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**Vale S.A.**

*(incorporated in Brazil as a Sociedade por Ações)*

(Stock code: 6210 for Common Depositary Receipts)

(Stock code: 6230 for Class A Preferred Depositary Receipts)

**ANNUAL REPORT FORM 20-F**

The following sets out the annual report Form 20-F filed by Vale S.A. (the **Company**) with the Securities and Exchange Commission of the United States on April 28, 2011.

Pursuant to the requirements of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (the **Listing Rules**) and the conditions imposed by The Stock Exchange of Hong Kong Limited (the **Stock Exchange**) in granting certain waivers from the requirements of the Listing Rules to the Company, the Company confirms as follows:

- (a) during the period from December 8, 2010 (being the date of listing of the Company's HDRs on the Stock Exchange) up to 31 December 2010, it was in compliance with the rules and regulations of the Brazilian Securities and Exchange Commission (**CVM**), the São Paulo Stock Exchange (**BM&FBOVESPA**), the United States Securities and Exchange Commission (**SEC**) and the New York Stock Exchange (**NYSE**) relating to treasury stock and other conditions to the waiver from strict compliance with Rules 10.06(5) and 19B.21 of the Listing Rules set out in sub-paragraphs (a) to (c) of the paragraph headed "Cancellation of shares upon repurchase" in the section headed "Waivers" in the listing document of the Company dated December 2, 2010;
- (b) it has adopted the Securities Trading Policy on terms no less exacting than the required standard set out in Appendix 10 to the Listing Rules as modified by the waivers granted to the Company by the Stock Exchange; and
- (c) the repurchases of the Company's shares on BM&FBOVESPA and American depositary receipts (**ADRs**) on NYSE during the fourth quarter of 2010 pursuant to the share

repurchase program approved by the Company's board of directors on September 23, 2010 were made in accordance with the rules issued by the CVM (with respect to the repurchases of the Company's shares) and the SEC (with respect to the repurchases of the Company's ADRs).

Chief Financial  
and  
Investor Relations Officer  
of  
**Vale S.A.**  
Guilherme Perboyre Cavalcanti

Hong Kong, April 28, 2011

UNITED STATES SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

Form 20-F

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d)  
OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended: December 31, 2010  
Commission file number: 001-15030

VALE S.A.

(Exact name of Registrant as specified in its charter)

Federative Republic of Brazil

(Jurisdiction of incorporation or organization)

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(Address of principal executive offices)

Securities registered or to be registered pursuant to Section 12(b) of the Act:

Title of Each Class	Name of Each Exchange on Which Registered
Preferred class A shares of Vale, no par value per share	New York Stock Exchange*
American Depositary Shares (evidenced by American Depositary Receipts), each representing one preferred class A share of Vale	New York Stock Exchange
Common shares of Vale, no par value per share	New York Stock Exchange*
American Depositary Shares (evidenced by American Depositary Receipts), each representing one common share of Vale	New York Stock Exchange
6.75% Guaranteed Notes due 2012, Series VALE, issued by Vale Capital II	New York Stock Exchange
6.75% Guaranteed Notes due 2012, Series VALE.P, issued by Vale Capital II	New York Stock Exchange
9.0% Guaranteed Notes due 2013, issued by Vale Overseas	New York Stock Exchange
6.25% Guaranteed Notes due 2016, issued by Vale Overseas	New York Stock Exchange
6.250% Guaranteed Notes due 2017, issued by Vale Overseas	New York Stock Exchange
5% Guaranteed Notes due 2019, issued by Vale Overseas	New York Stock Exchange
4.625% Guaranteed Notes due 2020, issued by Vale Overseas	New York Stock Exchange
8.25% Guaranteed Notes due 2034, issued by Vale Overseas	New York Stock Exchange
6.875% Guaranteed Notes due 2036, issued by Vale Overseas	New York Stock Exchange
6.875% Guaranteed Notes due 2039, issued by Vale Overseas	New York Stock Exchange

\* Shares are not listed for trading, but only in connection with the registration of American Depositary Shares pursuant to the requirements of the New York Stock Exchange.

Securities registered or to be registered pursuant to Section 12(g) of the Act: None  
Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act: None  
The number of outstanding shares of each class of stock of Vale as of December 31, 2010 was:

3,256,724,482 common shares, no par value per share  
2,108,579,618 preferred class A shares, no par value per share  
12 golden shares, no par value per share

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes  No

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

Yes  No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days.

Yes  No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).

Yes  No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer" and "large accelerated filer" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer  Accelerated filer  Non-accelerated filer

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP  International Financial Reporting Standards as issued by the International Accounting Standards Board  Other

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow.

Item 17  Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes  No

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## FORWARD-LOOKING STATEMENTS

This annual report contains statements that may constitute forward-looking statements within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Many of those forward-looking statements can be identified by the use of forward-looking words such as “anticipate,” “believe,” “could,” “expect,” “should,” “plan,” “intend,” “estimate” and “potential,” among others. Those statements appear in a number of places and include statements regarding our intent, belief or current expectations with respect to:

- our direction and future operation;
- the implementation of our principal operating strategies, including our potential participation in acquisition, divestiture or joint venture transactions or other investment opportunities;
- the implementation of our financing strategy and capital expenditure plans;
- the exploration of mineral reserves and development of mining facilities;
- the depletion and exhaustion of mines and mineral reserves;
- trends in commodity prices and demand for commodities;
- the future impact of competition and regulation;
- the payment of dividends;
- industry trends, including the direction of prices and expected levels of supply and demand;
- other factors or trends affecting our financial condition or results of operations; and
- the factors discussed under *Risk factors*.

We caution you that forward-looking statements are not guarantees of future performance and involve risks and uncertainties. Actual results may differ materially from those in forward-looking statements as a result of various factors. These risks and uncertainties include factors relating to (a) the countries in which we operate, mainly Brazil and Canada, (b) the global economy, (c) capital markets, (d) the mining and metals businesses and their dependence upon global industrial production, which is cyclical by nature, and (e) the high degree of global competition in the markets in which we operate. For additional information on factors that could cause our actual results to differ from expectations reflected in forward-looking statements, see *Risk factors*. Forward-looking statements speak only as of the date they are made, and we do not undertake any obligation to update them in light of new information or future developments. All forward-looking statements attributed to us or a person acting on our behalf are expressly qualified in their entirety by this cautionary statement, and you should not place undue reliance on any forward-looking statement.

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*Vale S.A. is a stock corporation, or sociedade por ações, organized on January 11, 1943 and existing under the laws of the Federative Republic of Brazil for an unlimited period of time. Its head offices are located at Avenida Graça Aranha, No. 26, 20030-900 Rio de Janeiro, RJ, Brazil, and its telephone number is 55-21-3814-4477.*

*In this report, references to “Vale” are to Vale S.A. References to “we,” “us” or the “Company” are to Vale and, except where the context otherwise requires, its consolidated subsidiaries. References to our “preferred shares” are to our preferred class A shares. References to our “ADSs” or “American Depositary Shares” include both our common American Depositary Shares (our “common ADSs”), each of which represents one common share of*



*Vale, and our preferred class A American Depositary Shares (our “preferred ADSs”), each of which represents one class A preferred share of Vale. American Depositary Shares are represented by American Depositary Receipts (“ADRs”) issued by the depositary. References to our “HDSs” or “Hong Kong Depositary Shares” include both our common Hong Kong Depositary Shares (our “common HDSs”), each of which represents one common share of Vale, and our class A preferred Hong Kong Depositary Shares (our “preferred HDSs”), each of which represents one preferred Class A share of Vale. Hong Kong Depositary Shares are represented by Hong Kong Depositary Receipts (“HDRs”) issued by the depositary. Unless otherwise specified, we use metric units.*

*References to “real,” “reais” or “R\$” are to the official currency of Brazil, the real (singular) or reais (plural). References to “U.S. dollars” or “US\$” are to United States dollars. References to “CAD” are to Canadian dollars, and references to “A\$” are to Australian dollars.*

## **RISK FACTORS**

### **Risks relating to our business**

*The mining industry is highly exposed to the cyclicity of global economic activity and requires significant investments of capital.*

The mining industry is primarily a supplier of industrial raw materials. Industrial production tends to be the most cyclical and volatile component of global economic activity, which affects demand for minerals and metals. At the same time, investment in mining requires a substantial amount of funds in order to replenish reserves, expand production capacity, build infrastructure and preserve the environment. Both the sensitivity to industrial production and the need for significant capital investments are important sources of financial risk for the mining industry.

*Adverse economic developments in China could have a negative impact on our revenues, cash flow and profitability.*

China has been the main driver of global demand for minerals and metals over the last few years. In 2010, Chinese demand represented 59% of global demand for seaborne iron ore, 37% of global demand for nickel, 38% of global demand for copper and 41% of global demand for aluminum. The percentage of our operating revenues attributable to sales to consumers in China was 33.1% in 2010. Although China largely withstood the recent global recession, a contraction of China’s economic growth could result in lower demand for our products, leading to lower revenues, cash flow and profitability. Poor performance in the Chinese real estate sector, the largest consumer of carbon steel in China, could also negatively impact our results.

*Our business can be adversely affected by declines in demand for the products our customers produce, including steel (for our iron ore business), stainless steel (for our nickel business) and agricultural commodities (for our fertilizer nutrients business).*

Demand for our iron ore and nickel products depends on global demand for steel. Iron ore and iron ore pellets, which together accounted for 70.5% of our 2010 operating revenues, are used to produce carbon steel. Nickel, which accounted for 8.3% of our 2010 operating revenues, is used mainly to produce stainless and alloy steels. Demand for steel depends heavily on global economic conditions, but it also depends on a variety of regional and sectoral factors. The prices of different steels and the performance of the global steel industry are highly cyclical and volatile, and these business cycles in the steel industry affect demand and prices for our products. In addition, vertical backward integration of the steel industry could reduce the global seaborne trade of iron ore.

The global seaborne trade of iron ore could also suffer from competition from metallics, such as semi-finished steel and scrap. In certain cases, it may be more economical for steelmakers to charge more scrap in basic oxygen furnaces (“BOF”) and electric arc furnaces (“EAF”), instead of producing pig iron.

Semi-finished products, such as billets and slabs, may also be available from fully-integrated steel mills at low cost, reducing overall demand for seaborne iron ore.

The demand for fertilizers is affected by global prices of agricultural commodities. A sustained decline in the price of one or more agricultural commodities could negatively impact our fertilizer business.

*The shift to index-based quarterly pricing for iron ore based on short-term market references and consequent price volatility could adversely affect our iron ore business.*

We reached agreements with all our iron ore customers during the first half of 2010 to move from annual benchmark contracts to quarterly index-based contracts to better reflect market fundamentals. The previous annual benchmark price system for iron ore has been replaced by a new system under which iron ore prices are established quarterly based on a three-month average of price indices for the period ending one month before the beginning of the new quarter. While the new pricing system more clearly differentiates pricing based on product quality, allowing our iron ore products to earn a premium over the price of standard iron ores, the increased price volatility resulting from the quarterly price changes could adversely affect our cash flow.

*The prices of nickel, copper and aluminum, which are actively traded on world commodity exchanges, are subject to significant volatility.*

Nickel, copper and aluminum are sold in an active global market and traded on commodity exchanges, such as the London Metal Exchange and the New York Mercantile Exchange. Prices for these metals are subject to significant fluctuations and are affected by many factors, including actual and expected global macroeconomic and political conditions, levels of supply and demand, the availability and cost of substitutes, inventory levels, investments by commodity funds and others and actions of participants in the commodity markets.

*Increased availability of alternative nickel sources or substitution of nickel from end-use applications could adversely affect our nickel business.*

Scrap nickel competes directly with primary nickel as a source of nickel for use in the production of stainless steel, and the choice between them is largely driven by their relative prices and availability. In 2010, the stainless steel scrap ratio remained unchanged from 2009, at 42%. Nickel pig iron, a product developed by Chinese steel and alloy makers that utilizes lateritic nickel ores, competes with other nickel sources in the production of stainless steel. In 2010, estimated nickel pig iron production increased 61%, representing 11% of global nickel output. Demand for primary nickel may be negatively affected by the direct substitution of primary nickel with other materials in current applications. In response to high nickel prices or other factors, producers and consumers of stainless steel may partially shift from stainless steel with high nickel content (series 300) to stainless steels with either lower nickel content (series 200) or no nickel content (series 400), which would adversely affect demand for nickel.

*We may not be able to adjust production volume in a timely or cost-efficient manner in response to changes in demand.*

During periods of high demand, our ability to rapidly increase production capacity is limited, which could render us unable to satisfy demand for our products. Moreover, we may be unable to complete expansions and greenfield projects in time to take advantage of rising demand for iron ore. When demand exceeds our production capacity, we may meet excess customer demand by purchasing iron ore, iron ore pellets or nickel from joint ventures or unrelated parties and reselling it, which would increase our costs and narrow our operating margins. If we are unable to satisfy excess customer demand in this way, we may lose customers. In addition, operating close to full capacity may expose us to higher costs, including demurrage fees due to capacity restraints in our logistics systems.

Conversely, operating at significant idle capacity during periods of weak demand may expose us to higher unit production costs since a significant portion of our cost structure is fixed in the short-term due to the high capital intensity of mining operations. In addition, efforts to reduce costs during periods of weak demand could be limited by labor regulations or previous labor or government agreements.

*Regulatory, political, economic and social conditions in the countries in which we have operations or projects could adversely impact our business and the market prices of our securities.*

Our financial performance may be negatively affected by regulatory, political, economic and social conditions in countries in which we have significant operations or projects, particularly Argentina, Australia, Brazil, Canada, Colombia, Guinea, Indonesia, Liberia, Malawi, Mozambique, New Caledonia, Oman and Peru.

Our operations depend on authorizations and concessions from governmental regulatory agencies of the countries in which we operate. For details about the authorizations and concessions upon which our operations depend, see *Information on the Company—Regulatory matters*. We are subject to laws and regulations in many jurisdictions that can change at any time, and changes in laws and regulations may require modifications to our technologies and operations and result in unanticipated capital expenditures.

Actual or potential political changes and changes in economic policy may undermine investor confidence, which may hamper investment and thereby reduce economic growth, and otherwise may adversely affect the economic and other conditions under which we operate in ways that could have a materially negative effect on our business.

Protesters have taken actions to disrupt our operations and projects, and they may continue to do so in the future. Although we vigorously defend ourselves against illegal acts, while supporting the communities living near our operations, future attempts by protesters to harm our operations could adversely affect our business.

Some of our operations and reserves are located on or near lands owned by indigenous or aboriginal tribes or other groups. These indigenous peoples have rights to participate in natural resource management, and we negotiate with them for access to their lands. A disagreement or dispute with an indigenous or aboriginal group could hamper our ability to develop our reserves and conduct our operations.

*We could be adversely affected by changes in government policies, including the imposition of new taxes or royalties on mining activities.*

Mining is subject to government regulation in the form of taxes and royalties, which can have an important financial impact on our operations. In the countries where we operate, governments may impose new taxes, raise existing taxes and royalty rates, or change the basis on which they are calculated in a manner that is unfavorable to us.

*Our projects are subject to risks that may result in increased costs or delay that prevent their successful implementation.*

We are investing to further increase our production capacity, logistics capabilities and to expand the scope of minerals we produce. Our projects are subject to a number of risks that may adversely affect our growth prospects and profitability, including the following:

- We may encounter delays or higher than expected costs in obtaining the necessary equipment or services and in implementing new technologies to build and operate a project.
- Our efforts to develop projects according to schedule may be hampered by a lack of infrastructure, including a reliable power supply.

- We may fail to obtain, or experience delays or higher than expected costs in obtaining, the required permits to build a project.
- Changes in market conditions or regulations may make a project less profitable than expected at the time we initiated work on it.
- Adverse mining conditions may delay and hamper our ability to produce the expected quantities of minerals.
- Some of our development projects are located in regions where tropical diseases, AIDS, malaria, yellow fever and other contagious diseases are a major public health issue and pose health and safety risks to our employees. If we are unable to ensure the health and safety of our employees, our business may be adversely affected.

*Our controlling shareholder has significant influence over Vale, and the Brazilian government has certain veto rights.*

As of March 31, 2011, Valepar S.A. (“Valepar”) owned 53.5% of our outstanding common stock and 33.3% of our total outstanding capital. As a result of its share ownership, Valepar can control the outcome of some actions that require shareholder approval. For a description of our ownership structure and of the Valepar shareholders’ agreement, see *Share ownership and trading—Major shareholders*.

The Brazilian government owns 12 golden shares of Vale, granting it limited veto power over certain company actions, such as changes to our name, the location of our headquarters and our corporate purpose as it relates to mining activities. For a detailed description of the Brazilian government’s veto powers, see *Additional information—Memorandum and articles of association—Common shares and preferred shares*.

*Our governance and compliance processes may fail to prevent regulatory penalties and reputational harm.*

We operate in a global environment, and our activities straddle multiple jurisdictions and complex regulatory frameworks with increased enforcement activities worldwide. Our governance and compliance processes, which include the review of internal control over financial reporting, may not prevent future breaches of law, accounting or governance standards. We may be subject to breaches of our Code of Ethical Conduct, business conduct protocols and instances of fraudulent behavior and dishonesty by our employees, contractors or other agents. Our failure to comply with applicable laws and other standards could subject us to fines, loss of operating licenses and reputational harm.

*Some of our operations depend on joint ventures, consortia or the participation of other investors, and our business could be adversely affected if our partners fail to observe their commitments.*

We currently operate important parts of our pelletizing, bauxite, nickel, coal, copper and steel businesses through joint ventures with other companies. Important parts of our electricity investments and all of our oil and gas projects are operated through consortia. Our forecasts and plans for these joint ventures and consortia assume that our partners will observe their obligations to make capital contributions, purchase products and, in some cases, provide skilled and competent managerial personnel. If any of our 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 we may have to increase the level of our investment to implement these plans. For example, the subsidiary that owns our nickel project in New Caledonia has a minority shareholder, Sumic Nickel Netherlands B.V., with a put option to sell us 25%, 50%, or 100% of its shares. Sumic may exercise the put option if the cost of the project exceeds a certain value agreed upon by a subset of the shareholders and certain other conditions are met. For more information about our joint ventures, see *Information on the Company—Lines of business*.

*Environmental, health and safety regulation may adversely affect our business.*

Our operations involve the use, handling, discharge and disposal of hazardous materials into the environment and the use of natural resources, and nearly all aspects of our activities, products, services and projects around the world are subject to environmental, health and safety regulation, which may expose us to increased litigation or increased costs. Such regulations require us to obtain environmental licenses, permits and authorizations for our operations, and to conduct environmental impact assessments in order to get the approval for our projects and permission for initiating construction. Additionally, all significant changes to existing operations must also undergo the same procedure. Difficulties in obtaining permits may lead to construction delays or cost increases, and in some cases may lead us to postpone or even abandon a project. Environmental regulation also imposes standards and controls on activities relating to mineral research, mining, pelletizing activities, railway and marine services, decommissioning, refining, distribution and marketing of our products. Such regulation may give rise to significant costs and liabilities. In addition, community activist groups and other stakeholders may increase demands for socially responsible and environmentally sustainable practices, which could entail significant costs and reduce our profitability. Private litigation relating to these or other matters may adversely affect our financial condition or cause harm to our reputation.

Environmental regulation in many countries in which we operate has become stricter in recent years, and it is possible that more regulation or more aggressive enforcement of existing regulations will adversely affect us by imposing restrictions on our activities and products, creating new requirements for the issuance or renewal of environmental licenses, raising our costs or requiring us to engage in expensive reclamation efforts. Concern over climate change, and efforts to comply with international undertakings under the Kyoto Protocol, could lead governments to impose limits on carbon emissions applicable to our operations, which could adversely affect our operating costs or our capital expenditure requirements. For example, the Brazilian government has adopted a decree under the carbon emissions law (*Política Nacional de Mudanças Climáticas*) that contemplates specific limits on carbon emissions to be established in late 2011 and phased in through 2020.

*Natural disasters have been increasing in frequency and may inflict severe damages to our operations and projects in the countries where we operate and/or may cause a negative impact in our sales to countries adversely affected by such disasters.*

Natural disasters, such as wind storms, floods, earthquakes and tsunamis, have been increasing in frequency around the world and may adversely affect our operations and projects in the countries where we operate, and may cause a contraction in sales to countries adversely affected due to, among other factors, power outages and the destruction of industrial facilities and infrastructure. In the last quarter of 2010 and first quarter of 2011, our coal operations in Australia were negatively affected by floods in the state of Queensland. Our sales of mining products to Japan will suffer the adverse impact of the earthquake that hit the northeast region of the country in March 2011.

*Our reserve estimates may materially differ from mineral quantities that we may be able to actually recover; our 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.*

Our reported ore reserves are estimated quantities of ore and minerals that we have determined can 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 our control. Reserve engineering involves estimating deposits of minerals that cannot be measured in an exact manner, and the accuracy of any reserve estimate is a function of the quality of available data and engineering and geological interpretation and judgment. As a result, no assurance can be given that the indicated amount of ore will be recovered or that it will be recovered at the rates we anticipate. Estimates may vary, and results of our mining and production subsequent to the date of an estimate may lead to revisions of estimates. 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 or other factors may render proven and probable reserves uneconomic to exploit and may ultimately result in a restatement of reserves.

*We may not be able to replenish our reserves, which could adversely affect our mining prospects.*

We engage in mineral exploration, which is highly speculative in nature, involves many risks and frequently is non-productive. Our exploration programs, which involve significant capital expenditures, may fail to result in the expansion or replacement of reserves depleted by current production. If we do not develop new reserves, we will not be able to sustain our current level of production beyond the remaining lives of our existing mines.

*Drilling and production risks could adversely affect the mining process.*

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

- establish mineral reserves through drilling;
- determine appropriate mining and metallurgical processes for optimizing the recovery of metal contained in ore;
- obtain environmental and other licenses;
- construct mining, processing facilities and infrastructure required for greenfield properties; and
- obtain the ore or extract the minerals from the ore.

If a project proves not to be economically feasible by the time we are able to exploit it, we may incur substantial losses and be obliged to take write-downs. In addition, potential changes or complications involving metallurgical and other technological processes arising during the life of a project may result in delays and cost overruns that may render the project not economically feasible.

*We face rising extraction costs over time as reserves deplete.*

Reserves are gradually depleted in the ordinary course of a given mining operation. As mining progresses, distances to the primary crusher and to waste deposits become longer, pits become steeper and underground operations become deeper. As a result, over time, we usually experience rising unit extraction costs with respect to each mine. Several of our mines have been operating for long periods, and we will likely experience rising extraction costs per unit in the future at these operations in particular.

*Labor disputes may disrupt our operations from time to time.*

A substantial number of our employees, and some of the employees of our subcontractors, are represented by labor unions and are covered by collective bargaining or other labor agreements, which are subject to periodic negotiation. Negotiation may become more difficult in times of higher prices and consequently higher profits in the mining and metals industries, as labor unions may seek wage increases and other forms of additional compensation.

Strikes and other labor disruptions at any of our operations could adversely affect the operation of facilities and the timing of completion and cost of our capital projects. For more information about labor relations, see *Management and employees—Employees*. Moreover, we could be adversely affected by labor disruptions involving unrelated parties that may provide us with goods or services.

*We may face shortages of equipment, services and skilled personnel.*

The mining industry has faced worldwide shortages of mining and construction equipment, spare parts, contractors and other skilled personnel during periods of high demand for minerals and metals and intense development of mining projects. We may experience longer lead-times for mining equipment and problems with the quality of contracted engineering, construction and maintenance services. We compete with other mining companies for highly skilled management and staff with relevant industry and technical experience, and we may not be able to attract and retain such people. Shortages during peak periods could negatively impact our operations, resulting in higher production or capital expenditure costs, production interruptions, higher inventory costs, project delays and potentially lower production and revenues.

*Higher energy costs or energy shortages would adversely affect our business.*

Energy costs are a significant component of our cost of production, representing 16.4% of our total cost of goods sold in 2010. To fulfill our energy needs, we depend on the following sources: oil by-products, which represented 42% of total energy needs in 2010, electricity (29%), coal (15%), natural gas (10%) and other energy sources (4%), using figures converted into tons of oil equivalent (“TOE”).

Fuel costs represented 10.0% of our cost of goods sold in 2010. Increases in oil and gas prices adversely affect margins in our logistics services, mining, iron ore pellets, nickel and alumina businesses.

Electricity costs represented 6.4% of our total cost of goods sold in 2010. If we are unable to secure reliable access to electricity at acceptable prices, we may be forced to curtail production or may experience higher production costs, either of which would adversely affect our results of operations. We face the risk of energy shortages in the countries where we have operations and projects due to excess demand or weather conditions, such as floods or droughts.

Electricity shortages have occurred throughout the world, and there can be no assurance that growth in power generation capacity in the countries in which we operate will be sufficient to meet future consumption increases. Future shortages, and government efforts to respond to or prevent shortages, may adversely impact the cost or supply of electricity for our operations.

Through our subsidiary PT International Nickel Indonesia Tbk (“PTI”), we process lateritic nickel ores using a pyrometallurgical process, which is energy-intensive. Although PTI currently generates a majority of the electricity for its operations from its own hydroelectric power plants, low rainfall or other hydrological factors could adversely affect electricity production at PTI’s plants in the future, which could significantly increase the risk of higher costs or lower production volume.

*Price volatility—relative to the U.S. dollar—of the currencies in which we conduct operations could adversely affect our financial condition and results of operations.*

A substantial portion of our revenues and debt is denominated in U.S. dollars, and changes in exchange rates may result in (i) losses or gains on our net U.S. dollar-denominated indebtedness and accounts receivable and (ii) fair value losses or gains on our currency derivatives used to stabilize our cash flow in U.S. dollars. In 2010, we had currency gains of US\$102 million; in 2009, we had currency gains of US\$665 million; in 2008, we had currency losses of US\$1.011 billion. In addition, the price volatility of the Brazilian *real*, the Canadian dollar, the Indonesian rupiah and other currencies against the U.S. dollar affect our results since most of our costs of goods sold are denominated in currencies other than the U.S. dollar, principally the *real* (64% in 2010) and the Canadian dollar (11% in 2010), while our revenues are mostly U.S. dollar-denominated. We expect currency fluctuations to continue to affect our financial income, expense and cash flow generation.

Significant volatility in currency prices may also result in disruption of foreign exchange markets and may limit our ability to transfer or to convert certain currencies into U.S. dollars and other currencies for the purpose of making timely payments of interest and principal on our indebtedness. The central banks and governments of the countries in which we operate may institute restrictive exchange rate policies in the future.

*We may not have adequate insurance coverage for some business risks.*

Our businesses are generally subject to a number of risks and hazards, which could result in damage to, or destruction of, mineral properties, facilities and equipment. The insurance we maintain against risks that are typical in our business may not provide adequate coverage. Insurance against some risks (including liabilities for environmental pollution or certain hazards or interruption of certain business activities) may not be available at a reasonable cost, or at all. As a result, accidents or other negative developments involving our mining, production or transportation facilities could have a material adverse effect on our operations.

*We are involved in several legal proceedings that could have a material adverse effect on our business in the event of an outcome that is unfavorable to us.*

We are involved in several legal proceedings in which adverse parties have claimed substantial amounts. Although we are vigorously contesting them, the outcomes of these proceedings are uncertain and may result in obligations that could materially adversely affect our business and the value of our shares, ADSs and HDSs. For additional information, see *Additional information—Legal Proceedings*.

*Concessions, authorizations, licenses and permits are subject to renewal and various uncertainties and we might only renew some of our mining concessions a limited number of times and for limited periods of time.*

Some of our mining concessions outside Brazil are subject to fixed expiration dates and might only be renewed a limited number of times for a limited period of time. Apart from mining concessions, we may need to obtain various authorizations, licenses and permits from governmental or other regulatory bodies in connection with the operation of our mines, which may be subject to fixed expiration dates or periodic review or renewal. While we anticipate that renewals will be given as and when sought, there is no assurance that such renewals will be given as a matter of course and there is no assurance that new conditions will not be imposed in connection therewith. Fees for mining concessions might increase substantially due to the passage of time from the original issuance of each individual exploration license. If so, our business objectives might be impeded by the costs of holding and/or renewing our mining concessions. Accordingly, we need to assess continually the mineral potential of each mining concession, particularly at the time of renewal, to determine if the costs of maintaining the mining concessions are justified by the results of operations to date, and might elect to let some of our concessions lapse. There can be no assurance that such concessions will be obtained on terms favorable to us, or at all, for our future intended mining and/or exploration targets.

*Ineffective project management and other operational problems could materially and adversely affect our business and financial performance.*

Ineffective project management and operational breakdowns might require us to suspend or curtail operations, which could generally reduce our productivity. Ineffective project management could mean that the logistics, including plant, machinery and transport, are not in place for continuous operation of our activities. Operational breakdowns could entail failure of critical plant and machinery. There can be no assurance that ineffective project management or other operational problems will not occur. Any damages to our projects or delays in our operations caused by ineffective project management or operational breakdowns could materially and adversely affect our business and results of operations.

*The integration between the Company and those acquisition targets that are a key part of the Company's strategies might prove more difficult than anticipated.*

We may not be able successfully to integrate our acquired businesses. We have grown our business in part through acquisitions, and some of our future growth could depend on acquisitions. The integration



process following the completion of any acquisition by the Company might prove more difficult than anticipated. In addition, if the focus on this process after acquisitions impacts the performance of our existing businesses, the results and operations of the Company may be adversely affected. Integration of acquisition targets might take longer than expected and the costs associated with integration of acquisition targets might be higher than anticipated. Completed acquisitions could fail to achieve the increased revenues, cost savings or operational benefits that were anticipated at the time of their conception. Acquisitions could lead to the incurrence of substantial costs as a result of, for example, inconsistencies in standards, controls, procedures and policies between the Company and the acquisition target which could negatively affect our financial condition and results of operations. Management attention could be diverted from ordinary responsibilities to integration issues.

*It could be difficult for investors to enforce any judgment obtained outside Brazil against us or any of our associates.*

Our investors may be located in jurisdictions outside Brazil and could seek to bring actions against us or our directors or officers in the courts of their home jurisdictions. The Company is a Brazilian company, and the majority of our officers and directors are residents of Brazil. The vast majority of our assets and the assets of our officers and directors are likely to be located in jurisdictions other than the home jurisdictions of our investors. It might not be possible for the investors to effect service of process within their home jurisdictions on us or on our officers or directors who reside outside their home jurisdictions. In addition, foreign court orders will be enforceable in the courts of Brazil without a re-examination of the merits only if previously confirmed by the Brazilian Superior Court of Justice (*Superior Tribunal de Justiça*), which confirmation will only be granted if such judgment: (a) fulfills all formalities required for its enforceability under the laws of the country where it was issued; (b) was issued by a competent court after due service of process on the Company or after sufficient evidence of the Company's absence has been given, as required under applicable law; (c) is not subject to appeal; (d) was authenticated by a Brazilian consulate in the country in which it was issued and is accompanied by a sworn translation into the Portuguese language; (e) is for payment of a sum certain; and (f) is not contrary to Brazilian national sovereignty, public policy or good morals. Therefore investors might not be able to recover against us or our directors and officers on judgments of the courts of their home jurisdictions predicated upon the laws of such jurisdictions.

#### **Risks relating to our depositary shares**

*If ADR holders or HDR holders exchange ADSs or HDSs, respectively, for the underlying shares, they risk losing the ability to remit foreign currency abroad.*

The custodian for the shares underlying our ADSs and HDSs maintains a registration with the Central Bank of Brazil entitling it to remit U.S. dollars outside Brazil for payments of dividends and other distributions relating to the shares underlying our ADSs and HDSs or upon the disposition of the underlying shares. If an ADR holder or HDR holder exchanges its ADSs or HDSs for the underlying shares, it will be entitled to rely on the custodian's registration for U.S. dollars for only five business days from the date of exchange. Thereafter, an ADR holder or HDR holder may not be able to obtain and remit foreign currency abroad upon the disposition of, or distributions relating to, the underlying shares unless it obtains its own registration under Resolution No. 2,689 of the National Monetary Council ("CMN"), which permits qualifying institutional foreign investors to buy and sell securities on the BM&FBOVESPA. For more information regarding these exchange controls, see *Additional information—Exchange controls and other limitations affecting security holders*. If an ADR holder or HDR holder attempts to obtain its own registration, it may incur expenses or suffer delays in the application process, which could delay the receipt of dividends or other distributions relating to the underlying shares or the return of capital in a timely manner.

We cannot assure ADR holders or HDR holders that the custodian's registration or any registration obtained will not be affected by future legislative changes, or that additional restrictions applicable to ADR holders or HDR holders, the disposition of the underlying shares or the repatriation of the proceeds from disposition will not be imposed in the future.

*ADR holders and HDR holders may be unable to exercise preemptive rights relating to the shares underlying their ADSs and HDSs.*

ADR holders and HDR holders may not be able to exercise preemptive rights, or exercise other types of rights, with respect to the underlying shares. The ability of ADR holders and HDR holders to exercise preemptive rights is not assured, particularly if the applicable law in the holder's jurisdiction (for example, the Securities Act in the United States or the Companies Ordinance in Hong Kong) requires that either a registration statement be effective or an exemption from registration be available with respect to those rights, as is in the case in the United States, or that any document offering preemptive rights be registered as a prospectus, as is the case in Hong Kong. We are not obligated to file a registration statement in the United States, or to make any other similar filing in any other jurisdiction, relating to preemptive rights or to undertake steps that may be needed to make exemptions from registration available, and we cannot assure holders that we will file any registration statement or take such steps. We are also not obligated to extend the offer of preemptive rights to HDR holders through the depository. For a more complete description of preemptive rights with respect to the underlying shares, see *Additional information—Memorandum and articles of association—Preemptive rights*.

*ADR holders and HDR holders may encounter difficulties in the exercise of voting rights.*

ADR holders and HDR holders do not have the rights of shareholders. They have only the contractual rights set forth for their benefit under the deposit agreements. ADR holders and HDR holders are not permitted to attend shareholders' meetings, and they may only vote by providing instructions to the depository. In the event that we fail to provide the depository with voting materials on a timely basis, or the depository does not provide sufficient time for ADR holders and HDR holders to submit voting instructions, ADR holders and HDR holders will not be able to vote. With respect to ADSs for which instructions are not received, the depository may, subject to certain limitations, grant a proxy to a person designated by us.

*The legal protections for holders of our securities differ from one jurisdiction to another and may be inconsistent, unfamiliar or less effective than investors anticipate.*

We are a global company with securities traded in several different markets and investors located in many different countries. The legal regime for the protection of investors varies around the world, sometimes in important respects, and investors in our securities should recognize that the protections and remedies available to them may be different from those to which they are accustomed in their home markets. We are subject to securities legislation in several countries, which have different rules, supervision and enforcement practices. The only corporate law applicable to us is the law of Brazil, with its specific substantive rules and judicial procedures. We are subject to corporate governance rules in several jurisdictions where our securities are listed, but as a foreign private issuer, we are not required to follow many of the corporate governance rules that apply to U.S. domestic issuers with securities listed on the New York Stock Exchange, and we are not subject to the U.S. proxy rules. Similarly, we have been granted waivers and exemptions from certain requirements of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited ("HKEx Listing Rules"), the Codes on Takeovers and Mergers and Share Repurchases and the Securities and Futures Ordinance of Hong Kong that are generally applicable to issuers listed in Hong Kong.

## **PRESENTATION OF FINANCIAL INFORMATION**

We have prepared our financial statements in this annual report in accordance with generally accepted accounting principles in the United States ("U.S. GAAP"). We also publish financial statements in accordance with International Financial Reporting Standards ("IFRS"), which differ in certain respects from U.S. GAAP, and use IFRS in reports to Brazilian shareholders, in CVM filings, and in determining the legal minimum dividend under Brazilian law. Our Brazilian tax liability is determined based on accounting practices in effect in Brazil as of 2007, which differ in certain respects from both U.S. GAAP and IFRS.

Our financial statements and the other financial information in this annual report have been translated from Brazilian *reais* into U.S. dollars on the basis explained in Note 3 to our financial statements, unless we indicate otherwise.

## SELECTED FINANCIAL DATA

The tables below present selected consolidated financial information as of and for the periods indicated. You should read this information together with our consolidated financial statements in this annual report.

### Statement of income data

	For the year ended December 31,				
	2006	2007	2008	2009	2010
	(US\$ million)				
Net operating revenues . . . . .	19,651	32,242	37,426	23,311	45,293
Cost of products and services . . . . .	(10,147)	(16,463)	(17,641)	(13,621)	(18,814)
Selling, general and administrative expenses . . . . .	(816)	(1,245)	(1,748)	(1,130)	(1,701)
Research and development . . . . .	(481)	(733)	(1,085)	(981)	(878)
Impairment of goodwill . . . . .	–	–	(950)	–	–
Other expenses . . . . .	(570)	(607)	(1,254)	(1,522)	(2,205)
Operating income . . . . .	<u>7,637</u>	<u>13,194</u>	<u>14,748</u>	<u>6,057</u>	<u>21,695</u>
Non-operating income (expenses):					
Financial income (expenses) . . . . .	(1,011)	(1,291)	(1,975)	351	(1,725)
Exchange and monetary gains, net . . . . .	529	2,553	364	675	344
Gain on sale of investments . . . . .	674	777	80	40	–
Subtotal . . . . .	<u>192</u>	<u>2,039</u>	<u>(1,531)</u>	<u>1,066</u>	<u>(1,381)</u>
Income before income taxes and equity results . . . . .	7,829	15,233	13,217	7,123	20,314
Income taxes charge . . . . .	(1,432)	(3,201)	(535)	(2,100)	(3,705)
Equity in results of affiliates and joint ventures and change in provision for gains on equity investments . . . . .	710	595	794	433	987
Net income from continuing operations . . . . .	<u>7,107</u>	<u>12,627</u>	<u>13,476</u>	<u>5,456</u>	<u>17,596</u>
Discontinued operations, net of tax . . . . .	–	–	–	–	(143)
Net income . . . . .	<u>7,107</u>	<u>12,627</u>	<u>13,476</u>	<u>5,456</u>	<u>17,453</u>
Net income attributable to non-controlling interests . . . . .	(579)	(802)	(258)	(107)	(189)
Net income attributable to Company's shareholders . . . . .	<u>6,528</u>	<u>11,825</u>	<u>13,218</u>	<u>5,349</u>	<u>17,264</u>
Total cash paid to shareholders(1) . . . . .	1,300	1,875	2,850	2,724	3,000

(1) Consists of total cash paid to shareholders during the period, whether classified as dividends or interest on shareholders' equity.

## Basic and diluted earnings per share

	For the year ended December 31,(1)				
	2006	2007	2008(5)	2009	2010(6)
	(US\$, except as noted)				
Earnings per share(2):					
Basic					
Per common share . . . . .	1.35	2.41	2.58	0.97	3.23
Per preferred share . . . . .	1.35	2.41	2.58	0.97	3.23
Diluted					
Per common share . . . . .	–	2.42	2.61	1.00	3.24
Per preferred share . . . . .	–	2.42	2.61	1.00	3.26
Weighted average number of shares outstanding (in thousands)(3):					
Common shares . . . . .	2,943,216	2,943,216	3,028,817	3,181,706	3,210,023
Preferred shares . . . . .	1,908,852	1,889,171	1,946,454	2,030,700	2,035,783
Treasury common shares underlying convertible notes . . . . .	–	34,510	56,582	74,998	18,416
Treasury preferred shares underlying convertible notes . . . . .	–	18,478	30,295	77,580	47,285
Total . . . . .	<u>4,852,068</u>	<u>4,885,375</u>	<u>5,062,148</u>	<u>5,364,984</u>	<u>5,311,507</u>
Distributions to shareholders per share(4):					
In US\$ . . . . .	0.27	0.39	0.56	0.53	0.57
In R\$ . . . . .	0.58	0.74	1.09	1.01	0.98

- (1) Share and per-share amounts for all periods give retroactive effect to all forward stock splits. We carried out two-for-one forward stock splits in September 2007 and in May 2006.
- (2) Diluted earnings per share for 2007, 2008 and 2009 include preferred shares and common shares underlying the mandatorily convertible notes issued in June 2007. Diluted earnings per share for 2009 and 2010 also include preferred shares and common shares underlying the mandatorily convertible notes issued in July 2009.
- (3) Each common ADS represents one common share and each preferred ADS represents one preferred share.
- (4) Our distributions to shareholders may be classified as either dividends or interest on shareholders' equity. In many years, part of each distribution has been classified as interest on shareholders' equity and part has been classified as dividends. For information about distributions paid to shareholders, see *Share ownership and trading—Distributions*.
- (5) In July 2008, we issued 80,079,223 common ADSs, 176,847,543 common shares, 63,506,751 preferred ADSs and 100,896,048 preferred shares in a global equity offering. In August 2008, we issued an additional 24,660,419 preferred shares. In October 2008, our Board of Directors approved a share buy-back program, which was terminated on May 27, 2009. While the program was in effect, Vale acquired 18,415,859 common shares and 47,284,800 preferred class A shares, corresponding respectively to 1.5% and 2.4% of the outstanding shares of each class on the date the program was launched. For more information see *Share ownership and trading—Purchases of equity securities by the issuer and affiliated purchasers*.
- (6) On September 23, 2010, the Board of Directors approved a share repurchase program of up to US\$2.0 billion that was completed by October 11, 2010. We acquired 21,682,700 common shares, at an average price of US\$31.31 per share, and 48,197,700 preferred shares, at an average price of US\$27.40 per share, totaling US\$2.0 billion and corresponding respectively to 1.67% and 2.45% of the free float of each class at the outset of the program. The shares acquired are currently being held in treasury. For more information see *Share ownership and trading—Purchases of equity securities by the issuer and affiliated purchasers*.

## Balance sheet data

	At December 31,				
	2006	2007	2008	2009	2010
	(US\$ million)				
Current assets . . . . .	12,940	11,380	23,238	21,294	31,791
Property, plant and equipment, net . . . . .	38,007	54,625	49,329	68,810	84,370
Investments in affiliated companies and joint ventures and other investments . . . . .	2,353	2,922	2,408	4,585	4,497
Other assets . . . . .	7,626	7,790	5,017	7,590	8,481
Total assets . . . . .	<u>60,926</u>	<u>76,717</u>	<u>79,992</u>	<u>102,279</u>	<u>129,139</u>
Current liabilities . . . . .	7,312	10,083	7,237	9,181	17,912
Long-term liabilities(1) . . . . .	10,008	13,195	10,173	12,703	17,195
Long-term debt(2) . . . . .	21,122	17,608	17,535	19,898	21,591
Total liabilities . . . . .	<u>38,442</u>	<u>40,886</u>	<u>34,945</u>	<u>32,601</u>	<u>38,786</u>
Redeemable non-controlling interests . . . . .	346	375	599	731	712
Shareholders' equity:					
Capital stock . . . . .	8,119	12,306	23,848	23,839	23,726
Additional paid-in capital . . . . .	498	498	393	411	2,188
Mandatorily convertible notes—common ADSs . . . . .	—	1,288	1,288	1,578	290
Mandatorily convertible notes—preferred ADSs . . . . .	—	581	581	1,225	644
Reserves and retained earnings . . . . .	11,056	18,603	16,446	29,882	42,051
Total Company shareholders' equity . . . . .	<u>19,673</u>	<u>33,276</u>	<u>42,556</u>	<u>56,935</u>	<u>68,899</u>
Non-controlling interests . . . . .	2,465	2,180	1,892	2,831	2,830
Total shareholders' equity . . . . .	<u>22,138</u>	<u>35,456</u>	<u>44,448</u>	<u>59,766</u>	<u>71,729</u>
Total liabilities and shareholders' equity . . . . .	<u>60,926</u>	<u>76,717</u>	<u>79,992</u>	<u>102,279</u>	<u>129,139</u>

(1) Excludes long-term debt.

(2) Excludes current portion of long-term debt.

## I. INFORMATION ON THE COMPANY

### BUSINESS OVERVIEW

#### Summary

We are the second-largest metals and mining company in the world and the largest in the Americas, based on market capitalization. We are the world's largest producer of iron ore and iron ore pellets and the world's second-largest producer of nickel. We are one of the world's largest producers of manganese ore and ferroalloys. We also produce copper, thermal and coking coal, phosphates, potash, cobalt, kaolin, and platinum group metals ("PGMs"). To support our growth strategy, we are actively engaged in mineral exploration efforts in 24 countries around the globe. We operate large logistics systems in Brazil, including railroads, maritime terminals and a port, which are integrated with our mining operations. In addition, we have a maritime freight portfolio to transport iron ore. Directly and through affiliates and joint ventures, we have investments in energy and steel businesses.

The following table presents the breakdown of our total gross operating revenues attributable to each of our main lines of business, each of which is described in the following table.

	Year ended December 31,					
	2008		2009		2010	
	(US\$ million)	(% of total)	(US\$ million)	(% of total)	(US\$ million)	(% of total)
Bulk materials:						
Iron ore . . . . .	US\$17,775	46.2%	US\$12,831	53.6%	US\$26,384	56.8%
Iron ore pellets . . . . .	4,301	11.2	1,352	5.6	6,402	13.7
Manganese . . . . .	266	0.7	145	0.6	258	0.6
Ferroalloys . . . . .	1,211	3.1	372	1.6	664	1.4
Coal . . . . .	577	1.5	505	2.1	770	1.6
Subtotal-bulk materials . . . . .	US\$24,130	62.7%	US\$15,205	63.5%	US\$34,478	74.2%
Base metals:						
Nickel . . . . .	US\$ 5,970	15.5%	US\$ 3,260	13.6%	US\$ 3,835	8.2%
Copper . . . . .	2,029	5.3	1,130	4.7	1,608	3.4
PGMs . . . . .	401	1.0	132	0.6	101	0.2
Other precious metals . . . . .	111	0.3	65	0.3	72	0.2
Cobalt . . . . .	212	0.6	42	0.2	30	0.1
Aluminum . . . . .	3,042	7.9	2,050	8.6	2,554	5.5
Subtotal-base metals . . . . .	US\$11,765	30.6%	US\$ 6,679	28.0%	US\$ 8,200	17.6%
Fertilizer nutrients . . . . .	295	0.8	413	1.7	1,846	4.0
Logistics services . . . . .	1,607	4.2	1,104	4.6	1,465	3.2
Other products and services(1) . . . . .	712	1.9	538	2.2	492	1.1
Total gross operating revenues . . . . .	US\$38,509	100.0%	US\$23,939	100.0%	US\$46,481	100.0%

(1) Includes kaolin, pig iron and energy.

- **Bulk materials:**

- *Iron ore and iron ore pellets.* We operate four systems in Brazil for producing and distributing iron ore: the Northern, Southeastern, Southern and Midwestern systems. The Northern and the Southeastern Systems are fully integrated, consisting of mines, railroads, a maritime terminal and a port. The Southern System consists of three mining sites and two maritime terminals. We operate 10 pellet plants in Brazil and we have two in Oman coming on stream. We also have a 50% stake in a joint venture that owns three integrated pellet plants in Brazil and a 25% stake in two pellet companies in China.

- *Manganese and ferroalloys.* We conduct our manganese mining operations through subsidiaries in Brazil, and we produce several types of manganese ferroalloys through subsidiaries in Brazil, France and Norway.
- *Coal:* We produce metallurgical and thermal coal through Vale Australia Holdings (“Vale Australia”), which operates coal assets in Australia through wholly owned subsidiaries and unincorporated joint ventures. Through our subsidiary Vale Coal Colombia Ltd. Sucursal Colombia (“Vale Colombia”) we produce thermal coal in the Cesar department of Colombia. We also have minority interests in Chinese coal and coke producers.
- **Base metals:**
  - *Nickel.* Our principal nickel mines and processing operations are conducted by our wholly owned subsidiary Vale Canada Limited (“Vale Canada”, formerly Vale Inco Limited), which has mining operations in Canada and Indonesia. We are ramping up our Onça Puma nickel operations in Brazil and are in the final phase of commissioning our nickel operations in New Caledonia. We own and operate, or have interests in, nickel refining facilities in the United Kingdom, Japan, Taiwan, South Korea and China.
  - *Copper.* In Brazil, we produce copper concentrates at Sossego in Carajás, in the state of Pará. In Canada, we produce copper concentrates, copper anodes and copper cathodes in conjunction with our nickel mining operations at Sudbury and Voisey Bay. In Chile, we are ramping up the Tres Valles copper SX-EW (solvent extraction electro winning) operation, located in the Coquimbo region.
  - *Aluminum.* Until February 2011, we engaged in bauxite mining, alumina refining and aluminum smelting through subsidiaries in Brazil. After several related transactions that closed in February 2011, we hold a 22.0% interest in Norsk Hydro ASA (“Hydro”) which we received as part of the consideration for the transfer to Hydro of our interests in Alumínio Brasileiro S.A. (“Albras”), Alumina do Norte do Brasil S.A. (“Alunorte”) and Companhia de Alumina do Pará (“CAP”). We are still engaged in bauxite mining through a 40.0% interest in Mineração Rio do Norte S.A. (“MRN”), and a remaining 40.0% interest in Mineração Paragominas S.A. (“Paragominas”), which we will subsequently transfer to Hydro in two equal tranches in 2013 and 2015. Both of MRN and Paragominas are located in Brazil.
  - *Cobalt.* We produce cobalt as a by-product of our nickel mining and processing operations in Canada and refine the majority of it at our Port Colborne facilities.
  - *PGMs.* We produce PGMs as by-products of our nickel mining and processing operations in Canada. The PGMs are concentrated at our Port Colborne facilities, in the Province of Ontario, Canada, and refined at our precious metals refinery in Acton, England.
  - *Other precious metals.* We produce gold and silver as by-products of our nickel mining and processing operations in Canada. Some of these precious metals are upgraded at our facilities in Port Colborne, Ontario, and all are refined by unrelated parties in Canada.
- **Fertilizer nutrients:** We produce potash in Brazil, with operations in Rosario do Catete, in the state of Sergipe. Our main phosphate operations are conducted by our subsidiary Vale Fertilizantes S.A. (“Vale Fertilizantes”), which holds the majority of our fertilizer assets in Brazil and is the largest Brazilian producer of phosphate rock, phosphate and nitrogen fertilizers. In addition, we are ramping up operations at Bayóvar, a phosphate rock mine in Peru.

- Logistics services:** We are a leading provider of logistics services in Brazil, with railroads, maritime terminals and a port. Two of our four iron ore systems incorporate an integrated railroad network linked to automated port and terminal facilities, which provide rail transportation for our mining products, general cargo and passengers, bulk terminal storage, and ship loading services for our mining operations and for customers. We conduct seaborne dry bulk shipping and provide tug boat services. We own and charter vessels to transport our iron ore sold on a cost and freight (“CFR”) basis to customers. Our tug boat services provide an efficient and safe towing service at our terminals in Brazil. We also own a 31.3% interest in Log-In Logística Intermodal S.A. (“Log-In”), which provides intermodal logistics services in Brazil, Argentina and Uruguay, and a 41.5% interest in MRS Logística S.A. (“MRS”), which transports our iron ore products from the Southern System mines to our Guaíba Island and Itaguaí maritime terminals, in the state of Rio de Janeiro.

## **Business strategy**

Our mission is to transform mineral resources into prosperity and sustainable development. Our vision is to become the largest mining company in the world by market capitalization, and to surpass established standards of excellence in research, development, project implementation and business operations. We aim to increase our geographical and product diversification and logistics capabilities. Iron ore and nickel will continue to be our main businesses while we boost the production capacity of our copper, coal and fertilizer nutrients businesses. To enhance our competitiveness, we will continue to invest in our railroads, maritime terminals, maritime freight portfolio and power generation capacities. We continue to seek opportunities to make strategic acquisitions, while focusing on disciplined capital management in order to maximize return on invested capital and total return to shareholders. Below are highlights of our major business strategies.

### *Maintaining our leadership position in the global iron ore market*

We continue to consolidate our leadership in the global iron ore market. In 2009 and 2010, we had an estimated market share of 24.9% and 24.7%, respectively, of the total volume traded in the seaborne market. We are committed to maintaining our leadership position in the global iron ore market, by focusing our product line to capture industry trends, increasing our production capacity in line with demand growth, controlling costs, strengthening our logistics infrastructure of railroads, ports, shipping and distribution centers, and strengthening relationships with customers. Our diversified portfolio of high quality products, strong technical marketing strategy, efficient logistics and strong and long-standing relationships with major customers will help us achieve this goal. We have also encouraged steelmakers to develop steel projects in Brazil through joint ventures in which we may preferably hold minority stakes, in order to create additional demand for our iron ore.

### *Achieving leadership in the nickel business*

We are the world’s second-largest nickel producer, with large-scale, long-life and low-cost operations, a substantial resource base, diversified mining operations producing both nickel sulfides and laterites, advanced technology and a robust growth profile. We have refineries in North America, Europe and Asia, which produce an array of products for use in most nickel applications. We are a leading producer of high-quality nickel products for non-stainless steel applications, such as plating, alloy steels, high nickel alloys and batteries, which represented 65% of our nickel sales in 2010. Our long-term goal is to strengthen our leadership in the nickel business.

### *Developing our copper resources*

We believe that our copper projects, most of which are situated in the Carajás mineral province in the Brazilian state of Pará, could be among the most competitive in the world in terms of investment cost per metric ton of ore. We are developing the Salobo project to produce copper concentrate. We expect these copper mines to benefit from our infrastructure facilities serving the Northern System. We are ramping up the Tres Valles copper project in Chile, and we have started developing the Konkola North copper mine in Zambia, Africa through a joint venture with African Rainbow Minerals Limited (“ARM”). We are engaged in mineral exploration in several countries to increase our reserve base.



### *Investing in coal*

We are pursuing various opportunities to become a large global player in the coal business. We have coal operating assets and a portfolio of exploration projects in Australia and Colombia, and minority interests in two joint ventures in China. We intend to continue pursuing organic growth in the coal business through the start-up of the Moatize project in Mozambique and its subsequent expansion, the development of more advanced coal exploration projects in Australia and Colombia, and mineral exploration initiatives in several countries, including Mozambique and Mongolia.

### *Investing in fertilizer nutrients*

We are actively investing with the aim of becoming one of the world's largest producers of potash and phosphate rock in order to benefit from rising global consumption of agricultural products, which is expected to grow significantly, especially in emerging market countries. We expect per capita income growth and the growing use of biofuels to drive demand for fertilizers. In this context, Brazil is expected to play a key role in the global agricultural market, given its position as a global agricultural powerhouse and its growth potential, mainly due to its access to water and arable land.

We understand the fertilizer industry, having successfully operated a potash mine in Brazil (Taquari-Vassouras) since the early nineties, and in 2010 we started the ramp-up of the Bayóvar phosphate rock operation in Peru, our first greenfield project for the production of fertilizers. Also during 2010, we expanded our fertilizer nutrients operations through the acquisition of Brazilian phosphate and nitrogen operations, now consolidated under Vale Fertilizantes. Our portfolio, which includes a phosphate operation in Peru and project in Mozambique and potash projects in Argentina, Brazil and Canada, positions us to capture a significant portion of market growth. In addition, we are engaged in several phosphate rock and potash mineral exploration projects around the world as part of our growth strategy. For more information, see—*Significant changes in our business* below.

### *Diversification and expansion of our resource base*

We are actively engaged in a mineral exploration program, with efforts in 24 countries around the globe. We are mainly seeking new deposits of coal, copper, iron ore, manganese ore, nickel, phosphates, natural gas, PGMs, potash and uranium. Mineral exploration is an important part of our organic growth strategy.

### *Enhancing our logistics capacity to support our bulk materials business*

We believe that the quality of our railway assets and extensive experience as a railroad and port operator, together with the lack of efficient transportation for general cargo in Brazil, position us as a leader in the logistics business in Brazil. We have been expanding the capacity of our railroads primarily to meet the needs of our iron ore business.

To support our commercial strategy for our iron ore business, we continue to invest in a dedicated maritime freight shuttle service from Brazil to Asia and in the development of distribution centers in Asia and the Middle East in order to minimize freight costs and maximize flexibility so as to enhance the competitiveness of our iron ore business in these regions.

In order to position ourselves for future expansion of our coal production in Mozambique and leverage our presence in Africa, we acquired control of Sociedade de Desenvolvimento do Corredor do Norte S.A. ("SDCN"), and will expand its capacity to develop the logistic corridor coming from our mine to the port of Nacala.

### *Optimizing our energy matrix*

Energy management and efficient supply have become a priority for us. As a large consumer of electricity, we believe that investing in power generation projects to support our operations will help protect us against volatility in the price of energy, regulatory uncertainties and the risk of energy shortages. Accordingly, we have developed hydroelectric power generation plants in Brazil, Canada and Indonesia, and we currently generate 45% of our worldwide electricity needs from our own plants, after accounting for the transfer of our aluminum production portfolio. As a potentially large consumer of natural gas, in 2007 we began investing in natural gas exploration in Brazil through consortia, and in 2009 we made our first discoveries.

We are seeking to develop a cleaner energy matrix by investing to develop clean energy sources such as biofuels and focusing on reducing our carbon footprint.

### **Significant changes in our business**

We summarize below major acquisitions, divestitures and other significant developments since the beginning of 2010.

#### *Index-based quarterly pricing for iron ore*

We reached agreements with all our iron ore customers during the first half of 2010 to move from annual benchmark contracts to quarterly index-based contracts. The previous annual benchmark pricing system for iron ore, based on annual bilateral negotiations, has been replaced by a new system under which iron ore prices are established quarterly based on a three-month average of price indices for the period ending one month before the beginning of the new quarter. The move towards increased price flexibility brings more efficiency and transparency to iron ore pricing and allows for the recognition of quality differences, which helps encourage long-term investment. In addition, clients are able to know beforehand the price to be paid in the subsequent quarter.

#### *Acquisition of iron ore assets in Guinea*

In the second quarter of 2010, we acquired a 51% interest in VBG—Vale BSGR Limited (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) in Guinea. We agreed to pay US\$2.5 billion in cash, of which US\$500 million was paid at closing and the balance will be paid in installments upon the achievement of agreed upon milestones. In connection with this acquisition, we have committed to renovate 660 kilometers of the Trans-Guinea railway for passenger transportation and light commercial use. We are currently negotiating contracts with the government of Liberia for the construction of an integrated railway-port system for transporting iron ore output from Simandou to a maritime terminal on the Atlantic coast in Liberia.

#### *Acquisition of phosphate operations in Brazil*

In a series of transactions during 2010, we acquired the Brazilian phosphate operations of Vale Fertilizantes (formerly Fertilizantes Fosfatados S.A.—Fosfertil) and Vale Fosfatados S.A. (formerly Bunge Participações e Investimentos S.A.). On February 1, 2011, Vale Fosfatados merged into Vale Fertilizantes. As of the date of this report, we own 84.3% of the shares of Vale Fertilizantes, including 99.9% of its common shares. 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.

### *Acquisition of Biopalma in Brazil*

In February 2011, we invested US\$173.5 million to acquire control of Biopalma, in the state of Pará, Brazil. Biopalma will produce palm oil, a raw material used to make biodiesel, and most of the production will be used for a B20 mix (a blend of 20% biodiesel and 80% regular diesel) to power our fleet of locomotives, heavy-duty machinery and equipment. Our investment in producing biodiesel is part of our strategic emphasis on global sustainability.

### *Acquisition of copper assets in the African copperbelt*

In April 2011, Vale and Metorex Limited (“Metorex”) agreed to the terms of Vale’s offer to acquire the total share capital of Metorex for US\$1.125 billion, to be paid in cash. Metorex is a producer of copper and cobalt, with operations in the African copperbelt. Metorex has two operating mines, Chibuluma located in Zambia, in which it holds an 85% interest, and Ruashi in the Democratic Republic of the Congo (DRC), in which it holds a 75% interest. Metorex also has three projects in the DRC, one in the development phase and two in the exploration phase. Metorex shareholders will be asked to vote on the proposed acquisition, which will be implemented through a scheme of arrangement pursuant to South Africa’s Companies Act. The acquisition of 100% of the share capital of Metorex requires approval by at least 75% of Metorex shareholders’ voting rights, of which we have already received irrevocable undertakings representing 25.8%. The acquisition is also conditional on approvals by applicable governments and regulators, and by minority holders in Metorex’s subsidiary companies, as well as to customary closing conditions.

### *Acquisition of stake in Belo Monte energy project*

In April 2011, our Board of Directors approved the acquisition, subject to certain conditions, of up to 9% of Norte Energia S.A. (“NESA”), which is currently held by Gaia Energia e Participações S.A. (“Gaia”). NESA was established with the sole purpose of implementing, operating and exploring the Belo Monte hydroelectric plant in the Brazilian state of Pará. Vale will reimburse Gaia for capital invested into NESA and will assume future capital investment commitments related to the acquired stake, which are estimated at R\$2.3 billion (US\$1.4 billion). The acquisition is consistent with our strategy of reducing operational costs and minimizing energy price and supply risks.

### *Organic growth*

We have an extensive program of investments in the organic growth of our businesses. Our main investment projects are summarized under—*Capital expenditures and projects*. The most significant projects that have come on stream since the beginning of 2010 are summarized below:

- *Carajás Additional 20 Mtpy*—At the end of the first quarter of 2010, we started operating new facilities that added 20 million metric tons per year (“Mtpy”) to the capacity of our Carajás iron ore mining operations. Due to debottlenecking and the development of operational flexibility, we were able to double the size of the capacity increase from our original plans of 10 Mtpy.
- *TKCSA*—Thyssen-Krupp Companhia Siderúrgica do Atlântico (“TKCSA”), a steel slab plant in the state of Rio de Janeiro, Brazil, began operations in 2010. The plant has a capacity of 5 Mtpy. Vale has a 26.87% stake and is the exclusive supplier of iron ore and pellets.
- *Bayóvar*—In the beginning of the third quarter of 2010, we started ramping up operations at Bayóvar, a phosphate rock mine in Peru, with nominal production capacity of 3.9 Mtpy. Bayóvar came on stream on time and is one of the lowest-cost phosphate rock mines in the world. It is our first greenfield project in the fertilizer business and also our first greenfield mining project concluded outside Brazil. We control Bayóvar with 51% of voting shares and 40% of the total equity. The other investors are Mosaic and Mitsui & Co., Ltd (“Mitsui”).
- *Tres Valles*—In the fourth quarter, we started production at the Tres Valles copper operation in the Coquimbo region of Chile. The hydrometallurgical process has an estimated nominal production capacity of 18,500 metric tons per year of copper cathodes.

- *Onça Puma*—In March of 2011, we started the ramp-up of Onça Puma, a nickel operation (mine and processing plant) in the Brazilian state of Pará. Its nominal production capacity is 53,000 metric tons per year of nickel contained in ferro-nickel, its final product.
- *Oman*—The Oman operations, in the industrial site of Sohar, Oman, are coming on stream and consist of two pellet plants, each with the capacity to produce 4.5 Mtpy, adding an aggregate of 9.0 Mtpy to our production capacity. The two pellet plants will produce direct reduction pellets. The first plant is commissioned and started up production in April 2011. The second plant is expected to reach the ramp-up stage by the second half of 2011. We are also developing a bulk terminal and a distribution center with the capacity to handle 40 Mtpy.
- *Estreito*—In March 2011, the first of eight turbines of the Estreito hydroelectric power plant became operational. Estreito is our first hydroelectric power plant in the Northern region and is located near the Tocantins River, on the border of the Brazilian states of Maranhão and Tocantins. The plant will have an installed capacity of 1,087 megawatts. We have a 30% stake in the consortium that operates the plant.

#### *Aluminum portfolio management*

In February 2011, we transferred a substantial part of our aluminum businesses to Hydro, an integrated aluminum company with operations in Norway and other countries that is listed on the Oslo Stock Exchange and the London Stock Exchange (ticker symbol: NHY). We transferred our interests in Albras, Alunorte and CAP, with net debt of US\$655 million, along with off-take rights and outstanding commercial contracts, for US\$503 million in cash and shares in Hydro representing a 22.0% interest in its equity. As part of the transaction, we transferred the Paragominas bauxite mine and all of our other Brazilian bauxite mineral rights (apart from rights owned through our stake in MRN) to the newly incorporated company Mineração Paragominas S.A. (“Paragominas”), 60.0% of which we transferred to Hydro in exchange for US\$578 million in cash. We will transfer the remaining 40.0% of Paragominas in two equal tranches in 2013 and 2015, each in exchange for US\$200 million in cash. In addition, as part of the agreement, Tito Martins, our Executive Officer of Base Metals Operations, has joined Hydro’s board.

#### *Other divestitures*

We are always seeking to optimize the structure of our portfolio of businesses. To that end, we dispose of assets from time to time that we have determined to be non-strategic. We summarize below our most significant dispositions and asset sales since the beginning of 2010.

- In June 2010, our wholly owned subsidiary Valesul Alumínio S.A. concluded the sale of its aluminum assets in the state of Rio de Janeiro, Brazil. The assets were sold to the Metalis group for US\$31.2 million.
- In July 2010, we completed the sale of our 86.2% stake in Pará Pigmentos S.A. (“PPSA”), a kaolin producer, and other kaolin mining rights located in the state of Pará, Brazil. The shares of PPSA and the kaolin mining rights were sold to Imerys S.A. for US\$74 million.

#### *Listing on the Hong Kong Stock Exchange*

In the fourth quarter of 2010, we listed on The Stock Exchange of Hong Kong Limited (“HKEx”) depositary receipts representing our common shares and our class A preferred shares. The HDRs began trading on the HKEx on December 8, 2010.

Asia is the main market for our products and is becoming increasingly important. Listing our HDRs on the HKEx using current common and preferred shares outstanding will provide direct exposure to Asian capital markets, which are of significant size and are the fastest growing in the world.

## LINES OF BUSINESS

Our principal lines of business consist of mining and logistics services. We also invest in energy to supply part of our consumption. This section presents information about operations, production, sales and competition and is organized as follows.

### 1. Bulk materials

#### 1.1 Iron ore

- 1.1.1 Operations
- 1.1.2 Production

#### 1.2 Iron ore pellets

- 1.2.1 Operations
- 1.2.2 Production

#### 1.3 Iron ore and iron ore pellets

- 1.3.1 Customers, sales and marketing
- 1.3.2 Competition

#### 1.4 Manganese ore

#### 1.5 Ferroalloys

#### 1.6 Manganese ore and ferroalloys: sales and competition

#### 1.7 Coal

- 1.7.1 Operations
- 1.7.2 Production
- 1.7.3 Customers and sales
- 1.7.4 Competition

### 2. Base metals

#### 2.1 Nickel

- 2.1.1 Operations
- 2.1.2 Production
- 2.1.3 Customers and sales
- 2.1.4 Competition

#### 2.2 Copper

- 2.2.1 Operations
- 2.2.2 Production
- 2.2.3 Customers and sales
- 2.2.4 Competition

#### 2.3 Aluminum

- 2.3.1 Bauxite

#### 2.4 PGMs and other precious metals

#### 2.5 Cobalt

### 3. Fertilizer nutrients

#### 3.1 Phosphates

#### 3.2 Potash

#### 3.3 Customers and sales

#### 3.4 Competition

### 4. Infrastructure

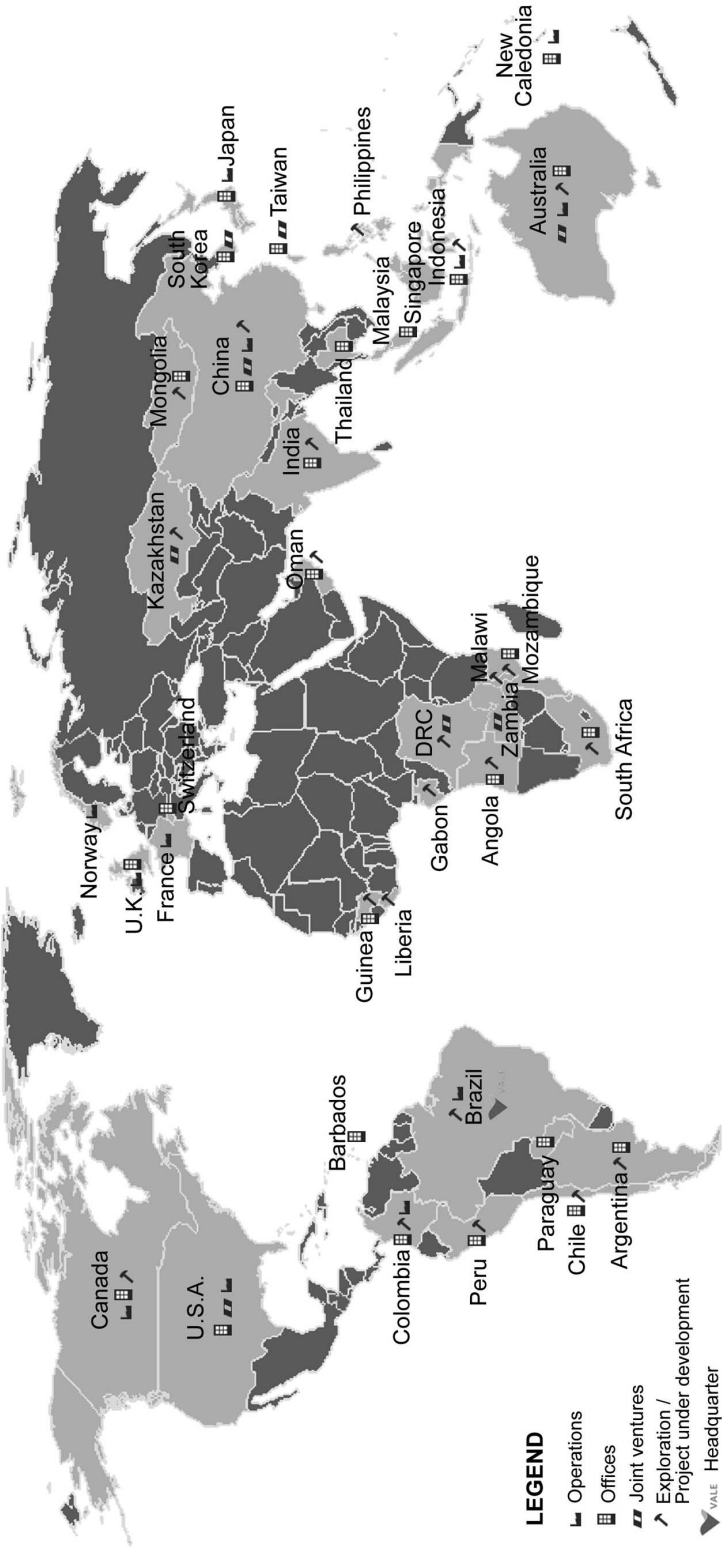
#### 4.1 Logistics services

- 4.1.1 Railroads
- 4.1.2 Ports and maritime terminals
- 4.1.3 Shipping

#### 4.2 Energy

- 4.2.1 Electric power
- 4.2.2 Oil and natural gas

### 5. Other investments



## 1. Bulk materials

Our bulk materials business includes iron ore mining, iron ore pellet production, manganese ore mining, ferroalloy production and coal production. Each of these activities is described below.

### 1.1 Iron ore

#### 1.1.1 Operations

We conduct our iron ore business in Brazil primarily at the parent-company level and through our wholly owned subsidiaries Urucum Mineração S.A. (“Urucum”) and Mineração Corumbaiense Reunidas (“MCR”). Our mines, all of which are open-pit, and their related operations are mainly concentrated in three systems: the Southeastern System, the Southern System and the Northern System, each with its own transportation capability. We also conduct mining operations in the Midwestern System and through joint venture Samarco Mineração S.A. (“Samarco”).

Company	System	Our share of capital		Partners
		Voting	Total	
		(%)		
Vale . . . . .	Northern, Southeastern, Southern and Midwestern	–	–	–
Urucum . . . . .	Midwestern	100.0	100.0	–
MCR . . . . .	Midwestern	100.0	100.0	–
Samarco . . . . .	–	50.0	50.0	BHP Billiton

#### *Southeastern System*

The Southeastern System mines are located in the Iron Quadrangle region of the state of Minas Gerais, where they are divided into three mining sites (Itabira, Minas Centrais and Mariana).

The ore reserves in the three mining sites have high ratios of itabirite ore relative to hematite ore. Itabirite ore has iron grade of 35-60% and requires concentration to achieve shipping grade, which is at least 63.5% average iron grade.

We conduct open-pit mining operations in the Southeastern System. At the three mining sites, we generally process the run-of-mine by means of standard crushing, classification and concentration steps, producing sinter feed, lump ore and pellet feed in the beneficiation plants located at the mining sites. In 2010, we produced 65.3% of the electric energy consumed in the Southeastern System at our hydroelectric power plants (Igarapava, Porto Estrela, Funil, Candonga, Aimorés, Capim Branco I and Capim Branco II).

We own and operate integrated railroad and terminal networks in the three mining sites, which are accessible by road or by spur tracks of our EFVM railroad. The EFVM railroad connects these mines to the Tubarão port in Vitória, in the state of Espírito Santo. For a more detailed description of the networks, see—*Logistics*.

#### *Southern System*

The Southern System mines are located in the Iron Quadrangle region of the state of Minas Gerais in Brazil. The mines of our subsidiary Minerações Brasileiras Reunidas S.A.—MBR (“MBR”) are operated at the parent-company level pursuant to an asset lease agreement. The Southern System has three major mining complexes: Minas Itabirito (comprised of four mines, with two major beneficiation plants and three secondary beneficiation plants); Vargem Grande (comprised of three mines and one major beneficiation plant); and Paraopeba (comprised of four mines and three beneficiation plants).

We beneficiate run-of-mine obtained from open pit mining operations into sinter feed, lump ore and pellet feed. In 2010, we produced 63.3% of the electric energy consumed in the Southern System at our hydroelectric power plants (Igarapava, Porto Estrela, Funil, Candonga, Capim Branco I and Capim Branco II).

We enter into freight contracts with our affiliate, MRS, an affiliate railway company in which we own a 41.5% stake, to transport our iron ore products at market prices from the mines to our Guaíba Island and Itaguaí maritime terminals in the state of Rio de Janeiro.

#### *Northern System*

The Northern System mines, located in the Carajás mineral province of the Brazilian state of Pará, contain some of the largest iron ore deposits in the world. The reserves are divided into northern, southern and eastern ranges situated 35 kilometers apart. Since 1985, we have been conducting mining activities in the northern range, which is divided into three main mining bodies (N4W, N4E and N5). The Northern System has open-pit mines and an ore-processing plant. The mines are located on public lands for which we hold mining concessions.

Because of the high grade (66.7% on average) of the Northern System deposits, we do not need to operate a concentration plant at Carajás. The beneficiation process consists simply of sizing operations, including screening, hydrocycloning, crushing and filtration. Output from the beneficiation process consists of sinter feed and pellet feed. We obtain all of the electrical power for the Northern System at market prices from regional utilities.

We operate an integrated railroad and maritime terminal network in the Northern System. After completion of the beneficiation process, our EFC railroad transports the iron ore to the Ponta da Madeira maritime terminal in the state of Maranhão. To support our Carajás operations, we have housing and other facilities in a nearby township. These operations are accessible by road, air and rail.

#### *Midwestern System*

The Midwestern System is comprised of the mines of Urucum and Corumbá, located in the state of Mato Grosso do Sul.

We conduct open-pit mining operations in the Midwestern System. The Urucum ore reserves contain a high ratio of hematite ore, which has an average grade of 62.2%. In September 2009, we concluded the acquisition of the Corumbá mine, where we produce lump ores. At the Urucum and Corumbá mines, we generally process the run-of-mine by means of standard crushing and classification steps, producing lumps and fines.

Iron ore products from the Urucum and Corumbá mines are delivered to customers by barges traveling along the Paraguay and Paraná rivers.

#### *Samarco*

We own 50.0% of Samarco, which operates an integrated system comprised of a mine, pipeline, three pellet plants and a port. Samarco's Alegria mine complex, located in Mariana, Minas Gerais, is in the same region as our Mariana complex in the Southeastern System.



## 1.1.2 Production

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

Mine/Plant	Type	Production for the year ended December 31,			Recovery rate
		2008	2009	2010	
		(million metric tons)			(%)
<b>Southeastern System</b>					
<i>Itabira</i>					
Cauê(1)	Open pit	21.5	13.8	19.3	68.0
Conceição(1)	Open pit	20.3	17.3	19.4	75.2
<i>Minas Centrais</i>					
Água Limpa/Cururu(2)	Open pit	4.7	1.4	5.0	52.9
Gongo Soco	Open pit	5.0	2.7	6.8	90.1
Brucutu	Open pit	26.4	23.6	29.7	79.1
Andrade(3)	Open pit	1.4	0.7	–	–
<i>Mariana</i>					
Alegria	Open pit	12.3	12.1	13.6	81.8
Fábrica Nova(4)	Open pit	14.0	13.7	12.5	66.9
Fazendão(5)	Open pit	9.8	3.1	10.6	100
Timbopeba	Open pit	–	–	–	–
Total Southeastern System		115.4	88.5	116.9	
<b>Southern System</b>					
<i>Minas Itabirito</i>					
Segredo/João Pereira(6)	Open pit	12.1	8.4	12.4	73.5
Sapecado/Galinheiro(7)	Open pit	15.1	9.8	17.7	67.0
<i>Vargem Grande</i>					
Tamanduá(8)	Open pit	9.8	7.3	8.6	83.4
Capitão do Mato(8)	Open pit	9.7	8.0	8.2	83.4
Abóboras	Open pit	4.2	5.4	5.2	100
<i>Paraopeba</i>					
Jangada	Open pit	4.3	–	3.5	98.9
Córrego do Feijão	Open pit	8.4	5.6	6.8	79.3
Capão Xavier(9)	Open pit	13.5	10.9	9.3	82.3
Mar Azul	Open pit	3.5	–	3.0	100
Total Southern System		80.5	55.2	74.7	
<b>Midwestern System</b>					
Corumbá	Open pit	–	0.4	2.8	62.9
Urucum	Open pit	1.0	0.5	1.4	55.3
Total Midwestern System		1.0	1.0	4.2	
<b>Northern System</b>					
<i>Serra Norte(10)</i>					
N4W	Open pit	44.3	31.0	30.2	92.4
N4E	Open pit	13.2	16.9	34.0	92.4
N5	Open pit	39.1	36.8	37.0	92.4
Total Northern System		96.5	84.6	101.2	
Vale		293.4	229.3	297.0	
Samarco(11)		8.3	8.6	10.8	57.2
Total		301.7	238.0	307.8	

- (1) The run-of-mine from the Minas do Meio and Conceição mines is sent to the Cauê and Conceição concentration plants.
- (2) Água Limpa/Cururu mines and plants are owned by Baovale, in which we own 100% of the voting shares and 50% of the total shares. Production figures for Água Limpa/Cururu have not been adjusted to reflect our ownership interest.
- (3) The lease for the Andrade mine was terminated in 2009.
- (4) Fábrica Nova ore is sent to the Alegria and Fábrica Nova plants.
- (5) Fazendão ore is sent to the Alegria plant and Samarco.
- (6) Segredo and João Pereira ore is processed at the Fábrica plant.
- (7) Galinheiro and Sapecado ore is processed at the Pico plant.
- (8) Tamanduá and Capitão do Mato ores are processed at the Vargem Grande plant.
- (9) Capão Xavier ore is processed at the Mutuca plant.
- (10) All Serra Norte ores are processed at the Carajás plant.
- (11) Production figures for Samarco, in which we have a 50% interest, are adjusted to reflect our ownership interest.

## 1.2 Iron ore pellets

### 1.2.1 Operations

Directly and through joint ventures, we produce iron ore pellets in Brazil, Oman and China, as set forth in the following table. Our total estimated nominal capacity is 45.3 Mtpy, not including the nominal capacity of our joint ventures of 22.2 Mtpy from Samarco, 4.5 Mtpy from Hispanobras, 1.2 Mtpy from Zhuhai and 1.2 Mtpy from Anyang. After ramping up our pellet plants in Oman, we will add 9.0 Mtpy of nominal capacity.

Company	Site of operation	Our share of capital		Partners
		Voting (%)	Total	
<i>Brazil:</i>				
Vale . . . . .	Tubarão, Fábrica, Vargem Grande and São Luís	–	–	–
Hispanobras . . . . .	Tubarão	51.0	50.9	Arcelor Mittal
Samarco . . . . .	Mariana and Anchieta	50.0	50.0	BHP Billiton
<i>China:</i>				
Zhuhai YPM . . . . .	Zhuhai, Guangdong	25.0	25.0	Zhuhai Yueyufeng Iron and Steel Co. Ltd. Pioneer Iron and Steel Group Co. Ltd.
Anyang Yu Vale Yongtong Pellet Co. Ltd. . . . .	Anyang, Henan	25.0	25.0	Anyang Iron & Steel Co. Ltd.
<i>Oman:</i>				
Vale Oman Pelletizing Company LLC (VOPC) . . . . .	Sohar industrial complex	100.0	100.0(1)	

(1) We entered into an agreement to sell 30% of our voting shares and total capital to the Oman Oil Company S.A.O.C. (OOC).

In the Tubarão port area, in the Brazilian state of Espírito Santo, we operate our wholly owned pellet plants, Tubarão I and II, four plants we lease under operating leases and our jointly-owned plant, Hispanobras. We send iron ore from our Southeastern System mines to these plants and use our logistics infrastructure to distribute their final products.

Our São Luís pellet plant, located in the Brazilian state of Maranhão, is part of the Northern System. We send Carajás iron ore to this plant and ship its production to customers through our Ponta da Madeira maritime terminal.

The Fábrica and Vargem Grande pellet plants, located in the Brazilian state of Minas Gerais, are part of the Southern System. We send some of the iron ore from the Fábrica mine to the Fábrica plant, and iron ore from the Pico mine to the Vargem Grande plant. We transport pellets from the Vargem Grande plant using MRS, and pellets from the Fábrica plant using both MRS and EFVM.

We started up a pelletizing operation in the Sohar industrial complex in Oman, in the Middle East. The two pellet plants will each have production capacity of 4.5 Mtpy, totaling 9 Mtpy of direct reduction pellets. The pellet plants are located in an area where we will have a distribution center with capacity to handle 40 Mtpy.

Samarco operates three pellet plants in two operating sites with nominal capacity of 22.2 Mtpy. The pellet plants are located in the Ponta Ubu unit, in Anchieta, Espírito Santo. Iron ore from Alegria and our Southeastern System mine Fábrica Nova supplies the Samarco pellet plants using a 396-kilometer pipeline, the longest pipeline in the world for the conveyance of iron ore. Samarco has its own port facilities to transport its production.

The Zhuhai YPM pellet plant, in China, is part of the Yueyufeng Steelmaking Complex. It has port facilities, which we use to send feed from our mines in Brazil. Zhuhai YPM's main customer is Yueyufeng Iron & Steel ("YYF"), which is also located in the Yueyufeng Steelmaking Complex. We also own a 25% interest in Anyang Yu Vale Yongtong Pellet Co. Ltd, which is a pelletizing operation in China with the capacity to produce 1.2 Mtpy that started production in March 2011.

We sell pellet feed to our pelletizing joint ventures at market prices. Historically, we have supplied all of the iron ore requirements of our wholly owned production pellet plants and joint ventures, except for Samarco and Zhuhai YPM, to which we supply only part of their requirements. Of our total 2010 pellet production, 73.2% was blast furnace pellets, and the remaining 26.8% was direct reduction pellets, which are used in steel mills that employ the direct reduction process rather than blast furnace technology.

We sell iron ore to our pelletizing joint ventures. In 2010, we sold 4.2 million metric tons to Hispanobras, 12.0 million metric tons to Samarco and 1.1 million metric tons to Zhuhai.

### 1.2.2 Production

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

Company	Production for the year ended December 31,		
	2008	2009	2010
	(million metric tons)		
Vale(1) . . . . .	26.6	15.3	36.3
Hispanobras(5) . . . . .	1.9	0.6	1.9
Itabasco(2) . . . . .	2.9	—	—
Kobrasco(3) . . . . .	2.1	—	—
Nibrasco(4) . . . . .	2.7	—	—
Samarco(5) . . . . .	8.6	8.0	10.8
Zhuhai(5) . . . . .	0.2	0.3	0.3
Total . . . . .	45.0	24.2	49.3

- (1) Figure includes actual production, including production from the four pellet plants we leased in 2008.
- (2) Production through September 2008. We signed a 10-year operating lease contract for Itabasco's pellet plant in October 2008.
- (3) Production through May 2008. We signed a five-year operating lease contract for Kobrasco's pellet plant in June 2008.
- (4) Production through April 2008. We signed a 30-year operating lease contract for Nibrasco's two pellet plants in May 2008.
- (5) Production figures for Hispanobras, Samarco and Zhuhai have been adjusted to reflect our ownership interest.

## 1.3 Iron ore and iron ore pellets

### 1.3.1 Customers, sales and marketing

We supply all of our iron ore and iron ore pellets (including our share of joint-venture pellet production) to the steel industry. Prevailing and expected levels of demand for steel products affect demand for our iron ore and iron ore pellets. Demand for steel products is influenced by many factors, such as global manufacturing production, civil construction and infrastructure spending. For further information about demand and prices, see *Operating and financial review and prospects—Demand and prices*.

In 2010, China accounted for 42.9% of our iron ore and iron ore pellet shipments, and Asia as a whole accounted for 60.7%. Europe accounted for 20.7%, followed by Brazil with 13.7%. Our 10 largest customers collectively purchased 130.2 million metric tons of iron ore and iron ore pellets from us, representing 44% of our 2010 iron ore and iron ore pellet shipments and 45% of our total iron ore and iron ore pellet revenues. In 2010, no individual customer accounted for more than 10.0% of our iron ore and iron ore pellet shipments.

In 2010, the Asian market (mainly Japan and South Korea) and the European market were the primary markets for our blast furnace pellets, while North America, the Middle East 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 our wholly owned subsidiary located in St. Prex, Switzerland. These offices also allow us to stay in close contact with our customers, monitor their requirements and our contract performance, and ensure that our customers receive timely deliveries.

### **1.3.2 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 and Rio Tinto Ltd. Although the transportation costs of delivering iron ore from Australia to Asian customers are generally lower than ours as a result of Australia's geographical proximity, we are competitive in the Asian market for two main reasons. First, steel companies generally seek to obtain the types (or blends) of iron ore and iron ore pellets that can produce the intended final product in the most economic 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 market demand is very strong, our quality differential is in many cases more valuable to customers than a freight differential. Second, steel companies often develop sales relationships based on a reliable supply of a specific mix of iron ore and iron ore pellets. We have a customer-oriented marketing policy and place specialized personnel in direct contact with our customers to help determine the blend that best suits each particular customer.

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 are 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 ordered new ships, purchased used vessels and entered into medium- and long-term freight contracts.

Our principal competitors in Europe are Kumba Iron Ore Limited, Luossavaara Kiirunavaara AB ("LKAB"), Société Nationale Industrielle et Minière ("SNIM"), Rio Tinto Ltd. and BHP Billiton. We are competitive in the European market not only 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 ore market is also competitive. There are several small iron ore producers and new companies with developing projects, such as Anglo Ferrous Brazil, MMX, MHAG and Bahia Mineração. Some steel companies, including Companhia Siderúrgica Nacional ("CSN"), V&M do Brasil S.A. ("Mannesmann") and Usiminas, also have iron ore mining operations. Although pricing is relevant, quality and reliability are important competitive factors as well. We believe that our integrated transportation systems, high-quality ore and technical services make us a strong competitor in the Brazilian market.

The demand for iron ore is seasonally stronger in the months of December, March and April. Demand also tends to be moderately weaker in the first half of each year relative to the second half.

With respect to pellets, our major competitors are LKAB, Cleveland-Cliffs Inc., Quebec Cartier Mining Co., Iron Ore Company of Canada (a subsidiary of Rio Tinto Ltd.) and Gulf Industrial Investment Co.

## 1.4 Manganese ore

We conduct our manganese mining operations in Brazil through our wholly owned subsidiaries Vale Manganês S.A. (“Vale Manganês”) and Urucum.

Company	Location	Our share of capital	
		Voting	Total
		(%)	
	Brazil:		
Vale Manganês . . . . .	Pará and Minas Gerais	100.0	100.0
Urucum . . . . .	Mato Grosso do Sul	100.0	100.0

Our mines produce three types of manganese ore products:

- metallurgical ore, used primarily for the production of ferroalloys;
- natural manganese dioxide, suitable for the manufacture of electrolytic batteries; and
- chemical ore, used in several industries for the production of fertilizer, pesticides and animal feed, and used as a pigment in the ceramics industry.

We operate on-site beneficiation plants at our Azul mine and at the Urucum mines, which are accessible by road. The Azul and Urucum mines have high-grade ores (at least 40% manganese grade), while our Morro da Mina mine has low-grade ores. All of these mines obtain electrical power at market prices from regional electric utilities. The following table sets forth information about our manganese production.

Mine	Type	Production for the year ended December 31,			Recovery rate
		2008	2009	2010	
		(million metric tons)			(%)
Azul . . . . .	Open pit	2.0	1.4	1.6	65.03
Morro da Mina . . . . .	Open pit	0.1	0.1	0.1	88.88
Urucum . . . . .	Underground	0.2	0.2	0.2	78.76
Total . . . . .		2.4	1.7	1.8	

## 1.5 Ferroalloys

The following table sets forth the subsidiaries through which we conduct our ferroalloys business.

Company	Location	Our share of capital	
		Voting	Total
		(%)	
Vale Manganês . . . . .	Minas Gerais and Bahia, Brazil	100.0	100.0
Urucum . . . . .	Mato Grosso do Sul, Brazil	100.0	100.0
Vale Manganèse France . . . . .	Dunkerque, France	100.0	100.0
Vale Manganese Norway AS . . . . .	Mo I Rana, Norway	100.0	100.0

We produce several types of manganese ferroalloys, such as high carbon and medium carbon ferro-manganese and ferro-silicon manganese. Our facilities have nominal capacity of 651,000 metric tons per year. The production of ferroalloys consumes significant amounts of electricity, representing 4.8% of our total consumption in 2010. The electricity supply for our ferroalloy plant in Dunkerque, France and Mo I Rana, Norway are provided through long-term contracts. For information on the risks associated with potential energy shortages, see *Risk factors*.

The following table sets forth information about our ferroalloys production.

Company	Production for the year ended December 31,		
	2008	2009	2010
		(thousand metric tons)	
Vale Manganês(1)	288	99	207
Urucum(2)	20	0	0
Vale Manganèse France(3)	55	45	138
Vale Manganese Norway AS	112	79	106
Total	475	223	451

(1) Vale Manganês has five plants in Brazil: Santa Rita, Barbacena and Ouro Preto in the state of Minas Gerais; and Simões Filho in the state of Bahia.

(2) Urucum has one plant in Corumbá in the Brazilian state of Mato Grosso do Sul.

(3) We shut down our furnace at Vale Manganèse France in August 2008 due to technical problems, and it was restarted in September 2009.

### 1.6 Manganese ore and ferroalloys: sales 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, electricity and logistics and reductants. We compete both with stand-alone producers and integrated producers that also mine their own ore. Our competitors are located principally in countries that produce manganese ore or steel. For further information about demand and prices, see *Operating and financial review and prospects—Demand and prices*.

### 1.7 Coal

#### 1.7.1 Operations

We produce thermal and metallurgical coal through our subsidiary Vale Australia, which operates coal assets in Australia through wholly owned companies and unincorporated joint ventures, and thermal coal through our subsidiary Vale Colombia.

We also have a minority interest in two Chinese companies, Henan Longyu Energy Resources Co., Ltd. (“Longyu”) and Shandong Yankuang International Coking Company Ltd. (“Yankuang”), as set forth in the following table.

<b>Company</b>	<b>Business</b>	<b>Location</b>	<b>Our share of capital (%)</b>	<b>Partners</b>
<i>Vale Australia</i>				
Integra Coal . . . . .	Thermal and metallurgical coal	Australia: Hunter Valley, New South Wales	61.2	Nippon Steel (“NSC”), JFE Group (“JFE”), Posco, Toyota Tsusho Australia, Chubu Electric Power Co. Ltd
Carborough Downs . . . . .	Metallurgical coal	Bowen Basin, Queensland	80.0	NSC, JFE, Posco, Tata
Isaac Plains . . . . .	Thermal and metallurgical coal	Bowen Basin, Queensland	50.0	Aquila
Broadlea . . . . .	Thermal and metallurgical coal	Bowen Basin, Queensland	100.0	–
<i>Vale Colombia</i>				
El Hatillo . . . . .	Thermal coal	Colombia	100.0	–
<i>Longyu</i>				
Longyu . . . . .	Coal and other related products	Henan Province, China	25.0	Yongmei Group Co., Ltd. (former Yongcheng Coal & Electricity (Group) Co. Ltd.), Shanghai Baosteel International Economic & Trading Co., Ltd. and other minority shareholders
<i>Yankuang</i>				
Yankuang . . . . .	Metallurgical coke and methanol	Shandong Province, China	25.0	Yankuang Group Co. Limited, Itochu Corporation

*Integra Coal Operations (underground and open-cut).* The Integra Coal Operations are located 10 kilometers northwest of Singleton in the Hunter Valley of New South Wales, Australia. The operations are comprised of an underground coal mine that produces coal by longwall methods, and an open-cut mine. Coal from the mines is processed at a coal handling and processing plant (“CHPP”) with a capacity of 1,200 metric tons per hour, loaded onto trains at a purpose-built rail loadout facility for transport to the port of Newcastle, New South Wales, Australia.

*Carborough Downs.* Carborough Downs is located in the Central Bowen Basin in central Queensland, Australia, 15 kilometers east of the township of Moranbah and 180 kilometers southwest of the coastal city of Mackay. Carborough Downs mining leases overlie the Rangal Coal Measures of the Bowen Basin with the economic seams of Leichardt and Vermont. Both seams have coking properties and can be beneficiated to produce coking and pulverized coal injection (“PCI”) products. The Leichardt seam is currently our main target for development and constitutes 100% of the current reserve and resource base. Carborough Downs coal is processed at the Carborough Downs CHPP, which is capable of processing 1000 metric tons per hour, and which operates seven days per week. The product is loaded onto trains at a rail loadout facility and transported 160 kilometers to the Dalrymple Bay Coal Terminal, Queensland, Australia.

*Isaac Plains.* The Isaac Plains open-cut mine is located close to Carborough Downs in central Queensland. The mine is managed by Isaac Plains Coal Management on behalf of the joint venture parties. The coal is classified as a medium volatile bituminous coal with low sulfur content. Coal is processed at the Isaac Plains CHPP and railed 172 kilometers to the Dalrymple Bay Coal Terminal.

*Broadlea.* Broadlea is an open-cut operation located just north of Carborough Downs’ underground mine, consisting of a collection of small economic coal deposits. Broadlea is mined using the truck-and-shovel method, and product coal is toll-washed at the Carborough Downs CHPP and railed 172 kilometers to the Dalrymple Bay Coal Terminal in Queensland, Australia. At the end of 2009, Broadlea ceased operations and underwent maintenance due to increasing unit costs. We will monitor the mine’s economic viability to determine the potential recommencement of operations.

*El Hatillo.* The El Hatillo coal mine in Colombia is located in the central portion of the Cesar Department, 210 kilometers southeast of Santa Marta. The concession area is adjacent to the town of La Loma and encompasses an area of 9,693 hectares. El Hatillo is mined with truck-and-shovel methodology and uses crushing and screening, to produce a thermal coal product that is loaded onto trains at a dedicated rail loading facility for transport to the port of SPRC. Most of the thermal coal product is exported to Europe and United States.

### 1.7.2 Production

The following table sets forth information on our coal production.

Operation	Mine type	Production for the year ended December 31,		
		2008	2009	2010
(thousand metric tons)				
Thermal coal:				
<i>Vale Colombia</i>				
El Hatillo(1) . . . . .	Open-cut	–	1,143	2,991
<i>Vale Australia</i>				
Integra Coal(2) . . . . .	Open-cut	557	702	305
Isaac Plains(3) . . . . .	Open-cut	147	551	371
Broadlea . . . . .	Open-cut	582	497	165
Total thermal coal . . . . .		<u>1,286</u>	<u>2,892</u>	<u>3,832</u>
Metallurgical coal:				
<i>Vale Australia</i>				
Integra Coal(3) . . . . .	Underground and open-cut	1,747	1,184	1,151
Isaac Plains(3) . . . . .	Open-cut	382	487	590
Carborough Downs(4) . . . . .	Underground	429	604	1,216
Broadlea . . . . .	Open-cut	249	252	101
Total metallurgical coal . . . . .		<u>2,808</u>	<u>2,527</u>	<u>3,057</u>

(1) We acquired El Hatillo in the first quarter of 2009. Figures for 2009 include production from April to December only.

(2) These figures correspond to our 61.2% equity interest in Integra Coal, an unincorporated joint venture.

(3) These figures correspond to our 50.0% equity interest in Isaac Plains, an unincorporated joint venture.

(4) These figures correspond to our 80.0% equity interest in Carborough Downs, an unincorporated joint venture.

Operation	Mine type
El Hatillo(1) . . . . .	Open-cut
Integra Coal(2) . . . . .	Underground and open-cut
Isaac Plains(3) . . . . .	Open-cut
Carborough Downs(4) . . . . .	Underground
Broadlea . . . . .	Open-cut

(1) We acquired El Hatillo in the first quarter of 2009. Figures for 2009 include production from April to December only.

(2) These figures correspond to our 61.2% equity interest in Integra Coal, an unincorporated joint venture.

(3) These figures correspond to our 50.0% equity interest in Isaac Plains, an unincorporated joint venture.

(4) These figures correspond to our 80.0% equity interest in Carborough Downs, an unincorporated joint venture.

Longyu produces coal and other related products. Yankuang, a metallurgical coke plant, has production capacity of 2.0 Mtpy of coke and 200,000 metric tons per year of methanol.

### 1.7.3 Customers and sales

The coal sales from our Australian operations are primarily focused on East Asia. In 2010, 32% of our sales were made to Japanese steel mills and power utilities. In 2010, our Chinese coal joint ventures directed their sales mainly to the Chinese domestic market. The coal sales from our Colombian operations are primarily destined for Europe and the United States.



#### **1.7.4 Competition**

The global coal industry, which is primarily comprised of the markets for hard coal (metallurgical coal and thermal coal) and brown coal/lignite, is highly competitive. Growth in the demand for steel, especially in Asia, underpins strong demand for metallurgical coal. Major port and rail constraints in some of the countries in which major suppliers are located could lead to limited availability of incremental metallurgical coal production.

The global seaborne thermal coal market has significantly expanded in recent years. Growth in thermal coal demand is closely related to growth in electricity consumption, which will continue to be driven by global economic growth, particularly from emerging economies. Large existing fleets of coal-fired power plants with long life cycles take decades to replace or upgrade, keeping a high share of thermal coal in the electricity matrix of countries with high consumption. The cost of fuel is typically the largest variable cost involved in electricity generation and coal is currently the most competitively priced fossil fuel for this purpose.

Competition in the coal industry is based primarily on the economics of production costs, coal quality and transportation costs. We believe that our operations and project pipeline are competitive, and our key competitive strengths include the strategic geographic location of our current and future supply bases and our production cash costs relative to several other coal producers.

Major participants in the coal seaborne market are subsidiaries and affiliates of Xstrata plc, BMA (BHP Billiton Mitsubishi Alliance), PT Bumi Resources Tbk., Anglo Coal, Drummond Company, Inc., Rio Tinto Ltd., Teck Cominco, Peabody and the Shenhua Group.

## **2. Base metals**

### **2.1 Nickel**

#### **2.1.1 Operations**

We conduct our nickel operations primarily through our wholly owned subsidiary Vale Canada, which operates two nickel production systems, one in the North Atlantic and the other in the Asia Pacific. We have recently commissioned and started ramping up Onça Puma, a new nickel operation in the Brazilian state of Pará. The operations are set forth in the following table.

System	Location	Operations
North Atlantic	Canada — Sudbury, Ontario	Fully integrated mines, mill, smelter and refinery (producer of intermediates and finished nickel and by-products)
	Canada — Thompson, Manitoba	Fully integrated mines, mill, smelter and refinery (producer of finished nickel and by-products)
	Canada — Voisey Bay, Newfoundland and Labrador	Mine and mill (producer of nickel concentrates and by-products)
	U.K. — Clydach, Wales	Stand-alone nickel refinery (producer of finished nickel)
Asia Pacific	Indonesia — Sorowako, Sulawesi(1)	Mining and processing operations (producer of nickel matte, an intermediate product)
	New Caledonia — Southern Province(2)	Mining and processing operations (producer of nickel oxide and cobalt carbonate)
	Japan — Matsuzaka(3)	Stand-alone nickel refinery (producer of intermediate and finished nickel)
	Taiwan — Kaoshiung(4)	Stand-alone nickel refinery (producer of finished nickel)
	China — Dalian, Liaoning(5)	Stand-alone nickel refinery (producer of finished nickel)
	South Korea — Onsan(6)	Stand-alone nickel refinery (producer of finished nickel)
South Atlantic	Brazil — Ourilândia do Norte, Pará	Mining and processing operations (producer of ferro-nickel)

- (1) Operations conducted through our 59.2%-owned subsidiary PT International Nickel Indonesia Tbk.  
(2) Operations conducted through our 74.0%-owned subsidiary Vale Nouvelle-Calédonie S.A.S.  
(3) Operations conducted through our 87.2%-owned subsidiary Vale Japan Limited.  
(4) Operations conducted through our 49.9%-owned subsidiary Taiwan Nickel Refining Corporation.  
(5) Operations conducted through our 98.3%-owned subsidiary Vale Nickel (Dalian) Co. Ltd.  
(6) Operations conducted through our 25.0% interest in Korea Nickel Corporation.

### *North Atlantic*

#### *Sudbury operations*

Our long-established mines in Sudbury, Ontario, are primarily underground operations with nickel sulfide ore bodies. These ore bodies also contain co-deposits of copper, cobalt, PGMs, gold and silver. We have integrated mining, milling, smelting and refining operations to process ore into finished nickel at Sudbury. We also smelt and refine nickel concentrates from our Voisey Bay operations. We ship a nickel intermediate product, nickel oxide, from our Sudbury smelter to our nickel refineries in Wales, Taiwan, China and South Korea for processing into finished nickel. In 2010, we produced 9% of the electric energy consumed in Sudbury at our hydroelectric power plants there. The remaining electricity was purchased from Ontario's provincial electricity grid.

In February 2011, we shut down one furnace at our Sudbury smelter due to an operational problem. The furnace will remain offline for a minimum of 16 weeks, which will result in the loss of approximately 15,000 metric tons of production of finished nickel.

In July 2010, new five-year collective bargaining agreements were ratified by the unions that represent production and maintenance employees at our Sudbury and Port Colborne operations. The settlements marked the end of a strike that began in July 2009. For more information about labor relations, see *Management and employees—Employees*.

#### *Thompson operations*

Our long-established mines in Thompson, Manitoba, are primarily underground operations with nickel sulfide ore bodies. The ore bodies also contain co-deposits of copper and cobalt. We currently have integrated mining, milling, smelting and refining operations to process ore into finished nickel at Thompson. We also

smelt and refine an intermediate product, nickel concentrate, from our Voisey Bay operations. Low-cost energy is available from purchased hydroelectric power at our Thompson operations.

We are transitioning our Thompson operations to a mining and milling business, and phasing out smelting and refining by 2015. This enables us to better align processing capacity with mineral reserves while meeting our environmental commitments. Mineral reserves in Thompson are not sufficient to operate the smelter and refinery at full capacity and do not support the investment of the significant capital that would be required under new pending federal sulfur dioxide emission standards that are expected to come into effect in 2015.

#### *Voisey Bay operations*

Our Voisey Bay operation in Newfoundland and Labrador is comprised of the Ovoid mine, an open-pit, and deposits with the potential for underground operations at a later stage. We mine nickel sulfide ore bodies, which also contain co-deposits of copper and cobalt. We mill Voisey Bay ore on site and ship it as an intermediate product (nickel concentrates) primarily to our Sudbury and Thompson operations for final processing (smelting and refining), while copper concentrate produced is sold in the market. The electricity requirements of our Voisey Bay operations are supplied through diesel generators.

On January 31, 2011, we ratified a new five-year collective agreement with unionized mine and mill operations employees at our Voisey Bay operations. The settlements marked the end of a strike that began in August 2009.

#### *Clydach operations*

Clydach is a stand-alone nickel refinery in Wales, U.K., that processes a nickel intermediate product, nickel oxide, supplied from our Sudbury operations to produce finished nickel in the form of powders and pellets.

#### *Asia Pacific*

##### *Sulawesi operations*

Our subsidiary PT International Nickel Indonesia Tbk (“PTI”) operates an open cast mining area and related processing facility in Sorowako on the Island of Sulawesi, Indonesia. PTI mines nickel laterite saprolite ore and produces an intermediate product (nickel matte), which is shipped primarily to our nickel refinery in Japan. Pursuant to life-of-mine off-take agreements, PTI sells 80% of its production to our wholly owned subsidiary Vale Canada and 20% of its production to Sumitomo Metal Mining Co., Ltd. (“Sumitomo”). PTI is a public company whose shares are traded on the Indonesia Stock Exchange. We hold 59.2% of its share capital, Sumitomo holds 20.1%, 20.1% is publicly held and 0.6% is held by others.

Energy costs are a significant component of our nickel production costs for the processing of lateritic saprolitic ores at our PTI operations in Indonesia. A major part of the electric furnace power requirements of PTI is supplied at low cost by its two hydroelectric power plants on the Larona River, Larona and Balambano. PTI has thermal generating facilities in order to supplement its hydroelectric power supply with a source of energy that is not subject to hydrological factors. In 2010, the hydroelectric power plants provided 90% of the electric energy consumed at our Indonesian operations, and the thermal generators provided the remainder.

##### *Asian refinery operations*

Our 87.2%-owned subsidiary Vale Japan Limited (“Vale Japan”) operates a refinery in Matsuzaka, which produces intermediate and finished nickel products, primarily using nickel matte sourced from PTI.

Vale Japan is a privately-owned company controlled by Vale, with the minority interest held by Sumitomo (12.8%).

We also operate or have investments in nickel refining operations in Taiwan through our 49.9% stake in Taiwan Nickel Refining Corporation (“TNRC”), in China through our 98.3% interest in Vale Nickel (Dalian) Co. Ltd. (“VNDC”) and in South Korea through our 25.0% stake in Korea Nickel Corporation (“KNC”). TNRC, VNDC and KNC produce finished nickel for the local stainless steel industry in Taiwan, China and South Korea, respectively, primarily using intermediate products containing about 75% nickel (in the form of nickel oxide) from Vale Japan and our Sudbury operations.

#### *New Caledonian operations*

We have almost completed the commissioning of our VNC nickel operation in New Caledonia in the South Pacific. VNC utilizes a High Pressure Acid Leach (“HPAL”) process to treat laterite limonite ores. We expect to ramp up VNC over a three-year period to reach nominal production capacity of 60,000 metric tons per year of nickel contained in nickel oxide and 4,600 metric tons of cobalt, once nickel oxide production starts. In order to accelerate cash generation, the resulting nickel and cobalt solution from HPAL is currently sold to clients as an intermediate product, nickel hydroxide cake (“NHC”).

#### *South Atlantic*

We have commissioned and are ramping up the Onça Puma project in Ourilândia do Norte, in the Brazilian state of Pará. The Onça Puma mine is built on lateritic nickel deposits of laterite saprolitic ore, and is expected to reach a nominal capacity of 53,000 tons per year of nickel contained in ferronickel, its final product.

## 2.1.2 Production

The following table sets forth our annual mine production by operating mine (or on an aggregate basis for PTI because it has mining areas rather than mines) and the average percentage grades of nickel and copper. The mine production at PTI represents the product from PTI's dryer kilns delivered to PTI's smelting operations and does not include nickel losses due to smelting. For our Sudbury, Thompson and Voisey Bay 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.

	2008			2009			2010		
	(thousands of metric tons, except percentages)								
	Production	Grade		Production	Grade		Production	Grade	
Copper		Nickel	Copper		Nickel	Copper		Nickel	
<i>Ontario operating mines</i>									
Copper Cliff North . . . . .	1,165	1.01	1.01	524	0.96	1.06	326	1.13	1.13
Copper Cliff South(1) . . . . .	771	1.67	1.48	78	1.45	1.40	–	–	–
Creighton . . . . .	1,001	1.56	2.14	395	1.57	1.82	426	2.65	3.10
Stobie . . . . .	2,892	0.65	0.72	1,198	0.64	0.72	775	0.59	0.69
Garson . . . . .	840	1.72	1.69	328	1.93	1.45	246	2.16	1.60
Coleman . . . . .	1,425	2.66	1.62	624	3.28	1.64	786	2.74	1.73
Gertrude . . . . .	124	0.29	0.72	–	–	–	–	–	–
Ellen . . . . .	–	–	–	–	–	–	86	0.56	0.75
Totten . . . . .	–	–	–	–	–	–	16	2.54	1.74
Total Ontario operations . . . . .	<u>8,219</u>	<u>1.36%</u>	<u>1.26%</u>	<u>3,145</u>	<u>1.49%</u>	<u>1.19%</u>	<u>2,660</u>	<u>1.78%</u>	<u>1.53%</u>
<i>Manitoba operating mines</i>									
Thompson . . . . .	1,320	–	1.77	1,270	–	1.98	1,325	–	1.83
Birchtree . . . . .	971	–	1.51	769	–	1.48	832	–	1.41
Total Manitoba operations . . . . .	<u>2,291</u>	<u>–</u>	<u>1.66%</u>	<u>2,040</u>	<u>–</u>	<u>1.79</u>	<u>2,158</u>	<u>–</u>	<u>1.67</u>
<i>Voisey Bay operating mines</i>									
Ovoid . . . . .	2,385	2.38	3.50	990	2.57	3.20	1,510	2.44	3.20
Total Voisey Bay operations . . . . .	<u>2,385</u>	<u>2.38%</u>	<u>3.50%</u>	<u>990</u>	<u>2.57%</u>	<u>3.20%</u>	<u>1,510</u>	<u>2.44%</u>	<u>3.20%</u>
<i>Sulawesi operating mining areas</i>									
Sorowako . . . . .	4,258	–	2.08	3,598	–	2.02	4,176	–	2.00
Pomalaa(2) . . . . .	417	–	2.29	–	–	–	–	–	–
Total Sulawesi operations . . . . .	<u>4,675</u>	<u>–</u>	<u>2.10%</u>	<u>3,598</u>	<u>–</u>	<u>2.02%</u>	<u>4,176</u>	<u>–</u>	<u>2.00%</u>
<i>New Caledonia operating mines</i>									
VNC . . . . .	–	–	–	–	–	–	326	–	1.31
Total New Caledonia operations . . . . .	<u>–</u>	<u>–</u>	<u>–</u>	<u>–</u>	<u>–</u>	<u>–</u>	<u>326</u>	<u>–</u>	<u>1.31%</u>
<i>Brazil operating mines</i>									
Onça Puma . . . . .	–	–	–	–	–	–	1,259	–	1.93
Total Brazil operations . . . . .	<u>–</u>	<u>–</u>	<u>–</u>	<u>–</u>	<u>–</u>	<u>–</u>	<u>1,259</u>	<u>–</u>	<u>1.93%</u>

- (1) This mine has been closed indefinitely since January 2009.  
(2) This mine has been closed indefinitely since May 2008.

The following table sets forth information about our nickel production, including: (i) nickel refined through our facilities, (ii) nickel further refined into specialty products, and (iii) intermediates designated for sale. The numbers below are reported on an ore-source basis.

Mine	Type	Production for the year ended December 31,		
		2008	2009	2010
		(thousand metric tons)		
Sudbury(1)	Underground	85.3	43.6	22.4
Thompson(1)	Underground	28.9	28.8	29.8
Voisey Bay(2)	Open pit	77.5	39.7	42.3
Sorowako(3)	Open cast	68.3	68.8	78.4
External(4)	–	15.4	5.8	5.9
Total(5)		275.4	186.7	178.7

- (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, as well as some finished nickel produced by unrelated parties under toll-smelting and toll-refining arrangements.
- (3) We have a 59.2% interest in PTI, which owns the Sorowako mines, and these figures include the minority interests.
- (4) Finished nickel processed at our facilities using feeds purchased from unrelated parties.
- (5) Excludes finished nickel produced under toll-smelting and refining arrangements covering purchased intermediates with unrelated parties. Unrelated-party tolling of purchased intermediates was 7.5 thousand metric tons in 2008, 5.2 thousand metric tons in 2009 and none in 2010.

### 2.1.3 Customers and sales

Our nickel customers are broadly distributed on a global basis. In 2010, 71% of our total nickel sales were delivered to customers in Asia, 19% to North America, 9% to Europe and 1% 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 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-containing material). Finished primary nickel products are distinguishable in terms of the following characteristics, which determine the product price level and the suitability for various end-use applications:

- nickel content and purity level: (i) intermediates with various levels of nickel content, (ii) nickel pig iron has 1.5-6% nickel, (iii) ferro-nickel has 10-40% nickel, (iv) standard LME grade nickel has a minimum of 99.8% nickel, and (v) 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 2010, the principal end-use applications for nickel were:

- austenitic stainless steel (64% of global nickel consumption);
- non-ferrous alloys, alloy steels and foundry applications (18% of global nickel consumption);

- nickel plating (9% of global nickel consumption); and
- specialty applications, such as batteries, chemicals and powder metallurgy (9% of global nickel consumption).

In 2010, 65% of our refined nickel sales were made into non-stainless steel applications, compared to the industry average for primary nickel producers of 36%, bringing more stability to our sales volumes. As a result of our focus on such higher-value segments, our average realized nickel prices for refined nickel have typically 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 finished nickel, based at our head office in Toronto, Canada. We also have sales offices in St. Prex (Switzerland), Saddle Brook, New Jersey (United States), Tokyo (Japan), Hong Kong, Shanghai (China), Kaohsiung (Taiwan), Bangkok (Thailand) and Bridgetown (Barbados). For information about demand and prices, see below *Operating and financial review and prospects—Demand and prices*.

#### **2.1.4 Competition**

The global nickel market is highly competitive. Our key competitive strengths include our long-life mines, our low cash costs of production relative to other nickel producers, sophisticated exploration and processing technologies, and 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, which were impacted by strikes in our Canadian operations, represented 12% of global consumption for primary nickel in 2010. In addition to us, the largest suppliers in the nickel industry (each with its own integrated facilities, including nickel mining, processing, refining and marketing operations) are Mining and Metallurgical Company Norilsk Nickel, Jinchuan Nonferrous Metals Corporation, BHP Billiton plc and Xstrata plc. Together with us, these companies accounted for about 53% of global finished primary nickel production in 2010.

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 42-49% of total nickel used for stainless steels, and primary nickel has accounted for about 51-58%. In 2006, a new primary nickel product entered the market, known as nickel pig iron. This 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 higher nickel prices and strong demand from the stainless steel industry, Chinese domestic production of nickel pig iron and ferro-nickel continues to expand. In 2010, Chinese nickel pig iron and ferro-nickel production is estimated to have been greater than 150,000 metric tons, representing 11% of world primary nickel supply.

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 conduct our copper operations at the parent-company level in Brazil and through our wholly owned subsidiaries in Canada and Chile.

Company	Location	Our share of capital	
		Voting	Total
		(%)	
Vale . . . . .	Brazil	–	–
Vale Canada . . . . .	Canada	100.0	100.0
Tres Valles . . . . .	Chile	100.0	90.0

#### *Brazilian operations*

Our Sossego copper mine in Carajás, in the state of Pará, has two main copper ore bodies, Sossego and Sequeirinho. The copper ore is mined by open-pit method, and the run-of-mine is processed by means of standard primary crushing and conveying, SAG milling (a semi-autogenous mill that uses a large rotating drum filled with ore, water and steel grinding balls to transform the ore into a fine slurry), ball milling, copper concentrate flotation, tailings disposal, concentrate thickening, filtration and load out. We truck the concentrate to a storage terminal in Parauapebas and then transport it via the EFC railroad to the Ponta da Madeira maritime terminal in São Luís, in the state of Maranhão.

We constructed an 85-kilometer road to link Sossego to the Carajás air and rail facilities and a power line that allows us to purchase electrical power at market prices. We have a long-term energy supply contract with Eletronorte.

#### *Canadian operations*

In Canada, we recover copper in conjunction with our nickel operations, principally at Sudbury and Voisey Bay. At Sudbury, we produce two intermediate copper products, copper concentrates and copper anodes, and we also produce electrowon copper cathode as a by-product of our nickel refining operations. At Voisey Bay, we produce copper concentrates. For information about strikes affecting some of our Canadian nickel operations in 2010, see *Management and employees—Employees*.

#### *Chilean operations*

In December 2010, we started the ramp-up of the Tres Valles copper operation, our first project in Chile. Located in Salamanca, in the Coquimbo region, the plant has an estimated annual production capacity of 18,500 metric tons of copper cathode (metal plate), and is our first industrial-scale cathode plant using a hydrometallurgical process. The Tres Valles operations include two copper oxide mines: Don Gabriel, an open-pit mine, and Papomono, an underground mine, as well as an SX-EW plant that produces copper cathodes.



## 2.2.2 Production

The following table sets forth information on our copper production.

Mine	Type	Production for the year ended		
		December 31,		
		2008	2009	2010
		(thousand metric tons)		
<i>Brazil:</i>				
Sossego . . . . .	Open pit	126	117	117
<i>Canada:</i>				
Sudbury . . . . .	Underground	115	42	34
Voisey Bay . . . . .	Open pit	55	24	33
Thompson . . . . .	Underground	1	1	1
External(1) . . . . .	-	14	14	22
Total . . . . .		312	198	207

(1) We process copper at our facilities using feed purchased from unrelated parties.

## 2.2.3 Customers and sales

Copper concentrates from Sossego are sold under medium- and long-term contracts to copper smelters in South America, Europe and Asia. We have long-term off-take agreements to sell the entire production of copper concentrates from the first phase of the Salobo project to smelters. We have long-term copper supply agreements with Xstrata Copper Canada for the sale of copper anodes and most of the copper concentrates produced in Sudbury. Copper concentrates from Voisey Bay are sold under medium-term contracts to customers in Europe. Electrowon copper from Sudbury is sold in North America under short-term sales agreements.

## 2.2.4 Competition

The global copper cathode market is highly competitive. Producers are integrated mining companies and custom smelters, covering all regions of the world, while consumers are principally wire, rod and copper-alloy producers. Competition occurs mainly on a regional level and is based primarily on production costs, quality, reliability of supply and logistics costs. The world's largest copper cathode producers are Codelco, Aurubis, Freeport-McMoRan, Jiangxi and Xstrata, operating at the parent-company level or through subsidiaries. Our participation in the global copper cathode market is marginal.

Copper concentrate and copper anode are intermediate products in the copper production chain. Both the concentrate and anode markets are competitive, having numerous producers but fewer participants and smaller volumes than in the copper cathode market due to high levels of integration by the major copper producers.

In the copper concentrate market, the main producers are mining companies located in South America and Indonesia, while consumers are custom smelters located in Europe and Asia. Competition in the copper concentrate market occurs mainly on a global level and is based on production costs, quality, logistics costs and reliability of supply. The largest competitors in the copper concentrate market are Freeport-McMoRan, BHP Billiton, Rio Tinto and Xstrata, operating at the parent-company level or through subsidiaries. Our market share in 2010 was about 2.6% of the total custom copper concentrate market.

The copper anode/blister market has very limited trade within the copper industry; generally, anodes are produced to supply each company's integrated refinery. The trade in anodes/blister is limited to those facilities that have more smelting capacity than refining capacity or to those situations where logistics cost savings provide an incentive to source anodes from outside smelters. The largest competitors in the copper anode market are Codelco, Anglo American and Xstrata, operating at the parent-company level or through subsidiaries.

Among the base metals produced by Vale, there is seasonality in the demand for nickel and copper. Demand for nickel is usually weaker in the third quarter and demand for copper is unfavorable throughout the second half of the year.

## **2.3 Aluminum**

Through 2010, we engaged in alumina refining through our subsidiary Alunorte and aluminum smelting through our subsidiary Albras as part of our aluminum business. Alunorte produced alumina by refining bauxite supplied by MRN and the Paragominas mine. Albras produced aluminum using alumina supplied by Alunorte. Our aluminum production facilities were located in the Brazilian state of Pará. In addition, we had participation in a project to build a new alumina refinery through our subsidiary CAP. In several related transactions that closed in February 2011, we transferred our interests in Albras, Alunorte and CAP, among other items, to Hydro. We remain connected to these aluminum operations by way of the 22.0% interest in Hydro that we received as part of the consideration.

### **2.3.1 Bauxite**

We also conduct bauxite operations through a 40.0% interest in MRN and a 40.0% interest in Paragominas, both of which are located in Brazil.

- *MRN.* MRN, which is located in the northern region of the Brazilian state of Pará, is one of the largest bauxite operations in the world, operating four open-pit bauxite mines that produce high quality bauxite. In addition, MRN controls substantial additional high quality bauxite resources, which will be converted into reserves after environmental licenses are fully obtained. MRN also operates ore beneficiation facilities at its mines, which are connected by rail to a loading terminal and port facilities on the Trombetas River, a tributary of the Amazon River, that can handle vessels of up to 60,000 deadweight tons ("DWT"). MRN owns and operates the rail and the port facilities serving its mines. The MRN mines are accessible by road from the port area and obtain electricity from their own thermal power plant.
- *Paragominas.* Operations at the Paragominas mine, in the Brazilian state of Pará, began in the first quarter of 2007 to supply Alunorte's alumina refinery. The first expansion of Paragominas was concluded in the second quarter of 2008. The mine produces a wet 12% moisture bauxite, and the bauxite quality is similar to that of MRN. The Paragominas site has a beneficiation plant with milling and a 244-kilometer slurry pipeline. Electricity for the Paragominas site is obtained from Eletronorte, a state-owned power generation company in Brazil. In 2010, we transferred the Paragominas bauxite mine and all of our other Brazilian bauxite mineral rights (apart from rights owned through our stake in MRN) into a new company, 60.0% of which we transferred to Hydro in exchange for US\$578 million in cash, in February 2011. We will transfer the remaining 40.0% of the company in two equal tranches in 2013 and 2015, each in exchange for US\$200 million in cash.

The following table sets forth information about bauxite ore production at our mining sites.

Mine(1)	Type	Production for the year ended December 31,			Recovery rate
		2008	2009	2010	
		(million metric tons)			(%)
<i>MRN</i>					
Almeidas . . . . .	Open pit	3.6	2.2	1.3	–
Aviso . . . . .	Open pit	14.5	13.5	15.2	–
Saracá V . . . . .	Open pit	2.3	0.9	0.7	–
Saracá W . . . . .	Open pit	3.9	4.1	4.2	–
Bacaba . . . . .	Open pit	–	–	0.4	–
Total MRN . . . . .		24.2	20.7	21.8	72 - 77
<i>Paragominas</i>					
Miltonia 3 . . . . .	Open pit	7.3	10.1	10.8	60

(1) These figures represent run-of-mine production.

The following table sets forth information about our bauxite production.

Mine	Type	Production for the year ended December 31,			Recovery rate
		2008	2009	2010	
		(million metric tons)			(%)
MRN . . . . .	Open pit	18.1	15.6	17.0	72 - 77
Paragominas . . . . .	Open pit	4.4	6.2	7.5	60 - 64

## 2.4 PGMs and other precious metals

As by-products of our Sudbury nickel operations in Canada, we recover significant quantities of PGMs, as well as small quantities of gold and silver. We operate a processing facility in Port Colborne, Ontario, which produces PGMs, gold and silver intermediate products. We have a refinery in Acton, England, where we process our intermediate products, as well as feeds purchased from unrelated parties and toll-refined materials. In 2010, PGM concentrates from our Sudbury operations supplied about 8% of our PGM production, which also includes precious metals purchased from unrelated parties and toll-refined materials. Our base metals marketing department sells our own PGMs and other precious metals, as well as products from unrelated parties and toll-refined products, on a sales agency basis. For information about strikes affecting some of our Canadian operations in 2010, see *Management and employees—Employees*.

The following table sets forth information on our precious metals production.

Mine(1)	Type	2008	2009	2010
		(thousand troy ounces)		
<i>Sudbury:</i>				
Platinum . . . . .	Underground	166	103	35
Palladium . . . . .	Underground	231	152	60
Gold . . . . .	Underground	85	49	42

(1) Production figures exclude precious metals purchased from unrelated parties and toll-refined materials.

## 2.5 Cobalt

We recover significant quantities of cobalt as a by-product of our Canadian nickel operations. In 2010, we produced 438 metric tons of refined cobalt metal at our Port Colborne refinery and 499 metric tons of cobalt in a cobalt-based intermediate at our Thompson nickel operations in Canada. Our remaining cobalt production consisted of 129 metric tons of cobalt contained in other intermediate products (such as nickel concentrates). For information about strikes affecting some of our Canadian operations in 2010, see *Management and employees—Employees*. We expect to increase our production of cobalt as we increase nickel

production in New Caledonia at the VNC operations, because the nickel laterite ore at this location contains significant co-deposits of cobalt.

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%). 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	Production for the year ended December 31,		
		2008	2009	2010
			(metric tons)	
Sudbury . . . . .	Underground	804	359	302
Thompson . . . . .	Underground	168	181	189
Voisey Bay . . . . .	Open pit	1,695	971	524
External(1) . . . . .	-	161	64	51
Total . . . . .		2,828	1,575	1,066

(1) These figures do not include tolling of feeds purchased from unrelated parties.

### 3. Fertilizer nutrients

#### 3.1 Phosphates

During 2010, we acquired fertilizer assets in Brazil that are now consolidated under Vale Fertilizantes and started phosphate rock operations in Peru through our subsidiary MVM Resources International, B.V. We operate our phosphates business through subsidiaries and joint ventures, as set forth in the following table.

Company	Location	Our share of capital		Partners
		Voting	Total	
Vale Fertilizantes . . . . .	Uberaba, Brazil	99.9%	84.3%	-
MVM Resources International, B.V. . . . .	Bayóvar, Peru	51.0	40.0	Mosaic, Mitsui

See—*Significant changes in our business*. Vale Fertilizantes is a producer of phosphate rock, phosphate fertilizers (“P”) (e.g., monoammonium phosphate (“MAP”), diammonium phosphate (“DAP”), triple superphosphate (“TSP”) and single superphosphate (“SSP”)) and nitrogen (“N”) fertilizers (e.g., ammonium nitrate and urea). It is the largest producer of phosphate and nitrogen crop nutrients in Brazil. Vale Fertilizantes operates the following phosphate rock mines: Catalão, in the state of Goiás, and Tapira, Patos de Minas and Araxá, all in the state of Minas Gerais, and Cajati, in the state of São Paulo, in Brazil. In addition, Vale Fertilizantes has nine processing plants for the production of phosphate and nitrogen nutrients, located at Catalão, Goiás; Araxá and Uberaba, Minas Gerais; Guará, Cajati and three plants in Cubatão, São Paulo; and Araucária, Paraná.

Besides the phosphate and nitrogen operations of Vale Fertilizantes, since 2010 we have also operated the Bayóvar phosphate rock mine in Peru, which is expected to reach nominal capacity of 3.9 Mtpy by 2014. Bayóvar is a world-class resource with a low mining cost of phosphate rock production.

The following table sets forth information about our phosphate rock production.

Mine	Type	Production for the year ended December 31, 2010
		(thousand metric tons)
Bayóvar	Open pit	791
Catalão	Open pit	626
Tapira	Open pit	2,068
Patos de Minas	Open pit	43
Araxá	Open pit	1,182
Cajati	Open pit	545
Total		5,255

The following table sets forth information about our phosphate and nitrogen nutrients production.

Company/product	Production for the year ended December 31, 2010
	(thousand metric tons)
Monoammonium phosphate (MAP)	898
Triple superphosphate (TSP)	788
Single superphosphate (SSP)	2,239
Dicalcium phosphate (DCP)	491
Ammonia	508
Urea	511
Nitric acid	454
Ammonium nitrate	447

### 3.2 Potash

We conduct potash operations in Brazil at the parent-company level. We lease Taquari-Vassouras, the only potash mine in Brazil (in Rosario do Catete, in the state of Sergipe), from Petrobras—Petróleo Brasileiro S.A., the Brazilian state-owned oil company. The lease, signed in 1991, became effective in 1992 for a period of 25 years. The following table sets forth information on our potash production.

Mine	Type	Production for the year ended December 31,			Recovery rate
		2008	2009	2010	
Taquari-Vassouras	Underground	607	717	662	85.7

### 3.3 Customers and sales

All potash sales from the Taquari-Vassouras mine are to the Brazilian market. In 2010, our production represented approximately 9% of total potash consumption in Brazil. We have a strong presence and long-standing relationships with the major players in Brazil, with more than 66% of our sales generated from four traditional customers.

Our phosphate products are sold to fertilizer blenders and cooperatives. In 2010, our production represented approximately 34% of total phosphate consumption in Brazil, with imports representing 44% of total supply. In the high-concentration segment, our production supplied more than 36% of total Brazilian consumption, with products like MAP, DAP and TSP. In the low-concentration phosphate nutrients segment, our production represented approximately 45% of total Brazilian consumption.

### 3.4 Competition

Fertilizers have strong demand growth potential, which is anchored on market fundamentals similar to those underlying the global demand for minerals, metals and energy. Rapid per capita income growth of emerging economies causes diet changes towards an increasing intake of proteins that ultimately contribute to boost fertilizer use. More recently, global output of biofuels has started to boom as they emerged as an alternative source of energy to reduce world reliance on sources of climate-changing greenhouse gases. Given that key inputs for the production of biofuels—sugar cane, corn and palm—are intensive in the use of fertilizers, they are becoming another major driver of the global demand for crop nutrients.

The industry is divided into three major nutrients: potash, phosphate and nitrogen. There are limited resources of potash around the world with Canada, Russia and Belarus being the most important sources. Due to the lack of resources, the high level of investment and the long time required for a project to mature, it is unlikely that other regions will emerge as major potash producers over the next few years. In addition, the potash industry is highly concentrated, with the 10 major producers accounting for more than 95% of total world production capacity. While potash is a very 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 top five phosphate rock producers (China, United States, Morocco, Russia and India) account for 80% of global production, of which roughly 20% is exported. However, higher value-added products such as MAP and DAP are usually traded instead of phosphate rock due to cost efficiency.

Brazil is one of the largest agribusiness markets in the world due to its high production and consumption of grains and biofuels. 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 91% of its potash consumption, which amounted to 5.2 Mtpy of KCl (potassium chloride) in 2010, 52% higher than 2009, from Russian, Belarussian, Canadian and German producers, in descending order. In terms of global consumption, the United States, Brazil, China and India represent 62% of the total. Our projects portfolios are highly competitive in terms of cost and logistics with these regions.

Most phosphate rock concentrate is consumed locally by downstream integrated producers, with the seaborne market corresponding to 16% of total phosphate rock production. Major phosphate rock exporters are concentrated in North Africa, mainly through state-owned companies, with Moroccan OCP Group holding 39% of the total seaborne market. Brazil imports 19% of its total phosphate nutrients it needs through both phosphate fertilizer products and phosphate rock. The phosphate rock imports supply non-integrated producers of phosphate fertilizers products such as SSP, TSP and MAP.

Nitrogen-based fertilizers are derived primarily from ammonia (NH<sub>3</sub>), which, in turn, is made from nitrogen present in the air and natural gas, making this an energy-intensive nutrient. Ammonia and urea are the main inputs for nitrogen-based fertilizers. Consumption of nitrogen-based fertilizers has a regional profile due to the high cost associated with transportation and storage of ammonia, which requires refrigerated and pressurized facilities. As a result, only 12% of the ammonia produced worldwide is traded. North America is the main importer, accounting for 40% of global trade. Main exporting regions are the Middle East, North Africa, and Russia.

## 4. Infrastructure

### 4.1 Logistics services

We have developed our logistics business based on the transportation needs of our mining operations and we also provide transportation services for other customers. We conduct logistics businesses at the parent-company level, through subsidiaries and through joint ventures, as set forth in the following table.

Company	Business	Location	Our share of capital		Partners
			Voting	Total	
Vale	Railroad (EFVM and EFC), port and maritime terminal operations	Brazil	100.0	100.0	–
FCA	Railroad operations	Brazil	100.0	99.9	–
FNS(1)	Railroad operations	Brazil	100.0	100.0	–
MRS	Railroad operations	Brazil	37.9	41.5	CSN, Usiminas and Gerdau
CPBS	Port and maritime terminal operations	Brazil	100.0	100.0	–
Log-In	Port and maritime terminal operations and intermodal logistics services	Brazil	31.3	31.3	Mitsui, public investors
PTI	Port and maritime terminal operations	Indonesia	59.2	59.2	Sumitomo, public investors
SPRC	Port and maritime terminal operations	Colombia	100.0	100.0	–
FENOCO	Railroad operations	Colombia	8.4	8.4	Drummond, Glencore and Comercializadora Internacional Colombian Natural Resources I S.A.S.
Vale Logística Argentina	Port operations	Argentina	100.0	100.0	–
SDCN	Railroad and maritime terminal operations	Mozambique	51.0	51.0	NCI and GESTRA—Gestão e Transportes, SARL; Consórcio de Cabo Delgado, SARL; GEDENA—Gestão e Desenvolvimento, SARL; STP—Sociedade de Tecnologias e Participações, SARL; Niassa Desenvolvimento, SARL; and Moçambique Gestores, SARL BSG Resources (Guinea)
VBG Logistics (Vale BSGR Logistics) Corp.	Railroad and port operations	Liberia	51.0	51.0	–
Transbarge Navegación	Paraná and Paraguay Waterway System (Convoys)	Paraguay	100.0%	100.0%	–

(1) BNDESPAR holds debentures of FNS that, beginning in 2018, can be exchanged at its option for a number of FNS common shares representing a minority position in the company, as determined by a formula provided for in the instruments governing the debentures.

#### 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 Brazilian state of Minas Gerais to the Tubarão Port, in Vitória, in the Brazilian 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. Industrial manufacturers are located in this area and major agricultural regions are also accessible to it. The EFVM railroad has a daily capacity of 342,000 metric tons of iron ore. In 2010, the EFVM railroad carried a total of 78.9 billion ntk of iron ore and other cargo, of which 16.8 billion ntk, or 21.3%, consisted of cargo

transported for customers, including iron ore for Brazilian customers. The EFVM railroad also carried 1.0 million passengers in 2010. In 2010, we had a fleet of 331 locomotives and 18,967 wagons at EFVM.

*Carajás railroad (“EFC”).* We operate the EFC railroad under a 30-year renewable concession, which expires in 2027. EFC is located in the Northern System, beginning at our Carajás iron ore mines in the Brazilian state of Pará and extending 892 kilometers to our Ponta da Madeira maritime terminal complex facilities located near the Itaqui Port in the Brazilian state of Maranhão. Its main cargo is iron ore, principally carried for us. It has a daily capacity of 313,970 metric tons of iron ore. In 2010, the EFC railroad carried a total of 90.4 billion ntk of iron ore and other cargo, 3.0 billion ntk of which was cargo for customers, including iron ore for Brazilian customers. EFC also carried 341,583 passengers in 2010. EFC supports the largest capacity train in Latin America, which measures 3.4 kilometers, weighs 42,300 gross metric tons when loaded and has 330 cars. In 2010, EFC had a fleet of 220 locomotives and 10,701 wagons.

*Ferrovias Centro-Atlântica (“FCA”).* Our subsidiary FCA operates the 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 8,023 kilometers of track extending into the states of Sergipe, Bahia, Espírito Santo, Minas Gerais, Rio de Janeiro and Goiás and Brasília, the Federal District of Brazil. It connects with our 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 our EFVM railroad and provides access to the Santos Port in the state of São Paulo. In 2010, the FCA railroad transported a total of 11.4 billion ntk of cargo for customers. In 2010, FCA had a fleet of 500 locomotives and 12,000 wagons.

*Ferrovias Norte-Sul railroad (“FNS”).* We have a 30-year renewable subconcession for the commercial operation of a 720-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 2010, the FNS railroad transported a total of 1.52 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 2010, FNS had a fleet of six locomotives and 440 wagons.

The principal items of cargo of the EFVM, EFC, FCA and FNS railroads are:

- iron ore and iron ore pellets, carried for us and customers;
- steel, coal, pig iron, limestone and other raw materials carried for customers with steel mills located along the railroad;
- agricultural products, such as soybeans, soybean meal and fertilizers; and
- other general cargo, such as building materials, 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 a 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*).

*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 2010, the MRS railroad carried a total of 144.9 million metric tons of cargo, including 60.8 million metric tons of iron ore and other cargo from Vale.



## *Colombia*

*Ferrocarriles del Norte de Colombia S.A. ("FENOCO")*. We own an 8.4% equity stake in FENOCO, a company that owns a concession to restore and operate the Chiriguana—Santa Marta tranche (220 kilometers) of the Atlantic Railroad, which connects the Cesar coal-producing region with various ports in the Atlantic Ocean.

## *Argentina*

On August 24, 2010, through our subsidiary Potasio Río Colorado S.A., we executed an agreement with Ferrosur Roca S.A. for partial assignment, subject to governmental approvals, of a 756-kilometer railroad administrative concession. This concession is important to the support of the Rio Colorado potash project and our strategy to become a leading global player in the fertilizer business.

## *Africa*

On September 2010, we exercised an option to purchase a 51% stake in SDCN for US\$21 million. This acquisition will allow the expansion of Moatize and facilitate the creation of a world-class logistics infrastructure to support our operations in Central and Eastern Africa. We will invest in the capacity expansion of the Nacala logistics corridor through the rehabilitation of the existing SDCN railroads in Malawi and Mozambique and the construction of railway links needed to carry the output of Moatize to a new deep water maritime terminal in Nacala, which will also be built by Vale.

We are currently negotiating contracts with the government of Liberia for the construction of an integrated railway-port system for transporting iron ore output from Simandou, in Guinea. Simandou is one of the best undeveloped iron ore deposits in the world in terms of size and quality, and the logistics corridor will allow the transportation of up to 50 Mtpy of iron ore by the end of the decade to our maritime terminal in the coast of Liberia.

### **4.1.2 Ports and maritime terminals**

#### *Brazil*

We operate a port and six maritime terminals principally as a means to complete the delivery of our iron ore and iron ore pellets to bulk carrier vessels serving the seaborne market. See—*Bulk materials—Iron ore pellets—Operations*. We also use our port and terminals to handle customers' cargo. In 2010, 12% of the cargo handled by our port and terminals represented cargo handled for customers.

*Tubarão Port*. The Tubarão Port, which covers an area of 18 square kilometers, is located near the Vitória Port in the Brazilian state of Espírito Santo and contains four maritime terminals: (i) the iron ore maritime terminal, (ii) Praia Mole Terminal, (iii) Terminal de Produtos Diversos, and (iv) Terminal de Granéis Líquidos.

- 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 365,000 DWT at a time, limited at 20 meters draft plus tide. In Pier I there are two ship loaders, which can load up to a combined total of 14,000 metric tons per hour. In Pier II there are two ship loaders that work alternately and can each load up to 16,000 metric tons per hour. In 2010, 100.4 million metric tons of iron ore and iron ore pellets were shipped through the terminal for us. The iron ore maritime terminal has a stockyard capacity of 2.8 million metric tons.

- Praia Mole terminal is principally a coal terminal and handled 10.7 million metric tons in 2010. See *Additional information—Legal proceedings*.
- Terminal de Produtos Diversos handled 6.6 million metric tons of grains and fertilizers in 2010.
- Terminal de Granéis Líquidos handled 1.0 million metric tons of bulk liquid in 2010.

*Ponta da Madeira maritime terminal.* The Ponta da Madeira maritime terminal is located near the Itaqui Port in the Brazilian state of Maranhão. The terminal facilities can accommodate four vessels. Pier I can accommodate vessels displacing up to 420,000 DWT. Pier II can accommodate vessels of up to 155,000 DWT. Pier I has a maximum loading rate of 16,000 tons per hour. Pier II has a maximum loading rate of 8,000 tons per hour. Pier III, which has two berths and three shiploaders, can accommodate vessels of up to 220,000 DWT at the south berths and 180,000 DWT at the north berths and has a maximum loading rate of 8,000 metric tons per hour in each shiploader. Cargo shipped through our Ponta da Madeira maritime terminal consists principally of our own iron ore production. Other cargo includes manganese ore, copper concentrate and pig iron produced by us and pig iron and soybeans for unrelated parties. In 2010, 94.2 million metric tons were handled through the terminal for us and 5.4 million metric tons for customers. The Ponta da Madeira maritime terminal has a stockyard capacity of 6.2 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, in the Brazilian state of Rio de Janeiro. Itaguaí’s maritime terminal has a pier that allows the loading of ships up to 18 meters of draft and up to 230,000 DWT. In 2010, the terminal uploaded 22.6 million metric tons of iron ore.

*Guaíba Island maritime terminal.* We operate a maritime terminal on Guaíba Island in the Sepetiba Bay, in the Brazilian state of Rio de Janeiro. The iron ore terminal has a pier that allows the loading of ships of up to 300,000 DWT. In 2010, the terminal uploaded 37.9 million metric tons of iron ore.

*Inácio Barbosa maritime terminal (“TMIB”).* We operate the Inácio Barbosa maritime terminal, located in the Brazilian state of Sergipe. The terminal is owned by Petrobras. Vale and Petrobras entered into an agreement in December 2002, which allows Vale to operate this terminal for a period of 10 years. In 2010, 0.6 million metric tons of fuel and agricultural and steel products were shipped through TMIB.

*Santos maritime terminal (“TUF”).* We operate a maritime terminal, through our subsidiary Vale Fertilizantes, in Santos, in the Brazilian state of São Paulo. The terminal has a pier that is equipped to receive ships of up to 67,000 DWT. In 2010, the terminal handled 2.1 million metric tons of ammonia and bulk solids, 10.2% higher than 2009.

#### *Colombia*

*Sociedad Portuaria Rio Cordoba (“SPRC”).* SPRC is a seaport facility wholly owned by Vale and used to export coal from the El Hatillo operation, as well as other nearby mines. The port is located in Cienaga, on the Caribbean coast of Colombia, in the Magdalena Department, about 67 kilometers from Barranquilla and 31 kilometers from Santa Marta.

#### *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 Vale Logística Argentina has a permit to use a stockyard of 20,000 square meters until October 2016 and an agreement with third parties for an extra stockyard of 27,000 square meters. We expect to handle 2 million metric tons of iron and manganese ore through this port in 2011, which will come from Corumbá, Brazil, through the Paraguay and Paraná rivers, for

shipment to Asian and European markets. The loading rate of this port is 17,000 tons per day and the unloading rate is 12,000 tons per day.

### *Indonesia*

PTI owns and operates two ports in Indonesia to support its nickel mining activities.

- The Balintang Special Port is located in Balintang Village, South Sulawesi, and has a pier that can accommodate vessels displacing up to 6,000 DWT.
- The Harapan Tanjung Mangkasa Special Port is located in Harapan Tanjung Mangkasa Village, South Sulawesi, and has a pier that can accommodate vessels displacing up to 39,000 DWT.

### **4.1.3 Shipping**

In addition to the iron ore seaborne shipping conducted to support our iron ore and pellets business (See—*Bulk Materials—Iron Ore—Operations*), and the shipping and loading in the Paraná and Paraguay waterway system conducted to support our bulk material operations, we also operate tug boat services.

We continue to develop and operate a low-cost fleet of vessels, comprised of our own ships and ships hired pursuant to medium and long-term contracts, to support our bulk materials business. Over the last few years, we purchased 22 used capesize vessels. At the end of 2010, 14 of our own vessels were in operation. We have also placed orders with shipyards for the construction of 19 very large ore carriers, each with a capacity of 400,000 DWT, and four additional capesize vessels, each with a capacity of 180,000 DWT. The first very large ore carrier was delivered in March 2011. We expect this service to enhance our ability to offer our iron ore products in the Asian market at competitive prices and to increase our market share in China and the global seaborne market. In 2010, we shipped 72.1 million metric tons of iron ore and pellets on a CFR basis to China.

In the Paraná and Paraguay waterway system, we transport iron ore and manganese ores through our wholly owned subsidiary Transbarga Navegación, which transported 1,335,210 tons through the waterway system in 2010, and our wholly owned subsidiary Vale Logística Argentina, which loaded 1,629,000 tons of ore at Saint Nicolas Port into ocean-going vessels in 2010. In 2010, we also purchased two new convoys (two pushers and 32 barges) that will begin operations in 2011.

We operate a fleet of 28 tug boats (23 owned and five freighted) in maritime terminals in Brazil, specifically in Vitória (in the state of Espírito Santo), Trombetas and Vila do Conde (in the state of Pará), São Luís (in the state of Maranhão) and Aracaju (in the state of Sergipe).

We own 31.3% of Log-In, which conducts intermodal logistics services. Log-In offers port handling and container transportation services, by sea or rail, as well as container storage. It operates owned and chartered ships for coastal shipping, a container terminal (Terminal Vila Velha, or TVV) and multimodal terminals. In 2010, Log-In's coastal shipping service transported 159,856 twenty-foot equivalent units ("teus"), TVV handled 249,072 teus and its express train service moved 38,684 teus.

## **4.2 Energy**

### **4.2.1 Electric power**

We have developed our energy assets based on the current and projected energy needs of our mining operations, with the goal of reducing our 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 electricity prices and electric energy shortages (as experienced in Brazil in the second half of 2001). We currently have eight hydroelectric power plants and four smaller hydroelectric power plants in operation. In addition, in December 2010, we obtained the operating license for the Estreito power plant, Vale's first hydroelectric power plant in the Northern region, which started generating power in March 2011. In 2010, our installed capacity in Brazil was 818 MW, which is similar to the previous year. We use the electricity produced by these plants for our internal consumption needs. As a large consumer of electricity, we expect that investing in power projects will help us reduce costs and will protect us against energy supply and price volatility. However, we may experience delays in the construction of certain generation projects due to environmental and regulatory issues, which may lead to higher costs.

## *Canada*

In 2010, our wholly owned and operated hydroelectric power plants in Sudbury generated 9% of the electricity requirements of our Sudbury operations. The power plants consist of five separate generation stations with an installed generator nameplate capacity of 56 MW. The output of the plants is limited by water availability, as well as constraints imposed by a water management plan regulated by the provincial government of Ontario. Over the course of 2010, the power system operator distributed electrical energy at the rate of 117 MW to all surface plants and mines in the Sudbury area.

In 2010, diesel generation provided 100% of the electric requirements of our Voisey Bay operations. We have six diesel generators on-site, of which normally only four are in operation, producing 12 MW.

## *Indonesia*

Energy costs are a significant component of our nickel production costs for the processing of lateritic saprolitic ores at PTI operations in Indonesia. A major portion of PTI's electric furnace power requirements are supplied at low-cost by its two hydroelectric power plants on the Laron River: (i) the Laron plant, which generates an average of 165 MW, and (ii) the Balambano plant, which generates an average of 110 MW. PTI has thermal generating facilities with 78 MW, which includes 54 MW from 24 Caterpillar diesel generators with capacity of 1 MW each and five Mirrlees Blackstone diesel generators, as well as a 24 MW high sulphur fuel oil burning steam turbine generator located in Sorowako. In addition, we are building the Karebbe plant, which will be the third hydropower plant on the Laron River, with 90 MW of average generating capacity. The plant will reduce production costs by substituting oil used for power generation with hydroelectric power.

### **4.2.2 Oil and natural gas**

The use of natural gas in our energy matrix in Brazil is expected to increase from 1.7 million cubic meters per day ("Mm<sup>3</sup>/day") in 2010 to 11.6 Mm<sup>3</sup>/day in 2020. In order to mitigate supply and price risks we started investing in natural gas exploration. Since 2007, we have developed a significant hydrocarbon exploration portfolio in Brazilian onshore and offshore basins. In 2009, two discoveries were made that are currently under appraisal. We believe that natural gas will play an important role in the global energy matrix in the future, given its advantages of lower carbon emissions and greater flexibility with regard to power generation.

## **5. Other investments**

We own a 50.0% stake in California Steel Industries, Inc. ("CSI"), a producer of flat-rolled steel and pipe products located in the United States. The remainder is owned by JFE Steel. CSI has annual production capacity of 1.8 million metric tons of flat rolled steel and pipe. CSI successfully concluded the commissioning of a second reheating furnace with state-of-the-art environmental technology at a cost of US\$71.0 million,

which will increase CSI's annual production capacity to approximately 2.8 million metric tons of flat rolled steel and pipe. The furnace is expected to be fully operational during the second quarter of 2011.

We have a 26.9% stake in the TKCSA integrated steel slab plant in the Brazilian state of Rio de Janeiro. The plant started operations during the third quarter of 2010, and will have a production capacity of 5.0 Mtpy. The plant will consume 8.5 million metric tons of iron ore and iron ore pellets per year, supplied exclusively by Vale.

We have a 61.5% stake in CADAM S.A. ("CADAM"), located on the border of the states of Pará and Amapá, in the Amazon area in northern Brazil. CADAM produces kaolin for paper coating and also conducts research into other uses for kaolin products in order to develop a more diversified portfolio. CADAM's reserves are principally concentrated in the open-pit Morro do Felipe mine, in Vitória do Jari, in the state of Amapá. The beneficiation plant and private port facilities are situated on the west bank of the Jari River, in Munguba, in the state of Pará. CADAM produces the following products: Amazon SB, Amazon Premium and Amazon Plus. They are sold mainly in the European, Asian and Latin American markets. CADAM obtains electricity from its own thermal power plant. In 2010, CADAM produced 403,000 metric tons of kaolin.

We conduct a pig iron operation in northern Brazil. This operation was conducted through our wholly owned subsidiary Ferro-Gusa Carajás S.A. ("FGC") until April 2008, when FGC was merged into Vale. We utilize two conventional mini-blast furnaces to produce 350,000 metric tons of pig iron per year, using iron ore from our Carajás mines in northern Brazil.

## RESERVES

### Presentation of information concerning reserves

The estimates of proven and probable ore reserves at our mines and projects and the estimates of mine life included in this annual report have been prepared by our staff of experienced geologists and engineers, unless otherwise stated, and calculated in accordance with the technical definitions established by the SEC. Under the SEC's Industry Guide 7:

- Reserves are the part of a mineral deposit that could be economically and legally extracted or produced at the time of the reserve determination.
- Proven (measured) reserves are reserves for which (a) quantity is computed from dimensions revealed in outcrops, trenches, working or drill holes; grade and/or quality are computed from the results of detailed sampling; and (b) the sites for inspection, sampling and measurement are spaced so closely and the geologic character is so well defined that size, shape, depth and mineral content of reserves are well-established.
- Probable (indicated) reserves are reserves for which quantity and grade and/or quality are computed from information similar to that used for proven (measured) reserves, but the sites for inspection, sampling and measurement are farther apart or are otherwise less adequately spaced. The degree of assurance, although lower than that for proven (measured) reserves, is high enough to assume continuity between points of observation.

We periodically revise our reserve estimates when we have new geological data, economic assumptions or mining plans. During 2010, we performed an analysis of our reserve estimates for certain projects, which is reflected in new estimates as of December 31, 2010. Reserve estimates for each operation are for 100% of the operation and assume that we either have or will obtain all of the necessary rights to mine, extract and process ore reserves at each mine. Where we own less than 100% of the operation, reserve estimates have not been adjusted to reflect our ownership interest. Certain figures in the tables, discussions and notes have been rounded. For a description of risks relating to reserves and reserve estimates, see *Risk factors*.

## Iron ore reserves

In preparing iron ore reserve data, we used price assumptions that did not exceed the three-year (2008 to 2010) realized average prices for iron ore of US\$76.31 per metric ton for pellet feed and US\$68.57 per metric ton for sinter feed in the Southeastern System, US\$74.52 per metric ton for pellet feed and US\$73.67 per metric ton for sinter feed in the Southern System, US\$93.48 per metric ton per for lump ore in the Midwestern System, and US\$79.00 per metric ton for sinter feed in the Northern System. All prices are reported on a wet basis. For Samarco, the price assumption used did not exceed the three-year (2008 to 2010) realized average price for iron ore pellets of US\$126.03 per dry metric ton.

The following tables set forth our iron ore reserves and other information about our iron ore mines. Our iron ore reserve estimates are of in-place material after adjustments for mining depletion, with no adjustments made for metal losses due to processing. Iron ore reserves increased slightly from 2009 to 2010.

	Proven – 2010		Probable – 2010		Total – 2010		Total – 2009	
	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade
Southeastern System . . . . .	2,220.0	50.9	1,279.0	50.2	3,499.0	50.6	3,398.9	50.6
Southern System . . . . .	1,459.9	52.2	1,811.4	48.8	3,271.3	50.3	3,373.0	50.5
Midwestern System . . . . .	7.8	62.7	27.6	62.1	35.4	62.2	36.7	62.3
Northern System . . . . .	4,948.9	66.7	2,311.1	66.7	7,260.0	66.7	7,098.5	66.7
Vale Total . . . . .	8,636.6	60.2	5,429.1	56.9	14,065.7	58.9	13,907.1	58.8
Samarco(2) . . . . .	1,134.0	42.4	934.9	39.8	2,068.9	41.2	2,111.2	41.3
Total . . . . .	9,770.6	58.1	6,364.0	54.3	16,134.6	56.6	16,018.2	56.5

- (1) Tonnage is stated in millions of metric tons of wet run-of-mine. Grade is % of Fe.
- (2) Reserves of Samarco's Alegria iron ore mines. Our equity interest in Samarco is 50% and the reserve figures have not been adjusted to reflect our ownership interest.

	Proven – 2010		Probable – 2010		Total – 2010		Total – 2009	
	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade
<i>Itabira complex</i>								
Conceição . . . . .	269.0	51.3	26.5	58.9	295.5	51.9	320.0	52.0
Minas do Meio . . . . .	303.9	53.9	167.7	55.9	471.6	54.6	501.6	54.6
<i>Minas Centrais complex</i>								
Água Limpa(2) . . . . .	39.2	41.7	5.9	41.9	45.1	41.7	50.8	41.8
Gongo Soco . . . . .	42.6	65.7	12.2	64.4	54.8	65.4	71.1	63.0
Brucutu . . . . .	401.5	50.1	250.7	47.1	652.2	49.0	682.1	49.3
Baú(3) . . . . .	–	–	–	–	–	–	37.1	55.7
Apolo . . . . .	292.4	57.4	339.7	55.1	632.1	56.1	278.7	58.3
<i>Mariana complex</i>								
Alegria . . . . .	152.0	49.7	26.9	46.8	178.9	49.2	220.5	49.7
Fábrica Nova . . . . .	478.7	45.9	352.3	44.1	830.9	45.2	828.8	45.5
Fazendão . . . . .	240.8	49.8	97.1	50.1	337.8	49.9	334.9	49.8
Timbopeba(3) . . . . .	–	–	–	–	–	–	73.2	55.2
Total Southeastern System . . . . .	2,220.0	50.9	1,279.0	50.2	3,499.0	50.6	3,398.8	50.6

- (1) Tonnage is stated in millions of metric tons of wet run-of-mine. Grade is % of Fe. Approximate drill hole spacing used to classify the reserves were: 100m × 100m to proven reserves and 200m × 200m to probable reserves.
- (2) Vale's equity interest in Água Limpa is 50% and the reserve figures have not been adjusted to reflect our ownership interest.
- (3) Timbopeba and Baú reserves are under review.

**Iron ore reserves per mine in the Southern System(1)**

	Proven – 2010		Probable – 2010		Total – 2010		Total – 2009	
	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade
<i>Minas Itabirito complex</i>								
Segredo . . . . .	137.1	51.7	162.3	48.2	299.4	49.8	303.9	49.9
João Pereira . . . . .	227.3	42.4	300.4	41.5	527.6	41.9	551.1	42.0
Sapecado . . . . .	116.4	53.7	115.3	52.4	231.7	53.0	250.2	53.1
Galinheiro . . . . .	123.5	54.5	188.2	54.0	311.8	54.2	320.6	54.3
<i>Vargem Grande complex</i>								
Tamandu . . . . .	256.2	54.4	246.3	51.2	502.5	52.9	515.4	53.1
Capitão do Mato . . . . .	200.1	55.6	561.2	50.7	761.3	52.0	771.6	52.1
Abóboras . . . . .	229.2	45.5	217.6	43.5	446.8	44.5	453.4	44.6
<i>Paraopeba complex</i>								
Jangada . . . . .	38.3	66.7	14.5	66.3	52.8	66.6	58.8	66.5
Córrego do Feijão . . . . .	28.6	67.0	3.3	63.5	31.9	66.6	33.6	66.6
Capão Xavier . . . . .	85.9	65.0	0.6	63.2	86.5	65.0	93.8	65.0
Mar Azul . . . . .	17.4	58.1	1.6	58.2	19.0	58.1	20.6	58.6
Total Southern System . . . . .	<u>1,459.9</u>	<u>52.2</u>	<u>1,811.4</u>	<u>48.8</u>	<u>3,271.3</u>	<u>50.3</u>	<u>3,373.0</u>	<u>50.5</u>

(1) Tonnage is stated in millions of metric tons of wet run-of-mine. Grade is % of Fe. Approximate drill hole spacing used to classify the reserves were: 100m × 100m to proven reserves and 200m × 200m to probable reserves.

**Iron ore reserves per mine in the Midwestern System(1)(2)(3)**

	Proven – 2010		Probable – 2010		Total – 2010		Total – 2009	
	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade
Urucum . . . . .	7.8	62.7	27.6	62.1	35.4	62.2	36.7	62.3
Total Midwestern System . . . . .	<u>7.8</u>	<u>62.7</u>	<u>27.6</u>	<u>62.1</u>	<u>35.4</u>	<u>62.2</u>	<u>36.7</u>	<u>62.3</u>

(1) The Midwestern System is comprised of the Urucum mine (formerly within the Southeastern System) and Corumbá (acquired by Vale in 2009).

(2) We are conducting a review of Corumbá's reserve model.

(3) Tonnage is stated in millions of metric tons of wet run-of-mine. Grade is % of Fe. Approximate drill hole spacings used to classify the reserves were: 100m × 100m to proven reserves and 200m × 200m to probable reserves.

**Iron ore reserves per mine in the Northern System(1)**

	Proven – 2010		Probable – 2010		Total – 2010		Total – 2009	
	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade
<i>Serra Norte complex</i>								
N4W . . . . .	1,205.6	66.5	281.1	66.1	1,486.7	66.5	1,527.3	66.5
N4E . . . . .	294.5	66.5	90.1	66.0	384.6	66.4	408.0	66.4
N5 . . . . .	347.2	66.8	741.0	67.2	1,088.2	67.1	862.7	67.1
<i>Serra Sul</i>								
S11 . . . . .	3,045.8	66.8	1,193.7	66.7	4,239.6	66.7	4,239.6	66.8
<i>Serra Leste</i>								
SL1 . . . . .	55.7	66.2	5.2	66.4	60.9	66.2	60.9	66.2
Total Northern System . . . . .	<u>4,948.9</u>	<u>66.7</u>	<u>2,311.1</u>	<u>66.7</u>	<u>7,260.0</u>	<u>66.7</u>	<u>7,098.5</u>	<u>66.7</u>

(1) Tonnage is stated in millions of metric tons of wet run-of-mine. Grade is 66.7% of Fe. Approximate drill hole spacings used to classify the reserves are: 150m × 100m to proven reserves and 300m × 200m to probable reserves, except SL1 which is 100m × 100m to proven reserves and 200m × 200m to probable reserves.

**Iron ore reserves per Samarco(1)(2)**

	Proven – 2010		Probable – 2010		Total – 2010		Total – 2009	
	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade
<i>Samarco</i>								
Alegria Norte/Centro . . . . .	698.6	44.1	553.5	40.7	1,252.1	42.6	1,276.3	42.7
Alegria Sul . . . . .	435.4	39.7	381.4	38.5	816.8	39.1	835.0	39.2
Total Samarco . . . . .	<u>1,134.0</u>	<u>42.4</u>	<u>934.9</u>	<u>39.8</u>	<u>2,068.9</u>	<u>41.2</u>	<u>2,111.2</u>	<u>41.3</u>

(1) Tonnage is stated in millions of metric tons of wet run-of-mine. Grade is % of Fe. Approximate drill hole spacings used to classify the reserves are: Alegria Norte/Centro, 150m × 100m to proven reserves and 200m × 300m to probable reserves; Alegria Sul, 100m × 100m to proven reserves and 200m × 200m to probable reserves.

(2) Vale's equity interest in Samarco mines is 50.0% and the reserve figures have not been adjusted to reflect our ownership interest.

Total iron ore reserves increased slightly from 2009 to 2010, as the effect of mining production during 2010 was offset by updated geological models or pit designs and reserve classification at several mines.

<b>Other mine data: Southeastern System iron ore mines</b>				
	<b>Type</b>	<b>Operating since</b>	<b>Projected exhaustion date</b>	<b>Vale interest (%)</b>
<i>Itabira complex</i>				
	Open pit	1957	2023	100.0
	Open pit	1976	2023	100.0
<i>Minas Centrais complex</i>				
	Open pit	2000	2020	50.0
	Open pit	2000	2018	100.0
	Open pit	1994	2024	100.0
	Open pit	–	2039	100.0
<i>Mariana complex</i>				
	Open pit	2000	2021	100.0
	Open pit	2005	2033	100.0
	Open pit	1976	2045	100.0
<b>Other mine data: Southern System iron ore mines</b>				
	<b>Type</b>	<b>Operating since</b>	<b>Projected exhaustion date</b>	<b>Vale interest (%)</b>
<i>Minas Itabirito complex</i>				
	Open pit	2003	2034	100.0
	Open pit	2003	2034	100.0
	Open pit	1942	2042	100.0
	Open pit	1942	2045	100.0
<i>Vargem Grande complex</i>				
	Open pit	1993	2039	100.0
	Open pit	1997	2040	100.0
	Open pit	2004	2029	100.0
<i>Paraopeba complex</i>				
	Open pit	2001	2018	100.0
	Open pit	2003	2014	100.0
	Open pit	2004	2022	100.0
	Open pit	2006	2017	100.0
<b>Other mine data: Midwestern System iron ore mines</b>				
	<b>Type</b>	<b>Operating since</b>	<b>Projected exhaustion date</b>	<b>Vale interest (%)</b>
Urucum . . . . .	Open pit	1994	2024	100.0
<b>Other mine data: Northern System iron ore mines</b>				
	<b>Type</b>	<b>Operating since</b>	<b>Projected exhaustion date</b>	<b>Vale interest (%)</b>
<i>Serra Norte</i>				
	Open pit	1994	2029	100.0
	Open pit	1984	2023	100.0
	Open pit	1998	2030	100.0
<i>Serra Sul</i>				
	Open pit	–	2061	100.0
<i>Serra Leste</i>				
	Open pit	–	2039	100.0



**Other mine data: Samarco iron ore mines**

	<b>Type</b>	<b>Operating since</b>	<b>Projected exhaustion date</b>	<b>Vale interest (%)</b>
<i>Samarco</i>				
Alegria Norte/Centro . . . . .	Open pit	2000	2052	50.0
Alegria Sul . . . . .	Open pit	2000	2052	50.0

**Manganese ore reserves**

No new manganese ore reserves were added in 2010. In preparing manganese reserve data, we used price assumptions that did not exceed the three-year (2008 to 2010) historical price for manganese of US\$427.78 per metric ton (published by CRU, CIF China, 44% manganese grade). We have adjusted ore reserve estimates for extraction losses and metallurgical recoveries during extraction.

**Manganese ore reserves(1)**

	<b>Proven – 2010</b>		<b>Probable – 2010</b>		<b>Total – 2010</b>		<b>Total – 2009</b>	
	<b>Tonnage</b>	<b>Grade</b>	<b>Tonnage</b>	<b>Grade</b>	<b>Tonnage</b>	<b>Grade</b>	<b>Tonnage</b>	<b>Grade</b>
Azul . . . . .	40.3	41.0	8.4	39.5	48.7	40.7	51.8	40.9
Urucum . . . . .	0.0	0.0	6.6	45.0	6.6	45.0	6.9	45.1
Morro da Mina . . . . .	9.1	24.3	6.0	24.3	15.1	24.3	15.2	24.3
<b>Total . . . . .</b>	<b>49.4</b>	<b>37.9</b>	<b>21.0</b>	<b>36.9</b>	<b>70.4</b>	<b>37.6</b>	<b>73.9</b>	<b>37.9</b>

(1) Tonnage is stated in millions of metric tons of wet run-of-mine. Grade is % of Mn.

The operating lifetime and projected exhaustion date of the manganese mines is shown below.

**Other mine data: manganese ore mines**

	<b>Type</b>	<b>Operating since</b>	<b>Projected exhaustion date</b>	<b>Vale interest (%)</b>
Azul . . . . .	Open pit	1985	2022	100.0
Urucum . . . . .	Underground	1976	2020	100.0
Morro da Mina . . . . .	Open pit	1902	2045	100.0

**Coal reserves**

In preparing coal reserve data, we used price assumptions that did not exceed the three-year (2008 to 2010) average price (based on realized sales or reference prices): for Australian reserves, realized prices of US\$176 per metric ton of hard metallurgical coal and US\$118 per metric ton of PCI; realized prices of US\$71.5 per metric ton for the El Hatillo reserves; and for hard metallurgical coal for Moatize reserves, US\$175.0 per metric ton (standard hard coking coal).

Our coal reserve estimates have been provided on an in-place material basis after adjustments for mining depletion, moisture content, anticipated mining losses and dilution, but excluding any adjustment for losses associated with beneficiation of raw coal mined to meet saleable product requirements. Our coal reserve estimates were prepared by the following independent consultants: IMC Mining Group (Integra Coal—Open Cut), IMC Mining Solutions (Integra—Underground), SRK Consulting (Carborough Downs),

Echelon Mining Services (Isaac Plains), Snowden Mining Industry Consultants Pty Ltd. (Moatize) and John T. Boyd Company (El Hatillo), each of whom has consented to the inclusion of these estimates herein.

		Coal ore reserves(1)					
Coal type		Proven – 2010	Probable – 2010	Total – 2010		Total – 2009	
		(tonnage)	(tonnage)	(tonnage)	(calorific value)	(tonnage)	(calorific value)
Integra Coal:							
Integra Open-cut . . . . .	Metallurgical & thermal	19.4	5.8	25.2	29.9	1.0	28.5 (thermal)
Integra Underground—							
Middle Liddell Seam . . . . .	Metallurgical	1.1	11.4	12.5	–	14.3	–
Integra Underground—							
Hebden Seam . . . . .	Metallurgical	0.0	30.8	30.8	–	Not reported	Not reported
Total Integra Coal . . . . .		20.5	48.0	68.5		15.3	–
Carborough Downs—							
Underground . . . . .	Metallurgical & PCI	37.1	5.2	42.3	31.7 (PCI)	44.3	31.7 (PCI)
Isaac Plains North Open Cut . . . . .	Metallurgical, PCI & thermal	21.3	2.1	23.4	31.0 (PCI)	23.7	31.0 (PCI)
					27.8 (thermal)		27.8 (thermal)
El Hatillo . . . . .	Thermal	46.7	0.0	46.7	25.8	50.0	25.4 (thermal)
Moatize . . . . .	Metallurgical & thermal	422.0	532.0	954.0	32.0	954.0	32.0
Total . . . . .		547.6	587.3	1,134.9	–	1,087.3	–

- (1) Tonnage is stated in millions of metric tons. Reserves are reported on a variable basis in regard to moisture : Integra Open Cut on in-situ estimated basis, Integra Underground on in-situ estimated basis + 2%, Carborough Downs on air dried basis, and Isaac plains North on in-situ estimated basis + 2%. Calorific value of product coal derived from beneficiation of ROM coal is typically stated in MJ/kg. Calorific value is used in marketing thermal and PCI coals. Marketable coal quality reported is based on typical 2010 sales contract specifications, except for Moatize.
- (2) The reserves stated above by deposit are on a 100% shareholding basis. Vale's ownership interest in accordance with the table below should be used to calculate the portion of reserves directly attributable to Vale.

Reserves at Integra Open Cut increased overall as depletion of the South Pit reserves were offset by an increase in reserves following the grant of mining licenses and completion of new reserve estimates as part of the studies for the North Open Cut and Western extension to the South Pit area. Reserves of the Middle Liddell Seam for Integra Underground decreased in 2010 due to depletion. Reserves were reported for the Hebden Seam for Integra Underground after the grant of the legal right to mine and completion of studies and reserve estimates. Reserves at Carborough Downs decreased as a result of mining depletion. Reserves at Isaac Plains decreased mainly due to mining depletion, which was offset by a small increase resulting from an updated reserve estimate at El Hatillo. The decrease was also due to mining depletion in accordance with ROM production in 2010. Reserves at Moatize remain at previously reported quantities and classifications, as the mine is not yet in production and, since no additional material drilling exploration information was acquired, a reserve estimation update was not performed in 2010.

Other mine data: coal mines				
	Type	Operating since	Projected exhaustion date	Vale interest (%)
Integra Coal:				
South Open-cut . . . . .	Open pit	1999	2011	61.2
Middle Liddell Seam . . . . .	Underground	1999	2014	61.2
Carborough Downs . . . . .	Underground	2006	2022	80.0
Isaac Plains . . . . .	Open pit	2006	2016	50.0
El Hatillo . . . . .	Open pit	2007	2021	100.0
Moatize . . . . .	Open pit	–	2046	100.0

### Nickel ore reserves

In preparing nickel reserve data, we used price assumptions that did not exceed the three-year (2008 to 2010) average LME spot price for nickel of US\$19,180.22 per metric ton. Our nickel reserve estimates are

of in-place material after adjustments for mining depletion and mining losses (or screening and drying in the cases of Sulawesi and VNC) and recoveries, with no adjustments made for metal losses due to processing.

	Nickel ore reserves(1)							
	Proven – 2010		Probable – 2010		Total – 2010		Total – 2009	
	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade
<i>Canada</i>								
Sudbury . . . . .	66.1	1.23	46.2	1.15	112.3	1.20	116.9	1.20
Thompson . . . . .	8.2	1.79	18.5	1.69	26.7	1.72	26.1	1.72
Voisey Bay . . . . .	21.0	2.87	3.1	0.65	24.1	2.58	25.0	2.71
<i>Indonesia(2)</i>								
Sulawesi . . . . .	75.4	1.83	38.3	1.71	113.7	1.79	121.1	1.79
<i>New Caledonia(2)</i>								
VNC . . . . .	101.9	1.34	24.5	1.85	126.4	1.44	124.3	1.46
<i>Brazil</i>								
Onça Puma . . . . .	55.1	1.79	27.6	1.62	82.7	1.73	82.7	1.73
Total . . . . .	327.7	1.62	158.2	1.53	485.9	1.59	496.1	1.60

(1) Tonnage is stated in millions of dry metric tons. Grade is % of nickel.

(2) We have rights to other properties in Indonesia, New Caledonia and in other locations, which have not yet been fully explored.

In Canada, reserves at our Sudbury operations decreased due primarily to mining depletion and reclassification of mineral reserves to mineral resources at the Copper Cliff mines and Stobie mine deposits. Reserves at our Thompson operations increased slightly due to resources-to-reserves conversion. Reserves at our Voisey Bay operations decreased primarily due to mining depletion. This reduction is supported by the reconciliation of production data with the life-of-mine plan estimates.

Reserves at Sulawesi decreased as a result of adjustments for mining depletion, changes in plant feed chemistry operational targets, changes to the duration of the life-of-mine plan (in accordance with the new mining law) and reclassification of mineral reserves to mineral resources.

Reserves at Onça Puma remained unchanged from 2009 estimates since there was virtually no production at this mine in 2010. At VNC, there was a slight increase in the reserve estimates from 2009 due to bedrock dilution that was not accounted for in the 2009 reserve estimates.

	Other mine data: nickel ore mines			
	Type	Operating since	Projected exhaustion date	Vale interest (%)
<i>Canada</i>				
Sudbury . . . . .	Underground	1885	2038	100.0
Thompson . . . . .	Underground	1961	2026	100.0
Voisey Bay . . . . .	Open pit	2005	2023	100.0
<i>Indonesia</i>				
Sulawesi . . . . .	Open cast	1977	2035	59.2
<i>New Caledonia</i>				
VNC . . . . .	Open pit	–	2040	74.0
<i>Brazil</i>				
Onça Puma . . . . .	Open pit	–	2044	100.0

## Copper ore reserves

In preparing copper reserve data, we used price assumptions that did not exceed the three-year (2008 to 2010) average LME spot price for copper of US\$6,547.73 per metric ton. Our copper reserve estimates are of in-place material after adjustments for mining depletion and mining losses and recoveries, with no adjustments made for metal losses due to processing.

	Copper ore reserves(1)							
	Proven – 2010		Probable – 2010		Total – 2010		Total – 2009	
	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade
<i>Canada</i>								
Sudbury . . . . .	66.1	1.51	46.2	1.55	112.3	1.53	116.9	1.51
Thompson . . . . .	8.2	0.11	18.5	0.10	26.7	0.10	26.1	0.12
Voisey Bay . . . . .	21.0	1.65	3.1	0.36	24.1	1.48	25.0	1.58
<i>Brazil</i>								
Sossego . . . . .	124.2	0.84	41.5	0.84	165.7	0.84	161.3	0.91
Salobo . . . . .	507.8	0.74	545.2	0.64	1,116.0	0.69	928.5	0.77
Total . . . . .	<u>727.3</u>	0.84	<u>654.5</u>	0.70	<u>1,444.8</u>	0.77	<u>1,257.9</u>	0.86

(1) Tonnage is stated in millions of dry metric tons. Grade is % of copper.

In Canada, our copper ore reserve estimates decreased for the reasons discussed above in connection with nickel reserves since these deposits are of polymetallic ore.

In Brazil, reserves at Sossego and Salobo increased due primarily to a review of pit optimization with an updated economic model that incorporates increased price assumptions. The Salobo mine is currently in the pre-operating phase.

	Other mine data: copper ore mines			
	Type	Operating since	Projected exhaustion date	Vale interest
				(%)
<i>Canada</i>				
Sudbury . . . . .	Underground	1885	2038	100.0
Thompson . . . . .	Underground	1961	2026	100.0
Voisey Bay . . . . .	Open pit	2005	2023	100.0
<i>Brazil</i>				
Sossego . . . . .	Open pit	2004	2021	100.0
Salobo . . . . .	Open pit	–	2046	100.0

## PGMs and other precious metals reserves

In preparing PGMs and other precious metals reserves data, we used price assumptions that did not exceed the three-year (2008 to 2010) average NYMEX price for platinum of US\$1,430.75 per troy ounce and the average Comex price for gold of US\$1,068.87 per troy ounce. We expect to recover significant quantities of precious metals as by-products of our Canadian operations, Sossego and from the Salobo project. Our

reserve estimates are of in-place material after adjustments for mining depletion and mining losses and recoveries, with no adjustments made for metal losses due to processing.

	Precious metals reserves(1)							
	Proven – 2010		Probable – 2010		Total – 2010		Total – 2009	
	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade
<i>Canada</i>								
Sudbury								
Platinum . . . . .	66.1	0.7	46.2	1.2	112.3	0.9	116.9	0.9
Palladium . . . . .	66.1	0.8	46.2	1.4	112.3	1.1	116.9	1.0
Gold . . . . .	66.1	0.3	46.2	0.5	112.3	0.4	116.9	0.4
<i>Brazil</i>								
Sossego								
Gold . . . . .	124.2	0.3	41.5	0.2	165.7	0.3	161.4	0.3
Salobo								
Gold . . . . .	570.8	0.5	545.2	0.4	1,116.0	0.4	928.5	0.5
Total – Gold . . . . .	761.1	0.4	632.9	0.4	1,394.0	0.4	1,206.8	0.4

(1) Tonnage is stated in millions of dry metric tons. Grade is grams per dry metric ton.

In Canada, our mineral reserve estimates for platinum, palladium and gold fluctuated for the reasons discussed above in connection with nickel reserves. In Brazil, reserves at Sossego and Salobo increased, primarily as a result of a recent review of pit optimization that employed an updated economic model that incorporated increased price assumptions.

	Other mine data: precious metals mines			
	Type	Operating since	Projected exhaustion date	Vale interest (%)
<i>Canada</i>				
Sudbury . . . . .	Underground	1885	2038	100.0
<i>Brazil</i>				
Sossego . . . . .	Open pit	2004	2021	100.0
Salobo . . . . .	Open pit	–	2046	100.0

### Cobalt ore reserves

In preparing cobalt reserve data, we used price assumptions that did not exceed the three-year (2008 to 2010) average realized sales price for cobalt of US\$22.82 per pound. We expect to recover significant quantities of cobalt as a by-product of our Canadian operations and from the VNC project. Our cobalt reserve estimates are of in-place material after adjustments for mining depletion and mining losses (or screening and drying in the case of VNC) and recoveries, with no adjustments made for metal losses due to processing.

	Cobalt ore reserves(1)							
	Proven – 2010		Probable – 2010		Total – 2010		Total – 2009	
	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade
<i>Canada</i>								
Sudbury . . . . .	66.1	0.04	46.2	0.03	112.3	0.04	116.9	0.04
Voisey Bay . . . . .	21.0	0.14	3.1	0.03	24.1	0.12	25.0	0.13
<i>New Caledonia</i>								
VNC . . . . .	101.9	0.12	24.5	0.08	126.4	0.11	124.3	0.11
Total . . . . .	189.0	0.09	73.8	0.05	262.8	0.08	266.3	0.08

(1) Tonnage is stated in millions of metric tons. Grade is % of cobalt.

Our cobalt reserve estimates decreased in 2010 for the reasons discussed above in connection with nickel reserves.

<b>Other mine data: cobalt ore mines</b>					
	<b>Type</b>	<b>Operating since</b>	<b>Projected exhaustion date</b>	<b>Vale interest</b>	
				(%)	
<i>Canada</i>					
	Sudbury . . . . .	Underground	1885	2038	100.0
	Voisey Bay . . . . .	Open pit	2005	2023	100.0
<i>New Caledonia</i>					
	VNC . . . . .	Open pit	–	2040	74.0

### Phosphate reserves

In preparing phosphate reserve data, we used price assumptions that did not exceed the three year (2008 to 2010) average benchmarking prices for phosphate concentrate of US\$132 per metric ton (average between value published by Fertecon and CRU – BSC – FOB Marocco). Our phosphate reserve estimates are of in-place material after adjustments for mining dilution, with no adjustments made for process recovery. The increase in our phosphate reserve estimates reflects the acquisition of fertilizer assets in Brazil.

<b>Phosphate reserves(1)</b>								
	<b>Proven – 2010</b>		<b>Probable – 2010</b>		<b>Total – 2010</b>		<b>Total – 2009</b>	
	<b>Tonnage</b>	<b>Grade</b>	<b>Tonnage</b>	<b>Grade</b>	<b>Tonnage</b>	<b>Grade</b>	<b>Tonnage</b>	<b>Grade</b>
Bayóvar . . . . .	237.1	17.3	1.9	15.9	239.0	17.2	239.0	17.2
Catalão . . . . .	59.1	10.4	7.6	10.2	66.7	10.4	–	–
Tapira . . . . .	271.0	7.0	461.6	6.6	732.6	6.7	–	–
Araxá . . . . .	151.0	11.7	4.9	9.8	155.9	11.6	–	–
Cajati . . . . .	81.5	5.6	49.0	4.5	130.5	5.2	–	–
Salitre . . . . .	0.0	0.0	206.0	11.4	206.0	11.4	–	–
Total . . . . .	799.7	11.0	730.7	7.9	1,530.4	9.5	239.0	17.2

(1) Tonnage is stated in millions of dry metric tons. Grade is % of P<sub>2</sub>O<sub>5</sub>.

<b>Other mine data: phosphate ore mine</b>				
	<b>Type</b>	<b>Operating since</b>	<b>Projected exhaustion date</b>	<b>Vale interest</b>
				(%)
Bayóvar . . . . .	Open pit	2010	2037	40.0
Catalão . . . . .	Open pit	1982	2020	84.3
Tapira . . . . .	Open pit	1979	2054	84.3
Araxá . . . . .	Open pit	1977	2027	84.3
Cajati . . . . .	Open pit	1970	2035	84.3
Salitre . . . . .	Open pit	–	2033	84.3

### Potash ore reserves

In preparing potash reserve data, we used price assumptions that did not exceed the three-year (2008 to 2010) average benchmark price for potash of US\$483 per metric ton (average between the value published by Fertecon and CRU – BSC – FOB Vancouver). Our reserve estimates are of in-place material after

adjustments for mining depletion and mining losses and recoveries, with no adjustments made for metal losses due to processing.

	Potash ore reserves(1)							
	Proven – 2010		Probable – 2010		Total – 2010		Total – 2009	
	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade
Taquari-Vassouras . . . . .	10.3	28.0	3.1	28.0	13.4	28.0	7.6	28.0
Rio Colorado . . . . .	0.0	0.0	360.8	34.2	360.8	34.2	360.8	34.2
Total . . . . .	10.3	28.0	363.9	34.1	374.2	34.0	368.4	34.0

(1) Tonnage is stated in millions of dry metric tons. Grade is % of KCl.

Our potash reserves increased in 2010 mainly due to new reserves accessed from drilling in 2009 and 2010.

	Other mine data: potash ore mines			
	Type	Operating since	Projected exhaustion date	Vale interest (%)
Taquari-Vassouras(1) . . . . .	Underground	1986	2016	100.0
Rio Colorado . . . . .	Solution mining	–	2039	100.0

(1) We have a 25-year lease, which was signed in 1991, with Petrobras.

#### Kaolin ore reserves

In preparing kaolin reserve data, we used price assumptions that did not exceed the three-year (2008 to 2010) average realized sales price for kaolin of US\$237 per metric ton. Our reserve estimates are of in-place material after adjustments for mining depletion and mining losses and recoveries, with no adjustments made for metal losses due to processing.

	Kaolin ore reserves(1)							
	Proven – 2010		Probable – 2010		Total – 2010		Total – 2009	
	Tonnage	Brightness	Tonnage	Brightness	Tonnage	Brightness	Tonnage	Brightness
Morro do Felipe . . . . .	8.1	86.6	23.0	86.8	31.2	86.7	32.1	86.7

(1) Tonnage is stated in millions of metric tons. Brightness is stated in percentage terms.

Reserves at Morro do Felipe decreased from 32.1 to 31.2 million metric tons primarily reflecting mining depletion in 2010 and, to a lesser extent, a reduction in estimates to reflect differences between actual recoveries and amounts predicted by our reserve model.

	Other mine data: kaolin ore mines			
	Type	Operating since	Projected exhaustion date	Vale interest (%)
Morro do Felipe . . . . .	Open pit	1976	2030	86.2

## CAPITAL EXPENDITURES AND PROJECTS

### Capital expenditures

We have an extensive program of investments in the organic growth of our businesses. During 2010, we made capital expenditures and other investments of US\$12.705 billion, of which US\$9.375 billion was on organic growth, while US\$3.330 billion was invested in maintaining existing operations. As previously disclosed, the 2011 investment budget approved by our Board of Directors in October 2010 is US\$24 billion. The capital expenditures, including R&D expenses, are reported on the basis of financial disbursements. A large part of the capital expenditures budget will be invested in Brazil (US\$15.318 billion, or 63.8%) and in Canada (US\$1.959 billion, or 8.2%). The remainder is allocated to investments in Argentina, Australia, Chile, China, Guinea, Indonesia, Malaysia, Mozambique, Oman and Peru, among other countries.

	<b>2010 expenditures</b>	<b>2011 budget</b>	
	(US\$ million)	(US\$ million)	(% of total)
Organic growth . . . . .	US\$9,375	US\$19,521	81.3%
Project execution . . . . .	8,239	17,535	73.0
Research and development . . . . .	1,136	1,986	8.3
Investments to sustain existing operations . . . . .	3,330	4,479	18.7
<b>Total . . . . .</b>	<b>US\$12,705</b>	<b>US\$24,000</b>	<b>100.0%</b>

The following table summarizes by major business area the breakdown of our capital expenditures in 2009 and 2010 and our investment budget for 2011.

	<b>2009</b>		<b>2010</b>		<b>2011 budget</b>	
	(US\$ million)	(% of total)	(US\$ million)	(% of total)	(US\$ million)	(% of total)
Bulk materials . . . . .	US\$2,688	29.8%	US\$4,441	35.0%	US\$10,110	42.1%
Ferrous minerals . . . . .	2,124	23.6	3,474	27.3	8,522	35.5
Coal . . . . .	564	6.3	967	7.6	1,588	6.6
Base metals . . . . .	3,053	33.9	2,973	23.4	4,310	18.0
Fertilizer nutrients . . . . .	91	1.0	843	6.6	2,505	10.4
Logistics . . . . .	1,985	22.0	2,852	22.4	5,014	20.9
Energy . . . . .	688	7.6	656	5.2	794	3.3
Steel . . . . .	184	2.0	186	1.5	677	2.8
Other . . . . .	324	3.6	755	5.9	590	2.5
<b>Total . . . . .</b>	<b>US\$9,013</b>	<b>100.0%</b>	<b>US\$12,705</b>	<b>100.0%</b>	<b>US\$24,000</b>	<b>100.0%</b>



The following table sets forth total expenditures in 2010 for our main investment projects and expenditures budgeted for those projects in 2011, together with estimated total expenditures for each project. The status of each project is described after the table.

Business area	Project	Actual	Budgeted	
		2010(1)	2011	Total(2)
		(US\$ million)		
Bulk materials and logistics	Carajás – Additional 20 Mtpy(4)	125	121	575
	Carajás – Additional 40 Mtpy	361	481	2,968
	Vargem Grande Itabiritos	56	356	1,521
	Conceição Itabiritos	177	411	1,174
	Conceição Itabiritos II	9	153	1,188
	CLN 150 Mtpy	587	1,289	2,986
	Tubarão VIII	132	185	833
	Moatize	626	422	1,658
	Serra Leste	15	274	455
	Simandou(3)	31	861	1,260
	Apolo	7	377	*
	Carajás Serra Sul S11D	211	1,017	6,776
	CLN S11D	18	155	*
	Oman(4)	474	269	1,356
	Teluk Rubiah	43	148	1,371
Moatize expansion		161	*	
Nacala Corridor	66	298	*	
Base metals . . . . .	Totten	84	112	362
	Long-Harbour	531	817	2,821
	Onça Puma(4)	435	146	2,841
	Tres Vales(4)	60	9	140
	Salobo	652	406	1,808
	Konkola North	18	80	200
	Salobo II	78	275	1,025
Cristalino		267	*	
Fertilizer nutrients . . . . .	Bayóvar(4)	231	–	566
	Bayóvar expansion	–	100	*
	Río Colorado	204	1,225	5,915
	Salitre	25	345	*
Energy . . . . .	Estreito(4)	233	40	703
	Karebbe	119	96	410
	Biofuels	89	46	633

(1) All figures presented on a cash basis.

(2) Estimated total capital expenditure cost for each project.

(3) Budget approved Simandou phase 1 with estimated capacity of 15 Mtpy.

(4) Projects delivered in 2010 and 2011.

\* Total capital expenditures for projects have not been approved by the Board of Directors.

### Bulk materials and logistics projects

Iron ore and iron ore pellet projects:

- *Carajás—Additional 40 Mtpy.* The former Carajás Additional 30 Mtpy project was enlarged to 40 Mtpy and, as a result, the Board of Directors approved additional capital expenditures of US\$490 million. Investments include expenditures for the construction of a dry processing plant. The investments for increasing the capacity of the Ponta da Madeira maritime terminal were finalized in 2010. The permit for vegetation removal and the installation license have been granted by the environmental protection authorities. Start-up is planned for the end of 2012.

- *Serra Leste.* The project includes investments in mining equipment, a new processing plant and logistics to meet additional iron ore production of 6 Mtpy in 2013. The iron ore will be transported by the EFC railroad. Start-up is scheduled for the first half of 2013. The project was recently approved by the Board of Directors and is subject to us obtaining the required environmental licenses.
- *Vargem Grande Itabiritos.* This project, in the Southern System, will add 10 Mtpy of pellet feed to our current capacity. It involves investment in a new iron ore treatment plant, which will be fed by low grade iron ore produced by the Abóboras mine and will be transported through the Andaime terminal, which we have invested in. Start-up is expected for the second half of 2013.
- *Conceição Itabiritos.* This is a brownfield project aimed at increasing pellet feed capacity through the processing of low-grade itabirites. The project involves the construction of a concentration plant to add 12 Mtpy to the current nominal capacity of pellet feed, using as feed run-of-mine from the Conceição mine, in the Itabira complex in the Southeastern System. Start-up is expected for the second half of 2013.
- *Conceição Itabiritos II.* This brownfield project will add 19 Mtpy of iron ore, 13 Mtpy of pellet feed and 6 Mtpy of sinter feed to current capacity through the processing of low-grade itabirites. The project involves the adaptation of current ore circuits for processing new run-of-mine from the Conceição mine in the Itabira complex in the Southeastern System, and investments in mine equipment. Start-up is expected for the first half of 2014. The project was recently approved by the Board of Directors.
- *Carajás Serra Sul S11D.* This project, located in the Southern range of Carajás in the Brazilian state of Pará, is the largest greenfield project in our history and in the global iron ore industry. It comprises the development of a mine and beneficiation complex with capacity of 90 million metric tons of iron ore per year, using a truckless mining operation. Start-up is scheduled for the second half of 2014, subject to obtaining the required environmental licenses.
- *Simandou.* The project involves the development of a mine-mill complex in Guinea in two phases, with total estimated production capacity of 50 million metric tons of iron ore per year, and construction of an integrated railroad and maritime terminal on the coast of Liberia, which will enable the transportation of Simandou's entire production capacity. Simandou phase 1 involves the development of the Zogota Mine, south of the Simandou district, the construction of a dry processing plant and approximately 100 kilometers of railway tracks to link mining operations with an existing railroad in Liberia. Production is scheduled to start in 2012 with 2 Mtpy of iron ore, and is expected to ramp-up to reach 15 million metric tons of iron ore per year in 2014. Simandou phase 2, subject to approval by the Board of Directors, may result in capacity reaching 50 Mtpy in 2020, stemming from the development of blocks 1 and 2 and the construction of an additional rail spur connecting them to the Zogota Mine.
- *Apolo.* We expect this greenfield project, located in the Southeastern System, to have production capacity of 24 Mtpy and expected start-up in 2014. It encompasses a new mining-processing complex and a railway spur linking the EFVM railroad. The project is subject to approval by the Board of Directors.
- *Tubarão VIII.* We are building a new pellet plant at our existing seven-plant complex at the Tubarão Port, in the Brazilian state of Espírito Santo. We expect the plant to have production capacity of 7.5 Mtpy. Start-up is scheduled for the second half of 2012.
- *Teluk Rubiah.* The project, in Teluk Rubiah, near the Strait of Malacca, in the Malaysian state of Perak, comprises the construction of a maritime terminal with enough depth to receive 400,000 dwt

vessels and a stockyard capable of handling up to 30 million metric tons of iron ore per year in an initial phase. There is potential for future expansion of up to 100 Mtpy. Start-up is scheduled for the first half of 2014.

#### Coal projects:

- *Moatize.* We have obtained all of the required licenses from the government of Mozambique for the construction of the Moatize mine, which will have nominal production capacity of 11 Mtpy, comprising 8.5 million metric tons of metallurgical coal and 2.5 million metric tons of thermal coal. During the first phase, coal production will be transported by the Linha do Sena railway to the Beira port, which is receiving additional investments in one of its piers. Start-up is scheduled for the first half of 2011.
- *Moatize expansion.* In 2011, we will start developing the second phase of Moatize under which we will open a new pit, duplicate the Moatize Coal Handling Preparation Plant (CHPP) and provide additional infrastructure, thereby increasing production capacity to 22 Mtpy. Start-up is scheduled for the second half of 2013. The project is still subject to approval by the Board of Directors.

#### Logistics projects:

- *CLN 150 Mtpy.* The project includes investments in railway capacity in the Ponta da Madeira terminal in the Brazilian state of Maranhão, including construction of a fourth pier. This will increase the railway and port capacity to approximately 150 Mtpy. Start-up is scheduled for the second half of 2013.
- *CLN S11D.* The project will expand the railway and the Ponta da Madeira terminal in the Northern System to increase capacity in line with the expansion in Carajás, as well as the construction of a rail branch connecting the EFC railroad to the Serra Sul S11D mine. Start-up is scheduled for the second half of 2014. The project is still subject to approval by the Board of Directors.
- *Nacala Corridor.* The project involves the construction of a 63-kilometer railway connecting the Moatize mine to the Malawi border, construction of a 139-kilometer railway connecting the Malawi border to the existing line (CEAR), a new coal maritime terminal in Nacala, Mozambique, a 29-kilometer rail branch that will connect the existing railway to the new coal maritime terminal and the recovery of existing railways in Malawi and Mozambique. Start-up is scheduled for 2014. The project is still subject to approval by the Board of Directors.

#### Base metals projects

##### Nickel projects:

- *Totten.* We are working on the re-opening of the Totten nickel mine in Sudbury, Ontario, which was closed in 1972. The mine will have an annual production capacity of 8,200 metric tons of nickel, with copper and precious metals (platinum, gold and silver) as by-products. Completion is expected in 2012.
- *Long-Harbour.* We are building a nickel processing facility pursuant to a commitment with the government of the Province of Newfoundland and Labrador, Canada. The facility will have nominal production capacity of 50,000 metric tons per year of finished nickel, utilizing feed from the Ovoid mine at Voisey Bay site. Start-up is scheduled for the first half of 2013.

#### Copper projects:

- *Salobo*. In the first phase of development of the Salobo copper deposit in Carajás, annual nominal capacity will be 100,000 metric tons of copper in concentrates, with 130,000 ounces of gold per year as a by-product. Salobo is scheduled to come on stream in the second half of 2011.
- *Salobo II*. The project will expand the Salobo mine's production capacity from 100,000 to 200,000 metric tons per year of copper in concentrates. The scope of the project contemplates the expansion of the industrial and support facilities, raising the height of the tailing dam and increasing mine movement. Start-up is scheduled for the second half of 2013.
- *Konkola North*. Located in the Zambian Copperbelt, Konkola North is an underground mine project with estimated nominal production capacity of 45,000 metric tons per year of copper in concentrate. This project is part of our 50/50 joint venture with African Rainbow Minerals ("ARM") in Africa. The joint venture entity controls the project, currently with 100% of the equity. Zambia Consolidated Copper Mines Limited ("ZCCM"), the Zambian state-owned copper company, has options to acquire up to 20% of the equity interest in the project from the joint venture. The strategic partnership with ZCCM is consistent with our strategy to preserve long-term partnerships with key local players to support the implementation of greenfield projects. Project development started in August 2010, and start-up is scheduled for 2013.
- *Cristalino*. This project, located in the Carajás region, has an expected nominal capacity of 90,000 tons per year of copper in concentrates. Start-up is scheduled for the second half of 2014. The project is still subject to approval by the Board of Directors.

#### Fertilizer nutrients projects

- *Rio Colorado*. The Rio Colorado project in Argentina involves an initial phase with a nominal capacity of 2.1 Mtpy of potash (potassium chloride, KCl), and a second phase which will increase capacity to 4.3 Mtpy. The project is comprised of investments in a solution mining system, the renovation of 440 kilometers of railway tracks, the construction of a railway spur of 350 kilometers and a new maritime terminal. The supply of natural gas is already secured through a joint venture with Yacimientos Petrolíferos Fiscales ("YPF") that will operate a facility dedicated to Rio Colorado. Start-up of the first phase is expected in the first half of 2014. The project was recently approved by the Board of Directors.
- *Salitre*. The Salitre project in Minas Gerais is comprised of a phosphate rock mine with estimated capacity of 2.2 Mtpy of phosphate concentrates and the implementation of a fertilizer production plant with the capacity to produce 560,000 tons per year of phosphorus pentoxide, linked by an 18-kilometer pipeline. Start-up is scheduled for 2014. The project is subject to approval of the Board of Directors.
- *Bayóvar II*. We are developing the expansion of the Bayóvar project in northern Peru, with nominal production capacity of 1.9 million metric tons of phosphate rock. Start-up is scheduled for the second half of 2014. The project is still subject to approval by the Board of Directors.

#### Energy projects

- *Karebbe*. Karebbe hydroelectric power plant in Sulawesi, Indonesia is projected to add 90 megawatts of average generating capacity. The plant will supply power to our Indonesian operations, which will reduce our production costs and enable the potential expansion to 90,000 tons per year of nickel matte. The dam construction is in the final stage and the installation of turbines has begun. Start-up is scheduled for the second half of 2011.
- *Biofuels*. Biopalma is implementing a project to produce approximately 500,000 tons per year of palm oil in the Northern region of Brazil, and is starting production in 2011. A significant amount of Biopalma's production will be sold to Vale and used as raw material to produce biodiesel from 2015

onwards for the B20 mix (a blend of 20% biodiesel and 80% regular diesel) to power our fleet of locomotives, heavy-duty machinery and equipment for Vale's operations in Brazil.

### **Steel projects**

We have the following steel projects, which will create additional demand for our iron ore and iron ore pellets.

- *Aços Laminados do Pará ("ALPA")*. We expect to start the development of the ALPA project in 2011, which involves the construction of a steel plant in Marabá, in the Brazilian state of Pará. The plant will have a nominal production capacity of 1.8 Mtpy in slabs and 0.7 Mtpy in semi-finished steel. Start-up is expected for the first half of 2014, subject to approval by the Board of Directors.
- *Companhia Siderúrgica do Pecém ("CSP")*. In partnership with Dongkuk Steel Mill Co. ("Dongkuk"), and Posco, two major steel producers in South Korea, we will start development of a steel slab plant in the Brazilian state of Ceará. During this phase, Vale will own 50% of the shares, Dongkuk will own 30%, and Posco 20%. The plant will have a nominal production capacity of 3.0 Mtpy, and total investments of US\$4.2 billion, with potential for expansion to 6.0 Mtpy in a second stage. Start-up is expected to occur in 2014.
- *Companhia Siderúrgica Ubu ("CSU")*. We are also evaluating the feasibility of constructing an integrated steel slab plant to be located in the Brazilian state of Espírito Santo, which would have a nominal production capacity of 5.0 Mtpy. In conjunction with the ongoing feasibility study, we are looking for potential partners for the project. If pursued, start-up would likely be scheduled for 2014. The project is subject to approval by the Board of Directors.

### **REGULATORY MATTERS**

We are subject to a wide range of governmental regulation in all the jurisdictions in which we operate worldwide. The following discussion summarizes the kinds of regulation that have the most significant impact on our operations.

#### **Mining rights**

In order to conduct mining activities, we are generally required to obtain some form of governmental permits, which differ in form depending on the jurisdiction but may include concessions, licenses, claims, tenements, leases or permits (all of which we refer to below as "concessions"). Some concessions are of indefinite duration, but many have specified expiration dates, and may not be renewable. The legal and regulatory regime governing concessions differs among jurisdictions, often in important ways. For example in many jurisdictions, including Brazil, mineral resources belong to the State and may only be extracted pursuant to a concession. In other jurisdictions, including Canada, a substantial part of our mining operations is conducted pursuant to mining rights we own or pursuant to leases, often from government agencies.

The table below summarizes our principal mining concessions and other similar rights. In addition to the concessions described below, we have exploration licenses covering 10.1 million hectares in Brazil and 17.8 million hectares in other countries.

Location	Concession or other right	Approximate area covered (in hectares)	Expiration date
<i>Brazil</i>	Mining concessions	664,627	Indefinite
<i>Canada</i>			
<i>Ontario</i>	Mineral Leases	14,026	2011-2028
	Patented Mineral Rights	82,805	Indefinite
	License of occupation	1,157	Indefinite
	Mining License of Occupation	2,952	Indefinite
<i>Manitoba</i>	Order in Council Leases	109,043	2011-2028
	Leases	4,903	2013
<i>Newfoundland and Labrador</i>	Mining lease	1,599	2027
	Surface lease	4,015	2027
<i>Indonesia</i>	Contract of Work	190,510	2025(1)
<i>Australia</i>	Mining tenements	22,281	2009-2039
<i>New Caledonia</i>	Mining concessions	20,332	2016-2051
	Mining Concessions Tiebaghi Nickel	936	2048
	Mining concessions (outside the VNC project area)	13,586	2016-2040
<i>Peru</i>	Mining concessions	146,887(2)	Indefinite
<i>Colombia</i>	El Hatillo concessions	9,695	2027
	Cerro Largo Sur concessions	1,092	2032
<i>Argentina</i>	Mining concessions	80,889(3)	Indefinite
<i>Chile</i>	Mining concessions	50,632(4)	Indefinite
<i>Mozambique</i>	Mining concessions	23,780	2030
<i>Guinea</i>	Mining concessions	102,400	2045

- (1) The Contract of Work for our Indonesian mining operations expires in 2025. However, under the new Mining Law, we may be entitled to apply for at least one 10-year extension.
- (2) The Peruvian mining regime comprises only one license type. For purposes of this report, only licenses involving mining activities were counted.
- (3) Out of the 80,889 hectares in Argentina, only 40,274 hectares are associated with active mining projects.
- (4) Out of the 50,332 hectares in Chile, only 23,657 have current mining activities.

Many concessions impose specific obligations on the concessionaire governing such matters as how operations are conducted and what investments are required to be made. Our ability to maintain our mineral rights depends on meeting these requirements, which often involve significant capital expenditures and operating costs.

### **Regulation of mining activities**

Mining and processing are subject to extensive regulation, which differs in each jurisdiction in which we operate. Our major operations are subject to legislation and regulations that apply to mining activities, which in many countries include state or provincial law in addition to national or federal law. In addition, many of our concessions, particularly for large operations, impose additional obligations on the concessionaire.

The jurisdictions in which we operate typically have government agencies that are charged with granting mining concessions and monitoring compliance with mining law and regulations. For example, mining activities in Brazil are supervised by the National Mineral Production Department (*Departamento Nacional de Produção Mineral*), or DNPM, an agency of the federal Ministry of Mines and Energy.

Changes in mining legislation can have significant effects on our operations. Among the jurisdictions in which we currently have major operations, there are several proposed or recently adopted changes in mining legislation that could materially affect us. These include the following:

- The Brazilian Ministry of Mining and Energy is planning to propose changes to the Brazilian Mining Code, which if adopted may have important implications for mining operations in Brazil or require unexpected capital expenditures.
- In Indonesia, a new Mining Law came into effect in January 2009 that introduces a new licensing regime. In 2010, certain government regulations implementing the new Mining Law were promulgated, but some remain outstanding. PTI, in collaboration with its Indonesian legal advisors, is investigating the impacts that the new Mining Law and regulations may have on PTI's current operations and its future prospects in Indonesia. Until all of the implementing regulations are promulgated, we will be unable to assess how and to what extent PTI's Contract of Work and operations will be affected.
- In New Caledonia, a new mining law was passed in March 2009 requiring new mining projects to obtain formal authorization rather than a declaration. Our application for authorization (replacing a 2005 declaration) must be made by April 2012 and, once submitted, we should obtain the authorization by April 2015. We believe it is unlikely that the application for the authorization will be rejected, but there is a risk that new conditions will be imposed.
- In Guinea, the government has proposed a new mining code that would change some of the current provisions governing mining operations. In particular, it would extend to all mining projects a requirement for 15% State participation that is currently only applicable to projects involving diamonds, gold or precious stones.

#### **Environmental regulations**

We are also 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 us to submit environmental impact statements for approval and often to make additional investments to mitigate environmental impacts. We must also operate our facilities in compliance with the terms of the approvals, licenses, permits or authorizations.

Environmental regulations affecting our operations relate, among other matters, to emissions into the air, soil and water; recycling and waste management; protection and preservation of forests, coastlines, natural caverns, watersheds and other features of the ecosystem; water use; and decommissioning and reclamation. In many cases, the mining concessions or environmental permits under which we operate impose specific environmental requirements on our operations. Environmental regulations can sometimes change and ongoing compliance can require significant costs for capital expenditures, operating costs, reclamation costs and compliance. For example, in Brazil, a suit challenging a Brazilian environmental decree that permits mining in certain subterranean areas may adversely affect our ability to conduct some mining operations or even reserves.

Environmental legislation is becoming stricter worldwide, which could lead to greater costs for environmental compliance. For instance, if we are required to modify installations, develop new operational procedures or purchase new equipment, our environmental compliance costs could increase. In particular, we expect heightened attention from various governments to reducing greenhouse gas emissions as a result of concern over climate change. Some important environmental regulation and compliance initiatives are described below, but it is unclear whether additional operating or capital expenditures will be required to comply with enacted amendments or what effect these regulations will have on our business, financial results or cash flow from operations:

- Our operations in Canada and at PTI in Indonesia are subject to air emission regulations that address, among other things, sulfur dioxide ("SO<sub>2</sub>"), particulates and metals. We will be required to make significant capital expenditures to ensure compliance with these emissions standards. The imposition of more stringent standards in the future, especially for SO<sub>2</sub> and nickel, could further increase our costs.

- The Canadian federal government’s efforts to legislate Greenhouse Gas (“GHG”) emission reduction targets for the industrial sectors have slowed down. The provinces of Manitoba, Ontario and Newfoundland have begun consulting various stakeholders with respect to climate change initiatives and are also focusing on adaptation strategies.
- In Canada, a number of studies have been completed or are in progress in Sudbury and Port Colborne related to contamination of soil and water from past and continuing activities. We are taking steps, in partnership with other stakeholders, to remediate the ecological impact of our activities.
- The Australian government is seeking to introduce an environmental scheme as part of an overall strategy to address climate change and reduce the output of greenhouse gas emissions in Australia. The Australian government has stated that it is committed to imposing mandatory targets to achieve reductions in greenhouse gas emissions by 2020.
- In October 2009, Indonesia adopted new legislation on Environmental Protection and Management. It sets out a broad regulatory structure and provides that many important details will be clarified in later implementing regulations.
- Brazil adopted a federal carbon emissions law (*Política Nacional de Mudanças Climáticas*) in December 2009 that contemplates specific limits on carbon emissions to be established in late 2011 and phased in through 2020. The law establishes a voluntary commitment to cut Brazil’s GHG emissions between 36.1% and 38.9% by 2020, based on 2005 levels, and several regulated industries, including the steel, forestry, agriculture and power generation sectors, have designed plans to reduce their GHG emissions. By the end of 2011, the government plans to issue rules establishing specific limits on carbon emissions from other sectors of the economy, including mining activities.

#### **Royalties and other taxes on mining activities**

We are required in many jurisdictions to pay royalties or taxes on our revenues or profits from mineral extractions and sales. These payments are an important element of the economic performance of a mining operation. The following royalties and taxes apply in some of the jurisdictions in which we have our largest operations:

- In Brazil, we pay a royalty known as the CFEM (*Compensação Financeira pela Exploração de Recursos Minerais*) on the revenues from the sale of minerals we extract, net of taxes, insurance costs and costs of transportation. The current rates on our products are: 2% for iron ore, kaolin, copper, nickel, fertilizers and other materials; 3% on bauxite, potash and manganese ore; and 1% on gold. The Brazilian government is preparing to propose changes in the CFEM regime. Any changes must be incorporated into a final proposal by DNPM, which is then subject to approval by the Brazilian National Congress. We are currently engaged in several administrative and legal proceedings alleging that we have failed to pay the proper amount of CFEM. See *Additional information—Legal proceedings—CFEM-related proceedings*.
- The Canadian provinces in which we operate charge us a tax on profit from mining operations. Profit from mining operations is generally determined by reference to gross revenue from the sale of mine output and deducting certain costs, such as mining and processing costs and investment in processing assets. The statutory mining tax rates are 10% in Ontario; with graduated rates up to 17% in Manitoba; and a combined mining and royalty tax rate of 16% in Newfoundland and Labrador.



- In Indonesia, our subsidiary PTI pays a royalty fee on, among other items, its nickel production on the concession area and has made certain other commitments. Until March 2008 the royalty was equal to 1.1% of revenues from sales of nickel products. As of April 2008, the royalty payment was changed to equal an amount based on sales volume (US\$78 per metric ton of contained nickel matte, based on total production).
- In Australia, we pay a royalty on revenues from the sale of minerals we extract in accordance with state laws. In Queensland, a two-tier coal royalty schedule applies under which we pay 7% of the value up to A\$100 per ton and 10% of the value thereafter. The price assumed is net of port charges and demurrage. In New South Wales, we pay coal ad valorem royalties on the value of production (total revenue less allowable deductions). The royalty rates are 6.2% for deep underground mines (coal extracted below 400 meters), 7.2% for underground mines and 8.2% for open cut mines. The assessable revenue is net of beneficiation costs and certain levies.
- The Australian government is currently considering introducing a mineral resource rent tax (“MRRT”). The MRRT will tax profits generated from the exploitation of coal and iron ore resources in Australia. The proposed tax would be levied at an effective rate of 22.5% of assessable profit and would be deductible for company income tax purposes. The difference between the MRRT and royalties paid to each state government is that royalties are based on revenue, whereas the MRRT is based on profit. However, the government has indicated that companies will be given a credit for any state-based royalties paid where the MRRT is payable.

### **Regulation of other activities**

In addition to mining and environmental regulation, we are subject to comprehensive regulatory regimes for some of our other activities, including rail transport, electricity generation, and oil and gas. We are also subject to more general legislation on workers’ health and safety, safety and support of communities near mines, and other matters.

Our Brazilian railroad business is subject to regulation and supervision by the Brazilian Ministry of Transportation and the transportation regulatory agency (*Agência Nacional de Transportes Terrestres*), or ANTT, and operates pursuant to concession contracts granted by the federal government. The concession contracts impose certain shareholder ownership limitations. The concession contract for FCA limits shareholder ownership to 20% of the voting capital of the concessionaire, unless such limit is waived by ANTT. We own 99.9% of FCA, which ANTT has authorized. The 20% ownership limitation does not apply to our EFVM, EFC and FNS railroads. ANTT also sets different tariff ceilings for railroad services for each of the concessionaires and each of the different products transported. So long as these limits are respected, the actual prices charged can be negotiated directly with the users of such services.

The MRS concession contract provides that each shareholder can only own up to 20% of the voting capital of the concessionaire, unless otherwise permitted by ANTT. As a result of our acquisitions of CAEMI and Ferteco, our share in the voting capital of MRS surpassed this threshold. As a result, Vale waived its voting and veto rights with respect to MRS shares in accordance with a 2006 ANTT resolution. We continue to have some voting rights through the shareholdings of a subsidiary.

Our railroad concession contracts have a duration of 30 years and are renewable. The FCA and MRS concessions expire in 2026, and the concessions for EFC and EFVM expire in 2027. We also own the subconcession for commercial operation for 30 years of a 720-kilometer segment of the FNS railroad, in Brazil. This concession expires in 2037.

In connection with the approval in 2006 of our acquisition of Vale Canada, we made a number of undertakings to the Canadian Minister of Industry under the Investment Canada Act. We believe we are substantially in compliance with these undertakings, which include locating our global nickel business in

Toronto, Canada; accelerating the Voisey Bay development project; enhancing investments in a number of areas in Canada; and honoring agreements with provincial governments, local governments, labor unions and aboriginal groups.

Some of our products are subject to regulations applicable to the marketing and distribution of chemicals and other substances. For example, the European Commission has adopted a European Chemicals Policy, known as REACH (“Registration, Evaluation, and Authorization of Chemicals”). Under REACH, manufacturers and importers were required to register new substances prior to their entry into the European market and in some cases may be subject to an authorization process. A company that fails to comply with the REACH regulation could face restrictions to commercialize its products in Europe. We have complied with registration requirements for the substances we import into or manufacture in the EU in 2010 and continue to take measures to manage our exposure to the authorization process.

## **II. OPERATING AND FINANCIAL REVIEW AND PROSPECTS**

### **Overview**

In 2010 we recorded the best annual results in our history, characterized by record figures for operating revenues, operating income, operating margin and net earnings. We also invested the largest amount in our history in capital expenditures to fund the creation of new platforms for future growth and to sustain high performance.

While 2009 was a transition year, marked by weaker but still robust performance, 2010 was a year of strong recovery and performance due to the combination of two powerful forces. On the one hand, the initiatives developed by the Company in response to the global economic downturn, embracing change and structural transformation, began to bear fruit. On the other hand, the global economy, led by emerging economies, the main drivers of the demand for minerals and metals, showed strong growth, rallying from the depressed levels of late 2008 and early 2009.

Our powerful cash generation and rigorous discipline in capital allocation allowed us to overcome once again the classical challenge posed to growth companies to finance growth, maintain a sound balance sheet and meet shareholders’ aspirations for capital return.

Below are the main highlights of Vale’s performance in 2010:

- Gross operating revenue of US\$46.5 billion;
- Operating income of US\$21.7 billion;
- Operating margin, measured as the ratio of operating income to net operating revenues, of 47.9%;
- Record return of capital to shareholders of US\$5.0 billion, through cash dividends of US\$3.0 billion, equal to US\$0.57 per share, and the completion of a share repurchase program of US\$2.0 billion;
- Net income of US\$17.3 billion, or US\$3.23 per preferred and common share on a fully diluted basis;
- Strong financial position, supported by large cash holdings of US\$9.4 billion, availability of significant medium and long-term credit lines and a low-risk debt portfolio.

## Demand and prices

The following table sets forth our average realized prices for our principal products for each of the periods indicated.

	Year ended December 31,			
	2007	2008	2009	2010
	(US\$ per metric ton, except where indicated)			
Iron ore . . . . .	45.33	67.32	55.99	103.50
Iron ore pellets . . . . .	78.62	131.76	73.75	161.29
Manganese . . . . .	107.34	350.46	147.06	230.22
Ferroalloys . . . . .	1,311.48	2,709.60	1,395.26	1,547.84
Nickel . . . . .	37,442.28	21,662.14	14,596.55	21,980.19
Copper . . . . .	6,611.27	6,331.07	5,229.39	7,730.09
Potash . . . . .	264.09	591.18	521.46	410.56
Platinum (US\$/oz) . . . . .	1,314.25	1,557.07	1,073.98	1,661.20
Cobalt (US\$/lb) . . . . .	24.56	31.01	10.03	15.09
Aluminum . . . . .	2,784.70	2,805.86	1,686.87	2,181.02
Alumina . . . . .	338.76	348.42	226.46	283.59
Bauxite . . . . .	36.08	41.47	34.15	31.64
Coal:				
Thermal coal . . . . .	53.73	85.38	66.60	70.40
Metallurgical coal . . . . .	67.37	170.55	115.55	149.96
Phosphates:				
MAP . . . . .	–	–	–	565.34
TSP . . . . .	–	–	–	451.80
SSP . . . . .	–	–	–	221.36
DCP . . . . .	–	–	–	570.49
Nitrogen . . . . .	–	–	–	451.46

### *Iron ore and iron ore pellets*

Demand for our iron ore and iron ore pellets is a function of global demand for carbon steel. Demand for carbon steel, in turn, is strongly influenced by global industrial production. Iron ore and iron ore pellets are priced according to the wide array of quality levels and physical characteristics. Various factors influence price differences among the various types of iron ore, such as the iron content of specific ore deposits, the various beneficiation and purifying processes required to produce the desired final product, particle size, moisture content, and the type and concentration of contaminants (such as phosphorus, alumina and manganese ore) in the ore. Fines, lump ore and pellets typically command different prices.

Since April 2010, we have reached agreements with all of our iron ore customers to move from annual benchmark contracts to index-based contracts. The old benchmark price system for iron ore, based on annual bilateral negotiations, has been replaced by a new system, as agreed with our customers, which establishes a quarterly iron ore price based on a three-month average of price indices for the period ending one month before the beginning of the new quarter. Our 2010 average prices for iron ore fines increased by 84.9%, and prices for our iron ore pellets were 118.7% higher than in 2009.

Chinese iron ore imports reached 619.1 million metric tons in 2010, slightly below the high level of 627.8 million metric tons in 2009 and 39.4% higher than the level of 2008, due mainly to the strong growth in Chinese steel production throughout 2010.

We expect China's economic growth to continue at a high rate during 2011, mainly driven by domestic demand. The demand for minerals and metals is expected to remain strong not only due to rapid economic growth but also due to restocking.

### *Manganese and ferroalloys*

The prices of manganese ore and ferroalloys are mainly influenced by trends in the carbon steel market. Ferroalloy prices are also influenced by the prices of the main production inputs, such as manganese ore, power and coke. We sell manganese ore mainly at spot prices or at prices established on a quarterly basis. Ferroalloy prices are negotiated on a quarterly basis.

### *Nickel*

Nickel is an exchange-traded metal, listed on the LME, mainly used to produce stainless steel. Most nickel products are priced using a discount or premium to the LME price, depending on the nickel product's physical and technical characteristics. Demand for nickel is strongly affected by stainless steel production, which represents, on average, 64% of global nickel consumption. Nickel demand for purposes other than stainless steel production represents 36% of global nickel consumption.

We have short-term fixed-volume contracts with customers for the majority of our expected annual nickel sales. These contracts, together with our sales for non-stainless steel applications (alloy steels, high nickel alloys, plating and batteries), provide stable demand for a significant portion of our annual production. In 2010, 65% of our refined nickel sales were made into non-stainless steel applications, compared to the industry average for primary nickel producers of 36%, bringing more stability to our sales volumes. As a result of our focus on such higher-value segments, our average realized nickel prices for refined nickel have typically exceeded LME cash nickel prices.

Primary nickel (including ferro-nickel, nickel pig iron and nickel cathode) and secondary nickel (i.e., scrap) are competing nickel sources for stainless steel production. The choice between different types of primary and secondary nickel is largely driven by their relative price and availability. In recent years, secondary nickel has accounted for about 42-49% of total nickel used for stainless steels, and primary nickel has accounted for about 51-58%. In 2010, Chinese nickel pig iron and ferro-nickel production is estimated to have been greater than 150,000 metric tons, representing 11% of world primary nickel supply, compared to 7% in 2009.

Nickel fundamentals are expected to remain strong for the foreseeable future. Stainless steel consumption is strongly correlated to consumption expenditures and is highly elastic to income growth. This helps to explain why nickel consumption intensity, as measured by consumption per US\$ of GDP, is still lower in emerging economies than in advanced economies, differently from other metals such as steel and copper. We expect emerging economies to maintain high per capita income growth and, as in recent years, to drive global consumption expenditures, suggesting that the demand for nickel has significant growth potential over the medium term.

### *Copper*

Growth in copper demand in recent years has been driven primarily by Chinese imports. Copper prices are determined on the basis of (i) prices of copper metal on terminal markets, such as the LME and the NYMEX, and (ii) in the case of intermediate products such as copper concentrate and copper anode (which comprise most of our sales), treatment and refining charges negotiated with each customer. Under a pricing system referred to as MAMA ("month after month of arrival"), sales of copper concentrates and anodes are provisionally priced at the time of shipment, and final prices are settled on the basis of the LME price for a future period, generally one to three months after the shipment date.

Copper consumption is expanding at a brisk pace, partly as a result of the broadening global economic recovery. Given the structural limitations to supply growth of concentrates, there is fundamental support for the persistence of a relatively high price level.

### *Fertilizer nutrients*

Demand for fertilizers is based on market fundamentals similar to those underlying global demand for minerals, metals and energy. Rapid per capita income growth of emerging economies generally causes dietary changes marked by the increase in consumption of proteins, which ultimately contributes to increased demand for fertilizer nutrients. Demand is also driven by bio-fuels since they have emerged as an alternative source of energy to reduce world reliance on sources of climate-changing greenhouse gases, and because key inputs for the production of biofuels—sugar cane, corn and palm—are intensive in the use of fertilizers.

Sales of fertilizers are mainly on a spot basis using international benchmarks, despite some large importers, such as China and India, which often sign annual contracts. Seasonality is an important factor for price determination throughout the year, since agricultural production in each region depends on climate conditions for crop production.

### *Aluminum*

We transferred the major part of our aluminum businesses to Hydro in February 2011, and we now have a 22.0% interest in Hydro, which is a major aluminum producer. For the periods prior to the transaction, our sales of aluminum were made at prices based on the LME of the previous month. Our sales of alumina were based on a percentage of the aluminum price traded on the LME, and our prices for bauxite were determined by a formula linked to the price of aluminum for the three-month futures contracts on the LME and to the price of alumina FOB Australia.

### *Coal*

Demand for metallurgical coal is driven by demand for steel, especially in Asia. Demand for thermal coal is closely related to electricity consumption, which will continue to be driven by global economic growth, particularly from emerging market economies. Since April 2010, prices for metallurgical coal are established mainly held on a quarterly basis for the majority of the seaborne term contract volumes. Price negotiations for thermal coal are held both on a spot and an annual basis.

### *Logistics*

Demand for our transportation services in Brazil is primarily driven by Brazilian economic growth, mainly in the agricultural and steel sectors. We earn our logistics revenues primarily from fees charged to customers for the transportation of cargo via our railroads, port and ships. Our railways generate most of these revenues. Nearly all of our logistics revenues are denominated in *reais* and subject to adjustments for changes in fuel prices. Prices in the Brazilian market for railroad services are subject to ceilings set by the Brazilian regulatory authorities, but they primarily reflect competition with the trucking industry.

### **Production levels**

Our financial performance depends, among other factors, on the volume of production at our facilities. Increases in the capacity of our facilities, resulting from our capital expenditure program, accordingly have an important effect on our performance.

Our results have also been affected by acquisitions and dispositions of businesses or assets, and they may be affected in the future by new acquisitions or dispositions. For more information on acquisitions and dispositions since the beginning of 2010, see *Information on the Company—Business overview—Significant changes in our business*.

## Currency price changes

Our results of operations are affected in several ways by changes in currency exchange rates. The most important of these are the following:

- Most of our revenues are denominated in U.S. dollars, while most of our costs of goods sold are denominated in other currencies, principally the *real* (64% in 2010) and the Canadian dollar (11% in 2010). As a result, changes in exchange rates affect our costs and operating margins. Our margins are adversely affected by a decline in the value of the U.S. dollar.
- Most of our long-term debt is denominated in currencies other than the *real* (US\$17.211 billion at December 31, 2010), principally the U.S. dollar. Because our functional currency for accounting purposes is the Brazilian *real*, changes in the value of the U.S. dollar against the *real* result in exchange gain or loss on our net liabilities.
- We had *real*-denominated debt of US\$6.860 billion at December 31, 2010. Since most of our revenue is in U.S. dollars, we use swaps to convert our debt service from *reais* to U.S. dollars. Changes in the value of the U.S. dollar against the *real* result in fair value variation on these derivatives, affecting our financial results. For more information on our use of derivatives, see—*Risk Management*.

A decline in the value of the U.S. dollar tends to result in: (i) lower operating margins and (ii) higher financial results due to currency gains on our net U.S. dollar-denominated liabilities and fair value gains on our currency derivatives. Conversely, an increase in the value of the U.S. dollar tends to result in: (i) better operating margins and (ii) lower financial results, due to exchange losses on our net U.S. dollar-denominated liabilities and fair value losses on our currency derivatives.

The U.S. dollar appreciated against the *real* during the first half of 2010 but began to depreciate in the second half of the year, while it depreciated against the Canadian Dollar during the first half of 2010 but began to appreciate in the second half of 2010. At December 31, 2010, the U.S. dollar had depreciated 4.3% against the *real* and 5.2% against the Canadian dollar relative to December 31, 2009. These currency price changes affected our operating margins and resulted in higher foreign exchange gains and gains on derivatives, as described under—*Critical accounting policies and estimates—Derivatives*.

## Operating expenses

Our principal operating expenses consist of: (i) cost of goods sold, (ii) selling, general and administrative expenses and (iii) research and development expenses. Our cost of goods sold consists of costs of energy (fuel and electric energy), materials (such as components for railroad and mining equipment), outsourced services (especially ore and waste removal, transportation and maintenance), purchased products for processing or resale (such as iron ore, iron ore pellets, nickel and aluminum products), personnel, and depreciation and depletion. Our selling, general and administrative expenses consist principally of personnel expense, sales expense and depreciation. Our research and development expenses consist primarily of investments related to mineral exploration and studies for the development of projects, which are recorded as expenses until the economic viability of the related mining activities is established.

## Results of operations—2010 compared to 2009

### Revenues

Our net operating revenues increased 94.3%, to US\$45.293 billion, in 2010, primarily as a result of higher prices for our major products. In response to strong demand, volumes sold increased for iron ore and other bulk materials, but not for nickel and copper due largely to the effect of the labor dispute at our

Sudbury and Voisey Bay operations, which has now ended. Of a total increase of US\$22.542 billion in gross revenues, US\$15.571 billion was attributable to higher prices for iron ore and iron ore pellets.

The following table summarizes our gross revenues by product and our net operating revenues for the periods indicated.

	<b>Year ended December 31,</b>		<b>% change</b>
	<b>2009</b>	<b>2010</b>	
	(US\$ million)		
<b>Bulk Materials:</b>			
Iron ore . . . . .	US\$12,831	US\$26,384	105.6
Iron ore pellets . . . . .	1,352	6,402	373.5
Manganese . . . . .	145	258	77.9
Ferroalloys . . . . .	372	664	78.5
Coal . . . . .	505	770	52.5
Subtotal . . . . .	15,205	34,478	126.8
<b>Base Metals:</b>			
Nickel and other products(1) . . . . .	3,947	4,712	19.4
Copper concentrate(2) . . . . .	682	934	37.0
Aluminum products . . . . .	2,050	2,554	24.6
Subtotal . . . . .	6,679	8,200	22.8
<b>Fertilizers:</b>			
Potash . . . . .	413	280	(32.2)
Phosphates . . . . .	-	1,211	-
Nitrogen . . . . .	-	337	-
Others fertilizer products . . . . .	-	18	-
Subtotal . . . . .	413	1,846	347.0
<b>Logistics:</b>			
Railroads . . . . .	838	1,107	32.1
Ports . . . . .	264	353	33.7
Shipping . . . . .	2	5	-
Subtotal . . . . .	1,104	1,465	32.7
Other products and services(3) . . . . .	538	492	(8.6)
Gross revenues . . . . .	23,939	46,481	94.2
Value added tax . . . . .	(628)	(1,188)	89.2
Net operating revenues . . . . .	US\$23,311	US\$45,293	94.3

(1) Includes nickel co-products and by-products (copper, precious metals, cobalt and others).

(2) Does not include copper produced as a nickel co-product.

(3) Includes kaolin, pig iron and energy.

The following table summarizes, for the periods indicated, the distribution of our operating revenues based on the geographical location of our customers.

	Operating revenue by destination					
	2008		2009		2010	
	(US\$ million)	(% of total)	(US\$ million)	(% of total)	(US\$ million)	(% of total)
<b>North America</b>						
Canada . . . . .	US\$ 1,516	3.9%	US\$ 886	3.7%	US\$ 1,126	2.4%
United States . .	2,467	6.4	832	3.5	828	1.8
Mexico . . . . .	253	0.7	24	0.1	74	0.2
	4,236	11.0	1,742	7.3	2,028	4.4
<b>South America</b>						
Brazil . . . . .	6,675	17.3	3,655	15.3	8,150	17.5
Other . . . . .	1,050	2.8	342	1.4	810	1.7
	7,725	20.1	3,997	16.7	8,960	19.3
<b>Asia</b>						
China . . . . .	6,706	17.4	9,003	37.6	15,379	33.1
Japan . . . . .	4,737	12.3	2,412	10.1	5,240	11.3
South Korea . .	1,474	3.8	883	3.7	1,934	4.2
Taiwan . . . . .	954	2.5	681	2.8	1,179	2.5
Other . . . . .	1,890	4.9	654	2.7	1,059	2.2
	15,761	40.9	13,633	56.9	24,791	53.3
<b>Europe</b>						
Germany . . . . .	2,510	6.5	1,085	4.5	3,092	6.7
United Kingdom	1,261	3.3	492	2.1	1,060	2.3
Italy . . . . .	822	2.1	335	1.4	1,043	2.2
France . . . . .	815	2.1	336	1.4	716	1.5
Belgium . . . . .	910	2.4	336	1.4	440	0.9
Other . . . . .	3,132	8.1	1,452	6.1	2,562	5.5
	9,450	24.5	4,036	16.9	8,912	19.2
<b>Rest of the world .</b>	1,337	3.5	531	2.2	1,790	3.9
<b>Total . . . . .</b>	<b>US\$ 38,509</b>	<b>100.0%</b>	<b>US\$ 23,939</b>	<b>100.0%</b>	<b>US\$ 46,481</b>	<b>100.0%</b>

### Revenues by segment

*Iron ore.* Gross revenues from sales of iron ore increased 105.6% in 2010 compared to 2009, primarily as a result of a 84.9% increase in the average sale price and a 11.2% increase in volume sold. The increase in the average sales price resulted from strong demand for iron ore. The increase in volume was a consequence of the worldwide economic recovery. Given strong demand pressure, the market for iron ore has been very tight, with rising spot prices and a decreasing stock-to-consumption ratio in China relative to last year.

*Iron ore pellets.* Gross revenues from sales of iron ore pellets increased 373.5%, driven by a 118.5% increase in volume sold due to increased utilization of production capacity, and a 118.7% increase in the average sales price due to strong demand.

*Manganese ore.* Gross revenues from sales of manganese ore increased 77.9%, driven by a 56.5% increase in the average sale price and a 13.5% increase in volume sold due to the demand from the steel industry, partially offset by stoppage occurred in mines for operational maintenance.

*Ferroalloys.* Gross revenues from sales of ferroalloys increased 78.5%, due primarily to a 60.7% increase in volume sold in connection with the recovery of the steel industry and an 10.9% increase in the average sales price.

*Coal.* Gross revenues from sales of coal increased 52.5%, mainly due to the consolidation of sales from Vale Colombia, which Vale acquired in the first quarter of 2009, as well as higher average sales price reflecting better market conditions. The improvement in sales prices for metallurgical coal reflected new



quarterly index-based pricing arrangements with our customers similar to those we adopted in our iron ore business. Metallurgical coal revenues increased by 57.9% due to high prices (29.8% higher than in 2009) and higher volumes sold (21.6% higher than in 2009). Thermal coal revenues increased by 44.7% due to higher prices (5.7% higher than in 2009) and higher volumes sold (37.3% higher than in 2009).

*Nickel and other products.* Gross revenues from this segment increased 19.4%, mainly due to an increase in prices, partially offset by a decrease in volumes as a result of the labor strikes at our production plants in Sudbury and Voisey Bay. The segment includes sales of nickel (representing 57.5% of base metals gross revenues for 2010) and sales of copper that is a by-product of our nickel operations. Gross revenues from nickel sales increased 17.6%, primarily due to a 50.6% increase in the average sales price due to an increase in the LME price, which was partially offset by a 22.8% decrease in volume sold. Gross revenues from copper sales increased 50.1%, primarily due to a 59.5% increase in the average sales price, which was partially offset by a 23.0% decrease in the volume sold.

*Copper concentrate.* Gross revenues from sales of copper concentrate increased 37.0%, reflecting a 40.5% increase in the average sales price as a result of structural limitations on growth in the supply of concentrates. The increase was partially offset by a 2.6% decrease in volume sold.

*Aluminum products.* Gross revenues from sales of aluminum-related products increased 24.6%, primarily reflecting an increase in the average sales price as a result of an increase in the LME price. We transferred our aluminum business in Albras, Alunorte and CAP, among other items, to Hydro in February 2011.

*Potash.* Gross revenues from sales of potash decreased 32.2%, mainly due to a 21.2% decrease in the average sales price and a 13.9% decrease in volume sold explained by the recovery of inventories.

*Phosphates and nitrogen.* We had revenues from sales of phosphates and nitrogen for the first time in 2010 due to the acquisition of fertilizer assets in Brazil.

*Logistics services.* Gross revenues from sales of logistics services increased 32.7%. Revenues from railroad transportation increased 32.1%, primarily reflecting the rise in transportation of agricultural products and steel industry inputs and products in 2010. Revenues from port operations increased 33.7% due to changes in the mix of goods carried.

*Other products and services.* Gross revenues from sales of other products and services decreased 8.6%, primarily due to the classification of kaolin within discontinued operations in the first quarter of 2010.

## Operating costs and expenses

	Year ended December 31,		% change
	2009	2010	
	(US\$ million)		
Cost of ores and metals . . . . .	US\$ 9,853	US\$ 13,326	35.2
Cost of aluminum products . . . . .	2,087	2,108	1.0
Cost of logistic services . . . . .	779	1,040	33.5
Cost of fertilizer products . . . . .	173	1,556	799.4
Others . . . . .	729	784	7.5
Cost of goods sold . . . . .	13,621	18,814	38.1
Selling, general and administrative expenses . . . . .	1,130	1,701	50.5
Research and development . . . . .	981	878	(10.5)
Other costs and expenses . . . . .	1,522	2,205	44.9
Total operating costs and expenses . . . . .	US\$ 17,254	US\$ 23,598	36.8

## Cost of goods sold

The following table summarizes the components of our cost of goods sold for the periods indicated.

	Year ended December 31,		% change
	2009	2010	
	(US\$ million)		
Outsourced services	US\$ 2,264	US\$ 2,740	21.0
Materials costs	2,698	2,861	6.0
Energy:			
Fuel	1,277	1,880	47.2
Electric energy	844	1,211	43.5
Subtotal	2,121	3,091	45.7
Acquisition of iron ore and pellets	155	963	521.3
Acquisition of other products:			
Nickel	271	358	32.1
Aluminum	279	285	2.2
Other	38	58	52.6
Subtotal	588	701	19.2
Personnel	1,939	2,081	7.3
Depreciation and depletion	2,332	2,803	20.2
Others	1,524	3,574	134.5
Total	US\$ 13,621	US\$ 18,814	38.1

- Our total cost of goods sold increased 38.1% from 2009 to 2010. The increase is attributable to the increase in volume sold and to exchange rate variations, partially offset by our continuous efforts to reduce costs. Of the US\$5.193 billion increase in cost of goods sold, higher volume sold and exchange rate variations were responsible for US\$1.775 billion and US\$1.323 billion, respectively. Also contributing to the increase were a higher level of purchases of third-party products for resale to meet demand and our acquisitions in the fertilizers segment. These factors were partially offset by our efforts to reduce costs by optimizing the flow of materials, optimizing plant and labor utilization, and cutting administrative costs, among other measures.
- Outsourced services costs (primarily for operational services such as waste removal, cargo freight and maintenance of equipment and facilities) increased 21.0%, driven primarily by higher volume sold and the appreciation of the Brazilian *real* against the U.S. dollar.
- Materials costs increased 6.0%, driven primarily by higher volume sold and the appreciation of the Brazilian *real* against the U.S. dollar, partially offset by lower maintenance expense in 2010 reflecting accelerated expenditures in 2009.
- Energy costs increased 45.7%, driven primarily by higher volume sold, higher average prices and the appreciation of the Brazilian *real* against the U.S. dollar.
- Costs for the acquisition of products from third parties increased 124.0%, driven primarily by the purchase of iron ore and iron ore pellets. In 2009, Vale did not purchase iron ore pellets from third parties, due to the lower level of demand during the financial crisis.
- Personnel costs increased 7.3%, due primarily to higher production volumes and the appreciation of the Brazilian *real* against the U.S. dollar, partially offset by lower production of nickel.

- Depreciation and depletion expense increased 20.2%, driven primarily by the general increase in volume sold and the appreciation of the Brazilian *real* against the U.S. dollar, partially offset by lower volumes of nickel sold due to the strikes.
- Other costs of goods sold increased 134.5%, primarily reflecting higher expenditures for mining royalties, inventory adjustments in the ferrous minerals business, the effects of fair value inventory adjustments made as part of the purchase price allocation of US\$98 million in connection with our acquisition of the fertilizers business and increased demurrage costs as a result of greater activity during 2010.

#### **Selling, general and administrative expenses**

Selling, general and administrative expenses increased by 50.5%, or US\$571 million, due primarily to higher volumes sold, increased personnel expenses, outsourced services and exchange rate variations.

#### **Research and development expenses**

Research and development expenses decreased by 10.5%. The US\$103 million decrease primarily reflects changes in the status of some gas and energy projects that we determined were viable, so the related expenditures were recorded as capital expenditures rather than expenses, as in prior periods.

#### **Other costs and expenses**

Other costs and expenses increased by US\$683 million, mainly due to provisions for losses on property, plant and equipment and disposal of materials, start-up expenses related to our New Caledonia operations and pre-operating expenses related to our Onça Puma, Salobo and Moatize projects.

## Operating income by segment

The following table provides information about our operating income by segment and as a percentage of revenues for the years indicated.

	Year ended December 31,			
	2009		2010	
	Segment operating income (loss) (US\$ million)	(% of net operating revenues)	Segment operating income (loss) (US\$ million)	(% of net operating revenues)
<b>Bulk materials:</b>				
Iron ore . . . . .	US\$ 6,659	52.6%	US\$ 17,347	66.7%
Iron ore pellets . . . . .	19	1.5	3,511	57.2
Manganese ore . . . . .	31	21.7	105	41.8
Ferroalloys . . . . .	34	10.4	270	44.9
Coal . . . . .	(105)	–	(169)	–
<b>Base metals:</b>				
Nickel and other products . . . . .	(361)	–	165	3.5
Copper concentrate . . . . .	129	19.5	197	21.8
Aluminum products . . . . .	(191)	–	286	11.3
<b>Fertilizers:</b>				
Potash . . . . .	180	45.5	(29)	–
Phosphates . . . . .	–	–	(27)	–
Nitrogen . . . . .	–	–	(41)	–
Others fertilizer products . . . . .	–	–	1	8.3
<b>Logistics:</b>				
Railroads . . . . .	65	9.3	85	9.2
Ports . . . . .	36	15.9	47	15.4
Shipping . . . . .	(7)	–	(8)	–
Other products and services . . . . .	(432)	–	(45)	–
<b>Total . . . . .</b>	<u>US\$ 6,057</u>	<u>26.0%</u>	<u>US\$ 21,695</u>	<u>47.9%</u>

Operating income as a percentage of net operating revenues increased from 26.0% in 2009 to 47.9% in 2010. In general, the segments benefited from higher prices and volumes sold, as summarized in more detail below.

- The increase in operating margin for iron ore and iron ore pellets primarily reflects higher average sales prices and volumes sold.
- The increase in operating margins for manganese and ferroalloys is attributable to higher sales prices and volumes sold as a result of the recovery of the steel industry.
- The decrease in operating margin for coal is attributable to higher expenses related to the pre-operating phase of Vale Moçambique.
- The increase in operating margins for nickel and other products is attributable to higher market prices.
- The negative operating margin for our fertilizer segment is attributable primarily to the fair value allocated to inventories as part of the purchase accounting adjustments in connection with the 2010 acquisitions.
- The increase in operating margin in the aluminum products segment resulted primarily from higher average sales prices.

## Non-operating income (expenses)

The following table details our net non-operating income (expenses) for the periods indicated.

	Year ended December 31,	
	2009	2010
	(US\$ million)	
Financial income . . . . .	US\$ 381	US\$ 290
Financial expenses . . . . .	(1,558)	(2,646)
Gains (losses) on derivatives, net . . . . .	1,528	631
Foreign exchange and monetary gains, net . . . . .	675	344
Gain on sale of assets . . . . .	40	–
Non-operating income (expenses) . . . . .	US\$ 1,066	(US\$ 1,381)

We had net non-operating expenses of US\$1.381 billion in 2010, compared to net non-operating income of US\$1.066 billion in 2009. The change in net non-operating income (expenses) was affected by the following factors:

- A decrease in financial income of US\$91 million, mainly due to a lower average cash balance.
- An increase in financial expenses of US\$1.088 billion, principally due to fair value changes in our liability under our shareholder debentures, IOF (financial operations tax) charges related to the conversion of our mandatorily convertible notes due June 2010, and higher financial interest due to a higher average level of debt.
- Lower foreign exchange and indexation gains due to foreign exchange loss, resulting from the combination of lower cash balances, treasury positions in U.S. dollars in 2010 and appreciation of the Brazilian *real* against the U.S. dollar in 2010.
- No gain on sales of assets in 2010, compared to a US\$40 million gain in 2009. The net gain in 2009 was mainly attributable to the sale of shares of Usiminas.

## Income taxes

For 2010, we recorded net income tax expense of US\$3.705 billion, compared to US\$2.100 billion in 2009. The effective tax rate on our pretax income was 18%, lower than the statutory rate, mainly because of a retroactive tax benefit eligible for recognition this year related to our Carajás iron ore operations and the tax benefit of shareholder distributions categorized as interest on shareholders' equity. For more information see Note 6 to our consolidated financial statements. Exchange variations directly impact the exchange gains or losses recognized on transactions between the parent company and certain subsidiaries with lower statutory tax rates. Although those gains and losses are eliminated from reported consolidated pretax amounts in the consolidation and currency re-measurement process, they are not eliminated for tax purposes since in Brazil there is no consolidated income tax regime. Our effective tax rate has historically been lower than the Brazilian statutory rate because: (i) income of some non-Brazilian subsidiaries is subject to lower rates of tax; (ii) we are entitled under Brazilian law to deduct the amount of our distributions to shareholders that we classify as interest on shareholders' equity; (iii) we benefit from tax incentives applicable to our earnings on production in certain regions of Brazil; and (iv) functional currency movements on some non-Brazilian subsidiaries are not taxable under Brazilian law. In addition, some of the foreign exchange variations that affect our operating results are not taxable.

## Affiliates and joint ventures

Our equity in the results of affiliates and joint ventures resulted in a net gain of US\$987 million in 2010, compared to a net gain of US\$433 million in 2009. Our joint venture Samarco represents

US\$798 million of the 2010 amount, and the increase in 2010 is attributable to higher sales volume and higher prices for iron ore pellets.

## Results of operations—2009 compared to 2008

### Revenues

Our net operating revenues decreased 37.7%, to US\$23.311 billion, in 2009, as a result of a decline in both volume sold and sale prices. The following table summarizes our gross revenues by product and our net operating revenues for the periods indicated.

	Year ended December 31,		% change
	2008	2009	
	(US\$ million)		
Bulk materials:			
Iron ore . . . . .	US\$ 17,775	US\$ 12,831	(27.8)%
Iron ore pellets . . . . .	4,301	1,352	(68.6)
Manganese . . . . .	266	145	(45.5)
Ferroalloys . . . . .	1,211	372	(69.3)
Coal . . . . .	577	505	(12.5)
Subtotal . . . . .	24,130	15,205	(37.0)
Base Metals:			
Nickel and other products (1) . . . . .	7,829	3,947	(49.6)
Copper concentrate (2) . . . . .	893	682	(23.6)
Aluminum . . . . .	3,042	2,050	(32.6)
Subtotal . . . . .	11,764	6,679	(43.2)
Fertilizers			
Potash . . . . .	295	413	40.0
Logistic services . . . . .	1,607	1,104	(31.3)
Other products and services (3) . . . . .	713	538	(24.5)
Gross revenues . . . . .	38,509	23,939	(37.8)
Value-added tax . . . . .	(1,083)	(628)	42.0
Net operating revenues . . . . .	US\$ 37,426	US\$ 23,311	(37.7)%

(1) Includes copper, precious metals, cobalt and other by-products produced by Vale Canada.

(2) Does not include copper produced by Vale Canada.

(3) Includes kaolin, pig iron and energy.

*Iron ore.* Gross revenues from iron ore decreased by 27.8% primarily as a result of a 13.2% decrease in volume sold and a 16.8% decrease in the average sale price. Although 2009 benchmark prices were lower than 2008 benchmark prices—by 28.2% for fines and 44.5% for lumps—the average sale price for iron ore in 2009 was only 16.8% lower than in 2008. This is primarily because (i) some of the 2008 benchmark prices did not take effect until the second quarter of 2008, (ii) the 2009 benchmark prices took effect in the second quarter of 2009 and (iii) we began selling on a cost and freight basis in early 2009 in accordance with a more flexible stance towards iron ore pricing.

*Iron ore pellets.* Gross revenues from iron ore pellets decreased by 68.6% due to a 43.9% reduction in volume sold as a result of weakened demand, and a 44.0% decrease in average sale prices. During an economic downturn, demand for iron ore pellets tends to be negatively affected earlier and more strongly than the demand for iron ore fines.

*Manganese ore.* Gross revenues from manganese ore decreased by 45.5% due primarily to lower prices. The effect of lower prices was partially offset by higher volume sold as a result of strong Chinese demand.

*Ferrous alloys.* Gross revenues from ferrous alloys decreased by 69.3% due to a 48.5% decline in average selling prices and a 36.1% decrease in volume sold. The decline in volume is primarily attributable to a decline in demand.

*Nickel and other products.* Gross revenues from this segment decreased by 49.6%, mainly due to the following factors:

- Gross revenues from nickel sales decreased 45.4%, to US\$3.260 billion in 2009 from US\$5.970 billion in 2008. Due to weaker demand, average nickel prices declined 32.6%. Volume sold declined by 18.8% in 2009, primarily due to lower demand and the shutdown of our Sudbury and Voisey Bay operations as a result of labor strikes in the second half of 2009.
- Gross revenues from copper sales decreased by 60.5%, from US\$1.136 billion in 2008 to US\$449 million in 2009, primarily due to a 52.7% drop in volume sold due to the shutdowns described above.
- Gross revenues from sales of precious metals and other products decreased 61.4%, from US\$511 million in 2008 to US\$197 million in 2009, primarily due to a decline in volume sold.

*Copper concentrate.* Gross revenues from sales of copper concentrate decreased by 23.6% due to a 5.3% decrease in volume sold and a 19.3% decrease in the average sale price.

*Aluminum.* Gross revenues from our aluminum business decreased by 32.6%. This decrease is attributable to the following factors:

- Gross revenues from sales of aluminum decreased 44.7%, from US\$1.545 billion in 2008 to US\$855 million in 2009, primarily due to a 40% decline in the average sale price.
- Gross revenues from sales of alumina decreased 19.2%, from US\$1.470 billion in 2008 to US\$1.188 billion in 2009 due to a 34.9% lower average sale price. The decline was partially offset by a 24.3% increase in volume sold.
- Gross revenues from sales of bauxite decreased 74.1%, from US\$27 million in 2008 to US\$7 million in 2009, due to a reduction in volume sold.

*Potash.* Gross revenues from sales of potash increased by 40.0%. The increase was due to a 58.7% increase in volume sold as a result of the strong performance of the Brazilian agricultural sector, which was partially offset by an 11.8% decline in average selling prices compared to the prior year.

*Logistics services.* Gross revenues from logistics services decreased by 31.3%. The decrease reflects the following factors:

- Revenues from railroad transportation decreased by 35.7%, from US\$1.303 billion in 2008 to US\$838 million in 2009, primarily reflecting the drop in Brazilian exports in 2009, which caused a sharp decline in the volume of steel inputs and products transported.
- Revenues from port operations decreased by 13.2%, from US\$304 million in 2008 to US\$264 million in 2009, reflecting weaker demand.

*Other products and services.* Gross revenues from other products and services decreased from US\$713 million in 2008 to US\$538 million in 2009.

## Operating costs and expenses

	Year ended December 31,		% change
	2008	2009	
	(US\$ million)		
Cost of ores and metals . . . . .	US\$ 14,055	US\$ 10,026	(28.7)%
Cost of logistic services . . . . .	930	779	(16.2)
Cost of aluminum products . . . . .	2,267	2,087	(7.9)
Others . . . . .	389	729	87.4
Cost of goods sold . . . . .	17,641	13,621	(22.8)
Selling, general and administrative expenses . . . . .	1,748	1,130	(35.4)
Research and development . . . . .	1,085	981	(9.6)
Impairment of goodwill . . . . .	950	–	(100.0)
Other costs and expenses . . . . .	1,254	1,522	21.4
Total operating costs and expenses . . . . .	US\$ 22,678	US\$ 17,254	(23.9)%

### Cost of goods sold

The following table summarizes the components of our cost of goods sold for the periods indicated.

	Year ended December 31,		% change
	2008	2009	
	(US\$ million)		
Outsourced services . . . . .	US\$ 2,880	US\$ 2,264	(21.4)%
Materials costs . . . . .	2,900	2,698	(7.0)
Energy:			
Fuel . . . . .	1,842	1,277	(30.7)
Electric energy . . . . .	1,078	844	(21.7)
Subtotal . . . . .	2,920	2,121	(27.4)
Acquisition of iron ore and pellets . . . . .	1,179	155	(86.9)
Acquisition of other products:			
Nickel . . . . .	687	271	(60.6)
Aluminum . . . . .	317	279	(12.0)
Other . . . . .	31	38	22.6
Subtotal . . . . .	1,035	588	(43.2)
Personnel . . . . .	2,139	1,939	(9.4)
Depreciation and depletion . . . . .	2,664	2,332	(12.5)
Others . . . . .	1,924	1,524	(20.8)
Total . . . . .	US\$ 17,641	US\$ 13,621	(22.8)%

Our total cost of goods sold decreased 22.8% from 2008 to 2009. The decline is attributable to the decline in volume sold, exchange rate variations and our efforts to reduce costs. Of the US\$4.020 billion decline in cost of goods sold, lower volume sold and exchange rate variations were responsible for US\$2.738 billion and US\$895 million, respectively. Further details are set forth below:

- *Outsourced services.* Outsourced services costs decreased by 21.4% in 2009 due to lower volume sold.
- *Material costs.* Material costs decreased by 7.0% in 2009, primarily reflecting lower volume sold, the effect of which was partially offset by increased maintenance expenses due to the acceleration of scheduled maintenance for some operations and the higher value of the Brazilian *real* against the U.S. dollar.
- *Energy costs.* Energy costs decreased by 27.4% in 2009 driven primarily by lower volume sold, lower average prices and exchange rate changes.



- *Personnel costs.* Personnel costs decreased by 9.4%, mainly due to lower staffing levels and the effects of idle capacity, which were offset by the impact of wage increases pursuant to a two-year agreement with our Brazilian employees entered into in November 2009.
- *Acquisition of products.* Costs related to the acquisition of iron ore and iron ore pellets decreased by 86.9%, and costs related to the acquisition of other products declined by 43.2%. These declines were primarily driven by lower purchased volumes of iron ore, iron ore pellets and nickel products and lower average prices of purchased products.
- *Other costs.* The decrease of US\$400 million in other costs was mainly due to lower lease payments for the Tubarão pellet plants and lower demurrage charges, both due to lower volume sold.

#### **Selling, general and administrative expenses**

Selling, general and administrative expenses decreased by 35.4%, or US\$618 million. The year-on-year comparison reflects an adjustment of US\$316 million related to copper sales recognized in 2008, when sharply declining copper prices in the fourth quarter resulted in an adjustment to sales based on provisional prices in earlier quarters.

#### **Research and development expenses**

Research and development expenses decreased by 9.6%. The US\$104 million decrease primarily reflects lower research expenditures related to copper, nickel, coal and logistics and was partially offset by an increase in research expenditures related to gas and energy.

#### **Impairment of goodwill**

No impairment was registered in 2009. In 2008, we recognized a US\$950 million impairment of the goodwill associated with our 2006 acquisition of Vale Canada.

#### **Other costs and expenses**

Other costs and expenses increased by US\$268 million, primarily as a result of an idle capacity increase of US\$880 million. The impact on the comparison was partially offset by the effects in 2008 of one-off tax assessments on third-party railroad transportation services used in our iron ore operations in previous years (US\$204 million), a provision for loss on materials (US\$199 million) and a fair value assessment of nickel inventories (US\$77 million).

## Operating income by segment

The following table provides information about our operating income by segment and as a percentage of revenues for the years indicated.

	Year ended December 31,			
	2008		2009	
	Segment operating income (loss) (US\$ million)	(% of net operating revenues)	Segment operating income (loss) (US\$ million)	(% of net operating revenues)
Bulk materials:				
Iron ore . . . . .	US\$ 9,988	57.4%	US\$ 6,659	52.6%
Iron ore pellets . . . . .	1,606	39.1	19	1.5
Manganese ore . . . . .	169	67.3	31	21.7
Ferroalloys . . . . .	604	55.8	34	10.4
Coal . . . . .	103	17.9	(105)	-
Base metals:				
Nickel and other products . . . . .	1,131	14.4	(361)	-
Copper concentrate . . . . .	111	12.7	129	19.5
Aluminum products . . . . .	516	17.3	(191)	-
Fertilizers:				
Potash . . . . .	140	50.2	180	45.5
Logistics:				
Railroads . . . . .	246	22.4	65	9.3
Ports . . . . .	41	15.5	36	15.9
Shipping . . . . .	-	-	(7)	-
Others . . . . .	93	13.8	(432)	-
Total . . . . .	<u>US\$14,748</u>	<u>39.4%</u>	<u>US\$6,057</u>	<u>26.0%</u>

Our operating income decreased as a percentage of net operating revenues, from 39.4% in 2008 to 26.0% in 2009, due to lower shipment volumes and prices. The effects on individual segments are summarized below:

- The decrease in operating margin for iron ore and iron ore pellets primarily reflects lower average selling prices and volume sold.
- The decrease in operating margins for manganese and ferroalloys is attributable to lower prices.
- The decrease in operating margin for potash is attributable to lower prices.
- The decrease in operating margin for nickel and other products primarily reflects (i) the decline in average selling prices and volume sold and (ii) the shutdown of some operations as a result of the continuing strikes at some of our Canadian operations.
- The margin declines in the aluminum products segment resulted primarily from lower volume sold.
- The decrease in railroad margins declined due to lower volume of transported steel products.
- The increase in the copper concentrate margin reflects the effects of recognizing price adjustments in 2008.

## Non-operating income (expenses)

The following table details our net non-operating income (expenses) for the periods indicated.

	Year ended December 31,	
	2008	2009
	(US\$ million)	
Financial income . . . . .	US\$ 602	US\$ 381
Financial expenses . . . . .	(1,765)	(1,558)
Gains (losses) on derivatives, net . . . . .	(812)	1,528
Foreign exchange and monetary gains, net . . . . .	364	675
Gain on sale of assets . . . . .	80	40
Non-operating income (expenses) . . . . .	<u>US\$ (1,531)</u>	<u>US\$ 1,066</u>

We had net non-operating income of US\$1.066 billion in 2009, compared to net non-operating expenses of US\$1.531 billion in 2008. This change primarily reflects a US\$1.528 billion gain on derivatives in 2009, compared to a US\$812 million loss in 2008, primarily due to swaps of *real*-denominated debt into U.S. dollars. These transactions generated a US\$1.600 billion gain in 2009 compared to a US\$833 million loss in 2008. The change in net non-operating income was also affected by the following factors:

- A decrease in financial income, principally due to lower average interest rates on cash balances in 2009.
- A decrease in financial expenses, mainly due to lower floating interest rates.
- Higher foreign exchange gains due to the depreciation of the U.S. dollar.
- A US\$40 million net gain on sales of assets in 2009 compared to a US\$80 million gain on sales of assets in 2008. The net gain in 2009 was primarily attributable to the sale of shares of Usiminas (US\$153 million) and the sale of certain assets to Suzano (US\$61 million), partially offset by losses recognized on Valesul assets (US\$82 million) and UTE Barcarena (US\$70 million).

## Income taxes

For 2009, we recorded net income tax expense of US\$2.100 billion, compared to US\$535 million in 2008. Our effective tax rate has historically been lower than the Brazilian statutory rate because: (i) income of some non-Brazilian subsidiaries is subject to lower rates of tax; (ii) we are entitled under Brazilian law to deduct the amount of our distributions to shareholders that we classify as interest on shareholders' equity; (iii) we benefit from tax incentives applicable to our earnings on production in certain regions of Brazil, and (iv) functional currency movements on some non-Brazilian subsidiaries are not taxable under Brazilian law. In addition, some of the foreign exchange variations that affect our operating results are not taxable. These variations produced a net exchange loss in 2009, after a net exchange gain in 2008, and contributed to the increase in net income tax expense in 2009.

## Affiliates and joint ventures

Our equity in the results of affiliates and joint ventures resulted in a gain of US\$433 million in 2009, compared to a gain of US\$794 million in 2008. The decrease was primarily due to lower prices and volume sold as a result of the global economic downturn.

## LIQUIDITY AND CAPITAL RESOURCES

### Overview

In the ordinary course of business, our principal funding requirements are for capital expenditures, dividend payments and debt service. We have historically met these requirements by using cash generated from operating activities and through borrowings, supplemented in some cases by dispositions of assets. In 2010, we issued bonds totaling US\$1.75 billion and €750 million, and we entered into a US\$500 million pre-export finance agreement. For 2011, we have budgeted capital expenditures of US\$24 billion, and announced a minimum dividend payment of US\$4 billion. In addition to the minimum dividend, on January 31, 2011, we paid an extraordinary dividend of US\$1 billion. We expect our operating cash flow and cash holdings to be sufficient to meet these anticipated requirements. We also regularly review acquisition and investment opportunities, and when suitable opportunities arise we make acquisitions and investments to implement our business strategy. We may fund these investments with borrowings.

### Sources of funds

Our principal sources of funds are operating cash flow and borrowings. Our operating activities generated cash flows of US\$19.7 billion in 2010.

Our major new borrowing transactions in 2010 and to date in 2011 are summarized below:

- In March 2010, we issued €750 million of 4.375% notes due 2018 in a public offering in Europe.
- In September 2010, our wholly owned finance subsidiary Vale Overseas issued notes of two series, both guaranteed by Vale: US\$1 billion of 4.625% notes due 2020, and US\$750 million of 6.875% notes due 2039. The notes due 2039 issued in September 2010 were a reopening of US\$1 billion of notes previously issued in November 2009.
- In June 2010, we entered into a US\$500 million pre-export financing agreement with a Brazilian bank, with final maturity in 2020.
- In June 2010, we established equipment financing facilities in the total amount of R\$774 million, or US\$430 million, with Banco Nacional de Desenvolvimento Econômico e Social—BNDES (the Brazilian national development bank). As of December 31, 2010, we have drawn the equivalent of US\$123 million under this facility.
- In September 2010, we entered into agreements with The Export-Import Bank of China and the Bank of China Limited to finance the construction of 12 large ore carriers at the Rongsheng shipyard in China. The agreements provide for a credit line of up to US\$1.229 billion, which corresponds to 80% of the amount required to fund the construction of the vessels. The credit line has a 13-year final maturity, and funds will be disbursed during the next 3 years, according to the construction schedule. As of December 31, 2010, we had drawn US\$291.2 million under this facility.
- In October 2010, we entered into agreements with Export Development Canada (“EDC”), Canada’s export credit agency, for the financing of our capital expenditure program. Pursuant to the agreements, EDC will provide a facility in an amount up to US\$1 billion, of which half will be available for investments in Canada and the other half will be related to existing and future

Canadian purchases of goods and services. As of December 31, 2010, Vale had drawn US\$250 million under this facility.

- In January 2011, we entered into an agreement with a group of commercial banks with the guarantee of the official Italian credit agency, Servizi Assicurativi Del Commercio Estero S.p.A (“SACE”), to provide us with a US\$300 million facility with a final tenor of 10 years to guarantee lines of credit provided by commercial banks.

## Uses of funds

### Capital expenditures

Capital expenditures amounted to US\$12.7 billion in 2010, and we have budgeted US\$24 billion for 2011. Our actual capital expenditures may differ from the budgeted amount for a variety of reasons, including unexpected changes in currency prices. These capital expenditure figures include some amounts that are treated as current expenses for accounting purposes, such as expenses for project development, maintenance of existing assets, and research and development. For more information about the specific projects for which we have budgeted funds, see our report on Form 6-K furnished to the Securities and Exchange Commission on October 28, 2010.

### Distributions

We paid total dividends of US\$3 billion in 2010 (including distributions classified for tax purposes as interest on shareholders’ equity). The minimum dividend announced for 2011 is US\$4.0 billion. The first installment of this dividend, in the amount of US\$2.0 billion, will be paid on April 30, 2011. In addition to the minimum dividend, on January 31, 2011, we paid an extraordinary dividend of US\$1 billion as proposed by our Board of Executive Officers in September 2010 and approved by our Board of Directors in January 2011.

### Share repurchases

We repurchased US\$2.0 billion of our common and preferred shares during the fourth quarter of 2010. For further information, see *Purchases of equity securities by the issuer and affiliated purchasers*.

## Debt

At December 31, 2010, we had aggregate outstanding debt of US\$24.553 billion, excluding debt of US\$791 million that was owed by our aluminum subsidiaries held for sale. Our outstanding long-term debt (including the current portion of long-term debt and accrued charges) was US\$24.414 billion, compared with US\$22.831 billion at the end of 2009. At December 31, 2010, US\$2 million of our debt was secured by liens on some of our assets. At December 31, 2010, the average debt maturity was 9.92 years (excluding the debt of the aluminum subsidiaries), compared to 9.17 years in 2009.

Our short-term debt consists primarily of U.S. dollar-denominated trade financing, mainly in the form of import financing with commercial banks. At December 31, 2010, we had US\$139 million of outstanding short-term debt.

Our major categories of long-term indebtedness are as follows. The amounts given below include the current portion of long-term debt and exclude accrued charges.

- *U.S. dollar-denominated loans and financing (US\$4.914 billion at December 31, 2010).* These loans include export financing lines, import finance from export credit agencies, and loans from commercial banks and multilateral organizations. The largest facility is a pre-export financing facility

linked to future receivables from export sales that was originally entered in the amount of US\$6.0 billion. The outstanding amount at December 31, 2010 was US\$2.650 billion.

- *U.S. dollar-denominated fixed rate notes (US\$10.242 billion at December 31, 2010).* Through our finance subsidiary Vale Overseas Limited, we have issued in public offerings fixed-rate debt securities guaranteed by Vale. The amount of these securities outstanding at December 31, 2010 was US\$9.131 billion. Our subsidiary Vale Canada has issued fixed rate debt in the amount of US\$1.111 billion.
- *Euro-denominated fixed rate notes (US\$1.003 billion at December 31, 2010).* We have one series of outstanding fixed-rate debt securities due in March 2018 that we sold in a public offering in Europe.
- *Real-denominated non-convertible debentures (US\$2.767 billion at December 31, 2010).* In November 2006, we issued *real*-denominated non-convertible debentures with four- and seven-year maturities in an aggregate amount equivalent at the time of issuance to US\$2.6 billion. The first series matured in 2010. The second series, in an aggregate principal amount of R\$4 billion, matures in 2013 and bears interest at the Brazilian CDI interest rate plus 0.25% per year.
- *Perpetual notes (US\$78 million at December 31, 2010).* We have issued perpetual notes that are exchangeable for 48 billion preferred shares of our subsidiary MRN. Interest is payable on the notes in an amount equal to dividends paid on the underlying preferred shares.
- *Other debt (US\$5.067 billion at December 31, 2010).* We have outstanding debt, principally owed to BNDES and Brazilian commercial banks denominated in Brazilian *reais*, and loans and financing in currencies other than *reais*.

We have framework agreements with the Japan Bank for International Cooperation and Nippon Export and Investment Insurance (“NEXI”) for the financing of mining, logistics and power generation projects. In November 2009, we entered into a US\$300 million export facility agreement, through our subsidiary PTI, with Japanese financial institutions to finance the construction of the Karebbe hydroelectric power plant on the Larona River in Sulawesi, Indonesia. As of December 31, 2010, we had drawn US\$150 million under this facility.

We also have a credit line for R\$7.3 billion, or US\$4.3 billion, with BNDES to help finance our investment program. As of December 31, 2010, we had drawn the equivalent of US\$1.153 billion under this facility.

We have revolving credit facilities with syndicates of international banks. At December 31, 2010, the total amount available under these facilities was US\$1.6 billion, of which US\$850 million is under facilities of our subsidiary Vale International and the balance is under facilities of our subsidiary Vale Canada. As of December 31, 2010, neither Vale International nor Vale Canada had drawn any amounts under these facilities, but US\$114 million of letters of credit were issued and outstanding pursuant to Vale Canada’s facility. In April 2011, we entered into a contract for a revolving credit line facility of US\$3 billion maturing in 2016, supplied by a bank syndicate.

Some of our long-term debt instruments contain financial covenants. Our principal covenants require us to maintain certain ratios, such as debt to EBITDA and interest coverage. We believe that our existing covenants will not significantly restrict our ability to borrow additional funds as needed to meet our capital requirements.

## SHAREHOLDER DEBENTURES

At the time of the first stage of our privatization in 1997, we issued shareholder revenue interests known in Brazil as “*debentures participativas*” to our then-existing shareholders. The terms of the debentures were established to ensure that our pre-privatization shareholders, including the Brazilian government, would participate alongside us in potential future financial benefits that we derive from exploiting certain mineral resources that were not taken into account in determining the minimum purchase price of our shares in the privatization. In accordance with the debentures deed, holders have the right to receive semi-annual payments equal to an agreed percentage of our net revenues (revenues less value-added tax, transport fee and insurance expenses related to the trading of the products) from certain identified mineral resources that we owned at the time of the privatization, to the extent that we exceed defined thresholds of sales volume relating to certain mineral resources, and from the sale of mineral rights that we owned at that time. Our obligation to make payments to the holders will cease when the relevant mineral resources are exhausted.

We have been making semi-annual payments to holders of shareholder debentures, which reached US\$11 million in 2008, US\$7 million in 2009 and US\$10 million in 2010. See Note 21 to our consolidated financial statements for a description of the terms of the debentures.

## CONTRACTUAL OBLIGATIONS

The following table summarizes our contractual obligations at December 31, 2010. This table excludes other common non-contractual obligations that we may have, including pension obligations, deferred tax liabilities and contingent obligations arising from uncertain tax positions, all of which are discussed in the notes to our consolidated financial statements. The table includes obligations of our aluminum businesses that were classified as assets held for sale at December 31, 2010. We completed the transfer of those assets to Hydro in February 2011.

	Payments due by period				
	Total	Less than 1 year	201-2013 (US\$ million)	2014-2015	Thereafter
Long-term debt(1)	US\$24,071	US\$2,480	US\$4,428	US\$1,791	US\$15,371
Long-term debt associated with assets held for sale(1)	702	152	308	102	140
Short-term debt	139	139	0	0	0
Short-term debt associated with assets held for sale	86	86	0	0	0
Interest payments(2)	16,504	1,364	2,892	2,137	10,111
Interest payments associated with assets held for sale(2)	26	4	10	9	3
Operating lease obligations(3)	2,948	197	394	394	1,963
Purchase obligations(4)	15,753	6,313	4,030	1,724	3,687
Take-or-pay obligation associated with assets held for sale(5)	578	141	291	146	–
<b>Total</b>	<b>US\$60,807</b>	<b>US\$10,876</b>	<b>US\$12,353</b>	<b>US\$6,303</b>	<b>US\$31,275</b>

(1) Amounts include the current portion of long-term debt and do not include accrued charges.

(2) Consists of estimated future payments of interest on our loans, financings and debentures, calculated based on interest rates and foreign exchange rates applicable at December 31, 2010 and assuming (i) that all amortization payments and payments at maturity on our loans, financings and debentures will be made on their scheduled payments dates, and (ii) that our perpetual bonds are redeemed on the first permitted redemption date.

(3) Amounts include fixed payments related to the operating lease contracts for the pellet plants.

(4) Obligations to purchase materials. Amounts are based on contracted prices, except for purchases of iron ore from mining companies located in Brazil, which are based on 2010 average prices.

(5) Our former subsidiary Alunorte is committed under a take-or-pay agreement to purchase bauxite from MRN at a price that is determined by a formula based on prevailing world prices of aluminum. In several related transactions that closed in February 2011, we transferred our alumina and aluminum production interests in Albras, Alunorte and CAP, among other items, to Hydro and received shares that represent a 22.0% equity interest in Hydro as part of the consideration. The values in the table are based on year-end 2010 aluminum prices.

## OFF-BALANCE SHEET ARRANGEMENTS

At December 31, 2010, we did not have any off-balance sheet arrangements as defined in the SEC's Form 20-F. For information on our contingent liabilities see Note 21 to our consolidated financial statements.

## CRITICAL ACCOUNTING POLICIES AND ESTIMATES

We believe that the following are our critical accounting policies. We consider an accounting policy to be critical if it is important to our financial condition and results of operations and if it requires significant judgments and estimates on the part of our management. For a summary of all of our significant accounting policies, see Note 3 to our consolidated financial statements.

### **Mineral reserves and useful life of mines**

We regularly evaluate and update our estimates of proven and probable mineral reserves. Our proven and probable mineral reserves are determined using generally accepted estimation techniques. Calculating our reserves requires us to make assumptions about future conditions that are highly uncertain, including future ore prices, currency prices, inflation rates, mining technology, availability of permits and production costs. Changes in some or all of these assumptions could have a significant impact on our recorded proven and probable reserves.

One of the ways we make our ore reserve estimates is to determine the mine closure dates used in recording the fair value of our asset retirement obligations for environmental and site reclamation costs and the periods over which we amortize our mining assets. Any change in our estimates of total expected future mine or asset lives could have an impact on the depreciation, depletion and amortization charges recorded in our consolidated financial statements under cost of goods sold. Changes in the estimated lives of our mines could also significantly impact our estimates of environmental and site reclamation costs, which are described in greater detail below.

### **Environmental and site reclamation costs**

Expenditures relating to ongoing compliance with environmental regulations are charged against earnings or capitalized as appropriate. These ongoing programs are designed to minimize the environmental impact of our activities.

We recognize a liability for the fair value of our estimated asset retirement obligations in the period in which they are incurred, if a reasonable estimate can be made. We consider the accounting estimates related to reclamation and closure costs to be critical accounting estimates because:

- we will not incur most of these costs for a number of years, requiring us to make estimates over a long period;
- reclamation and closure laws and regulations could change in the future or circumstances affecting our operations could change, either of which could result in significant changes to our current plans;
- calculating the fair value of our asset retirement obligations requires us to assign probabilities to projected cash flows, to make long-term assumptions about inflation rates, to determine our



credit-adjusted risk-free interest rates and to determine market risk premiums that are appropriate for our operations; and

- given the significance of these factors in the determination of our estimated environmental and site reclamation costs, changes in any or all of these estimates could have a material impact on net income. In particular, given the long periods over which many of these charges are discounted to present value, changes in our assumptions about credit-adjusted risk-free interest rates could have a significant impact on the size of our provision.

Our Environmental Department defines the rules and procedures that should be used to evaluate our asset retirement obligations. The future costs of retirement of our mines and sites are reviewed annually, in each case considering the actual stage of exhaustion and the projected exhaustion date of each mine and site. The future estimated retirement costs are discounted to present value using a credit-adjusted risk-free interest rate. At December 31, 2010, we estimated the fair value of our aggregate total asset retirement obligations to be US\$1.368 billion.

### **Impairment of long-lived assets and goodwill**

We have made acquisitions that included a significant amount of goodwill, as well as intangible and tangible assets. Under generally accepted accounting principles, except for goodwill and indefinite-life intangible assets, all long-lived assets, including these acquired assets, are amortized over their estimated useful lives, and are tested to determine if they are recoverable from operating earnings on an undiscounted cash flow basis over their useful lives whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Factors that could trigger an impairment review include the following:

- significant underperformance relating to expected historical or projected future operating results of entities or business units;
- significant changes in the way we use the acquired assets or our overall business strategy; or
- significant negative industry or macroeconomic trends.

When we determine that the carrying value of definite-life intangible assets and long-lived assets may not be recoverable based upon verification of one or more of the above indicators of impairment, we measure any impairment loss based on a projected discounted cash flow method using a discount rate estimated pursuant to technical criteria to be commensurate with the risk inherent in our current business model.

We are required to assign goodwill to reporting units and to test each reporting unit's goodwill for impairment at least annually and whenever circumstances indicating that recognized goodwill might not be fully recovered are identified. In the first step of a goodwill impairment test, we compare a reporting unit's fair value with its carrying amount to identify any potential goodwill impairment loss. If the carrying amount of a reporting unit exceeds the unit's fair value, we must carry out the second step of the impairment test to measure the amount, if any, of the unit's goodwill impairment loss. Goodwill arising from a business combination with a continuing non-controlling interest must be tested for impairment by using an approach that is consistent with the approach that the entity used to measure the non-controlling interest at the acquisition date. For equity investees we determine annually whether there is an other-than-temporary decline in the fair value of the investment.

Following the global financial shock of 2008, which contributed to a sharp decline in commodity prices during the last quarter of 2008, we determined that the goodwill associated with the acquisition of Vale Canada, included within the reportable segment "Non-ferrous—nickel," was partially impaired as of December 31, 2008. The impairment charge recorded in operating results in the fourth quarter of 2008 was US\$950 million. We did not recognize any impairments in 2009 or 2010.

For impairment test purposes, management determined discounted cash flows based on approved budget assumptions. Gross margin projections were based on past performance and management's expectations of market developments. Information about sales prices is consistent with the forecasts included in industry reports, taking into account quoted prices when available and appropriate. The discount rates used reflect specific risks relating to the relevant assets in each reporting unit, depending on their composition and location.

Recognition of additional goodwill impairment charges in the future would depend on several estimates, including market conditions, recent actual results and management's forecasts. This information will be obtained when our assessment is updated during the fourth quarter of 2011, or earlier if impairment indicators are identified. It is not possible at this time to determine whether an impairment charge will be taken in the future and if it were to be taken, whether such charge would be material.

### **Derivatives**

We are required to recognize all derivative financial instruments, whether designated in hedging relationships or not, on our balance sheet and to measure such instruments at fair value. The gain or loss in fair value is included in current earnings, unless the derivative to which the gain or loss is attributable qualifies for hedge accounting. We have entered into cash flow hedges that qualify for hedge accounting. Unrealized fair value adjustments to cash flow hedges are recognized in other comprehensive income. We use well-known market participants' valuation methodologies to compute the fair value of instruments. To evaluate the financial instruments, we use estimates and judgments related to present values, taking into account market curves, projected interest rates, exchange rates, forward market prices and their respective volatilities, when applicable. We evaluate the impact of credit risk on financial instruments and derivative transactions, and we enter into transactions with financial institutions that we consider to have a high credit quality. The exposure limits to financial institutions are proposed annually by the Executive Risk Committee and approved by the Board of Executive Officers. The financial institution's credit risk tracking is performed making use of a credit risk valuation methodology that considers, among other information, published ratings provided by international rating agencies and other management judgments. During 2010, we implemented hedge accounting partially for an aluminum hedge, strategic nickel hedge and for a foreign exchange hedge. At December 31, 2010, we had US\$284 million of realized gains related to derivative instruments designated as cash flow hedges. In 2010, we recorded to the income statement gains of US\$631 million in relation to derivative instruments.

### **Income taxes**

We recognize deferred tax effects of tax losses carryforward and temporary differences in our consolidated financial statements. We record a valuation allowance when we believe that it is more likely than not that tax assets will not be fully recoverable in the future.

When we prepare our consolidated financial statements, we estimate our income taxes based on regulations in the various jurisdictions where we conduct business. This requires us to estimate our actual current tax exposure and to assess temporary differences that result from deferring treatment of certain items for tax and accounting purposes. These differences result in deferred tax assets and liabilities, which we show on our consolidated balance sheet. We must then assess the likelihood that our deferred tax assets will be recovered from future taxable income. To the extent we believe that recovery is not likely, we establish a valuation allowance. When we establish a valuation allowance or increase this allowance in an accounting period, we record a tax expense in our statement of income. When we reduce the valuation allowance, we record a tax benefit in our statement of income.

Determining our provision for income taxes, our deferred tax assets and liabilities and any valuation allowance to be recorded against our net deferred tax assets requires significant management judgment, estimates and assumptions about matters that are highly uncertain. For each income tax asset, we evaluate the

likelihood of whether some portion or the entire asset will not be realized. The valuation allowance made in relation to accumulated tax losses carryforward depends on our assessment of the probability of generation of future taxable profits within the legal entity in which the related deferred tax asset is recorded based on our production and sales plans, selling prices, operating costs, environmental costs, group restructuring plans for subsidiaries and site reclamation costs and planned capital costs.

### **Contingencies**

We disclose material contingent liabilities unless the possibility of any loss arising is considered remote, and we disclose material contingent assets where the inflow of economic benefits is probable. We discuss our material contingencies in Note 21 to our consolidated financial statements.

We record an estimated loss from a loss contingency when information available prior to the issuance of our financial statements indicates that it is probable that a future event will confirm that an asset has been impaired or a liability has been incurred at the date of the financial statements, and the amount of the loss can be reasonably estimated. In particular, given the nature of Brazilian tax legislation, the assessment of potential tax liabilities requires significant management judgment. By their nature, contingencies will only be resolved when one or more future events occurs or fails to occur, and typically those events will occur a number of years in the future. Assessing such liabilities, particularly in the Brazilian legal environment, inherently involves the exercise of significant management judgment and estimates of the outcome of future events.

The provision for contingencies at December 31, 2010, totaling US\$2.043 billion, consists of provisions of US\$748 million for labor, US\$510 million for civil, US\$746 million for tax and US\$39 million for other claims.

### **Employee post-retirement benefits**

We sponsor defined benefit pension plans covering some of our employees. The determination of the amount of our obligations for pension benefits depends on certain actuarial assumptions. These assumptions are described in Note 19 to our consolidated financial statements and include, among others, the expected long-term rate of return on plan assets and increases in salaries. In accordance with U.S. GAAP, actual results that differ from our assumptions and are not a component of net benefit costs for the year are recorded in other comprehensive income (loss).

## **RISK MANAGEMENT**

The aim of our risk management strategy is to promote enterprise-wide risk management, through an integrated framework that considers the impact on our business of not only market risk factors (market risk), but also risks arising from third party obligations (credit risk) and risks inherent in our operational processes (operational risk). In furtherance of this objective, our Board of Directors has established an enterprise-wide risk management policy and a risk management committee.

Our risk management policy requires that we regularly evaluate risk to our cash flow, as well as mitigation strategies. The Board of Executive Officers is responsible for the evaluation and approval of long-term risk mitigation strategies recommended by the risk management committee. The committee is responsible for overseeing and reviewing our risk management principles and risk management instruments, in addition to reporting periodically to the Board of Executive Officers regarding major risks and exposures and their impact on our cash flow. As of April 2011, the members of the risk management committee were: Guilherme Perboyre Cavalcanti, Chief Financial and Investor Relations Officer, Tito Martins, Executive Officer for Base Metals Operations, José Carlos Martins, Executive Officer responsible for Marketing, Sales & Strategy, Pedro Zinner, Corporate Finance Director and Mauro Neves, Planning, Development & Continuous Improvement Director.

In addition to our risk management governance model, we also rely on our corporate structure with its well-defined roles and responsibilities. The recommendation and execution of derivative transactions are implemented by different and independent areas. The risk management department is responsible for defining and proposing to the risk management committee, risk mitigation strategies consistent with our corporate strategy. The corporate finance department is responsible for the execution of risk mitigation strategies through the use of derivatives. The independence of these departments promotes effective control over these operations.

## Market risk

The consolidated market risk exposure and portfolio of derivatives are measured monthly and monitored in order to evaluate the financial results and the possible risk impacts on our cash flows, measured against the initial goals. Fair value changes in the derivatives portfolio are monitored weekly. We also periodically review the credit limits and creditworthiness of our hedging counterparties.

Considering the nature of our business and operations, the main market risks we face are interest rates, currency prices, commodity prices and input prices.

We recognize all derivatives on our balance sheet at fair value, and the gain or loss in fair value is recognized in our current earnings, except as described in the next paragraph. Fair value accounting of derivatives may introduce unintended volatility in our quarterly earnings. However, it does not generate volatility in our cash flows, given the nature of our derivatives transactions.

During 2010, we implemented hedge accounting partially for hedging against aluminum and nickel prices, and exchange rate volatility. Hedge accounting modifies the usual accounting treatment of a hedging instrument by changing the timing of recognition of gains and losses on the hedging instrument to enable gains and losses on the hedging instrument to be recognized in the income statement in the same period as offsetting losses or gains on the hedged item. This avoids much of the volatility in accounting results that would arise if the derivative gains and losses were recognized in the income statement, as otherwise required.

The asset (liability) balances at December 31, 2010 and 2009 and the movement in fair value of derivative financial instruments are shown in the following table.

	Interest rates (LIBOR)/ Currencies	Aluminum products	Copper/ Coal	Nickel	Freight	Fuel/ Natural Gas	Total
Fair value at January 1, 2009 . . . . .	US\$(571)	US\$0	US\$0	US\$32	US\$0	US\$(2)	US\$(541)
Financial settlement . . . . .	(241)	5	0	139	(37)	(11)	(146)
Unrealized gains (losses) in the year . . . . .	1,681	(90)	0	(188)	66	58	1,527
Effect of exchange rate changes . . . . .	1	(2)	0	(11)	0	4	(8)
Unrealized gain (loss) at December 31, 2009 . . . . .	<u>US\$870</u>	<u>US\$(87)</u>	<u>US\$0</u>	<u>US\$(28)</u>	<u>US\$29</u>	<u>US\$49</u>	<u>US\$833</u>
Fair value at January 1, 2010 . . . . .	US\$870	US\$(87)	US\$-	US\$(28)	US\$29	US\$49	US\$833
Financial settlement . . . . .	(1,329)	63	3	97	(25)	(35)	(1,226)
Unrealized gains (losses) in the year . . . . .	832	(36)	(5)	(137)	(5)	3	652
Effect of exchange rate changes . . . . .	18	(1)	-	1	(1)	(1)	16
Unrealized gain (loss) at December 31, 2010 . . . . .	<u>US\$391</u>	<u>US\$(61)</u>	<u>US\$(2)</u>	<u>US\$(67)</u>	<u>US\$(2)</u>	<u>US\$16</u>	<u>US\$275</u>

## Interest rate and foreign exchange rate risks

Our cash flows are exposed to the volatility of several different currencies against the U.S. dollar. While most of our product prices, representing around 90% of total revenue, are denominated or indexed to the U.S. dollar, most of our costs, disbursements and investments are denominated or indexed to currencies other than the U.S. dollar, mainly *reais* and Canadian dollars.

In order to reduce potential cash flow volatility arising from this currency mismatch, we use foreign exchange derivative instruments. Our currency and interest rate derivative portfolio consists basically of swaps to convert floating cash flows in *reais* to fixed or floating U.S. dollar cash flows, without any leverage.

We are also exposed to interest rate risk on loans and financings. Our U.S. dollar-denominated floating rate debt consists mainly of loans, including export pre-payments, bank loans and multilateral organization loans. The U.S. dollar floating rate debt is mainly subject to changes in LIBOR (London Interbank Offer Rate) in U.S. dollars. In order to mitigate the impact of interest rate volatility on our cash flows, we take advantage of natural hedges resulting from the positive correlation between metal prices and U.S. dollar floating interest rates. Where natural hedges are not present, we may opt to obtain the same effect using financial instruments.

Our floating rate debt denominated in *reais* includes debentures issued in the Brazilian market and loans provided by BNDES and commercial local banks. Interest on these obligations is mainly based on the CDI (Interbank Deposit Certificate), the benchmark interest rate in the Brazilian interbank market, and the TJLP, the benchmark Brazilian long-term interest rate.

The following table sets forth our floating and fixed rate long-term debt, categorized by Brazilian *reais* and other currencies, and as a percentage of our total long-term debt portfolio at the dates indicated, except for accrued charges and translation adjustments, as reflected in our consolidated financial statements.

	At December 31,			
	2009		2010	
	(US\$ million, except percentages)			
Floating rate debt:				
<i>Real</i> -denominated . . . . .	6,949	30.8%	7,476	30.2%
Denominated in other currencies . . . . .	6,764	30.0%	4,969	20.1%
Denominated in other currencies associated with assets held for sale(1) . . . . .	0	0.0%	702	2.8%
Fixed rate debt:				
<i>Real</i> -denominated . . . . .	0	0.0%	123	0.5%
Denominated in other currencies . . . . .	8,830	39.2%	11,503	46.4%
Subtotal . . . . .	22,544	100.0%	24,773	100.0%
Accrued charges . . . . .	287	–	343	–
Accrued charges associated with assets held for sale(1) . . . . .	0	–	3	–
Total . . . . .	22,831	–	25,118	–

(1) We transferred our aluminum business in Albras, Alunorte and CAP, among other items, to Hydro in February 2011, in exchange for a 22.0% equity interest in Hydro as part of the consideration.

The following table provides information about our debt obligations as of December 31, 2010. It presents the principal cash flows and related weighted average interest rates of these obligations by expected maturity date. Weighted average variable interest rates are based on the applicable reference rate at December 31, 2010. Actual cash flows of these debt obligations are denominated mainly in U.S. dollars or *reais*, as indicated.

	Weighted average interest rate(1)(2)	2011	2012	2013	2014	2015	To 2039	Total	Fair value cash flow at December 31, 2010(3)
	(%)	(US\$ million)							
<b>US\$-denominated</b>									
<i>Fixed rate:</i>									
Bonds . . . . .	6.57	6	402	124	0	300	9,411	10,242	11,229
Loans . . . . .	6.17	15	0	0	0	0	36	50	50
<i>Floating rate:</i>									
Loans . . . . .	1.80	343	123	116	126	126	676	1,510	1,445
Loans associated with assets held for sale(4) . . . . .	1.49	152	154	154	51	51	140	702	671
Trade finance . . . . .	1.54	2,025	375	400	0	0	500	3,300	3,181
Subtotal . . . . .		2,541	1,054	794	177	477	10,761	15,805	16,577
<b>Real-denominated</b>									
Fixed rate loans . . . . .	4.57	0	6	15	15	15	70	123	123
Floating rate loans . . . . .	9.55	77	199	2,644	894	294	3,000	7,109	7,490
Subtotal . . . . .		77	206	2,659	910	310	3,070	7,232	7,613
<b>Denominated in other currencies</b>									
<i>Fixed rate</i>									
Eurobonds . . . . .	4.38	0	0	0	0	0	1,003	1,003	1,011
Loans . . . . .	7.48	2	2	2	2	2	199	207	207
<i>Floating rate</i>									
loans . . . . .	3.90	13	10	10	9	7	33	81	80
Subtotal . . . . .		15	11	12	10	9	1,235	1,291	1,298
No maturity . . . . .		-	-	-	-	-	445	445	447
Total . . . . .		2,633	1,271	3,465	1,097	795	15,511	24,773	25,936

- (1) Weighted average interest rates do not take into account the effect of the derivatives.
- (2) Weighted average variable interest rates are based on the applicable reference rate at December 31, 2010.
- (3) Includes only long-term debt obligations.
- (4) We transferred our aluminum business in Albras, Alunorte and CAP, among other items, to Hydro in February 2011, in exchange for a 22.0% equity interest in Hydro as part of the consideration.

As of December 31, 2010, the total principal amount and interest of our *real*-denominated debt converted through swaps into U.S. dollars was US\$5.835 billion and the total principal amount and interest of our euro-denominated debt converted through swaps into U.S. dollars was US\$668 million, with an average cost in U.S. dollars of 3.35% per year after swap transactions and with maturity until September 2029. Most of those contracts are subject to semi-annual interest payments.

Some of these swap transactions have shorter maturity dates than similar notional amounts to the interest and principal payment dates of the debt instruments. The swaps tenor may be different from the debt instruments due to liquidity restrictions of the market. At each settlement date the financial results of the swap transaction partially offset the impact of the foreign dollar exchange rate in our obligations, contributing to a stable flow of cash disbursements in U.S. dollars for the interest and principal payments on our *real*-denominated debt.

In the event of an appreciation (depreciation) of the *real* against the U.S. dollar, the negative (positive) impact on our *real*-denominated debt obligations (interest and/or principal payment) measured in U.S. dollars will be largely offset by a positive (negative) effect from any existing swap transaction, regardless of the *real*/U.S. dollar exchange rate on the payment date.

*Protection program for real-denominated debt indexed to CDI*

In order to reduce cash flow volatility, we entered into swap transactions to convert to U.S. dollars the cash flows on debt instruments denominated in *reais* linked to CDI. In those swaps, Vale pays either fixed rates or floating LIBOR rates in U.S. dollars and receives payments linked to CDI. These instruments were used to convert cash flows from: debentures issued in 2006 with a nominal value of R\$5.5 billion (US\$2.5 billion at the disbursement date), credit export notes issued in 2008 with a nominal value of R\$2.0 billion (US\$1.1 billion at the disbursement date) and procurement financing obtained in 2006 and 2007 with a nominal value of R\$1.0 billion (US\$464 million at the disbursement dates).

Flow	Notional value at December 31,		Index	Average rate	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
	(million)					(US\$ million)	
<b>CDI vs. fixed rate swap</b>							
Receivable . . . . .	R\$ 5,542	R\$ 7,574	CDI	101.15%	2015	3,447	4,630
Payable . . . . .	US\$3,144	US\$3,670	USD	3.87%		(3,248)	(3,997)
Total . . . . .						199	633
<b>CDI vs. floating rate swap</b>							
Receivable . . . . .	R\$ 428	R\$ 792	CDI	103.50%	2015	272	477
Payable . . . . .	US\$ 250	US\$ 430	LIBOR	0.70%		(262)	(424)
Total . . . . .						10	52

*Protection program for real-denominated debt indexed to TJLP*

In order to reduce cash flow volatility, we entered into swap transactions to convert to U.S. dollars the cash flows related to loans with BNDES indexed to TJLP. In these swaps, we pay either fixed or floating rates in U.S. dollars and receive payments linked to TJLP.

Flow	Notional value at December 31,		Index	Average rate	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
	(million)					(US\$ million)	
<b>TJLP vs. fixed rate swap</b>							
Receivable . . . . .	R\$ 2,418	R\$ 2,031	TJLP	1.44%	2019	1,244	1,060
Payable . . . . .	US\$1,228	US\$1,048	USD	3.09%		(1,180)	(983)
Total . . . . .						64	77
<b>TJLP vs. floating rate swap</b>							
Receivable . . . . .	R\$ 739	R\$ 658	TJLP	0.96%	2019	371	354
Payable . . . . .	US\$ 372	US\$ 385	LIBOR	-0.71%		(343)	(323)
Total . . . . .						28	31

*Protection program for real-denominated fixed debt*

In order to hedge against cash flow volatility, we entered into a swap transaction to convert the cash flows from loans with the Banco Nacional de Desenvolvimento Econômico e Social (BNDES) in Brazilian *reais* linked to a fixed rate into U.S. dollars linked to a fixed rate. In these swaps, we receive fixed rates in *reais* and pay fixed rates in U.S. dollars.

Flow	Notional value at December 31,		Index	Average rate	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
	(million)					(US\$ million)	
<b>BRL fixed rate vs. USD fixed rate swap</b>							
Receivable . . . . .	R\$ 204	–	Fixed	4.50%	2016	94.2	–
Payable . . . . .	US\$121	–	USD	– 1.70%		(93.6)	–
Total . . . . .						0.6	–

*Protection program for euro-denominated floating rate debt*

We entered into a swap transaction to convert cash flows related to a euro-denominated loan with an outstanding notional amount of €2.4 million. In this swap, we receive floating rates in EURIBOR and pay floating rates in LIBOR.

Flow	Notional value at December 31,		Index	Average rate	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
	(million)					(US\$ million)	
Receivable . . . . .	€ 2	€ 5	EUR	EURIBOR+0.875%	2011	3.2	6.9
Payable . . . . .	US\$3	US\$5	USD	LIBOR+1.0425%		(2.7)	(5.2)
Total . . . . .						0.5	1.7

*Protection program for euro-denominated fixed rate debt*

We entered into a swap transaction to convert cash flows from loans in euros linked to a fixed rate to U.S. dollars linked to a fixed rate. In this swap, we receive fixed rates in euros and pay fixed rates in U.S. dollars. This trade was used to convert the cash flow of a debt denominated in euros, with an outstanding notional amount of €750 million that was issued in 2010.

Flow	Notional value at December 31,		Index	Average rate	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
	(million)					(US\$ million)	
Receivable . . . . .	€ 500	–	EUR	4.375%	2014	760	–
Payable . . . . .	US\$675	–	USD	4.712%		(769)	–
Total . . . . .						(9)	–



*Foreign exchange cash flow hedges*

We entered into swap transactions to mitigate our exchange rate exposure arising from the currency mismatch between our revenues in U.S. dollars and our disbursements and investments in *reais*. Those transactions were designated as cash flow hedges.

Flow	Notional value at December 31,		Index	Average rate	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
	(million)					(US\$ million)	
Receivable . . . . .	R\$ 880	R\$ 1,964	Fixed	8.78%	2011	522	1,117
Payable . . . . .	US\$510	US\$1,110	USD	0.00%		(500)	(1,096)
Total . . . . .						22	21

*Foreign exchange cash flow hedge—Albras*

In order to reduce cash flow volatility, we entered into swap transactions to mitigate the foreign exchange exposure that arises from the currency mismatch between revenues denominated in U.S. dollars and disbursements and investments denominated in *reais*. Those transactions were designated as cash flow hedges. Aluminum trades were held for sale beginning in June 2010. We transferred our aluminum business in Albras, Alunorte and CAP, among other items, to Hydro in February 2011, in exchange for a 22.0% equity interest in Hydro as part of the consideration.

Flow	Notional value at December 31,		Index	Average rate	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
	(million)					(US\$ million)	
Receivable . . . . .	R\$ 501	R\$ 711	Fixed	6.94%	2011	325	401
Payable . . . . .	US\$251	US\$359	USD	0.00%		(248)	(349)
Total . . . . .						77	52

*Foreign exchange protection program on cash flow*

This program follows the same concept as the previous one, but in this case the transactions were not designated as cash flow hedges.

Flow	Notional value at December 31,		Buy/Sell	Average rate (BRL/USD)	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
	(million)					(US\$ million)	
Forward . . . . .	–	US\$60	Sell	–	2010	–	(0.1)

*Protection program for US\$ floating rate debt*

Our wholly owned subsidiary Vale Canada entered into a swap to convert U.S. dollar floating rate debt into U.S. dollar fixed rate debt in connection with debt issued in 2004 with a notional amount of US\$200 million. In this swap, Vale pays fixed rates in U.S. dollars and receives floating rates in LIBOR.

Flow	Notional value at December 31,		Index	Average rate	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
	(million)					(US\$ million)	
Receivable . . . . .	US\$100	US\$200	USD	LIBOR	2011	100	149
Payable . . . . .			USD	4.795%		(104)	(157)
Total . . . . .						(4)	(8)

*Foreign exchange protection program for fixed price coal sales*

In order to reduce cash flow volatility associated with a fixed price coal contract, we entered into an Australian dollar forward purchase contract to equalize production cost and revenue currencies exposure.

Flow	Notional value at December 31,		Buy/Sell	Average rate (AUD/ USD)	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
	(million)					(US\$ million)	
Forward . . . . .	AUD\$7	AUD\$41	Buy	0.66%	2011	2	9

*Protection program for foreign exchange and interest rates in 2010*

In September, we entered into interest rate swap transactions in order to fix the treasury reference rate used in the pricing of Vale's 10-year bond issuance, thereby neutralizing part of the funding costs. These swaps were executed and settled in September, when we received US\$0.87 million.

Between May and June, we entered into foreign exchange swap transactions to protect against foreign exchange rate volatility between U.S. dollars and Brazilian *reais* on exposure from how we structured our mandatory convertible issuance. In these swaps, we paid a fixed rate in U.S. dollars and received a fixed rate in Brazilian *reais*. On the maturity date, June 14, 2010, we received R\$67 million.

In March 2010, we entered into swap transactions in order to reduce cash flow volatility due to foreign exchange exposure arising from our euro note issuance. These short-term swaps were executed and settled in March 2010, when we received R\$3.6 million.

**Commodity price risk**

We are exposed to various market risks relating to the volatility of world market prices for the following products:

- iron ore and iron ore pellets, which represented 70.5% of our 2010 gross consolidated revenues;
- nickel, which represented 8.2% of our 2010 gross consolidated revenues;
- copper products, which represented 3.4% of our 2010 gross consolidated revenues;
- aluminum products, which represented 5.5% of our 2010 gross consolidated revenues;
- coal, which represented 1.7% of our 2010 gross consolidated revenues;

- PGMs and other precious metals, which represented 0.4% of our 2010 gross consolidated revenues; and
- other products.

*Nickel cash flow protection program*

In order to reduce cash flow volatility in 2010, we entered into forward-sale transactions that effectively fix nickel prices for part of our sales for the period.

Flow	Notional amount at December 31,		Buy/Sell	Average strike (USD/ton)	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
	(ton)					(US\$ million)	
Forward . . . . .	-	29,122	Sell	-	2010	-	(21)

*Nickel sales hedging program*

In order to reduce cash flow volatility in 2010 and 2011, we entered into forward-sale transactions that were accounted for as cash flow hedges. These transactions fixed the prices of part of the sales in the period.

Flow	Notional amount at December 31,		Buy/Sell	Average strike (USD/ton)	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
	(ton)					(US\$ million)	
Forward . . . . .	18,750	-	Sell	21,887	2011	(52)	-

*Nickel fixed price program*

We enter into derivatives in connection with fixed price nickel sales contracts to preserve exposure to nickel fluctuations. These transactions are intended to achieve a minimum price equal to the average LME price on the date of product delivery. These transactions normally involve buying nickel forwards (over-the-counter) or futures (exchange traded) and are usually settled on the settlement dates of the related commercial contracts. We also have contracts subject to margin calls for some nickel trades executed by Vale Canada, but the total cash amount as of December 2010 was not material.

We suspended new transactions under the nickel fixed price program whenever the nickel strategic cash flow protection program or the nickel sales hedging program are in effect.

Flow	Notional amount at December 31,		Buy/Sell	Average strike (USD/ton)	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
	(ton)					(US\$ million)	
Nickel futures . . . . .	2,172	3,426	Buy	18,694	2012	13	12

*Coal sales protection program*

In order to reduce cash flow volatility for 2010, we entered into hedging transactions to fix the price of a portion of our coal sales during the period. We had no open positions at December 31, 2010.

*Aluminum strategic cash flow hedging program*

In order to reduce cash flow volatility in 2009 and 2010, we entered into hedging transactions that effectively fix aluminum prices for part of our sales for these periods. Aluminum trades were held for sale beginning in June 2010. We transferred our aluminum business in Albras, Alunorte and CAP, among other items, to Hydro in February 2011, in exchange for a 22.0% equity interest in Hydro as part of the consideration.

Flow	Notional amount at December 31,		Buy/Sell	Average strike (USD/ton)	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
	(ton)					(US\$ million)	
Put .....	-	120,000	Buy	-	2010	-	9
Call .....	-	120,000	Sell	-		-	(37)
Forward .....	-	120,000	Buy	-	2010	-	(36)

**Input price risk**

We are exposed to various market risks relating to the volatility of world market prices for the following inputs, among others:

- energy, which represented 16.4% of our 2010 cost of goods sold;
- acquisition of products, which represented 8.9% of our 2010 cost of goods sold.
- materials, which represented 15.2% of our 2010 cost of goods sold; and
- outsourced services, which represented 14.6% of our 2010 cost of goods sold.

We may hedge certain input price risks with swap contracts, long-term contracts, embedded derivatives or upstream integration.

*Energy*

*Embedded derivatives—energy purchase*

Our former subsidiary Albras has an embedded energy derivative in a 20-year contract, expiring in 2024, with Eletronorte, which provides for an electricity purchase price in *reais* per MWh and requires us to pay a premium if the LME trading price of primary aluminum is in the range of US\$1,450 to US\$2,773 per metric ton. Aluminum trades were held for sale beginning in June 2010. We transferred our aluminum business in Albras, Alunorte and CAP, among other items, to Hydro in February 2011, in exchange for a 22.0% equity interest in Hydro as part of the consideration.

Flow	Notional amount at December 31,		Buy/Sell	Average strike (USD/ton)	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
	(ton)					(US\$ million)	
Call .....	200,228	220,228	Buy	2,773	2012	28	26
Call .....	200,228	220,228	Sell	1,450		(205)	(172)
Total .....						(177)	(146)

*Bunker oil purchase protection program*

In order to reduce the impact of bunker oil price fluctuation on our freight costs, we have entered into bunker oil derivatives, usually through forward purchases and swaps.

Flow	Notional amount at December 31,		Buy/Sell	Average strike (USD/metric ton)	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
	(metric ton)					(US\$ million)	
Forward . . . . .	240,000	452,000	Buy	459	2011	11	45

*Acquisition of products*

*Nickel purchase protection program*

In order to reduce cash flow volatility and eliminate the mismatch between the pricing of purchased nickel (concentrate, cathode, sinter and other) and the pricing of the final product sold to our customers, we entered into hedging transactions. The items purchased are raw materials utilized to produce refined nickel. The transactions are usually implemented by the sale of nickel forward or future contracts at LME or over-the-counter operations.

Flow	Notional amount at December 31,		Buy/Sell	Average strike (USD/ton)	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
	(ton)					(US\$ million)	
Nickel futures . . . . .	108	1,446	Sell	23,232	2011	(0.2)	(2)

*Copper scrap purchase protection program*

This program was implemented in order to reduce cash flow volatility due to the quotation period mismatch between the pricing period of copper scrap purchase and the pricing period of sale of final products to clients. Copper scrap, combined with other raw materials or inputs, is used to produce copper by Vale Canada, our wholly owned subsidiary. This program usually is implemented by the sale of forwards or futures on the LME or over-the-counter operations.

Flow	Notional amount at December 31,		Buy/Sell	Average strike (USD/lbs)	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
	(lbs)					(US\$ million)	
Forward . . . . .	386,675	-	Sell	3.6	2011	(0.3)	-

*Embedded derivatives—raw material and intermediate products purchase*

Our wholly owned subsidiary Vale Canada has embedded derivatives in purchase agreements for nickel concentrate and raw materials that are linked to nickel and copper future prices.

Flow	Notional amount at December 31,		Buy/Sell	Average strike (USD/ton)	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
	(ton)					(US\$ million)	
Nickel forwards . . . . .	1,960	440	Sell	23,590	2011	(1.0)	0.2
Copper forwards . . . . .	6,389	3,463		8,607		(3.2)	(1.0)
Total . . . . .						(4.2)	(0.8)

## Outsourced services

### Maritime freight hiring protection program

In order to reduce the impact of maritime freight price fluctuations, we have entered into freight derivatives, usually through forward purchases.

Flow	Notional value at December 31,		Buy/Sell	Average strike (USD/day)	Final maturity	Fair value at December 31,	
	2010	2009				2010	2009
Forward . . . . .	–	6,125	Buy	–	2010	–	29

### Credit risk

We are exposed to credit risk arising from trade receivables, derivative transactions, payment guarantees and cash investments. The credit risk management process was implemented through a set of governance documents that establish the guidelines for granting counterparty limits and for measuring and controlling credit exposure. The credit risk governance provides a framework for assessing and managing counterparties' credit risk and for maintaining our risk at an acceptable level. The risk management committee analyzes and recommends to the Board of Executive Officers the maximum credit risk exposure to trade receivables and the maximum credit risk exposure to financial institutions that are acceptable at both the counterparty and at the portfolio level.

Credit risk mitigation strategies are designed to hedge our portfolio to avoid concentration issues and, when necessary, to comply with the acceptable risk levels established by the Board of Executive Officers. Speculative credit derivative transactions are not permitted.

Customer credit limits are established through our risk management governance guidelines and monitored according to their credit exposure and their creditworthiness. Customer credit limits are updated at least once a year, or more often if there are significant changes in the marketplace.

### Operational risk

Operational risk management is the structured approach we take to manage uncertainty related to inadequate or failed internal processes, people and systems and to external events.

We mitigate operational risk with new controls and improvement of existing ones, with transfer of risk through insurance and establishment of financial provisions. As a result, the Company seeks to have a clear view of its major risks, the best cost-benefit mitigation plans it must invest in, and the controls in place to monitor the impact of operational risk closely and to efficiently allocate capital to reduce it.

More specifically, our operational risk management involves a consistent and systematic process to assess and manage risks that could prevent the Company from reaching its business objectives. The most important events are analyzed to understand the causes and respective controls that can prevent the event and/or respond and recover from the event. Standard risk measures such as the Most Foreseeable Loss and the Residual Risk, both based on Vale's Risk Matrix, are part of the risk management process, which enables consistent discussions by our management regarding whether additional resources are required to lower risk levels. The most significant risks identified in the process are reported to the Executive Risk Committee where decisions are made and action plans approved to further reduce risks where necessary.

### III. SHARE OWNERSHIP AND TRADING

#### MAJOR SHAREHOLDERS

Valepar is Vale's controlling shareholder. Valepar is a special-purpose company organized under the laws of Brazil that was incorporated for the sole purpose of holding an interest in Vale. Valepar does not have any other business activity. Valepar acquired its controlling stake in Vale from the Brazilian government in 1997 as part of the first stage of Vale's privatization.

The following table sets forth information regarding ownership of Vale shares as of March 31, 2011 by the shareholders we know beneficially own more than 5% of any class of our outstanding capital stock, and by our directors and executive officers as a group.

	<u>Common shares owned</u>	<u>% of class</u>	<u>Preferred shares owned</u>	<u>% of class</u>
Valepar(1) . . . . .	1,716,435,045	52.7%	20,340,000	1.0%
BNDENSPAR(2) . . . . .	218,386,481	6.7%	69,432,770	3.3%
Directors and executive officers as a group . . . . .	257,294	Less than 1.0%	1,145,338	Less than 1.0%

(1) See the following tables for information about Valepar's shareholders.

(2) BNDENSPAR is a wholly owned subsidiary of BNDES. The figures do not include common shares beneficially (as opposed to directly) owned by BNDENSPAR.

The Brazilian government also owns 12 golden shares of Vale, which give it veto powers over certain actions, such as changes to our name, the location of our headquarters and our corporate purpose as it relates to mining activities.

The table below set forth information regarding ownership of Valepar common shares as of March 31, 2011.

	<u>Common shares owned</u>	<u>% of class</u>
<i>Valepar shareholders</i>		
Litel Participações S.A.(1) . . . . .	637,443,857	49.00%
Eletron S.A.(2) . . . . .	380,708	0.03
Bradespar S.A.(3) . . . . .	275,965,821	21.21
Mitsui(4) . . . . .	237,328,059	18.24
BNDENSPAR(5) . . . . .	149,787,385	11.51
Total . . . . .	<u>1,300,905,830</u>	<u>100.00%</u>

(1) Litel owns 200,864,272 preferred class A shares of Valepar, which represents 71.41% of the preferred class A shares. Litela, an affiliate of Litel, owns 80,416,931 preferred class A shares of Valepar, which represents 28.59% of the preferred class A shares. LitelB, also an affiliate of Litel, owns 25,862,068 preferred class C shares of Valepar, which represents 29.25% of the preferred class C shares.

(2) Eletron owns 32,729 preferred class C shares of Valepar, which represents 0.04% of the preferred class C shares.

(3) Bradespar is controlled by a control group consisting of Cidade de Deus—Cia. Comercial Participações, Fundação Bradesco, NCF Participações S.A. and Nova Cidade de Deus Participações S.A. Bradespar owns 16,137,193 preferred class C shares of Valepar, which represents 18.25% of the preferred class C shares. Brumado Holdings Ltda., a subsidiary of Bradespar, owns 7,587,000 preferred class A shares of Valepar, which represents 8.58% of the class.

(4) Mitsui owns 20,402,587 preferred class C shares of Valepar, which represents 23.08% of the preferred class C shares.

(5) BNDENSPAR owns 18,394,143 preferred class C shares of Valepar, which represents 20.80% of the preferred class C shares.

The table below set forth information regarding ownership of Litel Participações S.A., one of Valepar's shareholders, as of March 31, 2011.

	<u>Common shares owned</u>	<u>% of class</u>
<i>Litel Participações S.A. shareholders</i> (1)		
BB Carteira Ativa . . . . .	193,740,121	78.40%
Carteira Ativa II . . . . .	53,387,982	21.60
Caixa de Previdência dos Funcionários do Banco do Brasil . . . . .	19	–
Others . . . . .	219	–
Directors and executive officers as a group . . . . .	4	–
Total . . . . .	<u>247,128,345</u>	<u>100.00%</u>

(1) Each of BB Carteira Ativa and Carteira Ativa II is a Brazilian investment fund. BB Carteira Ativa is 100.00% owned by Caixa de Previdência dos Funcionários do Banco do Brasil ("Previ"). Carteira Ativa II is 59.36% owned by Funcef, 35.81% owned by Petros and 4.84% owned by Fundação Cesp. Each of Previ, Petros, Funcef and Fundação Cesp is a Brazilian pension fund.

The shareholders of Valepar are parties to a shareholders' agreement, ending in 2017. Under this agreement, each of the shareholders of Valepar has the right to veto the transfer by Valepar of any Vale shares it holds. The Valepar shareholders' agreement also:

- grants rights of first refusal on any transfer of Valepar shares and preemptive rights on any new issue of Valepar shares;
- prohibits the direct acquisition of Vale shares by Valepar's shareholders unless authorized by the other shareholders party to the agreement;
- prohibits encumbrances on Valepar shares (other than in connection with financing an acquisition of Vale shares);
- requires each party generally to retain control of its special purpose company holding its interest in shares of Valepar, unless the rights of first refusal mentioned above are observed;
- allocates seats on Valepar's and Vale's boards among representatives of the parties;
- commits the Valepar shareholders to support a Vale dividend policy of distributing 50% of Vale's net profit for each fiscal year, unless the Valepar shareholders commit to support a different dividend policy for a given year;
- provides for the maintenance by Vale of a capital structure that does not exceed specified debt to equity thresholds;
- requires the Valepar shareholders to vote their indirectly held Vale shares and to cause their representatives on Vale's Board of Directors to vote only in accordance with decisions made at Valepar meetings held prior to meetings of Vale's Board of Directors or shareholders; and
- establishes supermajority voting requirements for certain significant actions relating to Valepar and to Vale.

Pursuant to the Valepar shareholders' agreement, Valepar cannot support any of the following actions with respect to Vale without the consent of at least 75% of the holders of Valepar's common shares:

- any amendment of Vale's bylaws;



- any increase of Vale’s capital stock by share subscription, creation of a new class of shares, change in the characteristics of the existing shares or any reduction of Vale’s capital stock;
- any issuance of debentures of Vale, whether or not convertible into shares of Vale, participation certificates upon compensation (*partes beneficiárias*), call options (*bônus de subscrição*) or any other security of Vale;
- any determination of issuance price for any new shares of capital stock or other security of Vale;
- any amalgamation, spin-off or merger to which Vale is a party, as well as any change to Vale’s corporate form;
- any dissolution, receivership, bankruptcy or any other voluntary act for financial reorganization or any suspension thereof;
- the election and replacement of Vale’s Board of Directors, including the Chairman of the Board, and any executive officer of Vale;
- the disposal or acquisition by Vale of an equity interest in any company, as well as the acquisition of any shares of capital stock of Vale or Valepar;
- the participation by Vale in a group of companies or in a consortium of any kind;
- the execution by Vale of agreements relating to distribution, investment, sales exportation, technology transfer, trademark license, patent exploration, license to use and leases;
- the approval and amendment of Vale’s business plan;
- the determination of the compensation of the executive officers and directors of Vale, as well as the duties of the Board of Directors and the Board of Executive Officers;
- any profit sharing among the members of the Board of Directors or Board of Executive Officers of Vale;
- any change in the corporate purpose of Vale;
- the distribution or non-distribution of any dividends (including distributions classified as interest on shareholders’ equity) on any shares of capital stock of Vale other than as provided in Vale’s bylaws;
- the appointment and replacement of Vale’s independent auditor;
- the creation of any “in rem” guarantee, granting of guarantees including rendering of sureties by Vale with respect to obligations of any unrelated party, including any affiliates or subsidiaries;
- the passing of any resolution on any matter which, pursuant to applicable law, entitles a shareholder to withdrawal rights;
- the appointment and replacement by the Board of Directors of any representative of Vale in subsidiaries, companies related to Vale or other companies in which Vale is entitled to appoint directors and officers; and
- any change in the debt to equity threshold, as defined in the shareholders’ agreement.

In addition, the shareholders' agreement provides that any issuance of participation certificates by Vale and any disposition by Valepar of Vale shares requires the unanimous consent of all of Valepar's shareholders.

## RELATED PARTY TRANSACTIONS

We have arm's-length commercial relationships in the ordinary course of our business with Mitsui, a shareholder of Valepar (our controlling shareholder) and we have arm's-length financial relationships in the ordinary course of our business with Bradesco, which is controlled by the same controlling group as Bradepar, also a shareholder of Valepar.

BNDES is the parent company of one of our major shareholders, BNDESPAR. We and BNDES, the Brazilian state-owned development bank, are parties to a contract relating to authorizations for mining exploration. This contract, which we refer to as the Mineral Risk Contract, provides for the joint development of certain unexplored mineral deposits that form part of our Northern System (Carajás), as well as proportional participation in any profits earned from the development of such resources. Iron ore and manganese ore deposits already identified at the time we entered into the Mineral Risk Contract (in March 1997) were specifically excluded from the contract. In 2007, the Mineral Risk Contract was extended indefinitely, with specific rules for all exploration projects and exploration targets and mineral rights covered under the contract. In addition, BNDES has provided us with a R\$7.3 billion, or US\$4.3 billion, credit facility to help us finance our investment programs, and its subsidiary BNDESPAR holds a total of R\$1.050 billion, or US\$630 million, in debentures, exchangeable into FNS shares, that were issued to finance the expansion of the FNS railroad. BNDES has also participated in certain of our other financing arrangements. For more information on our transactions with BNDES, see *Operating and financial review and prospects—Liquidity and capital resources*.

For information regarding investments in affiliated companies and joint ventures and for information regarding transactions with major related parties, see Notes 15 and 25 to our consolidated financial statements.

## DISTRIBUTIONS

Under our dividend policy, our Board of Executive Officers announces by, no later than January 31 of each year, a proposal to be approved by our Board of Directors of a minimum amount, expressed in U.S. dollars, that will be distributed in that year to our shareholders. Distributions may be classified for tax purposes either as dividends or interest on shareholders' equity, and references to "dividends" should be understood to include all distributions regardless of their tax classification, unless stated otherwise. We determine the minimum dividend payment in U.S. dollars, considering our expected free cash flow generation in the year of distribution. The proposal establishes two installments, to be paid in April and October of each year. Each installment is submitted to the Board of Directors for approval at meetings in April and October. Once approved, dividends are converted into and paid in *reais* at the Brazilian *real*/U.S. dollar exchange rates announced by the Central Bank of Brazil on the last business day before the Board meetings in April and October of each year. The Board of Executive Officers can also propose to the Board of Directors, depending on the evolution of our cash flow performance, an additional payment to shareholders of an amount over and above the minimum dividend initially established.

For 2011, our Board of Executive Officers has proposed a minimum dividend of US\$4 billion. We pay the same amount per share on both common and preferred shares in accordance with our bylaws. The first installment of this dividend of US\$2 billion has been approved for payment on April 30, 2011. In addition to the minimum dividend, on January 31, 2011, we paid an extraordinary dividend of US\$1 billion as proposed by our Board of Executive Officers in September 2010 and approved by our Board of Directors in January 2011.

Under Brazilian law and our bylaws, we are required to distribute to our shareholders an annual amount equal to not less than 25% of the distributable amount, referred to as the mandatory dividend, unless the Board of Directors advises our shareholders at our shareholders' meeting that payment of the mandatory dividend for the preceding year is inadvisable in light of our financial condition. For a discussion of dividend distribution provisions under Brazilian corporate law and our bylaws, see *Additional information*.

Distributions classified for tax purposes as dividends which are paid to ADR holders and to non-resident shareholders will not be subject to Brazilian withholding tax, except that a distribution from profits generated prior to December 31, 1995 will be subject to Brazilian withholding tax at varying rates. Distributions classified for tax purposes as interest on shareholders' equity which are paid to ADR holders and to non-resident shareholders are currently subject to Brazilian withholding tax. See *Additional information—Taxation—Brazilian tax considerations*.

By law, we are required to hold an annual shareholders' meeting by April 30 of each year at which an annual dividend may be declared. Additionally, our Board of Directors may declare interim dividends. Under Brazilian corporate law, dividends are generally required to be paid to the holder of record on a dividend declaration date within 60 days following the date the dividend was declared, unless a shareholders' resolution sets forth another date of payment, which, in either case, must occur prior to the end of the fiscal year in which the dividend was declared. A shareholder has a three-year period from the dividend payment date to claim dividends (or payments of interest on shareholders' equity) in respect of its shares, after which we will have no liability for such payments. From 1997 to 2003, all distributions took the form of interest on shareholders' equity. In many years, part of the distribution has been made in the form of interest on shareholders' equity and part as dividends. See *Additional information—Memorandum and articles of association—Common shares and preferred shares*.

We make cash distributions on the common shares and preferred shares underlying the ADSs in *reais* to the custodian on behalf of the depositary. The custodian then converts such proceeds into U.S. dollars and transfers such U.S. dollars to be delivered to the depositary for distribution to holders of American Depositary Receipts. The depositary charges a fee of up to US\$0.02 per ADS for each distribution. For information on taxation of dividend distributions, see *Additional information—Taxation—Brazilian tax considerations*.

The following table sets forth the cash distributions we paid to holders of common shares and preferred shares for the periods indicated. Amounts have been restated to give effect to stock splits that we carried out in subsequent periods. We have calculated U.S. dollar conversions using the commercial selling rate in effect on the date of payment. Amounts are stated before any applicable withholding tax.

Year	Payment date	Reais per share			U.S. dollars per share at payment date
		Dividends	Interest on equity	Total	
2004	April 30	0.17	–	0.17	0.06
	October 29	0.06	0.26	0.32	0.11
2005	April 29	0.28	–	0.28	0.11
	October 31	0.22	0.17	0.39	0.18
2006	April 28	0.12	0.17	0.29	0.14
	October 31	0.01	0.28	0.29	0.14
2007	April 30	0.22	0.13	0.35	0.17
	October 31	0.01	0.38	0.39	0.22
2008	April 30	0.20	0.24	0.44	0.26
	October 31	0.14	0.51	0.65	0.30
2009	April 30	0.52	–	0.52	0.24
	October 30	–	0.49	0.49	0.29
2010	April 30	–	0.42	0.42	0.24
	October 31	–	0.56	0.56	0.34
2011	January 31	–	0.32	0.32	0.19

## TRADING MARKETS

Our publicly traded share capital consists of common shares and preferred shares, each without par value. Our common shares and our preferred shares are publicly traded in Brazil on the BM&FBOVESPA, under the ticker symbols VALE3 and VALE5, respectively. Our common shares and preferred shares also trade on the LATIBEX, under the ticker symbols XVALO and XVALP, respectively. The LATIBEX is a non-regulated electronic market created in 1999 by the Madrid stock exchange in order to enable trading of Latin American equity securities.

Our common ADSs, each representing one common share, are traded on the New York Stock Exchange (“NYSE”), under the ticker symbol VALE. Our preferred ADSs, each representing one preferred share, are traded on the NYSE, under the ticker symbol VALE.P. Our common ADSs and preferred ADSs are traded on Euronext Paris, under the ticker symbols VALE3 and VALE5, respectively. JPMorgan Chase Bank serves as the depository for both the common and the preferred ADSs.

On March 31, 2011, there were 1,584,729,540 ADSs outstanding, 786,476,603 common ADSs and 798,252,937 preferred ADSs, representing 24.1% of our common shares and 37.9% of our preferred shares, or 29.5% of our total share capital.

In December 2010, we listed depositary shares on the HKEx representing our common shares and our class A preferred shares. Our common HDSs, each representing one common share, are traded on the HKEx, under the stock code 6210. Our preferred HDSs, each representing one class A preferred share, are traded on the HKEx, under the stock code 6230. JPMorgan Chase Bank serves as the depository for both the common and the preferred HDSs. On March 31, 2011, there were 1,241,850 HDSs outstanding, consisting of 878,400 common HDSs and 363,450 preferred HDSs.

## SHARE PRICE HISTORY

The following table sets forth trading information for our ADSs, as reported by the New York Stock Exchange and our shares, as reported by the BM&FBOVESPA, for the periods indicated. Share prices in the table have been adjusted to reflect stock splits.

	BM&F BOVESPA ( <i>Reais per share</i> )				NYSE (US\$ per share)			
	Common share		Preferred share		Common ADS		Preferred ADS	
	High	Low	High	Low	High	Low	High	Low
2006 . . . . .	32.50	21.86	27.50	18.55	15.17	9.88	13.13	8.05
2007 . . . . .	65.90	29.40	55.62	25.42	37.75	13.76	31.59	11.83
2008 . . . . .	72.09	22.10	58.70	20.24	43.91	8.80	35.84	7.95
2009 . . . . .	50.30	27.69	43.37	23.89	29.53	11.90	25.66	10.36
1Q . . . . .	38.75	27.69	32.48	23.89	17.70	11.90	14.70	10.36
2Q . . . . .	40.00	31.50	33.79	27.05	20.83	13.82	17.70	11.93
3Q . . . . .	41.77	31.89	37.02	27.75	23.28	15.88	20.73	13.73
4Q . . . . .	50.30	40.05	43.37	35.67	29.53	22.30	25.66	19.90
2010 . . . . .	59.85	42.85	51.34	37.50	34.65	23.98	30.50	20.20
1Q . . . . .	57.45	47.16	49.55	40.80	32.29	25.18	27.76	21.91
2Q . . . . .	59.85	43.65	51.34	37.50	34.55	23.98	29.46	20.20
3Q . . . . .	52.30	42.85	46.30	37.52	31.27	24.34	27.75	21.09
4Q . . . . .	58.19	52.80	50.92	46.75	34.65	31.47	30.50	27.88
2011								
December 2010 . . . . .	58.19	54.74	50.92	48.30	34.65	33.17	30.50	29.22
January 2011 . . . . .	60.92	55.33	53.41	48.50	37.08	34.20	32.50	30.22
February 2011 . . . . .	58.49	54.60	51.87	48.30	35.62	33.44	31.63	29.10
March 2011 . . . . .	56.60	50.75	49.60	44.70	34.87	31.04	30.41	27.01
April 2011(1) . . . . .	54.40	50.64	48.30	45.20	34.27	32.05	30.40	28.49

(1) Until April 26, 2011.

## DEPOSITARY SHARES

JPMorgan Chase Bank serves as the depositary for our ADSs and HDSs. ADR holders and HDR holders are required to pay various fees to the depositary, and the depositary may refuse to provide any service for which a fee is assessed until the applicable fee has been paid.

ADR holders and HDR holders are required to pay the depositary amounts in respect of expenses incurred by the depositary or its agents on behalf of ADR holders and HDR holders, including expenses arising from compliance with applicable law, taxes or other governmental charges, facsimile transmission or conversion of foreign currency into U.S. or Hong Kong dollars. In this case, the depositary may decide in its sole discretion to seek payment by either billing holders or by deducting the fee from one or more cash dividends or other cash distributions. The depositary may recover any unpaid taxes or other governmental charges owed by an ADR holder or HDR holder by billing such holder, by deducting the fee from one or more cash dividends or other cash distributions, or by selling underlying shares after reasonable attempts to notify the holder, with the holder liable for any remaining deficiency.

ADR holders are also required to pay additional fees for certain services provided by the depositary, as set forth in the table below.

Depositary service	Fee payable by ADR holders
Issuance and delivery of ADRs, including in connection with share distributions, stock splits . . . . .	US\$5.00 or less per 100 ADSs (or portion thereof)
Distribution of dividends . . . . .	US\$0.02 or less per ADS
Withdrawal of shares underlying ADSs . . . . .	US\$5.00 or less per 100 ADSs (or portion thereof)
Transfers, combining or grouping of ADRs . . . . .	US\$1.50 or less per ADS

HDR holders are also required to pay additional fees for certain services provided by the depositary, as set forth in the table below.

Depositary service	Fee payable by HDR holders
Issuance and delivery of HDRs, including in connection with share distributions, stock splits . . . . .	HK\$0.40 or less per HDS (or portion thereof)
Distribution of dividends and other cash distributions . . . . .	HK\$0.40 or less per HDS
Transfer of certificated or direct registration HDRs . . . . .	HK\$2.50 or less per HDS
Administration fee assessed annually . . . . .	HK\$0.40 or less per HDS (or portion thereof)

The depositary reimburses us for certain expenses we incur in connection with the ADR and HDR programs, subject to a ceiling agreed between us and the depositary from time to time. These reimbursable expenses currently include legal and accounting fees, listing fees, investor relations expenses and fees payable to service providers for the distribution of material to ADR holders and HDR holders. For the year ended December 31, 2010, such reimbursements totaled US\$16 million.

## PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS

In September 2010, our Board of Directors approved a proposal from our Board of Executive Officers to establish a share repurchase program for the purpose of optimizing capital allocation. The program contemplated the acquisition of shares to be held in treasury for subsequent sale or cancellation, for up to US\$2 billion and involving up to 64,810,513 common shares and up to 98,367,748 preferred shares, corresponding 5% of the free floating shares of each class as of the launch date. We reached US\$2 billion of repurchases in October 2010. See Note 18 to our consolidated financial statements for further information. Upon termination, we had acquired 21,682,700 common shares and 48,197,700 preferred shares, corresponding respectively to 1.67% and 2.45% of the free floating shares of each class as of the launch date,

which will be held in treasury until disposal or cancellation. The shares were acquired at an average weighted unit cost of US\$31.31 per common share and of US\$27.40 per preferred share. See Note 18 to our consolidated financial statements for further information.

The results of our share repurchase program for 2010 are set forth below.

Period	Total number of shares (or units) purchased	Average price paid per share (or units) (US\$)	Minimum price paid per share (or units) (US\$)	Maximum price paid per share (or units) (US\$)	Total number of shares (or units) purchased as part of publicly announced plans or programs	Maximum number (or approximate US\$ value) of shares (or units) that may yet be purchased under the program
<i>Common shares</i>						
September 2010 . . .	10,029,700	30.56	29.47	30.94	10,029,700	–
October 2010 . . .	11,653,000	31.95	30.99	32.62	11,653,000	–
Total . . . . .	21,682,700	31.31	29.47	32.62	21,682,700	–
<i>Preferred shares</i>						
September 2010 . . .	21,125,300	26.60	25.99	28.05	21,125,300	–
October 2010 . . .	27,072,400	28.03	27.46	28.40	27,072,400	–
Total . . . . .	48,197,700	27.40	25.99	28.40	48,197,700	–

#### IV. MANAGEMENT AND EMPLOYEES

##### MANAGEMENT

###### Board of Directors

Our Board of Directors sets general guidelines and policies for our business and monitors the implementation of those guidelines and policies by our executive officers. Our bylaws provide that the Board of Directors consist of 11 members and 11 alternates, each of whom serves on behalf of a particular director. Each director (and his or her respective alternate) is elected for a two-year term at a general shareholders' meeting, can be re-elected, and is subject to removal at any time.

The Board of Directors holds regularly scheduled meetings on a monthly basis and holds additional meetings when called by the chairman, vice-chairman or any two directors. Decisions of the Board of Directors require a quorum of a majority of the directors and are taken by majority vote. Alternate directors may attend and vote at meetings in the absence of the director for whom the alternate director is acting.

Our bylaws establish the following technical and advisory committees to the Board of Directors.

- The Executive Development Committee is responsible for reporting on general human resources policies, analyzing and reporting on the adequacy of compensation levels for our executive officers, proposing and updating guidelines for evaluating the performance of our executive officers, and reporting on policies relating to health and safety.
- The Strategy Committee is responsible for reviewing and making recommendations to the Board of Directors concerning: the strategic guidelines and plan submitted annually to the Board by our executive officers, our annual and multi-annual investment budgets, investment or divestiture opportunities submitted by executive officers, and mergers and acquisitions.
- The Finance Committee is responsible for reviewing and making recommendations to the Board of Directors concerning: our corporate risks and financial policies and the internal financial control systems, compatibility between the level of distributions to shareholders and the parameters established in the annual budget, and the consistency between our general dividend policy and capital structure.

- The Accounting Committee is responsible for: nominating an employee to be responsible for our internal auditing, reporting on auditing policies and the execution of our annual auditing plan, tracking the results of our internal auditing, and identifying, prioritizing, and submitting recommendations to the executive officers, and analyzing and making recommendations with regard to our annual report and financial statements.
- The Governance and Sustainability Committee is responsible for: evaluating and recommending improvements to the effectiveness of our corporate governance practices and the functioning of our Board of Directors, recommending improvements to the code of ethical conduct and our management system in order to avoid conflicts of interests between Vale and its shareholders or management, issuing reports on potential conflicts of interest between Vale and its shareholders or management, and reporting on policies relating to corporate responsibility, such as environmental and social responsibility.

Ten of our 11 current directors (and nine of their respective alternates) were appointed by Valepar, our controlling shareholder, pursuant to Valepar's shareholders' agreement. Non-controlling shareholders holding common shares representing at least 15% of our voting capital, and preferred shares representing at least 10% of our total share capital, have the right to appoint one member and an alternate to our Board of Directors. Our employees and our non-controlling shareholders each have the right, as a class, to appoint one director and an alternate. All of our current directors were elected or re-elected, as the case may be, at our annual shareholders' meeting held on April 19, 2011. Their terms will expire in 2013.

The following table lists the current members of the Board of Directors and each director's alternate.

Director(1)	Year first elected	Alternate director(1)	Year first elected
Ricardo José da Costa Flores (chairman)	2010	Marco Geovanne Tobias da Silva	2011
Mario da Silveira Teixeira Júnior (vice-chairman)	2003	João Moisés de Oliveira	2000
José Ricardo Sasseron	2007	Deli Soares Pereira	2009
Robson Rocha	2011	Sandro Kohler Marcondes	2011
Nelson Henrique Barbosa Filho	2011	Eustáquio Wagner Guimarães Gomes	2011
Renato da Cruz Gomes	2001	Luiz Carlos de Freitas	2007
Fuminobu Kawashima	2011	Hajime Tonoki	2009
Oscar Augusto de Camargo Filho	2003	Eduardo de Oliveira Rodrigues Filho	2011
Luciano Galvão Coutinho	2007	Paulo Sergio Moreira da Fonseca	2007
José Mauro Mettrau Carneiro da Cunha	2010	Vacant	–
Paulo Soares de Souza(2)	2011	Raimundo Nonato Alves Amorim(2)	2009

(1) Appointed by Valepar and approved at the shareholders' meeting unless otherwise indicated.

(2) Appointed by our employees and approved at the shareholders' meeting.

Below is a summary of the business experience, activities and areas of expertise of our current directors.

**Ricardo José da Costa Flores, 47:** Chairman of Vale's Board of Directors and Member of Vale's Strategy Committee since November 2010.

*Other current director or officer positions:* Chief Executive Officer of Previ, the pension fund of Banco do Brasil employees, since June 2010; Chairman of the Board of Directors, since December 2010, and Chief Executive Officer, since November 2010, of Valepar; Chairman of the Board of Directors of Brasilcap Capitalização S.A. ("Brasilcap") since 2007; Deputy Director of the Conselho Deliberativo do Fundo de Amparo ao Trabalhador ("CODEFAT"); President of Federação Nacional de Capitalização ("FENACAP") and Vice-President of Confederação Nacional das Empresas de Seguros Gerais, Previdência Privada e Vida, Saúde Complementar e Capitalização ("CNSeg") since January 2008, both of which are insurance industry trade associations.

*Professional experience:* Vice-President of the Credit, Accounting and Global Risk Management committee of Banco do Brasil (“Banco do Brasil”), a publicly-held financial institution, from April 2009 to May 2010, where he also served as the Vice-President of Government Relations from June 2008 to April 2009, as the officer responsible for insurance, pension plans and capitalization from August 2007 to May 2008 and as the officer responsible for operational assets restructuring from May 2004 to July 2007; Chairman of the Board of Directors of Banco Nossa Caixa S.A. (“Nossa Caixa”) from January 2009 to November 2009, and Ativos S.A.—Securizadora de Créditos Financeiros from May 2004 to August 2007; Director of Brasilveículos Companhia de Seguros S.A. (“Brasilveículos”) from October 2007 to September 2008; Director of Brasilprev Seguros e Previdência S.A. (“Brasilprev”), and Brasilsaúde Companhia de Seguros S.A. from October 2007 to August 2008, both private companies engaged in insurance activity; member of the Fiscal Council of various energy companies, namely, Companhia Energética do Rio Grande do Norte (“COSERN”) from April 2006 to January 2008, Companhia Energética de Pernambuco (“CELPE”) from March 2004 to March 2006, CPFL Geração de Energia S.A. (“CPFL Geração”) and Companhia Paulista de Força e Luz (“CPFL”) from April 2002 to April 2004. Mr. Flores was also the Executive Officer of Federação Brasileira de Bancos (“FEBRABAN”) from June 2009 to June 2010.

*Academic background:* Degree in Economics from the Centro de Ensino Unificado de Brasília (“CEUB”), Faculdade de Ciências Econômicas, Contábeis e Administração in Brasília; post-graduate degrees in Project Analysis from Fundação Getúlio Vargas and in Project Development from the Instituto de Planejamento Econômico e Social; Executive MBA degree from Universidade de São Paulo (“USP”) and MBA Controller degree from FIPECAFI/USP.

**Mario da Silveira Teixeira Júnior**, 65: Director of Vale since April 2003 and Vice-Chairman since May 2003.

*Other current director or officer positions:* Vice-Chairman of the Board of Directors of Valepar; Member of the Board of Directors of Banco Bradesco S.A. (“Banco Bradesco”), a publicly-held financial institution, since 2002; Member of the Board of Directors of Bradespar S.A. (“Bradespar”), a publicly-held investment holding company; Member of the Board of Directors of Bradesco Leasing S.A.—Arrendamento Mercantil, a subsidiary of Banco Bradesco engaged in the provision of financial leasing operations; and Member of the Board of Directors of Banco Espírito Santo de Investimentos S.A., an investment bank.

*Professional experience:* Member of the Board of Directors of Banco Bradesco from March 1999 to July 2001; President of Bradespar; Executive Vice-President, Executive Managing Officer and Department Director at Banco Bradesco and Officer of Bradesco S.A. Corretora de Títulos e Valores Mobiliários, a subsidiary of Banco Bradesco that provides securities brokerage and research services, from March 1983 to January 1984; Executive Vice-President of the Associação Nacional dos Bancos de Investimento (“ANBID”), an association of investment banks; Member of the Board of Directors of the Associação Brasileira das Companhias Abertas (“ABRASCA”), an association of Brazilian publicly held companies; Vice-Chairman of the Board of Directors of BES Investimento do Brasil S.A.—Banco de Investimento, an investment bank and subsidiary of Banco Espírito Santo; Member of the Board of Directors of CSN, a publicly-held steel company, Latas de Alumínio S.A. (“Latas”), currently Rexam Beverage Can South America S.A., an aluminum products manufacturer, São Paulo Alpargatas S.A., a clothing and sporting goods manufacturer, Tigre S.A.—Tubos e Conexões, a pipe and construction materials manufacturer, as well as the electric utility companies CPFL, CPFL Geração, Companhia Piratininga de Força e Luz, and VBC Participações S.A. and the electric utility holding companies CPFL Energia S.A. (“CPFL Energia”) and VBC Energia S.A.

*Academic background:* Degree in Civil Engineering and Business Administration from Universidade Presbiteriana Mackenzie, São Paulo.



**José Ricardo Sasseron**, 55: Director of Vale since April 2007.

*Other current director or officer positions:* Social Security Officer of Previ.

*Professional experience:* Chairman of the Board of Directors of Sauípe S.A., a private hotel and resort development and management company, from 2005 to 2007; member of the advisory board of Previ, from 2004 to 2006 and Chairman of the Fiscal Council of Previ from 1996 to 1998.

*Academic background:* Degree in History from USP.

**Robson Rocha**, 52: Director of Vale since April 2011.

*Other current director or officer positions:* Vice-President for Human Resources Management and Sustainable Development of Banco do Brasil since 2009; Vice-Chairman of CPFL Energia since 2010.

*Professional experience:* Director of Nossa Caixa from May to November 2009; Officer of Banco do Brasil from 2008 to 2009.

*Academic background:* Degree in Business Administration from UNICENTRO—Newton Paiva, Belo Horizonte, post-graduate degree in Strategic Management from Universidade Federal de Minas Gerais (“UFMG”), Master’s degree in Marketing from Fundação Ciências Humanas—Pedro Leopoldo, and MBA degree in Finance from Fundação Dom Cabral.

**Nelson Henrique Barbosa Filho**, 41: Director of Vale since April 2011.

*Other current director or officer positions:* Executive Secretary of the Ministry of Finance since 2011; Chairman of Banco do Brasil since 2009; Director of Brasilveículos since 2011.

*Professional experience:* Director of Brasilcap from 2010 to 2011; adviser to the Presidency of BNDES from 2005 to 2006; director of EPE—Empresa de Pesquisa Energética, a state-owned energy research company, from 2007 to 2009; Secretary of Economic Policy of the Ministry of Finance from 2008 to 2010, where he also served as Secretary of Economic Monitoring from 2007 to 2008 and Assistant Secretary for Economic Policy from 2006 to 2007.

*Academic background:* Degree and Master’s degree in Economics from Universidade Federal do Rio de Janeiro (“UFRJ”) and a Ph.D. in Economics from New School for Social Research.

**Renato da Cruz Gomes**, 58: Director of Vale since April 2001.

*Other current director or officer positions:* Executive Officer and Member of the Board of Directors of Valepar; Investor Relations Executive Officer of Bradespar since 2000.

*Professional experience:* Various positions at BNDES from 1976 to 2000; Member of the Board of Directors of Iochpe Maxion S.A., a publicly-held company with investments in the auto parts and railway equipment industries, Globo Cabo S.A., currently Net Serviços de Comunicação S.A. (“Net”), a Brazilian cable TV operator, Latasa and the Brazilian pulp and paper manufacturers Aracruz Celulose S.A., currently Fibria S.A., and Bahia Sul Celulose S.A.

*Academic background:* Degree in Engineering from UFRJ and graduate degree in Management Development from Sociedade de Desenvolvimento Empresarial (“SDE”).

**Fuminobu Kawashima**, 59: Director of Vale since April 2011.

*Other current director or officer positions:* Executive Managing Officer and Chief Operating Officer of the Marine & Aerospace business unit of Mitsui, a publicly-held trading company that is one of Valepar's major shareholders, since 2010.

*Professional experience:* Managing Officer and Chief Operating Officer of the Energy business of Mitsui, where he also served as the General Manager of the energy business unit of the LNG project division from 2005 to 2007 and as the General Manager of the energy business unit of the Natural Gas division from May to September 2005; Director of Japan Australia Eng Pty Ltd., an oil and gas company, from 2005 to 2007; Director of Mitsui Oil Co. Ltd., a petroleum products company, from 2007 to 2009 and Director of Kyokuto Petroleum Industries Ltd., an oil refinery, from 2007 to 2009.

*Academic background:* Degree in Economics from Hitotsubashi University in Japan; post-graduate degree in Economic Development from Keble College, Oxford.

**Oscar Augusto de Camargo Filho, 73:** Director of Vale since October 2003.

*Other current director or officer positions:* Director of Valepar; partner of CWH Consultoria Empresarial, a business consulting firm.

*Professional experience:* Chairman of the Board of Directors of MRS from 1999 to 2003 and Chief Executive Officer and Member of the Board of Directors of CAEMI—Mineração e Metalurgia S.A. ("CAEMI"), a mining holding company that was acquired by Vale in 2006, where Mr. Camargo Filho also held various positions from 1973 to 2003; various positions at Motores Perkins S.A., including commercial officer and sales and services manager, from 1963 to 1973.

*Academic background:* Law degree from USP.

**Luciano Galvão Coutinho, 64:** Director of Vale since August 2007.

*Other current director or officer positions:* President of BNDES.

*Professional experience:* Partner of LCA Consultores, a business consulting firm, from 1995 until 2007 and Executive Secretary of the Ministry of Science and Technology from 1985 to 1988. Mr. Coutinho is an invited professor at the Universidade Estadual de Campinas ("UNICAMP") and has been a visiting professor at USP, the University of Paris XIII, the University of Texas and the Ortega y Gasset Institute.

*Academic background:* Degree in Economics from USP, where Mr. Coutinho was awarded the Gastão Vidigal prize for best economics student; Master's degree in Economics from the Economic Research Institute of USP and a Ph.D. in Economics from Cornell University.

**José Mauro Mettrau Carneiro da Cunha, 61:** Director of Vale since June 2010.

*Other current director or officer positions:* Chairman of the Board of Directors of a number of publicly-held Brazilian telecommunication companies, including Tele Norte Leste Participações S.A., Telemar Norte Leste S.A., Coari Participações S.A. and Calais Participações S.A. since 2007, Tele Norte Celular Participações S.A. since 2008, and Brasil Telecom S.A. since 2009; Chairman of the Board of Directors of TNL PCS S.A. ("TNL"), a telecommunications company, since 2007; director of Santo Antonio Energia S.A., a Brazilian energy company, since 2008, Log-In since 2007 and Lupatech S.A., a publicly-held oil and gas production support company, since 2006; alternate director of Telemar Participações S.A., a Brazilian telecommunications company, since 2008.

*Professional experience:* Member of the Board of Directors of Braskem S.A., a Brazilian petrochemical company, from 2007 to April 2010, where he previously served as Vice-President of Strategic Planning from 2003 to 2005, Politéno Indústria e Comércio S.A., a manufacturer of polyethylene and

thermoplastic resins, from 2003 to 2004, Banco do Estado do Espírito Santo (“BANESTES”), a financial institution, from 2008 to 2009, and TNL from 1999 to 2003, where he also served as an Alternate Director in 2006.

*Academic background:* Degree in Mechanical Engineering from Universidade Católica de Petrópolis in Rio de Janeiro; executive education program in management at Anderson School, University of California at Los Angeles (United States).

**Paulo Soares de Souza, 46:** Director of Vale since April 2011.

*Professional experience:* Alternate Director of Vale from 2007 to 2009; union leader since 1997, and President of Itabira’s Employees Union (*Sindicato dos Trabalhadores nas Indústrias de Extração Mineral e de Pesquisa, Prospecção, Extração e Beneficiamento do Ferro e Metais Básicos e demais Minerais Metálicos e não Metálicos*) since 2003.

*Academic background:* Technical degree as an electrician from Serviço Social da Indústria (SESI) School of Technology.

### Executive officers

The executive officers are responsible for day-to-day operations and the implementation of the general policies and guidelines set forth by the Board of Directors. Our bylaws provide for a minimum of six and a maximum of 11 executive officers. The executive officers hold weekly meetings and hold additional meetings when called by any executive officer. Under Brazilian corporate law, executive officers must be Brazilian residents.

The Board of Directors appoints executive officers for two-year terms and may remove them at any time. All of our current executive officers were elected or re-elected, as the case may be, at the Board of Directors’ meeting held on May 21, 2009, except for Mr. Ledsham and Mr. Barbosa, who were appointed at the Board of Directors’ meeting held on May 27, 2010, and Mr. Cavalcanti, who was appointed at the Board of Directors’ meeting held on August 26, 2010. The following table lists our current executive officers.

	<b>Year of appointment</b>	<b>Position</b>	<b>Age</b>
Roger Agnelli . . . . .	2001	Chief Executive Officer	51
Guilherme Perboyre Cavalcanti . . . . .	2010	Chief Financial Officer	42
José Carlos Martins . . . . .	2004	Executive Officer (Marketing, Sales and Strategy)	61
Eduardo de Salles Bartolomeo . . . . .	2006	Executive Officer (Integrated Operations)	47
Carla Grasso . . . . .	2001	Executive Officer (Human Resources & Corporate Services)	49
Tito Botelho Martins . . . . .	2006	Executive Officer (Base Metals Operations)	48
Eduardo Jorge Ledsham . . . . .	2010	Executive Officer (Exploration, Energy and Projects)	48
Mário Alves Barbosa Neto . . . . .	2010	Executive Officer (Fertilizers)	64

On April 4, 2011, the shareholders of Valepar nominated Murilo Ferreira to succeed Roger Agnelli as Vale’s Chief Executive Officer, effective May 22, 2011, at the conclusion of Mr. Agnelli’s term. The nomination is subject to approval of Vale’s Board of Directors.

Below is a summary of the business experience, activities and areas of expertise of our current executive officers.

**Roger Agnelli, 51:** Chief Executive Officer of Vale since July 2001; Permanent Member of Vale’s Strategy Committee since 2001.

*Other current director or officer positions:* Member of the Global Advisory Board of Anadarko Petroleum Corporation, a publicly-held oil and gas exploration and production company, since 2009.

*Professional experience:* Chairman of our Board of Directors from May 2000 until July 2001; President and Chief Executive Officer of Bradespar from March 2000 to July 2001; Executive Director of Banco Bradesco from 1998 until 2000; member of the International Advisory Committee of the NYSE; Vice-President of the center of industries of the state of Rio de Janeiro; member of the strategic superior council of the Federação das Indústrias do Estado de São Paulo (“FIESP”), an industrial trade group in the Brazilian state of São Paulo; member of the Conselho Consultivo do Setor Privado (“CONEX”), the private sector advisory council for the foreign trade chamber of the presidency of Brazil; member of the International Advisory Investment Council to the president of the Republic of Mozambique; member of the Conselho de Desenvolvimento Econômico e Social (“CDES”), an advisory body to the president of Brazil on economic and social development issues, from 2003 to 2007. Mr. Agnelli was also a Member of the Board of Directors of ABB Ltd., CPFL, CSN, Latasa, VBC Energia S.A., Brasmotor, Mahle Metal Leve, Rio Grande Energia, Suzano Petroquímica, Serra da Mesa Energia S.A., Duke Energy, Spectra Energy Corp., and Petrobras and has been a Director of UGB and Vice-President of ANBID.

*Academic background:* Degree in Economics from Fundação Armando Álvares Penteado in São Paulo.

**Carla Grasso, 49:** Executive Officer for Human Resources and Corporate Services of Vale since October 2001; Member of the Board of Directors of Vale Fertilizantes since June 2010.

*Professional experience:* Member of Curator’s Council of Fundação Vale and chief of personnel, management and information technology at our corporate center from 1997 to 2001; Chairperson of Brazil’s Pension Fund Authority; head of the office of international affairs of the Ministry of Social Welfare of Brazil; head of the department of fiscal policies of the Ministry of Finance; and coordinator of the social and macroeconomic areas in the Office of the President of Brazil. Ms. Grasso has also been a lecturer of economics and advanced mathematics at the Centro Universitário do Distrito Federal and the Universidade Católica de Brasília.

*Academic background:* Degree in Economics and Master’s degree in Economic Policies from the Universidade de Brasília (“UNB”); executive education programs at INSEAD (France), IMD (Switzerland) and Sloan School of Management, MIT (United States).

**Eduardo de Salles Bartolomeo, 47:** Executive Officer of Integrated Operations of Vale since January 2007.

*Other current director or officer positions:* Member of the Board of Directors of Log-In since 2007.

*Professional experience:* President of Petroflex, a polyethylene duct and conduit manufacturer, from August to December 2006; Officer of the logistics operations department of Vale between January 2004 and July 2006; Manager of Corporate Planning, Plant Manager, Corporate Logistics Manager and Regional Director at Companhia de Bebidas das Américas (“Ambev”), a brewery company, from 1994 to 2003; and head of the steel conversion sector at COSIPA, a Brazilian steel producer, until 1991.

*Academic background:* Degree in Metallurgical Engineering from the Universidade Federal Fluminense and MBA from the Katholieke Universiteit in Leuven, Belgium.

**Eduardo Jorge Ledsham, 48:** Executive Officer for Exploration, Energy and Projects of Vale since May 2010; Chairman of the Board of Directors of Vale Óleo e Gás S.A. since May 2009; Chairman of the Board of Directors of CADAM since December 2009; Member of the Board of Directors of Vale Fertilizantes since June 2010.

*Professional experience:* Within Vale, global officer responsible for exploration and project development, energy and fertilizers from 2008 to 2010 and officer of exploration and mineral project development in Brazil, the Americas, Africa, Asia and Oceania from 2005 to 2007, among other previous positions.

*Academic background:* Degree in Geology from UFMG; graduate degrees in Finance from IBMEC, in Business and Project Management from FGV and in Management from Fundação Dom Cabral; executive education programs on mergers and acquisitions at Harvard Business School and management at IMD (Switzerland) and MIT.

**Guilherme Perboyre Cavalcanti, 42:** Chief Financial Officer of Vale since August 2010, Permanent Member of Vale's Finance Committee since August 2010; Member of Vale's Risk Management and Disclosure Committees since August 2010; Member of the Board of Directors of Vale Fertilizantes since June 2010.

*Other current director or officer positions:* Member of the Board of Directors of Log-In since 2007;

*Professional experience:* Global head of Vale's corporate finance department from 2005 to 2010; Member of the Board of Directors of Net from 2002 to 2005; and treasury officer of Globo Comunicações e Participações S.A., a Brazilian media group.

*Academic background:* Degree and Master's degree in Economics from Pontifícia Universidade Católica in Rio de Janeiro; executive education programs at IMD (Switzerland) and Sloan School of Management, MIT (United States).

**José Carlos Martins, 61:** Executive Officer for Marketing, Sales and Strategy of Vale since April 2005.

*Other current director or officer positions:* Member of the Board of Directors of Samarco.

*Professional experience:* Executive Officer of Vale for New Business Development from April 2004 to March 2005; President of South America aluminum can production and marketing for Rexam PLC, a global consumer packaging group; President of Latasa from 1999 until Rexam PLC bought Latasa in 2003; Executive Officer for steel production of CSN from 1997 until 1999; and Chief Executive Officer at Aços Villares, a steel manufacturer, where Mr. Martins also held several other important positions from 1986 until 1996.

*Academic background:* Degree in Economics from Pontifícia Universidade Católica in São Paulo.

**Mário Alves Barbosa Neto, 64:** Executive Officer for Fertilizers of Vale since May 2010, Chief Executive Officer and Member of the Board of Directors of Vale Fertilizantes since 2005.

*Other current director or officer positions:* Member of the Advisory Board of Associação Nacional para Difusão de Adubos ("ANDA"), a fertilizer industry trade group, since 2005.

*Professional experience:* Chief Executive Officer of Bunge Fertilizantes S.A., a fertilizer manufacturer, from 2000 to 2010; Chief Executive Officer of ANDA from 1992 to 2010; Chairman of the Board of Directors of Fosbrasil S.A., a Brazilian phosphate manufacturer, from 1996 to 2010; Chairman of the Board of Directors of Fertifos Administração e Participações S.A. from 1997 to 2009; Member of the Board of Directors and Chief Executive Officer of Bunge Brasil S.A. from 1996 to 2005; and Executive Officer of Bunge Participações e Investimentos S.A. ("BPI") from 2006 to 2010.

*Academic background:* Degree in Industrial Engineering from Escola Politécnica of USP and a post-graduate degree in Business Administration from FGV.

**Tito Botelho Martins, 48:** Executive Officer for Base Metals Operations of Vale since 2006; President and Chief Executive Officer of Vale Canada; Member of Vale's Risk Management Committee since 2008.

*Other current director or officer positions:* Chairman of the Board of Directors of MRN; Member of the Board of Directors of Hydro, a publicly traded aluminum company.

*Professional experience:* Executive Officer of Vale for corporate affairs and energy; Chief Executive Officer of CAEMI and Chairman and Chief Executive Officer of MBR from 2003 to 2006; and Managing Officer of the corporate finance department of Vale from August 1999 to September 2003. Previously, Mr. Martins was a Member of the Board of Directors of Fundação Vale do Rio Doce de Seguridade Social (“Valia”), a pension plan for Brazilian employees of Vale, Ferrovias Bandeirantes S.A. (“Ferrobán”), a railway company, Aço Minas Gerais S.A. (“Açominas”), a steel company, Gulf Industrial Investment Company (“GIIC”), an iron ore pelletizing company in the country of Bahrain, and at our affiliated companies FCA, Samarco, Itabasco and Hispanobras.

*Academic Background:* Degree in Economics from the Universidade Federal de Minas Gerais; Master’s degree in Business Administration from UFRJ; executive education programs at INSEAD (France) and at the Kellogg School of Management of Northwestern University (United States).

### **Conflicts of interest**

Under Brazilian corporate law, if a director or an executive officer has a conflict of interest with the Company in connection with any proposed transaction, the director or executive officer may not vote in any decision of the Board of Directors or of the board of executive officers regarding such transaction and must disclose the nature and extent of the conflicting interest for transcription in the minutes of the meeting. In any case, a director or an executive officer may not transact any business with the Company, except on reasonable or fair terms and conditions that are identical to the terms and conditions prevailing in the market or offered by unrelated parties.

### **Fiscal Council**

We have a fiscal council established in accordance with Brazilian law. The primary responsibility of the fiscal council under Brazilian corporate law is to monitor management’s activities, review the Company’s financial statements, and report its findings to the shareholders. Pursuant to a written policy, our Fiscal Council requires management to obtain the Fiscal Council’s approval before engaging any external auditor to provide any audit or permitted non-audit services to Vale or its consolidated subsidiaries. Under the policy, the Fiscal Council has pre-approved a detailed list of services based on detailed proposals from our auditors up to specified monetary limits. The list of pre approved services is updated periodically. Services that are not listed, that exceed the specified limits, or that relate to internal controls must be separately pre-approved by the Fiscal Council. The policy also sets forth a list of prohibited services. The Fiscal Council is provided with reports on the services provided under the policy on a periodic basis, review and monitor the Company’s external auditor’s independence and objectivity. The Fiscal Council has the power to review and evaluate the performance of the Company’s external auditors on an annual basis and make a recommendation to the Board of Directors on whether the Company should remove and replace its existing external auditors. The Fiscal Council may also recommend withholding the payment of compensation to the independent auditors has the power to mediate disagreements between management and the auditors regarding financial reporting.

Under our bylaws, our Fiscal Council is also responsible for establishing procedures for the receipt, retention and treatment of any complaints related to accounting, controls and audit issues, as well as procedures for the confidential, anonymous submission of concerns regarding such matters.

Brazilian law requires the members of a fiscal council to meet certain eligibility requirements. A member of our Fiscal Council cannot (i) hold office as a member of the board of directors, fiscal council or advisory committee of any company that competes with Vale or otherwise has a conflicting interest with Vale, unless compliance with this requirement is expressly waived by shareholder vote, (ii) be an employee or member of the management of Vale or its subsidiaries or affiliates, or (iii) be a spouse or relative within the third degree by affinity or consanguinity of an officer or director of Vale.

We are required by both the SEC and the NYSE listed company audit committee rules to comply with Exchange Act Rule 10A-3, which requires, absent an exemption, a standing audit committee composed of

members of the Board of Directors that meet specified requirements. In lieu of establishing an independent audit committee, we have given our Fiscal Council the necessary powers to qualify for the exemption set forth in Exchange Act Rule 10A-3(c)(3). We believe our Fiscal Council satisfies the independence and other requirements of Exchange Act Rule 10A-3 that would apply in the absence of our reliance on the exemption. Pursuant to our undertakings to the HKEx, the Fiscal Council must be comprised of at least three members who satisfy specified independence requirements set out in the HKEx Listing Rules. We believe that the members of our Fiscal Council appointed by Valepar satisfy these independence requirements.

Our Board of Directors has determined that one of the members of our Fiscal Council, Mr. Aníbal Moreira dos Santos, is an audit committee financial expert. In addition, Mr. Moreira dos Santos meets the applicable independence requirements for Fiscal Council membership under Brazilian law and the NYSE independence requirements that would apply to audit committee members in the absence of our reliance on the exemption set forth in Exchange Act Rule 10A-3(c)(3).

Members of the Fiscal Council are elected by our shareholders for one-year terms. The current members of the Fiscal Council and their respective alternates were elected on April 19, 2011. The terms of the members of the Fiscal Council expire at the next annual shareholders' meeting following election.

Two members of our Fiscal Council (and the respective alternates) may be elected by non-controlling shareholders: one member may be appointed by our preferred shareholders and one member may be appointed by minority holders of common shares comprising at least 10% of the common shares outstanding.

The following table lists the current and alternate members of the Fiscal Council.

<u>Current member</u>	<u>First year of appointment</u>	<u>Alternate</u>	<u>First year of appointment</u>
Antônio Henrique Pinheiro Silveira(1) . . . . .	2011	Marcus Pereira Aucélio(1) . . . . .	2008
Arnaldo José Vollet(2) . . . . .	2011	Cícero da Silva(2) . . . . .	2009
Marcelo Amaral Moraes(2) . . . . .	2004	Oswaldo Mário Pêgo de Amorim Azevedo(2) . . . . .	2004
Aníbal Moreira dos Santos(2) . . . . .	2005	Vacant . . . . .	–

(1) Appointed by preferred shareholders.

(2) Appointed by Valepar.

Below is a summary of the business experience, activities and areas of expertise of the members of our Fiscal Council.

**Antônio Henrique Pinheiro Silveira, 46:** Member of Vale's Fiscal Council since 2011.

*Other director or officer positions:* Secretary of Economic Management of the Ministry of Finance since 2008; Director of Companhia de Seguros Aliança do Brasil, a private insurance company, since 2010, and of Norte Energia SA, a private energy company, since July 2010.

*Professional experience:* Assistant Secretary for Economic Management of the Ministry of Finance from 2007 to 2008 and Assistant Chief Economic Advisor of the Ministry of Planning, Budget and Management of Brazil from 2004 to 2007. He also served as Chairman of Banco Nordeste do Brasil, a privately-held bank, from 2008 to 2010; Director of Empresa Gestora de Ativos—EMGEA, a private asset management entity, from 2007 to 2008; and member of the senior management of Companhia Docas do Estado da Bahia, a port services provider, from 2005 to 2007.

*Academic Background:* Bachelor's, Master's and Ph.D. degrees in Economics from UFRJ.

**Arnaldo José Vollet, 62:** Member of Vale's Fiscal Council since April 2011.

*Professional experience:* Executive Officer of BB DTVM, a subsidiary of Banco do Brasil, from 2002 to 2009; Finance and Investor Relations Officer of Companhia de Energia Elétrica da Bahia—Coelba, a publicly-held electricity company, from 2000 to 2002; Member of the Fiscal Council of Telesp Celular—Participações, a publicly-held telecommunications company, from 1999 to 2000; Member of the Fiscal Council of CELP—Companhia de Eletricidade de Pernambuco, a publicly-held electricity company, from 2004 to 2009; Director of Guaraniã, currently Neoenergia S.A., a publicly-held electricity holding company, from 2002 to 2003; Alternate Member of the Board of Directors of CEMIG—Companhia de Energia de Minas Gerais, a publicly-held electricity company, from 2003 to 2005.

*Academic background:* Degree in Mathematics from USP and MBA degree in Finance from IBMEC/RJ.

**Marcelo Amaral Moraes, 43:** Member of the Fiscal Council since 2004 and Director for specialized funds of Grupo Stratus, a private equity and financial advisory company, since 2006.

*Professional experience:* Resource Manager at Stratus Investimentos Ltda., a private equity and venture capital firm, from 2006 to 2010; Investment Manager at Bradespar from 2000 to 2006; worked in the mergers and acquisitions and capital markets departments of Banco Bozano, Simonsen from 1995 to 2000; Alternate Member of the Board of Directors of Net from 2004 to 2005; Alternate Member of the Board of Directors of Vale in 2003.

*Academic background:* Degree in Economics from UFRJ and an MBA from UFRJ/COPPEAD.

**Aníbal Moreira dos Santos, 72:** Member of Vale's Fiscal Council since 2005 and of the Fiscal Council of Log-In since April 2009.

*Professional experience:* From 1998 until his retirement in 2003, served as Executive Officer of several CAEMI subsidiaries, including Caemi Canada Inc., Caemi Canada Investments Inc., CMM Overseas, Ltd., Caemi International Holdings BV and Caemi International Investments NV; Member of the Fiscal Council of CADAM from 1999 to 2003; and an Alternate Member of the Board of Directors of MBR and Empreendimentos Brasileiros de Mineração, an iron ore asset holding company, from 1998 to 2003; Chief Accounting Officer of CAEMI from 1983 to 2003.

*Academic background:* Degree in Accounting from FGV in Rio de Janeiro.

## MANAGEMENT COMPENSATION

Under our bylaws, our shareholders are responsible for establishing the aggregate compensation we pay to the members of our Board of Directors and our Board of Executive Officers, and the Board of Directors allocates the compensation among its members and the Board of Executive Officers.

Our shareholders determine this annual aggregate compensation at the general shareholders' meeting each year. In order to establish aggregate director and officer compensation, our shareholders usually take into account various factors, which range from attributes, experience and skills of our directors and executive officers to the recent performance of our operations. Once aggregate compensation is established, the members of our Board of Directors are then responsible for distributing such aggregate compensation in compliance with our bylaws among the directors and executive officers, in the latter case, at the recommendation of the Chief Executive Officer. The Executive Development Committee of our Board of Directors makes recommendations to the Board concerning the annual aggregate compensation of the executive officers. In addition to fixed compensation, our executive officers are also eligible for bonuses and incentive payments.



For the year ended December 31, 2010, we paid US\$39.5 million in aggregate to the executive officers, of which US\$8.6 million was fixed compensation and US\$30.8 million was variable compensation and in kind benefits, including amounts accrued to provide pension, retirement or similar benefits for our executive officers of US\$0.81 million. We paid US\$1 million in aggregate to the members of our Board of Directors for services in all capacities, all of which was fixed compensation. There are no pension, retirement or similar benefits for the members of our Board of Directors.

As of March 31, 2011, the total number of common shares owned by our directors and executive officers was 257,294, and the total number of preferred shares owned by our directors and executive officers was 1,145,338. None of our directors or executive officers beneficially owns 1% or more of any class of our shares.

#### *Fiscal Council*

We paid an aggregate of US\$519,297 to members of the Fiscal Council in 2010. In addition, the members of the Fiscal Council are reimbursed for travel expenses related to the performance of their functions.

#### *Advisory committees*

We paid an aggregate of US\$116,524 to members of our advisory committees in 2010. Under Article 15 of our bylaws, those members who are directors or officers of Vale are not entitled to additional compensation for participating on a committee. Members of our advisory committees are reimbursed for travel expenses related to the performance of their functions.

### **EMPLOYEES**

The following table sets forth the number of our employees by category as of the dates indicated.

	<b>At December 31,</b>		
	<b>2008</b>	<b>2009</b>	<b>2010</b>
Bulk materials . . . . .	36,234	35,760	40,986
Base metals operations . . . . .	20,341	18,031	17,855
Fertilizer nutrients . . . . .	821	1,156	6,054
Corporate activities(1) . . . . .	5,094	5,089	5,890
Total . . . . .	62,490	60,036	70,785

(1) Includes Marketing, Sales & Strategy; Exploration, Energy & Projects; Human Resources & Corporate Services; Finance & Investor Relations, and others.

We negotiate wages and benefits with a large number of unions worldwide that represent our employees. We have collective agreements with unionized employees at our Argentine, Australian, Brazilian, Canadian, Indonesian, New Caledonian, Peruvian and U.K. operations.

A significant number of our employees at our Canadian nickel operations in Sudbury and Port Colborne, Ontario were on strike during the period from July 2009 to July 2010. A number of employees working in mining and mill operations at Voisey Bay, Newfoundland and Labrador were on strike from August 2009 to January 2011. We entered into five-year collective agreements with the unions representing the employees previously on strike, which we believe provide the right incentives for increasing labor productivity and enhancing the long-term competitiveness of these operations and their capacity to continue generating value. The collective agreements include a defined contribution pension plan for new employees and adjustments in variable compensation programs that support the achievement of strategic objectives and rewards performance, among various other improvements to the collective bargaining agreement.

## **Wages and benefits**

Wages and benefits for Vale and its subsidiaries are generally established on a company-by-company basis. Vale establishes its wage and benefits programs for Vale and its subsidiaries, other than Vale Canada, in periodic negotiations with unions. In November 2009, Vale reached a two-year agreement with the Brazilian unions, which is valid until November 2011. Salary increases of 7% were implemented in November 2009 and November 2010 for our employees in Brazil as part of that agreement. The provisions of Vale's collective bargaining agreements with its unions also apply to Vale's non-unionized employees. Vale Canada establishes wages and benefits for its unionized employees through collective agreements. For non-unionized employees, Vale Canada undertakes an annual review of salaries. Vale and its subsidiaries provide their employees and their dependents with other benefits, including supplementary medical assistance.

## **Pension plans**

Brazilian employees of Vale and of most of its Brazilian subsidiaries are eligible to participate in pension plans managed by Valia. Sponsored by Vale and such subsidiaries, Valia is a closed, nonprofit, complementary social security foundation with both financial and administrative autonomy.

Most of the participants in plans held by Valia are participants in a plan named "Vale Mais," which Valia implemented in May 2000. This plan is primarily a defined contribution plan with a defined benefit feature relating to service prior to May 2000 and another defined benefit feature to cover temporary or permanent disability, pension and financial protection to dependents in case of death. Valia also operates a defined benefit plan, closed to new participants since May 2000, with benefits based on years of service, salary and social security benefits. This plan covers retired participants and their beneficiaries, as well as a relatively small number of employees that declined to transfer from the old plan to the "Vale Mais" plan when it was established in May 2000.

Our wholly owned subsidiary Vale Canada sponsors defined benefit pension plans, principally for employees in Canada, the United States, the United Kingdom and Indonesia. Most of these defined benefit plans are closed to new members. They have been replaced with defined contribution plans for new employees in Canada and the United Kingdom. Each of the jurisdictions in which these plans is offered has legislation which, among other statutory requirements, cover minimum contributions to be made to these plans to meet their potential liabilities as calculated in accordance with such legislation. Vale Canada's subsidiary, Vale Newfoundland & Labrador Ltd., has a defined contribution pension plan. In addition, Vale Canada provides supplemental retirement benefits arrangements for eligible employees.

## **Performance-based compensation**

All Vale parent-company employees receive incentive compensation each year in an amount based on the performance of Vale, the performance of the employee's department and the performance of the individual employee. Similar incentive compensation arrangements are in place at our subsidiaries.

Certain Vale employees are also eligible to receive deferred bonuses with vesting periods of three years based on Vale's performance as measured by total shareholder return relative to a group of peer companies over the vesting period. Since 2008, qualifying management personnel have been eligible to participate at their option in a bonus program tied to preferred share ownership. Under the program, each qualified employee may elect to invest part of their bonus either in Vale preferred shares for eligible employees receiving an incentive payment in Brazil, or in ADRs representing Vale preferred shares for eligible employees receiving an incentive payment outside Brazil. If the employee continues to be employed by us and has held the preferred shares (or ADRs) for the entire duration of the relevant cycle of the matching program, at the expiration of the applicable three year term of the program, the employee will receive a cash payment to be applied to purchase in the open market a number of additional preferred shares (or ADRs) equal to the number of preferred shares (or ADRs) purchased by the employee pursuant to the program. During the three-year term of the incentive program, participating employees have the right to sell

all or part of the preferred shares (or ADRs) purchased through the program, however such employees forfeit the right to the matching reward for all shares sold prior to the expiration of the term of the program. For the 2010-2012 cycle, 1,255 employees participated in the program.

## **V. ADDITIONAL INFORMATION**

### **LEGAL PROCEEDINGS**

We and our subsidiaries are defendants in numerous legal actions in the normal course of business, including civil, administrative, tax, social security and labor proceedings. The most significant proceedings are discussed below. The amounts claimed, and the amounts of our provisions for possible losses, are stated as of December 31, 2010. See Note 21 to our consolidated financial statements for further information.

#### **Praia Mole suit**

We are among the defendants in a public civil action filed by Brazilian federal government agencies in November 1997 seeking to annul the concession agreements under which the defendants operate the Praia Mole maritime terminal in the Brazilian state of Espírito Santo. The case was decided in our favor in November 2007 with a decision recognizing the validity of that concession agreement, however, the federal public prosecutor filed an appeal with the federal circuit court in April 2008, which is still pending.

#### **Itabira suits**

We are a defendant in two separate actions brought by the municipality of Itabira, in the Brazilian state of Minas Gerais. In the first action, filed in August 1996, the municipality of Itabira alleges that our Itabira iron ore mining operations have caused environmental and social harm, and claims damages with respect to the alleged environmental degradation of the site of one of our mines, as well as the immediate restoration of the affected ecological complex and the performance of compensatory environmental programs in the region. The damages sought, as adjusted from the date of the claim, amount to approximately R\$2.440 billion (US\$1.464 billion). There have been hearings in this action and a report favorable to Vale was issued, but a final decision is still pending the judicial review of additional expert evidence.

In the second action, filed in September 1996, the municipality of Itabira claims the right to be reimbursed for expenses it has incurred in connection with public services rendered as a consequence of our mining activities. The damages sought, as adjusted from the date of the claim, amount to approximately R\$2.825 billion (US\$1.695 billion). This case has been suspended pending consideration of our request to include favorable evidence from a separate lawsuit.

#### **CFEM-related proceedings**

We are a defendant in a series of administrative and judicial proceedings with the National Mineral Production Department (*Departamento Nacional de Produção Mineral*), or DNPM, an agency of the Ministry of Mines and Energy of the Brazilian government relating to the mining royalty known as the CFEM. These proceedings concern different interpretations of the deductibility of tax and transportation expenditures, DNPM's method of estimating sales, the statute of limitations, due process of law, payment of royalties on pellet sales and CFEM charges on the revenues generated by our subsidiaries abroad. We believe that the DNPM's allegations are without merit. The early judicial decisions in the first instance have been favorable to our positions, particularly on arguments concerning permissible deductions, the statute of limitations and due process of law.

The aggregate amount claimed in the administrative and judicial proceedings is approximately R\$7.880 billion (US\$4.729 billion).

## **Tax litigation**

We are engaged in litigation with respect to Article 74 of the Brazilian Provisional Measure 2,158-34/2001 (“Article 74 of the Provisional Measure”), a tax regulation requiring payment of income tax in Brazil on net income of foreign subsidiaries. In 2003, we initiated a legal proceeding challenging the applicability of the regulation based on the following arguments: (i) Article 74 of the Provisional Measure disregards double taxation treaties between Brazil and the countries where some of our subsidiaries are based; (ii) the Brazilian Tax Code prohibits the establishment of conditions and timing of any tax assessment by means of a regulation such as Article 74 of the Provisional Measure; (iii) even if Article 74 of the Provisional Measure is valid, currency exchange gains and losses must be excluded from the net income of our foreign subsidiaries in the calculation of taxes owed (in accordance with new Brazilian accounting principles and IFRS); and (iv) the constitutional principle prohibiting retroactive application of tax laws would be violated if this regulation were applied to net income generated before December 2001. We received an unfavorable decision on the merits of the case at the court of first instance, but we did obtain a preliminary injunction suspending our obligation to pay the disputed amounts. We appealed the lower court’s decision in July 2005, and in March 2011, we received an unfavorable decision from the Federal Court of Appeals (*Tribunal Regional Federal da 2ª Região*). New appeals will be presented before the Superior Court of Justice (*Superior Tribunal de Justiça*) and the Supreme Court (*Supremo Tribunal Federal*) as soon as the Federal Court’s decision is published. In April 2011, another taxpayer prevailed in the Superior Court of Justice (*Superior Tribunal de Justiça*) on some of the same grounds that we have asserted against the tax authorities. The leading case filed by the Brazilian Industry Association, challenging the constitutionality of Article 74 of the Provisional Measure, is pending judgment before the Supreme Court (*Supremo Tribunal Federal*). Even if that constitutional claim fails, we intend to continue pursuing the other legal arguments.

The tax authorities have levied four tax assessments against us for payment of taxes in accordance with Article 74 of the Provisional Measure, for a total claim of R\$26.708 billion (US\$16.029 billion) covering the years from 1996 to 2008. We await final administrative judgment on these assessments.

## **Railway litigation**

In August 2006, the Brazilian federal rail network, Rede Ferroviária Federal S.A. (“RFFSA”) filed a breach of contract claim against us for R\$2.662 billion (US\$1.597 billion) in damages, stemming from a 1994 agreement regarding the construction of two railway networks. The RFFSA has since been succeeded as plaintiff by the Brazilian government.

In 1994, prior to becoming a private company, Vale entered into a contract with RFFSA to build two railway networks in Belo Horizonte, Brazil, which were to be incorporated into an existing railway segment, in a project called “*Transposição de Belo Horizonte*.” We subsequently entered into a related agreement with the Brazilian government to begin the construction of an alternative railway segment, because the initially agreed upon segments cannot currently be built.

Before the RFFSA lawsuit was filed, we filed a claim against RFFSA, now succeeded as defendant by the Brazilian government, which challenged the inflation adjustment provisions in the contract with RFFSA. We contend that the method of calculation employed by the Brazilian government is not lawful under Brazilian law.

We assert that the construction costs of the new segment should be set off against the damages sought under the original RFFSA claim, which would significantly reduce the amount we would be required to pay in damages. The lawsuit has yet to be heard and no date has been fixed for a hearing.

## **Gold forward contracts litigation**

In 1988 and 1989, we entered into gold forward contracts with various Brazilian private pension funds. Under the terms of these contracts, settlement was permitted by either physical delivery or cash payment.

However, in May 1989 the Brazilian government, through the Brazilian central bank, passed a resolution prohibiting settlement by physical delivery, and we were consequently obligated to settle in cash. During these years, Brazil experienced severe inflation and, beginning in 2005, some of the pension funds sued us, claiming that the inflation adjustment provided for in the contracts did not adequately compensate them for monetary losses arising from the government's measures to control inflation during this period. There are 11 such lawsuits. We have prevailed in two cases in the lower court, but the adverse parties appealed to the Superior Courts. We have lost four of the cases in the lower courts, and, in April 2011, in our major lawsuit the Superior Court of Justice (*Superior Tribunal de Justiça*) issued an appealable decision against us, but we are pursuing appeals in each such case. The five remaining cases are still pending in the lower courts (*fase probatória*) and the amounts claimed in these remaining cases are not material. The total amount claimed is now R\$495.5 million (US\$297.4 million).

#### **Transger suit**

One of our subsidiaries, FCA, is a defendant in a suit first filed in state court in Minas Gerais by Transger S.A. ("Transger") and later moved to federal court. Transger seeks money damages and the annulment of certain General Meetings that occurred in early 2003, at which shareholders approved an increase in FCA's authorized capital, on the grounds of allegedly abusive acts by FCA's controlling group. The court of first instance initially ruled against the defendants, but subsequently rescinded the judgment to allow for the preparation of an additional expert report.

### **MEMORANDUM AND ARTICLES OF ASSOCIATION**

#### **Company objectives and purposes**

Our corporate purpose is defined by our bylaws to include:

- the exploitation of mineral deposits in Brazil and abroad by means of research, extraction, processing, industrialization, transportation, shipment and commerce of mineral goods;
- the building and operation of railways and the exploitation of own or unrelated-party rail traffic;
- the building and operation of our own or unrelated-party maritime terminals, and the exploitation of nautical activities for the provision of support within the harbor;
- the provision of logistics services integrated with cargo transport, comprising generation, storage, transshipment, distribution and delivery within the context of a multimodal transport system;
- the production, processing, transport, industrialization and commerce of all and any source and form of energy, also involving activities of production, generation, transmission, distribution and commerce of its products, derivatives and sub products;

- the carrying-on, in Brazil or abroad, of other activities that may be of direct or indirect consequence for the achievement of its corporate purpose, including research, industrialization, purchase and sale, importation and exportation, the exploitation, industrialization and commerce of forest resources and the provision of services of any kind whatsoever; and
- constituting or participating in any fashion in other companies, consortia or associations directly or indirectly related to its business purpose.

### **Common shares and preferred shares**

Set forth below is certain information concerning our authorized and issued share capital and a brief summary of certain significant provisions of our bylaws and Brazilian corporate law. This description does not purport to be complete and is qualified by reference to our bylaws (an English translation of which we have filed with the SEC) and to Brazilian corporate law.

Our bylaws authorize the issuance of up to 3.6 billion common shares and up to 7.2 billion preferred shares, in each case based solely on the approval of the Board of Directors without any additional shareholder approval.

Each common share entitles the holder thereof to one vote at meetings of our shareholders. Holders of common shares are not entitled to any preference relating to our dividends or other distributions.

Holders of preferred shares and the golden shares are generally entitled to the same voting rights as holders of common shares, except with respect to the election of members of the Board of Directors, and are entitled to a preferential dividend as described below. Non-controlling shareholders holding common shares representing at least 15% of our voting capital, and preferred shares representing at least 10% of our total share capital, have the right to appoint each one member and an alternate to our Board of Directors. If no group of common or preferred shareholders meets the thresholds described above, shareholders holding preferred or common shares representing at least 10% of our total share capital are entitled to combine their holdings to appoint one member and an alternate to our Board of Directors. Holders of preferred shares, including the golden shares, may elect one member of the permanent Fiscal Council and the respective alternate. Non-controlling holders of common shares comprising at least 10% of the voting shares outstanding may also elect one member of the Fiscal Council and an alternate.

The Brazilian government holds 12 golden shares of Vale. The golden shares are preferred shares that entitle the holder to the same rights (including with respect to voting and dividend preference) as holders of preferred shares. In addition, the holder of the golden shares is entitled to veto any proposed action relating to the following matters:

- a change in our name;
- a change in the location of our head office;
- a change in our corporate purpose as regards mining activities;
- any liquidation of the Company;
- any disposal or winding up of activities in any of the following parts of our iron ore mining integrated systems:
  - (a) mineral deposits, ore deposits, mines;
  - (b) railways; or

- (c) ports and maritime terminals;
- any change in the bylaws relating to the rights accorded to the classes of capital stock issued by us; and
- any change in the bylaws relating to the rights accorded the golden shares.

#### **Calculation of distributable amount**

At each annual shareholders' meeting, the Board of Directors is required to recommend, based on the executive officers' proposal, how to allocate our earnings for the preceding fiscal year. For purposes of Brazilian corporate law, a company's net income after income taxes and social contribution taxes for such fiscal year, net of any accumulated losses from prior fiscal years and amounts allocated to employees' and management's participation in earnings represents its "net profits" for such fiscal year. In accordance with Brazilian corporate law, an amount equal to our net profits, as further reduced by amounts allocated to the legal reserve, to the fiscal incentive investment reserve, to the contingency reserve or to the unrealized income reserve established by us in compliance with applicable law (discussed below) and increased by reversals of reserves constituted in prior years, is available for distribution to shareholders in any given year. Such amount, the adjusted net profits, is referred to herein as the distributable amount. We may also establish discretionary reserves, such as reserves for investment projects.

The Brazilian corporate law provides that all discretionary allocations of net profits, including discretionary reserves, the contingency reserve, the unrealized income reserve and the reserve for investment projects, are subject to approval by the shareholders voting at the annual meeting and can be transferred to capital or used for the payment of dividends in subsequent years. The fiscal incentive investment reserve and legal reserve are also subject to approval by the shareholders voting at the annual meeting and may be transferred to capital but are not available for the payment of dividends in subsequent years.

The sum of certain discretionary reserves may not exceed the amount of our paid-in capital. When such limit is reached, our shareholders may vote to use the excess to pay in capital, increase capital or distribute dividends.

Our calculation of net profits and allocations to reserves for any fiscal year are determined on the basis of financial statements prepared in accordance with Brazilian corporate law. Our consolidated financial statements have been prepared in accordance with U.S. GAAP and, although our allocations to reserves and dividends will be reflected in these financial statements, investors will not be able to calculate such allocations or required dividend amounts from our consolidated financial statements.

#### **Mandatory dividend**

The Brazilian corporate law and our bylaws prescribe that we must distribute to our shareholders in the form of dividends or interest on shareholders' equity an annual amount equal to not less than 25% of the distributable amount, referred to as the mandatory dividend, unless the Board of Directors advises our shareholders at our general shareholders' meeting that payment of the mandatory dividend for the preceding year is inadvisable in light of our financial condition. To date, our Board of Directors has never determined that payment of the mandatory dividend was inadvisable. The Fiscal Council must review any such determination and report it to the shareholders. In addition to the mandatory dividend, our Board of Directors may recommend to the shareholders payment of dividends from other funds legally available therefore. Any payment of interim dividends will be netted against the amount of the mandatory dividend for that fiscal year. The shareholders must also approve the recommendation of the Board of Directors with respect to any required distribution. The amount of the mandatory dividend is subject to the size of the legal reserve, the contingency reserve, and the unrealized income reserve. The amount of the mandatory dividend is not subject to the size of the discretionary depletion reserve. See—*Calculation of distributable amount*.

### **Dividend preference of preferred shares**

Pursuant to our bylaws, holders of preferred shares and the golden shares are entitled to a minimum annual non-cumulative preferential dividend equal to (i) at least 3% of the book value per share, calculated in accordance with the financial statements which serve as reference for the payment of dividends, or (ii) 6% of their pro rata share of our paid-in capital, whichever is higher. To the extent that we declare dividends in any particular year in amounts which exceed the preferential dividends on preferred shares, and after holders of common shares have received distributions equivalent, on a per share basis, to the preferential dividends on preferred shares, holders of common shares and preferred shares shall receive the same additional dividend amount per share. Since the first step of our privatization in 1997, we have had sufficient distributable amounts to be able to distribute equal amounts to both common and preferred shareholders.

### **Other matters relating to our preferred shares**

Our bylaws do not provide for the conversion of preferred shares into common shares. In addition, the preferred shares do not have any preference upon our liquidation and there are no redemption provisions associated with the preferred shares.

### **Distributions classified as shareholders' equity**

Brazilian companies are permitted to pay limited amounts to shareholders and treat such payments as an expense for Brazilian income tax purposes. Our bylaws provide for the distribution of interest on shareholders' equity as an alternative form of payment to shareholders. The interest rate applied is limited to the Brazilian long-term interest rate, or TJLP, for the applicable period. The deduction of the amount of interest paid cannot exceed the greater of (1) 50% of net income (after the deduction of the provision of social contribution on net profits and before the deduction of the provision of the corporate income tax) before taking into account any such distribution for the period in respect of which the payment is made or (2) 50% of the sum of retained earnings and profit reserves. Any payment of interest on shareholders' equity is subject to Brazilian withholding income tax. See *Additional information—Taxation*. Under our bylaws, the amount paid to shareholders as interest on shareholders' equity (net of any withholding tax) may be included as part of any mandatory and minimum dividend. Under Brazilian corporate law, we are obligated to distribute to shareholders an amount sufficient to ensure that the net amount received, after payment by us of applicable Brazilian withholding taxes in respect of the distribution of interest on shareholders' equity, is at least equal to the mandatory dividend.

### **Mandatorily convertible notes**

In 2009, our wholly owned subsidiary Vale Capital II issued mandatorily convertible notes in two series, both due June 15, 2012. The series VALE-2012 notes (US\$293 million principal amount) are mandatorily convertible into ADSs representing an aggregate maximum of 18,415,859 common shares. The series VALE.P-2012 notes (US\$649 million principal amount) are mandatorily convertible into ADSs representing an aggregate maximum of 47,284,791 preferred shares.

The mandatorily convertible notes of Vale Capital II can convert before maturity under specified circumstances. The conversion rate for all series will depend on the market price of the ADSs on the conversion date. Under the indentures governing the notes, additional remuneration is due to each noteholder in an amount in U.S. dollars equal to any cash distribution net of any applicable withholding tax and fees paid by the Depositary of our ADSs to the holder of one ADS, multiplied by the number of ADSs that would be received by the noteholder upon conversion of the notes at the conversion rate specified in the applicable indenture.



## **Voting rights**

Each common share entitles the holder thereof to one vote at meetings of our shareholders. Holders of preferred shares are entitled to the same voting rights as holders of common shares except that they may not vote on the election of members of the Board of Directors, except in the event of dividend arrearages, as described below. One of the members of the permanent Fiscal Council and his or her alternate are elected by majority vote of the holders of preferred shares. Holders of preferred shares and common shares may, in certain circumstances, combine their respective holdings to elect members of our Board of Directors, as described under—*Common shares and preferred shares*.

The golden shares entitle the holder thereof to the same voting rights as holders of preferred shares. The golden shares also confer certain other significant voting rights in respect of particular actions, as described under—*Common shares and preferred shares*.

The Brazilian corporate law provides that non-voting or restricted-voting shares, such as the preferred shares, acquire unrestricted voting rights beginning when a company has failed for three consecutive fiscal years (or for any shorter period set forth in a company's constituent documents) to pay any fixed or minimum dividend to which such shares are entitled and continuing until payment thereof is made. Our bylaws do not set forth any such shorter period.

Any change in the preferences or advantages of our preferred shares, or the creation of a class of shares having priority over the preferred shares, would require the approval of the holder of the golden shares, who can veto such matters, as well as the approval of the holders of a majority of the outstanding preferred shares, voting as a class at a special meeting.

## **Shareholders' meetings**

Our Ordinary General Shareholders' Meeting is convened by April of each year for shareholders to resolve upon our financial statements, distribution of profits, election of Directors and Fiscal Council Members, if necessary, and compensation of senior management. Extraordinary General Shareholders' Meetings are convened by the Board of Directors as necessary in order to decide all other matters relating to our corporate purposes and to pass such other resolutions as may be necessary.

Pursuant to Brazilian corporate law, shareholders voting at a general shareholders' meeting have the power, among other powers, to:

- amend the bylaws;
- elect or dismiss members of the Board of Directors and members of the Fiscal Council at any time;
- establish the remuneration of senior management and members of the Fiscal Council;
- receive annual reports by management and accept or reject management's financial statements and recommendations including the allocation of net profits and the distributable amount for payment of the mandatory dividend and allocation to the various reserve accounts;
- authorize the issuance of convertible and secured debentures;
- suspend the rights of a shareholder in default of obligations established by law or by the bylaws;
- accept or reject the valuation of assets contributed by a shareholder in consideration for issuance of capital stock;

- pass resolutions to reorganize our legal form, to merge, consolidate or split us, to dissolve and liquidate us, to elect and dismiss our liquidators and to examine their accounts; and
- authorize management to file for bankruptcy or to request a *concordata*.

Pursuant to CVM recommendations and as stipulated in our undertakings to the HKEx, all general shareholders' meetings, including the annual shareholders' meeting, require no fewer than 30 days notice to shareholders prior to the scheduled meeting date. Pursuant to Brazilian corporate law, this notice to shareholders is required to be published no fewer than three times, in the *Diário Oficial do Estado do Rio de Janeiro* and in a newspaper with general circulation in the city where we have our registered office, in Rio de Janeiro. Where any general shareholders' meeting is adjourned, 15 days prior notice to shareholders of the reconvened meeting is required. Our shareholders have previously designated *Jornal do Commercio* for this purpose. Also, because our shares are traded on the BM&FBOVESPA, we must publish a notice in a São Paulo based newspaper. Such notice must contain the agenda for the meeting and, in the case of an amendment to our bylaws, an indication of the subject matter. In addition, under our bylaws, the holder of the golden shares is entitled to a minimum of 15 days prior formal notice to its legal representative of any general shareholders' meeting to consider any proposed action subject to the veto rights accorded to the golden shares. See—*Common shares and preferred shares*.

A shareholders' meeting may be held if shareholders representing at least one-quarter of the voting capital are present, except for meetings convened to amend our bylaws, which require a quorum of at least two-thirds of the voting capital. If no such quorum is present, notice must again be given in the same manner as described above, and a meeting may then be convened without any specific quorum requirement, subject to the minimum quorum and voting requirements for certain matters, as discussed below. A shareholder without a right to vote may attend a general shareholders' meeting and take part in the discussion of matters submitted for consideration.

Except as otherwise provided by law, resolutions of a shareholders' meeting are passed by a simple majority vote, abstentions not being taken into account. Under Brazilian corporate law, the approval of shareholders representing at least one-half of the issued and outstanding voting shares is required for the types of action described below, as well as, in the case of items (1) and (2), below, a majority of issued and outstanding shares of the affected class:

- creating a new class of preferred shares or disproportionately increasing an existing class of preferred shares relative to the other classes of shares, other than to the extent permitted by the bylaws;
- changing a priority, preference, right, privilege or condition of redemption or amortization of any class of preferred shares or creating any class of non-voting preferred shares that has a priority, preference, right, condition or redemption or amortization superior to an existing class of shares, such as the preferred shares;
- reducing the mandatory dividend;
- changing the corporate purposes;
- merging us with another company or consolidating or splitting us;
- dissolving or liquidating us;
- participating in a centralized group of companies as defined under Brazilian corporate law; and
- canceling any ongoing liquidation of us.

Whenever the shares of any class of capital stock are entitled to vote, each share is entitled to one vote. Annual shareholders' meetings must be held by April 30 of each year. Shareholders' meetings are called,

convened and presided over by the chairman or by the vice-chairman of our Board of Directors. In the case of temporary absence or impediment of the chairman or vice-chairman of the Board of Directors, the shareholders' meetings may be chaired by their respective alternates, or in the absence or impediment of such alternates, by a director especially appointed by the chairman of the Board of Directors. A shareholder may be represented at a general shareholders' meeting by an attorney-in-fact appointed not more than one year before the meeting, who must be a shareholder, a company officer or a lawyer. For a public company, such as us, the attorney-in-fact may also be a financial institution.

### **Redemption rights**

Our common shares and preferred shares are not redeemable, except that a dissenting shareholder is entitled under Brazilian corporate law to obtain redemption upon a decision made at a shareholders' meeting by shareholders representing at least 50% of the voting shares:

- (1) to create a new class of preferred shares or to disproportionately increase an existing class of preferred shares relative to the other classes of shares (unless such actions are provided for or authorized by the bylaws);
- (2) to modify a preference, privilege or condition of redemption or amortization conferred on one or more classes of preferred shares, or to create a new class with greater privileges than the existing classes of preferred shares;
- (3) to reduce the mandatory distribution of dividends;
- (4) to change our corporate purposes;
- (5) to merge us with another company, consolidate or split us;
- (6) to transfer all of our shares to another company in order to make us a wholly owned subsidiary of such company, a stock merger;
- (7) to approve the acquisition of control of another company at a price which exceeds certain limits set forth in Brazilian corporate law;
- (8) to approve our participation in a centralized group of companies as defined under Brazilian corporate law; or
- (9) in the event that the entity resulting from (a) a merger, (b) a stock merger as described in clause (6) above or (c) a spin-off that we conduct fails to become a listed company within 120 days of the general shareholders' meeting at which such decision was taken.

Only holders of shares adversely affected by the shareholder decisions mentioned in items (1) and (2), above, may require us to redeem their shares. The right of redemption mentioned in items (5), (6) and (8), above, may only be exercised if our shares do not satisfy certain tests of liquidity, among others, at the time of the shareholder resolution. The right of redemption lapses 30 days after publication of the minutes of the relevant general shareholders' meeting, unless, in the case of items (1) and (2), above, the resolution is subject to confirmation by the preferred shareholders (which must be made at a special meeting to be held within one year), in which case the 30-day term is counted from the publication of the minutes of the special meeting.

We would be entitled to reconsider any action giving rise to redemption rights within 10 days following the expiration of such rights if the redemption of shares of dissenting shareholders would jeopardize our financial stability. Any redemption pursuant to Brazilian corporate law would be made at no less than the book value per share, determined on the basis of the last balance sheet approved by the shareholders; provided that if the general shareholders' meeting giving rise to redemption rights occurred more than 60 days after the date of the last approved balance sheet, a shareholder would be entitled to demand that his

or her shares be valued on the basis of a new balance sheet dated within 60 days of such general shareholders' meeting.

### **Preemptive rights**

Each of our shareholders has a general preemptive right to subscribe for shares in any capital increase, in proportion to his or her shareholding. A minimum period of 30 days following the publication of notice of a capital increase is assured for the exercise of the right, and the right is transferable. Under our bylaws and Brazilian corporate law, our Board of Directors may decide not to extend preemptive rights to our shareholders, or to reduce the 30-day period for the exercise of preemptive rights, in each case with respect to any issuance of shares, debentures convertible into shares or warrants in the context of a public offering, subject to the limit on the number of shares that may be issued with the approval of the Board without any additional shareholder approval. In the event of a capital increase that would maintain or increase the proportion of capital represented by preferred shares, holders of preferred shares will have preemptive rights to subscribe only to newly issued preferred shares. In the event of a capital increase that would reduce the proportion of capital represented by preferred shares, shareholders will have preemptive rights to subscribe for preferred shares, in proportion to their shareholdings, and for common shares only to the extent necessary to prevent dilution of their overall interest in us. In the event of a capital increase that would maintain or increase the proportion of capital represented by common shares, shareholders will have preemptive rights to subscribe only to newly issued common shares. In the event of a capital increase that would reduce the proportion of capital represented by common shares, holders of common shares will have preemptive rights to subscribe for preferred shares only to the extent necessary to prevent dilution of their overall interest in us.

### **Tag-along rights**

According to Brazilian corporate law, in the event of a sale of control of a company, the acquirer is obliged to offer to holders of voting shares the right to sell their shares for a price equal to at least 80% of the price paid for the voting shares representing control.

### **Form and transfer of shares**

Our preferred shares and common shares are in book-entry form registered in the name of each shareholder or its nominee. The transfer of such shares is made under Brazilian corporate law, which provides that a transfer of shares is effected by our transfer agent, Banco Bradesco S.A., upon presentation of valid share transfer instructions to us by a transferor or its representative. When preferred shares or common shares are acquired or sold on a Brazilian stock exchange, the transfer is effected on the records of our transfer agent by a representative of a brokerage firm or the stock exchange's clearing system. Transfers of shares by a foreign investor are made in the same way and are executed by the investor's local agent, who is also responsible for updating the information relating to the foreign investment furnished to the Central Bank of Brazil.

The BM&FBOVESPA operates a central clearing system through *Companhia Brasileira de Liquidação e Custódia*, or CBLC. A holder of our shares may participate in this system and all shares elected to be put into the system will be deposited in custody with CBLC (through a Brazilian institution that is duly authorized to operate by the Central Bank of Brazil and maintains a clearing account with CBLC). The fact that such shares are subject to custody with the relevant stock exchange will be reflected in our registry of shareholders. Each participating shareholder will, in turn, be registered in the register of our beneficial shareholders that is maintained by CBLC and will be treated in the same way as registered shareholders.

## **EXCHANGE CONTROLS AND OTHER LIMITATIONS AFFECTING SECURITY HOLDERS**

Under Brazilian corporate law, there are no restrictions on ownership of our capital stock by individuals or legal entities domiciled outside Brazil. However, the right to convert dividend payments and proceeds from the sale of preferred shares or common shares into foreign currency and to remit such amounts outside Brazil is subject to restrictions under foreign investment legislation which generally requires, among other things, that the relevant investment be registered with the Central Bank of Brazil. These restrictions on the remittance of foreign capital abroad could hinder or prevent the custodian for the preferred shares or common shares represented by ADSs and HDSs, or holders who have exchanged ADSs and HDSs for preferred shares or common shares, from converting dividends, distributions or the proceeds from any sale of preferred shares or common shares, as the case may be, into U.S. dollars and remitting such U.S. dollars abroad. Delays in, or refusal to grant any required government approval for conversions of Brazilian currency payments and remittances abroad of amounts owed to holders of ADSs could adversely affect holders of ADRs.

Under Resolution No. 2,689/2000 of the CMN, foreign investors may invest in almost all financial assets and engage in almost all transactions available in the Brazilian financial and capital markets, provided that certain requirements are fulfilled. In accordance with Resolution No. 2,689/2000, the definition of foreign investor includes individuals, legal entities, mutual funds and other collective investment entities, domiciled or headquartered outside Brazil.

Under Resolution No. 2,689/2000, a foreign investor must:

- (1) appoint at least one representative in Brazil, with powers to perform actions relating to its investment,
- (2) complete the appropriate foreign investor registration form,
- (3) register as a foreign investor with the CVM, and register its foreign investment with the Central Bank of Brazil, and
- (4) appoint a custodian if the Brazilian representative in item (1) is not a financial institution.

Securities and other financial assets held by foreign investors pursuant to Resolution No. 2,689/2000 must be registered or maintained in deposit accounts or under the custody of an entity duly licensed by the Central Bank of Brazil or the CVM. In addition, securities trading is generally restricted to transactions carried out on stock exchanges or through organized over-the-counter markets licensed by the CVM.

Moreover, the offshore transfer or assignment of securities or other financial assets held by foreign investors pursuant to Resolution No. 2,689/2000 out of a stock exchange or an organized over-the-counter market in Brazil is prohibited, except for transfers resulting from a corporate reorganization, or occurring upon the death of an investor by operation of law or will.

Resolution No. 1,927/1992 of the CMN provides for the issuance of depositary receipts in foreign markets in respect of shares of Brazilian issuers. It provides that the proceeds from the sale of ADSs by holders of ADRs outside Brazil are not subject to Brazilian foreign investment controls and holders of ADSs who are not resident in a tax haven jurisdiction (i.e., a country or location that does not impose taxes on income or where the maximum income tax rate is lower than 20%, or where the legislation imposes restrictions on disclosure of the shareholding structure or the ownership of the investment) will be entitled to favorable tax treatment.

An electronic registration has been issued to the custodian in the name of the depositary with respect to the ADSs and HDSs. Pursuant to this electronic registration, the custodian and the depositary are able to

convert dividends and other distributions with respect to the underlying shares into foreign currency and to remit the proceeds outside Brazil. If a holder exchanges ADSs or HDSs for preferred shares or common shares, the holder may continue to rely on the custodian's electronic registration for only five business days after the exchange. After that, the holder must seek to obtain its own electronic registration with the Central Bank of Brazil under Law No. 4,131/1962 or Resolution No. 2,689/2000. Thereafter, unless the holder has registered its investment with the Central Bank of Brazil, such holder may not convert into foreign currency and remit outside Brazil the proceeds from the disposition of, or distributions with respect to, such preferred shares or common shares.

Under Brazilian law, whenever there is a serious imbalance in Brazil's balance of payments or reasons to foresee a serious imbalance, the Brazilian government may impose temporary restrictions on the remittance to foreign investors of the proceeds of their investments in Brazil, and on the conversion of Brazilian currency into foreign currencies. Such restrictions may hinder or prevent the custodian or holders who have exchanged ADSs or HDSs for underlying preferred shares or common shares from converting distributions or the proceeds from any sale of such shares, as the case may be, into U.S. dollars or Hong Kong dollars and remitting such U.S. dollars or Hong Kong dollars abroad. In the event the custodian is prevented from converting and remitting amounts owed to foreign investors, the custodian will hold the *reais* it cannot convert for the account of the holders of American Depositary Receipts or HDRs who have not been paid. The depositary will not invest the *reais* and will not be liable for interest on those amounts. Any *reais* so held will be subject to devaluation risk against the U.S. dollar or Hong Kong dollar.

## TAXATION

The following summary contains a description of the principal Brazilian and/or U.S. federal income tax consequences of the ownership and disposition of preferred shares, common shares, ADSs or HDSs. You should know that this summary does not purport to be a comprehensive description of all the tax considerations that may be relevant to a holder of preferred shares, common shares, ADSs or HDSs.

Holders of preferred shares, common shares, ADSs or HDSs should consult their own tax advisors to discuss the tax consequences of the purchase, ownership and disposition of preferred shares, common shares, ADSs or HDSs, including, in particular, the effect of any state, local or other national tax laws.

Although there is at present no treaty to avoid double taxation between Brazil and the United States, but only a common understanding between the two countries according to which income taxes paid in one may be offset against taxes to be paid in the other, both countries' tax authorities have been having discussions that may result in the execution of such a treaty. In this regard, the two countries signed a Tax Information Exchange Agreement on March 20, 2007. We cannot predict whether or when such a treaty will enter into force or how, if entered into, such a treaty will affect the U.S. holders, as defined below, of preferred shares, common shares or ADSs.

### **Brazilian tax considerations**

The following discussion summarizes the principal Brazilian tax consequences of the acquisition, ownership and disposition of preferred shares, common shares, ADSs or HDSs by a holder not deemed to be domiciled in Brazil for purposes of Brazilian taxation ("Non-Brazilian Holder"). It is based on the tax laws of Brazil and regulations thereunder in effect on the date hereof, which are subject to change (possibly with retroactive effect). This discussion does not specifically address all of the Brazilian tax considerations applicable to any particular Non-Brazilian Holder. Therefore, Non-Brazilian Holders should consult their own tax advisors concerning the Brazilian tax consequences of an investment in preferred shares, common shares, ADSs or HDSs.

### *Shareholder distributions*

For Brazilian corporations, such as the Company, distributions to shareholders are classified, for tax purposes, as either dividend or interest on shareholders' equity.

#### *Dividends*

Amounts distributed as dividends, including distributions in kind, will generally not be subject to withholding income tax if the distribution is paid by us from profits of periods beginning on or after January 1, 1996 (1) to the depository in respect of our preferred shares or common shares underlying the ADSs or HDSs or (2) to a Non-Brazilian Holder in respect of our preferred shares or common shares. Dividends paid from profits generated before January 1, 1996 may be subject to Brazilian withholding income tax at varying rates depending on the year the profits were generated.

#### *Interest on shareholders' equity*

Amounts distributed as interest on shareholders' equity are generally subject to withholding income tax at the rate of 15%, except where:

- (1) the beneficiary is exempt from tax in Brazil, in which case the distribution will not be subject to withholding income tax;
- (2) the beneficiary is located in a jurisdiction that does not impose income tax or where the maximum income tax rate is lower than 20% (a "Low Tax Jurisdiction") or where internal legislation imposes restrictions on the disclosure of the shareholding structure or the ownership of the investment, in which case the applicable withholding income tax rate is 25%; or
- (3) the effective beneficiary is resident in Japan, in which case the applicable withholding income tax rate is 12.5%.

Interest on shareholders' equity is calculated as a percentage of shareholders' equity, as stated in the statutory accounting records. The interest rate applied may not exceed TJLP, the benchmark Brazilian long-term interest rate. In addition, the amount of distributions classified as interest on shareholders' equity may not be more than the greater of (1) 50% of net income (after the deduction of social contribution on net profits but before taking into account such payment of interest and the provision for corporate income tax) for the period in respect of which the payment is made and (2) 50% of the sum of retained earnings and profit reserves as at the first day of the fiscal year in respect of which the payment is made.

Payments of interest on shareholders' equity are deductible for the purposes of corporate income tax and social contribution on net profit, to the extent of the limits described above. The tax benefit to the Company in the case of a distribution by way of interest on shareholders' equity is a reduction in the Company's corporate tax charge by an amount equivalent to 34% of such distribution.

#### *Taxation of capital gains*

Taxation of Non-Brazilian Holders on capital gains depends on the status of the holder as either:

- (1) (i) not resident or domiciled in a Low Tax Jurisdiction or where internal legislation imposes restrictions on the disclosure of shareholding structure or the ownership of the investment and registered its investment in Brazil in accordance with Resolution No. 2,689 (a 2,689 Holder), or (ii) a holder of ADSs or HDSs; or
- (2) any other Non-Brazilian Holder.

Investors identified in item 1 are subject to favorable tax treatment, as described below.

According to Law No. 10,833, dated December 29, 2003, capital gains realized by a Non-Brazilian Holder from the disposition of “assets located in Brazil” are subject to taxation in Brazil.

Preferred shares and common shares qualify as assets located in Brazil, and the disposition of such assets by a Non-Brazilian Holder may be subject to income tax on the gains assessed, in accordance with the rules described below, regardless of whether the transaction is carried out with another Non-Brazilian resident or with a Brazilian resident.

There is some uncertainty as to whether ADSs or HDSs qualify as “assets located in Brazil” for purposes of Law No. 10,833/03. Arguably, neither ADSs nor HDSs constitute assets located in Brazil and therefore the gains realized by a Non-Brazilian Holder on the disposition of ADSs or HDSs to another Non-Brazilian resident should not be subject to income tax in Brazil. However, it cannot be guaranteed that the Brazilian courts will uphold this interpretation of the definition of “assets located in Brazil” in connection with the taxation of gains realized by a Non-Brazilian Holder on the disposition of ADSs or HDSs. Consequently, gains on a disposition of ADSs or HDSs by a Non-Brazilian Holder (whether in a transaction carried out with another Non-Brazilian Holder or a person domiciled in Brazil) may be subject to income tax in Brazil in accordance with the rules applicable to a disposition of shares.

Although there are grounds to sustain otherwise, the deposit of preferred shares or common shares in exchange for ADSs or HDSs may be subject to Brazilian income tax if the acquisition cost of the preferred shares or common shares being deposited is lower than the average price of the preferred shares or common shares (as the case may be), which is determined as either:

- (1) the average price per preferred share or common share on the Brazilian stock exchange in which the greatest number of such shares were sold on the day of deposit; or
- (2) if no preferred shares or common shares were sold on that day, the average price on the Brazilian stock exchange in which the greatest number of preferred shares or common shares were sold in the 15 trading sessions immediately preceding such deposit.

The positive difference between the average price of the preferred shares or common shares calculated as described above and their acquisition cost will be considered to be a capital gain subject to income tax in Brazil. In some circumstances, there are grounds to sustain that such taxation is not applicable with respect to any 2,689 Holder, provided he is not located in a Low Tax Jurisdiction.

The withdrawal of ADSs or HDSs in exchange for preferred shares or common shares is not subject to Brazilian income tax, subject to compliance with applicable regulations regarding the registration of the investment with the Central Bank of Brazil.

For the purpose of Brazilian taxation, the income tax rules on gains related to disposition of preferred shares or common shares vary depending on:

- the domicile of the Non-Brazilian Holder;
- the method by which such Non-Brazilian Holder has registered his investment with the Central Bank of Brazil; and/or
- how the disposition is carried out, as described below.

The gain realized as a result of a transaction on a Brazilian stock, future and commodities exchange is the difference between: (i) the amount in Brazilian currency realized on the sale or disposition and (ii) the acquisition cost, without any adjustment for inflation, of the securities that are the subject of the transaction.



Any gain realized by a Non-Brazilian Holder on a sale or disposition of preferred shares or common shares carried out on the Brazilian stock exchange is:

- exempt from income tax where the Non-Brazilian Holder (i) is a 2,689 Holder; and (ii) is not located in a Low Tax Jurisdiction;
- subject to income tax at a rate of 15% where the Non-Brazilian Holder either (A) (i) is not a 2,689 Holder and (ii) is not resident or domiciled in a Low Tax Jurisdiction or (B) (i) is a 2,689 Holder and (ii) is resident or domiciled in a Low Tax Jurisdiction; or
- subject to income tax at a rate of 25% where the Non-Brazilian Holder (i) is not a 2,689 Holder and (ii) is resident or domiciled in a Low Tax Jurisdiction.

The sale or disposition of common shares carried out on the Brazilian stock exchange is subject to withholding tax at the rate of 0.005% on the sale value. This withholding tax can be offset against the eventual income tax due on the capital gain. A 2,689 Holder that is not resident or domiciled in a Low Tax Jurisdiction is not required to withhold income tax.

Any gain realized by a Non-Brazilian Holder on a sale or disposition of preferred shares or common shares that is not carried out on the Brazilian stock exchange is subject to income tax at a 15% rate, except for gain realized by a resident in a Low Tax Jurisdiction, which is subject to income tax at the rate of 25%.

With respect to transactions arranged by a broker that are conducted on the Brazilian non-organized over-the-counter market, a withholding income tax at a rate of 0.005% on the sale value is also levied on the transaction and can be offset against the eventual income tax due on the capital gain. There can be no assurance that the current favorable treatment of 2,689 Holders will continue in the future.

In the case of a redemption of preferred shares, common shares, ADSs or HDSs or a capital reduction by a Brazilian corporation, the positive difference between the amount received by any Non-Brazilian Holder and the acquisition cost of the preferred shares, common shares, ADSs or HDSs being redeemed is treated as capital gain and is therefore generally subject to income tax at the rate of 15%, while the 25% rate applies to residents in a Low Tax Jurisdiction.

Any exercise of pre-emptive rights relating to our preferred shares or common shares will not be subject to Brazilian taxation. Any gain realized by a Non-Brazilian Holder on the disposition of pre-emptive rights relating to preferred shares or common shares in Brazil will be subject to Brazilian income taxation in accordance with the same rules applicable to the sale or disposition of preferred shares or common shares.

### ***Tax on foreign exchange and financial transactions***

#### ***Foreign exchange transactions***

Brazilian law imposes a tax on foreign exchange transactions, or an IOF/Exchange Tax, due on the conversion of *reais* into foreign currency and on the conversion of foreign currency into *reais*. Currently, for most foreign currency exchange transactions, the rate of IOF/Exchange is 0.38%.

Effective as of October 20, 2010, in respect of foreign exchange agreements entered into since October 5, 2010, the inflow of resources into Brazil for the acquisition or subscription of common shares through public offerings in Brazilian financial and capital markets by a Non-Brazilian Holder are subject to the IOF/Exchange at a rate of 2%, provided that the issuer has registered its shares for trading on the stock exchange.

The outflow of resources from Brazil related to investments carried out by a Non-Brazilian Holder in the Brazilian financial and capital markets is currently subject to IOF/Exchange at a zero percent rate. In any case, the Brazilian government may increase such rates at any time, up to 25%, with no retroactive effect.

#### *Transactions involving bonds and securities*

Brazilian law imposes a tax on transactions involving bonds and securities, or an IOF/Bonds Tax, including those carried out on the Brazilian stock exchange. The rate of IOF/Bonds Tax applicable to transactions involving publicly-traded shares in Brazil is currently zero. However, the Brazilian Government may increase such rate at any time up to 1.5% of the transaction amount per day, but the tax cannot be applied retroactively. Transfer of shares traded on the Brazilian stock exchange in order to back depository receipts traded abroad are subject to IOF/Bonds Tax at a rate of 1.5% starting November 19, 2009.

#### *Other Brazilian taxes*

There are no Brazilian inheritance, gift or succession taxes applicable to the ownership, transfer or disposition of preferred shares, common shares, ADSs or HDSs by a Non-Brazilian Holder, except for gift and inheritance taxes which are levied by some states of Brazil on gifts made or inheritances bestowed by a Non-Brazilian Holder to individuals or entities resident or domiciled within such states in Brazil. There are no Brazilian stamp, issue, registration, or similar taxes or duties payable by holders of preferred shares or common shares or ADSs or HDSs.

#### **U.S. federal income tax considerations**

This summary does not purport to be a comprehensive description of all the U.S. federal income tax consequences of the acquisition, holding or disposition of the preferred shares, common shares or ADSs. This summary applies to U.S. holders, as defined below, who hold their preferred shares, common shares or ADSs as capital assets and does not apply to special classes of holders, such as:

- certain financial institutions,
- insurance companies,
- dealers in securities or foreign currencies,
- tax-exempt organizations,
- securities traders who elect to account for their investment in preferred shares, common shares or ADSs on a mark-to-market basis,
- persons holding preferred shares, common shares or ADSs as part of hedge, straddle, conversion or other integrated financial transactions for tax purposes,
- holders whose functional currency for U.S. federal income tax purposes is not the U.S. dollar,
- partnerships or other holders treated as “pass-through entities” for U.S. federal income tax purposes,
- persons subject to the alternative minimum tax, or
- persons owning, actually or constructively, 10% or more of our voting shares.

This discussion is based on the Internal Revenue Code of 1986, as amended to the date hereof, administrative pronouncements, judicial decisions and final, temporary and proposed Treasury Regulations, all

as in effect on the date hereof. These authorities are subject to differing interpretations and may be changed, perhaps retroactively, so as to result in U.S. federal income tax consequences different from those discussed below. There can be no assurance that the U.S. Internal Revenue Service (the “IRS”) will not challenge one or more of the tax consequences discussed herein or that a court will not sustain such a challenge in the event of litigation. This summary does not address any aspect of state, local or non-U.S. tax law.

**YOU SHOULD CONSULT YOUR TAX ADVISORS WITH REGARD TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO YOUR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSEQUENCES ARISING UNDER THE LAWS OF ANY STATE, LOCAL OR NON-U.S. TAXING JURISDICTION.**

This discussion is also based, in part, on representations of the depositary and the assumption that each obligation in the deposit agreement and any related agreement will be performed in accordance with its terms.

For purposes of this discussion, you are a “U.S. holder” if you are a beneficial owner of preferred shares, common shares or ADSs that is, for U.S. federal income tax purposes and are:

- a citizen or resident alien individual of the United States,
- a corporation created or organized in or under the laws of the United States or of any political subdivision thereof, or
- otherwise subject to U.S. federal income taxation on a net income basis with respect to the preferred shares, common shares or ADSs.

The term U.S. holder also includes certain former citizens of the United States.

In general, if you are the beneficial owner of American depositary receipts evidencing ADSs, you will be treated as the beneficial owner of the preferred shares or common shares represented by those ADSs for U.S. federal income tax purposes. Deposits and withdrawals of preferred shares or common shares by you in exchange for ADSs will not result in the realization of gain or loss for U.S. federal income tax purposes. Your tax basis in such preferred shares will be the same as your tax basis in such ADSs, and the holding period in which preferred shares or common shares will include the holding period in such ADSs.

***Taxation of dividends***

The gross amount of a distribution paid on ADSs, preferred shares or common shares, including distributions paid in the form of payments of interest on capital for Brazilian tax purposes, out of our current or accumulated earnings and profits (as determined for U.S. federal income tax purposes) will be taxable to you as foreign source dividend income and will not be eligible for the dividends-received deduction allowed to corporate shareholders under U.S. federal income tax law. The amount of any such distribution will include the amount of Brazilian withholding taxes, if any, withheld on the amount distributed. To the extent that a distribution exceeds our current and accumulated earnings and profits, such distribution will be treated as a nontaxable return of capital to the extent of your basis in the ADSs, preferred shares or common shares, as the case may be, with respect to which such distribution is made, and thereafter as a capital gain.

You will be required to include dividends paid in *reais* in income in an amount equal to their U.S. dollar value calculated by reference to an exchange rate in effect on the date such distribution is received by the depositary, in the case of ADSs, or by you, in the case of common shares or preferred shares. If the depositary or you do not convert such *reais* into U.S. dollars on the date they are received, it is possible that you will recognize foreign currency loss or gain, which would be ordinary loss or gain, when the *reais* are converted into U.S. dollars. If you hold ADSs, you will be considered to receive a dividend when the dividend is received by the depositary.

Subject to certain exceptions for short-term and hedged positions, the U.S. dollar amount of dividends received by certain noncorporate taxpayers, including individuals, prior to January 1, 2013 with respect to the ADSs will be subject to taxation at a maximum rate of 15% if the dividends are “qualified dividends.” Dividends paid on the ADSs will be treated as qualified dividends if (i) the ADSs are readily tradable on an established securities market in the United States and (ii) the Company was not, in the year prior to the year in which the dividend was paid, and is not, in the year in which the dividend is paid, a passive foreign investment company (“PFIC”). The ADSs are listed on the New York Stock Exchange and will qualify as readily tradable on an established securities market in the United States so long as they are so listed. Based on Vale’s audited financial statements and relevant market and shareholder data, Vale believes that it was not treated as a PFIC for U.S. federal income tax purposes with respect to its 2009 or 2010 taxable year. In addition, based on Vale’s audited financial statements and its current expectations regarding the value and nature of its assets, the sources and nature of its income, and relevant market and shareholder data, Vale does not anticipate becoming a PFIC for its 2011 taxable year.

Based on existing guidance, it is not entirely clear whether dividends received with respect to the preferred shares and common shares will be treated as qualified dividends (and therefore whether such dividends will qualify for the maximum rate of taxation of 15%), because the preferred shares and common shares are not themselves listed on a U.S. exchange. In addition, the U.S. Treasury has announced its intention to promulgate rules pursuant to which holders of ADSs, preferred shares or common stock and intermediaries through whom such securities are held will be permitted to rely on certifications from issuers to establish that dividends are treated as qualified dividends. Because such procedures have not yet been issued, it is unclear whether we will be able to comply with them. You should consult your own tax advisors regarding the availability of the reduced dividend tax rate in light of your own particular circumstances.

Subject to generally applicable limitations and restrictions, you will be entitled to a credit against your U.S. federal income tax liability, or a deduction in computing your U.S. federal taxable income, for Brazilian income taxes withheld by us. You must satisfy minimum holding period requirements to be eligible to claim a foreign tax credit for Brazilian taxes withheld on dividends. The limitation on foreign taxes eligible for credit is calculated separately for specific classes of income. For this purpose dividends paid by us on our shares will generally constitute “passive income”. Foreign tax credits may not be allowed for withholding taxes imposed in respect of certain short-term or hedged positions in securities or in respect of arrangements in which a U.S. holder’s expected economic profit is insubstantial. You should consult your own tax advisors concerning the implications of these rules in light of your particular circumstances.

#### ***Taxation of capital gains***

Upon a sale or exchange of preferred shares, common shares or ADSs, you will recognize a capital gain or loss for U.S. federal income tax purposes equal to the difference, if any, between the amount realized on the sale or exchange and your adjusted tax basis in the preferred shares, common shares or ADSs. This gain or loss will be long-term capital gain or loss if your holding period in the preferred shares, common shares or ADSs exceeds one year. The net amount of long-term capital gain recognized by individual U.S. holders prior to January 1, 2013 generally is subject to taxation at a maximum rate of 15%. Your ability to use capital losses to offset income is subject to limitations.

Any gain or loss will be U.S. source gain or loss for U.S. foreign tax credit purposes. Consequently, if a Brazilian withholding tax is imposed on the sale or disposition of ADSs, preferred shares or common shares, and you do not receive significant foreign source income from other sources you may not be able to derive effective U.S. foreign tax credit benefits in respect of such Brazilian withholding tax. You should consult your own tax advisor regarding the application of the foreign tax credit rules to your investment in, and disposition of, ADSs, preferred shares or common shares.

If a Brazilian tax is withheld on the sale or disposition of shares, the amount realized by a U.S. holder will include the gross amount of the proceeds of such sale or disposition before deduction of the Brazilian tax. See—*Brazilian tax considerations* above.

### ***Information reporting and backup withholding***

Information returns may be filed with the Internal Revenue Service in connection with distributions on the preferred shares, common shares or ADSs and the proceeds from their sale or other disposition. You may be subject to United States backup withholding tax on these payments if you fail to provide your taxpayer identification number or comply with certain certification procedures or otherwise establish an exemption from backup withholding. If you are required to make such a certification or to establish such an exemption, you generally must do so on IRS Form W-9.

The amount of any backup withholding from a payment to you will be allowed as a credit against your U.S. federal income tax liability and may entitle you to a refund, provided that the required information is timely furnished to the Internal Revenue Service.

### **EVALUATION OF DISCLOSURE CONTROLS AND PROCEDURES**

Our management, with the participation of our chief executive officer and chief financial officer, has evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2010. There are inherent limitations to the effectiveness of any system of disclosure controls and procedures, including the possibility of human error and the circumvention or overriding of the controls and procedures. Accordingly, even effective disclosure controls and procedures can only provide reasonable assurance of achieving their control objectives.

Our chief executive officer and chief financial officer have concluded that our disclosure controls and procedures were effective to provide reasonable assurance that information required to be disclosed by us in the reports filed or submitted under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the applicable rules and forms, and that it is accumulated and communicated to our management, including our chief executive officer and chief financial officer, as appropriate to allow timely decisions regarding required disclosure.

### **MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING**

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Our internal control over financial reporting includes those policies and procedures that: (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company; (ii) provide reasonable assurance that transactions are recorded to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of our assets that could have a material effect on the financial statements. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of the effectiveness to future periods are subject to the risk that controls may become inadequate and that the degree of compliance with the policies or procedures may deteriorate.

Our management has assessed the effectiveness of Vale’s internal control over financial reporting as of December 31, 2010 based on the criteria established in “Internal Control—Integrated Framework” issued by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO”). Based on such assessment and criteria, our management has concluded that our internal control over financial reporting was effective as of December 31, 2010. The effectiveness of our internal control over financial reporting as of December 31, 2010 has been audited by PricewaterhouseCoopers Auditores Independentes, an independent registered public accounting firm, as stated in their report which appears herein.

Our management identified no change in our internal control over financial reporting during our fiscal year ended December 31, 2010 that has materially affected or is reasonably likely to materially affect our internal control over financial reporting.

## CORPORATE GOVERNANCE

Under NYSE rules, foreign private issuers are subject to more limited corporate governance requirements than U.S. domestic issuers. As a foreign private issuer, we must comply with four principal NYSE corporate governance rules: (1) we must satisfy the requirements of Exchange Act Rule 10A-3 relating to audit committees; (2) our chief executive officer must promptly notify the NYSE in writing after any executive officer becomes aware of any non-compliance with the applicable NYSE corporate governance rules; (3) we must provide the NYSE with annual and interim written affirmations as required under the NYSE corporate governance rules; and (4) we must provide a brief description of any significant differences between our corporate governance practices and those followed by U.S. companies under NYSE listing standards. The table below briefly describes the significant differences between our domestic practice and the NYSE corporate governance rules.

Section	NYSE corporate governance rule for U.S. domestic issuers	Our approach
303A.01	A listed company must have a majority of independent directors. “Controlled companies” are not required to comply with this requirement.	We are a controlled company because more than a majority of our voting power for the appointment of directors is controlled by Valepar. As a controlled company, we would not be required to comply with the majority of independent director requirements if we were a U.S. domestic issuer. There is no legal provision or policy that requires us to have independent directors.
303A.03	The non-management directors of a listed company must meet at regularly scheduled executive sessions without management.	We do not have any management directors.
303A.04	A listed company must have a nominating/corporate governance committee composed entirely of independent directors, with a written charter that covers certain minimum specified duties. “Controlled companies” are not required to comply with this requirement.	<p>We do not have a nominating committee. As a controlled company, we would not be required to comply with the nominating/corporate governance committee requirements if we were a U.S. domestic issuer. However, we do have a Governance and Sustainability Committee, which is an advisory committee to the Board of Directors and may include members who are not directors. According to its charter, this committee is responsible for:</p> <ul style="list-style-type: none"> <li>● evaluating and recommending improvements to the effectiveness of our corporate governance practices and the functioning of the Board of Directors;</li> <li>● recommending improvements to our code of ethical conduct and management system in order to avoid conflicts of interest between us and our shareholders or management;</li> <li>● issuing reports on potential conflicts of interest between us and our shareholders or management; and</li> <li>● reporting on policies relating to corporate responsibility, such as environmental and social responsibility</li> </ul> <p>The committee’s charter requires at least one of its members to be independent. For this purpose, an independent member is a person who:</p>

Section	NYSE corporate governance rule for U.S. domestic issuers	Our approach
303A.05	A listed company must have a compensation committee composed entirely of independent directors, with a written charter that covers certain minimum specified duties. “Controlled companies” are not required to comply with this requirement.	<ul style="list-style-type: none"> <li>• does not have any current relationship with us other than being part of a committee, or being a shareholder of the Company;</li> <li>• does not participate, directly or indirectly, in the sales efforts or provision of services by Vale;</li> <li>• is not a representative of the controlling shareholders;</li> <li>• has not been an employee of the controlling shareholder or of entities affiliated with a controlling shareholder; and</li> <li>• has not been an executive officer of the controlling shareholder.</li> </ul> <p>As a controlled company, we would not be required to comply with the compensation committee requirements if we were a U.S. domestic issuer. However, we have an Executive Development Committee, which is an advisory committee to the Board of Directors and may include members who are not directors. This committee is responsible for:</p> <ul style="list-style-type: none"> <li>• reporting on general human resources policies;</li> <li>• analyzing and reporting on the adequacy of compensation levels for our executive officers;</li> <li>• proposing and updating guidelines for evaluating the performance of our executive officers; and</li> <li>• reporting on policies relating to health and safety.</li> </ul>
303A.06 303A.07	A listed company must have an audit committee with a minimum of three independent directors who satisfy the independence requirements of Rule 10A-3 under the Exchange Act, with a written charter that covers certain minimum specified duties.	<p>In lieu of appointing an audit committee composed of independent members of the Board of Directors, we have established a permanent <i>conselho fiscal</i>, or fiscal council, in accordance with the applicable provisions of Brazilian corporate law, and provided the fiscal council with additional powers to permit it to meet the requirements of Exchange Act Rule 10A-3(c)(3).</p> <p>The Fiscal Council currently has four members. Under Brazilian corporate law, which provides standards for the independence of the Fiscal Council from us and our management, none of the members of the Fiscal Council may be a member of the Board of Directors or an executive officer. Management does not elect any Fiscal Council member. Our Board of Directors has determined that one of the members of our Fiscal Council meets the New York Stock Exchange independence requirements that would apply to audit committee members in the absence of our reliance on Exchange Act Rule 10A-3(c)(3).</p> <p>The responsibilities of the Fiscal Council are set forth in its charter. Under our bylaws, the charter must give the Fiscal Council responsibility for the matters required under Brazilian corporate law, as well as responsibility for:</p> <ul style="list-style-type: none"> <li>• establishing procedures for the receipt, retention and treatment of complaints related to accounting, controls and audit issues, as well as procedures for the confidential, anonymous submission of concerns regarding such matters;</li> <li>• recommending and assisting the Board of Directors in the appointment, establishment of compensation and dismissal of independent auditors;</li> <li>• pre-approving services to be rendered by the independent auditors;</li> <li>• overseeing the work performed by the independent auditors, with powers to recommend withholding the payment of compensation to the independent auditors; and</li> <li>• mediating disagreements between management and the independent auditors regarding financial reporting.</li> </ul>

<b>Section</b>	<b>NYSE corporate governance rule for U.S. domestic issuers</b>	<b>Our approach</b>
303A.08	Shareholders must be given the opportunity to vote on all equity-compensation plans and material revisions thereto, with limited exemptions set forth in the NYSE rules.	Under Brazilian corporate law, shareholder pre-approval is required for the adoption of any equity compensation plans.
303A.09	A listed company must adopt and disclose corporate governance guidelines that cover certain minimum specified subjects.	We have not published formal corporate governance guidelines.
303A.10	A listed company must adopt and disclose a code of business conduct and ethics for directors, officers and employees, and promptly disclose any waivers of the code for directors or executive officers.	We have adopted a formal code of ethical conduct, which applies to our directors, officers and employees. We report each year in our annual report on Form 20-F any waivers of the code of ethical conduct granted for directors or executive officers. Our code of ethical conduct has a scope that is similar, but not identical, to that required for a U.S. domestic company under the NYSE rules. We also have a code of ethics that applies specifically to employees in the corporate finance, investor relations and accounting departments.
303A.12	<p>a) Each listed company CEO must certify to the NYSE each year that he or she is not aware of any violation by the company of NYSE corporate governance listing standards.</p> <p>b) Each listed company CEO must promptly notify the NYSE in writing after any executive officer of the listed company becomes aware of any non-compliance with any applicable provisions of this Section 303A.</p> <p>c) Each listed company must submit an executed Written Affirmation annually to the NYSE. In addition, each listed company must submit an interim Written Affirmation as and when required by the interim Written Affirmation form specified by the NYSE.</p>	We are subject to (b) and (c) of these requirements, but not (a).

## CODE OF ETHICS

We have adopted a code of ethical conduct that applies to all Board members, executive officers and employees, including the chief executive officer, the chief financial officer and the principal accounting officer. We have posted this code of ethical conduct on our Web site, at: <http://www.vale.com> (under English Version/ Investors/Corporate Governance/Code of Ethics). Copies of our code of ethical conduct may be obtained without charge by writing to us at the address set forth on the front cover of this Form 20-F. We have not granted any implicit or explicit waivers from any provision of our code of ethical conduct since its adoption.

## PRINCIPAL ACCOUNTANT FEES AND SERVICES

PricewaterhouseCoopers Auditores Independentes billed the following fees to us for professional services in 2009 and 2010.

	<b>Year ended December 31,</b>	
	<b>2009</b>	<b>2010</b>
	(US\$ thousand)	
Audit fees . . . . .	8,036	11,752
Audit-related fees . . . . .	230	496
Tax fees . . . . .	278	106
All other fees . . . . .	11	–
Total fees . . . . .	<u>8,555</u>	<u>12,354</u>

“Audit fees” are the aggregate fees billed by PricewaterhouseCoopers for the audit of our annual financial statements, for the audit of the statutory financial statements of our subsidiaries, and reviews of interim financial statements and attestation services that are provided in connection with statutory and



regulatory filings or engagements. They also include billed fees, which are services that only the independent auditor reasonably can provide, including the provision of comfort letters and consents in connection with statutory and regulatory filings and the review of documents filed with the SEC and other capital markets or local financial reporting regulatory bodies. "Audit-related fees" are fees charged by PricewaterhouseCoopers for assurance and related services that are reasonably related to the performance of the audit or review of our financial statements and are not reported under "Audit fees." In 2010 and 2009, "Audit-related fees" consisted primarily of fees for services related to due diligence and special reviews. "Tax fees" relate primarily to the review of annual tax returns and review of accuracy of the tax computation procedures with respect to income tax and sales taxes.

### INFORMATION FILED WITH SECURITIES REGULATORS

We are subject to various information and disclosure requirements in those countries in which our securities are traded, and file financial statements and other periodic reports with the CVM, BM&FBOVESPA, the SEC, the French securities regulator Autorité des Marchés Financiers, and the HKEx.

- *Brazil.* Vale's Common Shares and Class A Preferred Shares are listed on BM&FBOVESPA in São Paulo, Brazil, its primary listing venue. As a result, we are subject to the information and disclosure requirements of Brazilian Corporate Law, as amended. We are also subject to the periodic disclosure requirements of CVM rules applicable to listed companies and to BM&FBOVESPA's "Level 1" Corporate Governance Requirements. Our CVM filings are available from the CVM at <http://www.cvm.gov.br> or from BM&FBOVESPA at <http://www.bmfbovespa.com.br>. In addition, as with all of our security filings, they may be accessed at our website, <http://www.vale.com>.
- *United States.* As a result of our ADSs being listed on the New York Stock Exchange, we are subject to the information requirements of the Securities Exchange Act of 1934, as amended, and accordingly file reports and other information with the SEC. Reports and other information filed by us with the SEC may be inspected and copied at the public reference facilities maintained by the SEC at 100 F Street, N.E., Washington, D.C., 20549. You can obtain further information about the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. You may also inspect Vale's reports and other information at the offices of the New York Stock Exchange, 11 Wall Street, New York, New York 10005, on which Vale's ADSs are listed. Our SEC filings are also available to the public from the SEC at <http://www.sec.gov>. For further information on obtaining copies of Vale's public filings at the New York Stock Exchange, you should call (212) 656-5060.
- *France.* As a result of the admission to listing and trading of the ADSs on NYSE Euronext Paris, we must comply with certain French periodic and ongoing disclosure rules (for example, annual report with audited financial statements and interim financial statements) and anti-fraud rules, which prohibit market-abuse practices and devices, including insider trading, market manipulation and disclosure of false or misleading information. In general, the Company is deemed to comply with the French periodic and ongoing disclosure rules through its compliance with U.S. disclosure rules.
- *Hong Kong.* As a result of the listing and trading of our HDSs on the HKEx, we must comply with the HKEx Listing Rules, subject to certain waivers granted by the HKEx, including certain periodic and ongoing disclosure rules, such as annual reports with audited financial statements and interim financial statements. In accordance with the HKEx Listing Rules, we are required to upload reports and other information onto the website of the HKEx.

## EXHIBITS

<u>Exhibit Number</u>	
1	Bylaws of Vale S.A., as amended on May 19, 2010
8	List of subsidiaries
12.1	Certification of Chief Executive Officer of Vale pursuant to Rules 13a-14 and 15d-14 under the Securities Exchange Act of 1934
12.2	Certification of Chief Financial Officer of Vale pursuant to Rules 13a-14 and 15d-14 under the Securities Exchange Act of 1934
13.1	Certification of Chief Executive Officer and Chief Financial Officer of Vale, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
15.1	Consent of PricewaterhouseCoopers
15.2	Consent of IMC Mining Group
15.3	Consent of IMC Mining Solutions
15.4	Consent of SRK Consulting
15.5	Consent of Echelon Mining Services
15.6	Consent of Snowden Mining Industry Consultants Pty Ltd
15.7	Consent of John T. Boyd Company
(101)	Interactive Data File*

\* In accordance with Rule 406T of Regulation S-T promulgated by the Securities and Exchange Commission, Exhibit 101 is deemed not filed or part of a registration statement or prospectus for purposes of sections 11 or 12 of the Securities Act of 1933, is deemed not filed for purposes of section 18 of the Securities Exchange Act of 1934, and otherwise is not subject to liability under these sections.

The amount of long-term debt securities of Vale or its subsidiaries authorized under any individual outstanding agreement does not exceed 10% of Vale's total assets on a consolidated basis. Vale hereby agrees to furnish the SEC, upon its request, a copy of any instruments defining the rights of holders of its long-term debt or of its subsidiaries for which consolidated or unconsolidated financial statements are required to be filed.

## GLOSSARY

Alumina . . . . .	Aluminum oxide. It is the main component of bauxite, and extracted from bauxite ore in a chemical refining process. It is the principal raw material in the electro-chemical process from which aluminum is produced.
Aluminum . . . . .	A white metal that is obtained in the electro-chemical process of reducing aluminum oxide.
Anthracite . . . . .	The hardest coal type, which contains a high percentage of fixed carbon and a low percentage of volatile matter. Anthracite is the highest ranked coal and it contains 90% fixed carbon, more than any other form of coal. Anthracite has a semi-metallic luster and is capable of burning with little smoke. Mainly used for metallurgical purposes.
Austenitic stainless steel . . . . .	Steel that contains a significant amount of chromium and sufficient nickel to stabilize the austenite microstructure, giving to the steel good formability and ductility and improving its high temperature resistance. They are used in a wide variety of applications, ranging from consumer products to industrial process equipment, as well as for power generation and transportation equipment, kitchen appliances and many other applications where strength, corrosion and high temperature resistance are required.
A\$ . . . . .	Australian dollars.
Bauxite . . . . .	A rock composed primarily of hydrated aluminum oxides. It is the principal ore of alumina, the raw material from which aluminum is made.
Beneficiation . . . . .	A variety of processes whereby extracted ore from mining is reduced to particles that can be separated into ore-mineral and waste, the former suitable for further processing or direct use.
BOF . . . . .	The vast majority of steel manufactured in the world is produced using the basic oxygen furnace (“BOF”). Basic oxygen steelmaking is a method of primary steelmaking in which carbon-rich molten pig iron is made into steel. High purity oxygen is blown through the molten bath to lower carbon, silicon, manganese, and phosphorous content of the iron, while various fluxes are used to reduce the sulfur and phosphorous levels.
CAD . . . . .	Canadian dollars.
CFR . . . . .	Cost and freight. Indicates that all costs related to the transportation of goods up to a named port of destination will be paid by the seller of the goods.
Coal . . . . .	Coal is a black or brownish-black solid combustible substance formed by the decomposition of vegetable matter without access to air. The rank of coal, which includes anthracite, bituminous coal (both are called hard coal), sub-bituminous coal, and lignite, is based on fixed carbon, volatile matter, and heating value.
Cobalt . . . . .	Cobalt is a hard, lustrous, silver-gray metal found in ores, and used in the preparation of magnetic, wear-resistant, and high-strength alloys (particularly for jet engines and turbines). Its compounds are also used in the production of inks, paints, and varnishes.

Coke . . . . .	Coal that has been processed in a coke oven, for use as a reduction agent in blast furnaces and in foundries for the purposes of transforming iron ore into pig iron.
Concentration . . . . .	Physical, chemical or biological process to increase the grade of the metal or mineral of interest.
Copper . . . . .	A reddish brown metallic element. Copper is highly conductive, both thermally and electrically. It is highly malleable and ductile and is easily rolled into sheet and drawn into wire.
Copper anode . . . . .	Copper anode is a metallic product of the converting stage of smelting process that is cast into blocks and generally contains 99% copper grade, which requires further processing to produce refined copper cathodes.
Copper cathode . . . . .	Copper plate with purity higher than or equal to 99.9% that is produced by an electrolytic process.
Copper concentrate . . . . .	Material produced by concentration of copper minerals contained in the copper ore. It is the raw material used in smelters to produce copper metal.
DRI . . . . .	Direct reduced iron. Iron ore lumps or pellets converted by the direct reduction process, used mainly as a scrap substitute in electric arc furnace steelmaking.
DWT . . . . .	Deadweight ton. The measurement unit of a vessel's capacity for cargo, fuel oil, stores and crew, measured in metric tons of 1,000 kg. A vessel's total deadweight is the total weight the vessel can carry when loaded to a particular load line.
EAF . . . . .	The electric arc furnace ("EAF") is the principle furnace type for the electric production of steel. The primary application of the EAF is for the re-melting of steel scrap; however, EAFs can be charged with limited amounts of iron scrap, pig iron and direct reduced iron.
Electrowon copper cathode . . .	Refined copper cathode is a metallic product produced by an electrochemical process in which copper is recovered by dissolving copper anode in an electrolyte and plating it onto an electrode. Electrowon copper cathodes generally contain 99.99% copper grade.
Embedded derivatives . . . . .	A financial instrument within a contractual arrangement such as leases, purchase agreements and guarantees. Its function is to modify some or all of the cash flow that would otherwise be required by the contract, such as caps, floors or collars.
Fe unit . . . . .	A measure of the iron grade in the iron ore that is equivalent to 1% iron grade in one metric ton of iron ore.
Ferroalloys . . . . .	Ferroalloys are alloys of iron that contain one or more other chemical elements. These alloys are used to add these other elements into molten metal, usually in steelmaking. The principal ferroalloys are those of manganese, silicon and chromium.
FOB . . . . .	Free on board. It indicates that the purchaser pays for shipping, insurance and all the other costs associated with transportation of the goods to their destination.

Gold . . . . .	A precious metal sometimes found free in nature, but usually found in conjunction with silver, quartz, calcite, lead, tellurium, zinc or copper. It is the most malleable and ductile metal, a good conductor of heat and electricity and unaffected by air and most reagents.
Grade . . . . .	The proportion of metal or mineral present in ore or any other host material.
Hard metallurgical coal . . . . .	Metallurgical coking coal with the required properties to produce a stronger/harder metallurgical coke.
Hematite Ore . . . . .	Hematite is an iron oxide mineral, but also denotes the high-grade iron ore type within the iron deposits.
Iridium . . . . .	A dense, hard, brittle, silvery-white transition metal of the platinum family that occurs in natural alloys with platinum or osmium. Iridium is used in high-strength alloys that can withstand high temperatures, primarily in high-temperature apparatus, electrical contacts, and as a hardening agent for platinum.
Iron ore pellets . . . . .	Agglomerated ultra-fine iron ore particles of a size and quality suitable for particular iron making processes. Our iron ore pellets range in size from 8 mm to 18 mm.
Itabirite Ore . . . . .	Itabirite is a banded iron formation and denotes the low-grade iron ore type within the iron deposits.
Kaolin . . . . .	A fine white aluminum silicate clay derived from rock composed chiefly of feldspar, which is used as a coating agent, filler, extender and absorbent in the paper, paint, ceramics and other industries.
Lump ore . . . . .	Iron ore or manganese ore with the coarsest particle size in the range of 6.35 mm to 50 mm in diameter, but varying slightly between different mines and ores.
Manganese . . . . .	A hard brittle metallic element found primarily in the minerals pyrolusite, hausmannite and manganate. Manganese is essential to the production of virtually all steels and is important in the production of cast iron.
Metallurgical coal . . . . .	A bituminous hard coal with a quality that allows the production of coke. Normally used in coke ovens for metallurgical purposes.
Methanol . . . . .	An alcohol fuel largely used in the production of chemical and plastic compounds.
Mineral deposit(s) . . . . .	A mineralized body that has been intersected by a sufficient number of closely spaced drill holes and/or underground/surface samples to support sufficient tonnage and grade of metal(s) or mineral(s) of interest to warrant further exploration-development work.
Mineral resource . . . . .	A concentration or occurrence of minerals of economic interest in such form and quantity that could justify an eventual economic extraction. The location, quantity, grade, geological characteristics and continuity of a mineral resource are known, estimated or interpreted from specific geological evidence through drill holes, trenches and/or outcrops. Mineral resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured Resources.

Nickel . . . . .	A silvery white metal that takes on a high polish. It is hard, malleable, ductile, somewhat ferromagnetic, and a fair conductor of heat and electricity. It belongs to the iron-cobalt group of metals and is chiefly valuable for the alloys it forms, such as stainless steel and other corrosion-resistant alloys.
Nickel matte . . . . .	An intermediate smelter product that must be further refined to obtain pure metal.
Nickel pig iron . . . . .	A low-grade nickel product, made from lateritic ores, suitable primarily for use in stainless steel production. Nickel pig iron typically has a nickel grade of 1.5-6% produced from blast furnaces. Nickel pig iron can also contain chrome, manganese, and impurities such as phosphorus, sulfur and carbon. Low grade iron-nickel (FeNi) produced in China through electric furnaces is often also referred to as nickel pig iron.
Ntk . . . . .	Net ton (the weight of the goods being transported excluding the weight of the wagon) kilometer.
Open-pit mining . . . . .	Method of extracting rock or minerals from the earth by their removal from an open pit. Open-pit mines for extraction of ore are used when deposits of commercially useful minerals or rock are found near the surface; that is, where the overburden (surface material covering the valuable deposit) is relatively thin or the material of interest is structurally unsuitable for underground mining.
Oxides . . . . .	Compounds of oxygen with another element. For example, magnetite is an oxide mineral formed by the chemical union of iron with oxygen.
Palladium . . . . .	A silver-white metal that is ductile and malleable, used primarily in automobile-emissions control devices, jewelry, electrical and chemical applications.
PCI . . . . .	Pulverized coal injection. Type of coal with specific properties ideal for direct injection via the tuyeres of blast furnaces. This type of coal does not require any processing or coke making, and can be directly injected into the blast furnaces, replacing lump cokes to be charged from the top of the blast furnaces.
Pellet feed fines . . . . .	Ultra-fine iron ore (less than 0.15 mm) generated by mining and grinding. This material is aggregated into iron ore pellets through an agglomeration process.
Pelletizing . . . . .	Iron ore pelletizing is a process of agglomeration of ultra-fines produced in iron ore exploitation and concentration steps. The three basic stages of the process are: (i) ore preparation (to get the correct fineness); (ii) mixing and balling (additive mixing and ball formation); and (iii) firing (to get ceramic bonding and strength).
PGMs . . . . .	Platinum group metals. Consist of platinum, palladium, rhodium, ruthenium, osmium and iridium, of which osmium has no industrial application and no economic value, while platinum and palladium have the greatest economic value.
Phosphate . . . . .	A phosphorous compound, which occurs in natural ores and is used as a raw material for primary production of fertilizer nutrients, animal feeds and detergents.
Pig iron . . . . .	Product of smelting iron ore usually with coke and limestone in a blast furnace.

Platinum . . . . .	A dense, precious, grey-white transition metal that is ductile and malleable and occurs in some nickel and copper ores. Platinum is resistant to corrosion and is used in jewelry, laboratory equipment, electrical contacts, dentistry, automobile-emissions control devices, flat panel TVs and hard disk drives.
Potash . . . . .	A potassium chloride compound, chiefly KCl, used as simple fertilizer and in the production of mixture fertilizer.
Precious metals . . . . .	Metals valued for their color, malleability, and rarity, with a high economic value driven not only by their practical industrial use, but also by their role as investments. The widely-traded precious metals are gold, silver, platinum and palladium.
Primary nickel . . . . .	Nickel produced directly from mineral ores.
Probable (indicated) reserves . .	Reserves for which quantity and grade and/or quality are computed from information similar to that used for proven (measured) reserves, but the sites for inspection, sampling and measurement are farther apart or are otherwise less adequately spaced. The degree of assurance, although lower than that for proven (measured) reserves, is high enough to assume continuity between points of observation.
Proven (measured) reserves . . .	Reserves for which (a) quantity is computed from dimensions revealed in outcrops, trenches, working or drill holes; grade and/or quality are computed from the results of detailed sampling and (b) the sites for inspection, sampling and measurement are spaced so closely and the geologic character is so well defined that size, shape, depth and mineral content of reserves are well-established.
<i>Real, reais</i> or R\$ . . . . .	The official currency of Brazil is the <i>real</i> (singular) (plural: <i>reais</i> ).
Reserves . . . . .	The part of a mineral deposit that could be economically and legally extracted or produced at the time of the reserve determination.
Rhodium . . . . .	A hard, silvery-white, durable metal that has a high reflectance and is primarily used in combination with platinum for automobile-emission control devices and as an alloying agent for hardening platinum.
ROM . . . . .	Run-of-mine. Ore in its natural (unprocessed) state, as mined, without having been crushed.
Ruthenium . . . . .	A hard, white metal that can harden platinum and palladium used to make severe wear-resistant electrical contacts and in other applications in the electronics industry.
Secondary or scrap nickel . . . .	Stainless steel or other nickel-containing scrap.
Seaborne market . . . . .	Comprises the total ore trade between countries using ocean bulk vessels.
Silver . . . . .	A ductile and malleable metal used in photography, coins and medal fabrication, and in industrial applications.
Sinter feed (also known as fines)	Iron ore fines with particles in the range of 0.15 mm to 6.35 mm in diameter. Suitable for sintering.
Sintering . . . . .	The agglomeration of sinter feed, binder and other materials, into a coherent mass by heating without melting, to be used as metallic charge into a blast furnace.

Slabs . . . . .	The most common type of semi-finished steel. Traditional slabs measure 10 inches thick and 30-85 inches wide (and average 20 feet long), while the output of the recently developed “thin slab” casters is two inches thick. Subsequent to casting, slabs are sent to the hot-strip mill to be rolled into coiled sheet and plate products.
Stainless steel . . . . .	Alloy steel containing at least 10% chromium and with superior corrosion resistance. It may also contain other elements such as nickel, manganese, niobium, titanium, molybdenum, copper, in order to improve mechanical, thermal properties and service life. It is primarily classified as austenitic (200 and 300 series), ferritic (400 series), martensitic, duplex or precipitation hardening grades.
Stainless steel scrap ratio . . . . .	The ratio of secondary nickel units (either in the form of nickel-bearing, stainless steel scrap, or in alloy steel, foundry and nickel-based alloy scrap) relative to all nickel units consumed in the manufacture of new stainless steel.
Thermal coal . . . . .	A type of coal that is suitable for energy generation in thermal power stations.
Troy ounce . . . . .	One troy ounce equals 31.103 grams.
Underground mining . . . . .	Mineral exploitation in which extraction is carried out beneath the earth’s surface.
U.S. dollars or US\$ . . . . .	United States dollars.





**Vale S.A.**  
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## Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders  
Vale S.A.

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of income, of comprehensive income, of cash flows and of changes in stockholders' equity present fairly, in all material respects, the financial position of Vale S.A. and its subsidiaries (the "Company") at December 31, 2010 and 2009, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2010 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2010, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on internal control over financial reporting. Our responsibility is to express opinions on these financial statements and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Vale S.A.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.



PricewaterhouseCoopers  
Auditores Independentes

Rio de Janeiro, Brazil  
February 24, 2011

## Management's Report on Internal Control over Financial Reporting

The management of Vale S.A (Vale) is responsible for establishing and maintaining adequate internal control over financial reporting.

The company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. The company's internal control over financial reporting includes those policies and procedures that: (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of the effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, and that the degree of compliance with the policies or procedures may deteriorate.

Vale's management has assessed the effectiveness of the company's internal control over financial reporting as of December 31, 2010 based on the criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission – COSO. Based on such assessment and criteria, Vale's management has concluded that the company's internal control over financial reporting was effective as of December 31, 2010.

The effectiveness of the company's internal control over financial reporting as of December 31, 2010 has been audited by PricewaterhouseCoopers Auditores Independentes, an independent registered public accounting firm, as stated in their report which appears herein.

February 24, 2011

/s/ ROGER AGNELLI

Roger Agnelli  
Chief Executive Officer

/s/ GUILHERME CAVALCANTI

Guilherme Cavalcanti  
Chief Financial Officer

**Consolidated Balance Sheets**  
Expressed in millions of United States dollars

	<b>As of December 31,</b>	
	<b>2010</b>	<b>2009</b>
<b>Assets</b>		
<b>Current assets</b>		
Cash and cash equivalents	7,584	7,293
Short-term investments	1,793	3,747
Accounts receivable		
Related parties	435	79
Unrelated parties	7,776	3,041
Loans and advances to related parties	96	107
Inventories	4,298	3,196
Deferred income tax	386	852
Unrealized gains on derivative instruments	52	105
Advances to suppliers	188	498
Recoverable taxes	1,603	1,511
Assets held for sale	6,987	-
Others	593	865
	<b>31,791</b>	<b>21,294</b>
<b>Non-current assets</b>		
Property, plant and equipment, net	83,096	67,637
Intangible assets	1,274	1,173
Investments in affiliated companies, joint ventures and others		
investments	4,497	4,585
Other assets:		
Goodwill on acquisition of subsidiaries	3,317	2,313
Loans and advances		
Related parties	29	36
Unrelated parties	165	158
Prepaid pension cost	1,962	1,335
Prepaid expenses	222	235
Judicial deposits	1,731	1,143
Recoverable taxes	361	817
Unrealized gains on derivative instruments	301	865
Others	393	688
	<b>8,481</b>	<b>7,590</b>
<b>TOTAL</b>	<b>129,139</b>	<b>102,279</b>

**Consolidated Balance Sheets**  
**Expressed in millions of United States dollars**  
**(Except number of shares)**

(Continued)  
As of December 31,

	2010	2009
<b>Liabilities and stockholders' equity</b>		
<b>Current liabilities</b>		
Suppliers	3,558	2,309
Payroll and related charges	1,134	864
Minimum annual remuneration attributed to stockholders	4,842	1,464
Current portion of long-term debt	2,823	2,933
Short-term debt	139	30
Loans from related parties	9	19
Provision for income taxes	751	173
Taxes payable and royalties	257	124
Employees postretirement benefits	168	144
Railway sub-concession agreement payable	70	285
Unrealized losses on derivative instruments	35	129
Provisions for asset retirement obligations	75	89
Liabilities associated with assets held for sale	3,152	-
Others	899	618
	<b>17,912</b>	<b>9,181</b>
<b>Non-current liabilities</b>		
Employees postretirement benefits	2,442	1,970
Long-term debt	21,591	19,898
Provisions for contingencies (Note 21(b))	2,043	1,763
Unrealized losses on derivative instruments	61	9
Deferred income tax	8,085	5,755
Provisions for asset retirement obligations	1,293	1,027
Debentures	1,284	752
Others	1,987	1,427
	<b>38,786</b>	<b>32,601</b>
<b>Redeemable noncontrolling interest</b>	<b>712</b>	<b>731</b>
<b>Commitments and contingencies (Note 21)</b>		
Stockholders' equity		
Preferred class A stock - 7,200,000,000 no-par-value shares authorized and 2,108,579,618 (2009 - 2,108,579,618) issued	10,370	9,727
Common stock - 3,600,000,000 no-par-value shares authorized and 3,256,724,482 (2009 - 3,256,724,482) issued	16,016	15,262
Treasury stock - 99,649,571 (2009 - 77,581,904) preferred and 45,375,394 (2009 - 74,997,899) common shares	(2,660)	(1,150)
Additional paid-in capital	2,188	411
Mandatorily convertible notes - common shares	290	1,578
Mandatorily convertible notes - preferred shares	644	1,225
Other cumulative comprehensive loss	(333)	(1,808)
Undistributed retained earnings	42,218	28,508
Unappropriated retained earnings	166	3,182
<b>Total Company stockholders' equity</b>	<b>68,899</b>	<b>56,935</b>
<b>Noncontrolling interests</b>	<b>2,830</b>	<b>2,831</b>
<b>Total stockholders' equity</b>	<b>71,729</b>	<b>59,766</b>
<b>TOTAL</b>	<b>129,139</b>	<b>102,279</b>

The accompanying notes are an integral part of these consolidated financial statements.

**Consolidated Statements of Income**  
**Expressed in millions of United States dollars**  
**(Except per share amounts)**

	Year ended as of December 31,		
	2010	2009	2008
<b>Operating revenues, net of discounts, returns and allowances</b>			
Sales of ores and metals	39,422	19,502	32,484
Aluminum products	2,554	2,050	3,042
Revenues from logistic services	1,465	1,104	1,607
Fertilizer products	1,845	413	295
Others	1,195	870	1,081
	<b>46,481</b>	<b>23,939</b>	<b>38,509</b>
Taxes on revenues	(1,188)	(628)	(1,083)
<b>Net operating revenues</b>	<b>45,293</b>	<b>23,311</b>	<b>37,426</b>
<b>Operating costs and expenses</b>			
Cost of ores and metals sold	(13,326)	(9,853)	(13,938)
Cost of aluminum products	(2,108)	(2,087)	(2,267)
Cost of logistic services	(1,040)	(779)	(930)
Cost of fertilizer products	(1,556)	(173)	(117)
Others	(784)	(729)	(389)
	<b>(18,814)</b>	<b>(13,621)</b>	<b>(17,641)</b>
Selling, general and administrative expenses	(1,701)	(1,130)	(1,748)
Research and development expenses	(878)	(981)	(1,085)
Impairment of goodwill	-	-	(950)
Others	(2,205)	(1,522)	(1,254)
	<b>(23,598)</b>	<b>(17,254)</b>	<b>(22,678)</b>
<b>Operating income</b>	<b>21,695</b>	<b>6,057</b>	<b>14,748</b>
<b>Non-operating income (expenses)</b>			
Financial income	290	381	602
Financial expenses	(2,646)	(1,558)	(1,765)
Gains (losses) on derivatives, net	631	1,528	(812)
Foreign exchange and indexation gains, net	344	675	364
Gain (loss) on sale of investments	-	40	80
	<b>(1,381)</b>	<b>1,066</b>	<b>(1,531)</b>
<b>Income before discontinued operations, income taxes and equity results</b>	<b>20,314</b>	<b>7,123</b>	<b>13,217</b>
<b>Income taxes</b>			
Current	(4,996)	(2,084)	(1,338)
Deferred	1,291	(16)	803
	<b>(3,705)</b>	<b>(2,100)</b>	<b>(535)</b>
<b>Equity in results of affiliates, joint ventures and other investments</b>	<b>987</b>	<b>433</b>	<b>794</b>
<b>Net income from continuing operations</b>	<b>17,596</b>	<b>5,456</b>	<b>13,476</b>
<b>Discontinued operations, net of tax</b>	<b>(143)</b>	<b>-</b>	<b>-</b>
<b>Net income</b>	<b>17,453</b>	<b>5,456</b>	<b>13,476</b>
<b>Net income attributable to noncontrolling interests</b>	<b>189</b>	<b>107</b>	<b>258</b>
<b>Net income attributable to the Company's stockholders</b>	<b>17,264</b>	<b>5,349</b>	<b>13,218</b>
Basic and diluted earnings per share attributable to Company's stockholders			
Earnings per preferred share	3.23	0.97	2.58
Earnings per common share	3.23	0.97	2.58
Earnings per preferred share linked to mandatorily convertible notes(*)	4.76	1.71	4.09
Earnings per common share linked to mandatorily convertible notes(*)	6.52	2.21	4.29

(\*) Basic earnings per share only, as dilution assumes conversion

The accompanying notes are an integral part of these consolidated financial statements.



## Consolidated Statements of Cash Flows

Expressed in millions of United States dollars

	Year ended as of December 31,		
	2010	2009	2008
<b>Cash flows from operating activities:</b>			
<b>Net income</b>	17,453	5,456	13,476
<b>Adjustments to reconcile net income to cash from operations:</b>			
Depreciation, depletion and amortization	3,260	2,722	2,807
Dividends received	1,161	386	513
Equity in results of affiliates, joint ventures and other investments	(987)	(433)	(794)
Deferred income taxes	(1,291)	16	(803)
Impairment of goodwill	-	-	950
(Gain) Loss on disposal of property, plant and equipment	623	293	376
(Gain) Loss on sale of investments	-	(40)	(80)
Discontinued operations, net of tax	143	-	-
Foreign exchange and indexation gains, net	(301)	(1,095)	451
Unrealized derivative losses (gains), net	594	(1,382)	809
Unrealized interest (income) expense, net	187	(25)	116
Others	58	20	(3)
<b>Decrease (increase) in assets:</b>			
Accounts receivable	(3,800)	616	(466)
Inventories	(425)	530	(467)
Recoverable taxes	42	108	(263)
Others	307	(455)	21
<b>Increase (decrease) in liabilities:</b>			
Suppliers	928	121	703
Payroll and related charges	214	159	1
Income taxes	1,311	(234)	(140)
Others	192	373	(93)
<b>Net cash provided by operating activities</b>	<b>19,669</b>	<b>7,136</b>	<b>17,114</b>
<b>Cash flows from investing activities:</b>			
Short term investments	1,954	(1,439)	(2,308)
Loans and advances receivable			
Related parties			
Loan proceeds	(28)	(181)	(37)
Repayments	-	7	58
Others	(30)	(25)	(15)
Judicial deposits	(94)	(132)	(133)
Investments	(87)	(1,947)	(128)
Additions to property, plant and equipment	(12,647)	(8,096)	(8,972)
Proceeds from disposal of investments/property, plant and equipment	-	606	134
Acquisition of subsidiaries, net of cash acquired	(6,252)	(1,952)	-
<b>Net cash used in investing activities</b>	<b>(17,184)</b>	<b>(13,159)</b>	<b>(11,401)</b>
<b>Cash flows from financing activities:</b>			
Short-term debt, additions	2,233	1,285	1,076
Short-term debt, repayments	(2,132)	(1,254)	(1,311)
Loans			
Related parties			
Loan proceeds	24	16	54
Repayments	(25)	(373)	(20)
Issuances of long-term debt			
Third parties	4,436	3,104	1,890
Repayments of long-term debt			
Third parties	(2,629)	(307)	(1,130)
Treasury stock	(1,996)	(9)	(752)
Mandatorily convertible notes	-	934	-
Transactions of noncontrolling interest	660	-	-
Capital increase	-	-	12,190
Dividends and interest attributed to Company's stockholders	(3,000)	(2,724)	(2,850)
Dividends and interest attributed to noncontrolling interest	(140)	(47)	(143)
<b>Net cash provided by (used in) financing activities</b>	<b>(2,569)</b>	<b>625</b>	<b>9,004</b>
Increase (decrease) in cash and cash equivalents	(84)	(5,398)	14,717
Effect of exchange rate changes on cash and cash equivalents	375	2,360	(5,432)
Cash and cash equivalents, beginning of period	7,293	10,331	1,046
<b>Cash and cash equivalents, end of period</b>	<b>7,584</b>	<b>7,293</b>	<b>10,331</b>
<b>Cash paid during the period for:</b>			
Interest on short-term debt	(5)	(1)	(11)
Interest on long-term debt	(1,097)	(1,113)	(1,255)
Income tax	(1,972)	(1,331)	(2,867)
<b>Non-cash transactions</b>			
Interest capitalized	164	266	230
Conversion of mandatorily convertible notes using 75,435,238 treasury stock (see note 18).			

The accompanying notes are an integral part of these consolidated financial statements.

## Consolidated Statements of Changes in Stockholders' Equity

Expressed in millions of United States dollars  
(Except number of shares)

	Year ended as of December 31,		
	2010	2009	2008
<b>Preferred class A stock (including twelve golden shares)</b>			
Beginning of the period	9,727	9,727	4,953
Capital increase	-	-	4,774
Transfer from undistributed retained earnings	643	-	-
<b>End of the period</b>	<b>10,370</b>	<b>9,727</b>	<b>9,727</b>
<b>Common stock</b>			
Beginning of the period	15,262	15,262	7,742
Capital increase	-	-	7,520
Transfer from undistributed retained earnings	754	-	-
<b>End of the period</b>	<b>16,016</b>	<b>15,262</b>	<b>15,262</b>
<b>Treasury stock</b>			
Beginning of the period	(1,150)	(1,141)	(389)
Sales (acquisitions)	(1,510)	(9)	(752)
<b>End of the period</b>	<b>(2,660)</b>	<b>(1,150)</b>	<b>(1,141)</b>
<b>Additional paid-in capital</b>			
Beginning of the period	411	393	498
Change in the period	1,777	18	(105)
<b>End of the period</b>	<b>2,188</b>	<b>411</b>	<b>393</b>
<b>Mandatorily convertible notes — common shares</b>			
Beginning of the period	1,578	1,288	1,288
Change in the period	(1,288)	290	-
<b>End of the period</b>	<b>290</b>	<b>1,578</b>	<b>1,288</b>
<b>Mandatorily convertible notes — preferred shares</b>			
Beginning of the period	1,225	581	581
Change in the period	(581)	644	-
<b>End of the period</b>	<b>644</b>	<b>1,225</b>	<b>581</b>
<b>Other cumulative comprehensive income (deficit) Cumulative translation adjustments</b>			
Beginning of the period	(1,772)	(11,493)	1,340
Change in the period	1,519	9,721	(12,833)
<b>End of the period</b>	<b>(253)</b>	<b>(1,772)</b>	<b>(11,493)</b>
<b>Unrealized gain (loss) — available-for-sale securities, net of tax</b>			
Beginning of the period	-	17	211
Change in the period	3	(17)	(194)
<b>End of the period</b>	<b>3</b>	<b>-</b>	<b>17</b>
<b>Surplus (deficit) accrued pension plan</b>			
Beginning of the period	(38)	(34)	75
Change in the period	(21)	(4)	(109)
<b>End of the period</b>	<b>(59)</b>	<b>(38)</b>	<b>(34)</b>
<b>Cash flow hedge</b>			
Beginning of the period	2	-	29
Change in the period	(26)	2	(29)
<b>End of the period</b>	<b>(24)</b>	<b>2</b>	<b>-</b>
<b>Total other cumulative comprehensive income (deficit)</b>	<b>(333)</b>	<b>(1,808)</b>	<b>(11,510)</b>
<b>Undistributed retained earnings</b>			
Beginning of the period	28,508	18,340	15,317
Transfer from/to unappropriated retained earnings	15,107	10,168	3,023
Transfer to capitalized earnings	(1,397)	-	-
<b>End of the period</b>	<b>42,218</b>	<b>28,508</b>	<b>18,340</b>
<b>Unappropriated retained earnings</b>			
Beginning of the period	3,182	9,616	1,631
Net income attributable to the stockholders' Company	17,264	5,349	13,218
Interest on mandatorily convertible debt			
Preferred class A stock	(72)	(58)	(46)
Common stock	(61)	(93)	(96)
<b>Dividends and interest attributed to stockholders' equity</b>			
Preferred class A stock	(1,940)	(570)	(806)
Common stock	(3,100)	(894)	(1,262)
Appropriation from/to undistributed retained earnings	(15,107)	(10,168)	(3,023)
<b>End of the period</b>	<b>166</b>	<b>3,182</b>	<b>9,616</b>
<b>Total Company stockholders' equity</b>	<b>68,899</b>	<b>56,935</b>	<b>42,556</b>
<b>Noncontrolling interests</b>			
Beginning of the period	2,831	1,892	2,180
Disposals (acquisitions) of noncontrolling interests	1,629	83	-
Cumulative translation adjustments	104	823	(445)
Cash flow hedge	40	(18)	(21)
Net income attributable to noncontrolling interests	189	107	258
Dividends and interest attributable to noncontrolling interests	(104)	(56)	(137)
Capitalization of stockholders advances	27	-	57
Assets and liabilities held for sale	(1,886)	-	-
<b>End of the period</b>	<b>2,830</b>	<b>2,831</b>	<b>1,892</b>
<b>Total stockholders' equity</b>	<b>71,729</b>	<b>59,766</b>	<b>44,448</b>
<b>Number of shares issued and outstanding:</b>			
Preferred class A stock (including twelve golden shares)	2,108,579,618	2,108,579,618	2,108,579,618
Common stock	3,256,724,482	3,256,724,482	3,256,724,482
Buy-backs			
Beginning of the period	(152,579,803)	(151,792,203)	(86,923,184)
Acquisitions	(69,880,400)	(831,400)	(64,869,259)
Conversions	75,435,238	43,800	240
<b>End of the period</b>	<b>(147,024,965)</b>	<b>(152,579,803)</b>	<b>(151,792,203)</b>
	<b>5,218,279,135</b>	<b>5,212,724,297</b>	<b>5,213,511,897</b>

The accompanying notes are an integral part of these consolidated financial statements.

## Consolidated Statements of Comprehensive Income

Expressed in millions of United States dollars

	Year ended as of December 31,		
	2010	2009	2008
<b>Comprehensive income is comprised as follows:</b>			
<b>Company's stockholders:</b>			
Net income attributable to Company's stockholders	17,264	5,349	13,218
Cumulative translation adjustments	1,519	9,721	(12,833)
<b>Unrealized gain (loss) — available-for-sale securities</b>			
Gross balance as of the period/year end	12	(47)	(230)
Tax (expense) benefit	(9)	30	36
	<b>3</b>	<b>(17)</b>	<b>(194)</b>
<b>Surplus (deficit) accrued pension plan</b>			
Gross balance as of the period/year end	(53)	10	(194)
Tax (expense) benefit	32	(14)	85
	<b>(21)</b>	<b>(4)</b>	<b>(109)</b>
<b>Cash flow hedge</b>			
Gross balance as of the period	(16)	11	(29)
Tax expense	(10)	(9)	-
	<b>(26)</b>	<b>2</b>	<b>(29)</b>
<b>Total comprehensive income attributable to Company's stockholders</b>	<b>18,739</b>	<b>15,051</b>	<b>53</b>
<b>Noncontrolling interests:</b>			
Net income attributable to noncontrolling interests	189	107	258
Cumulative translation adjustments	104	823	(445)
Cash flow hedge	40	(18)	(21)
<b>Total comprehensive income attributable to Noncontrolling interests</b>	<b>333</b>	<b>912</b>	<b>(208)</b>
<b>Total comprehensive income</b>	<b>19,072</b>	<b>15,963</b>	<b>(155)</b>

The accompanying notes are an integral part of these consolidated financial statements.

## Notes to the Consolidated Financial Statements

Expressed in millions of United States dollars, unless otherwise stated

### 1 The Company and its operations

Vale S.A., (“Vale”, the “Company” or “we”) is a limited liability company incorporated in Brazil. Operations are carried out through Vale and our subsidiary companies, joint ventures and affiliates, and mainly consist of mining, basic metals production, fertilizers, logistics and steel activities.

At December 31, 2010, our principal consolidated operating subsidiaries are the following:

Subsidiary	% ownership	% voting capital	Location	Principal activity
Alumina do Norte do Brasil S.A. - Alunorte(*)	57.03	59.02	Brazil	Alumina
Alumínio Brasileiro S.A. - Albras(*)	51.00	51.00	Brazil	Aluminum
Compañía Minera Misky Mayo S.A.C.	40.00	51.00	Peru	Fertilizer
Ferrovía Centro-Atlântica S.A.	99.99	99.99	Brazil	Logistics
Ferrovía Norte Sul S.A.	100.00	100.00	Brazil	Logistics
Mineração Corumbá Reunidas S.A.	100.00	100.00	Brazil	Iron ore
PT International Nickel Indonesia Tbk	59.14	59.14	Indonesia	Nickel
Sociedad Contractual Minera Tres Valles	90.00	90.00	Chile	Copper
Urucum Mineração S.A.	100.00	100.00	Brazil	Iron Ore and Manganese
Vale Australia Pty Ltd.	100.00	100.00	Australia	Coal
Vale Austria Holdings GMBH	100.00	100.00	Austria	Holding and Exploration
Vale Canada Limited	100.00	100.00	Canada	Nickel
Vale Colombia Ltd.	100.00	100.00	Colombia	Coal
Vale Fertilizantes S.A	78.92	99.83	Brazil	Fertilizer
Vale Fosfatados S.A	100.00	100.00	Brazil	Fertilizer
Vale International S.A	100.00	100.00	Switzerland	Trading
Vale Manganês S.A.	100.00	100.00	Brazil	Manganese and Ferroalloys
Vale Nouvelle Caledonie SAS	74.00	74.00	New Caledonia	Nickel

(\*) Classified as current assets held for sale.

### 2 Basis of consolidation

All majority-owned subsidiaries in which we have both share and management control are consolidated. All significant intercompany accounts and transactions are eliminated. Subsidiaries over which control is achieved through other means, such as stockholders agreement, are also consolidated even if we hold less than 51% of voting capital. Our variable interest entities in which we are the primary beneficiary are consolidated. Investments in unconsolidated affiliates and joint ventures are accounted for under the equity method (Note 15).

We evaluate the carrying value of our equity investments in relation to publicly quoted market prices when available. If the quoted market price is below book value, and such decline is considered other than temporary, we write-down our equity investments to quoted market value.

We define joint ventures as businesses in which we and a small group of other partners each participate actively in the overall entity management, based on a stockholders agreement. We define affiliates as businesses in which we participate as a noncontrolling interest but with significant influence over the operating and financial policies of the investee.

Our participation in hydroelectric projects in Brazil is made via consortium contracts under which we have undivided interests in the assets, and are liable for our proportionate share of liabilities and expenses, which are based on our proportionate share of power output. We do not have joint liability for any obligations. No separate legal or tax status is granted to consortia under Brazilian law. Accordingly, we recognize our proportionate share of costs and our undivided interest in assets relating to hydroelectric projects (Note 12).

### 3 Summary of significant accounting policies

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Estimates are used for, but not limited to, the selection of useful lives of property, plant and equipment, impairment, provisions necessary for contingent liabilities, fair values assigned to assets and liabilities acquired in business combinations, income tax valuation allowances, employee post retirement benefits and other similar evaluations. Actual results could differ from those estimated.

#### a) Basis of presentation

We have prepared our consolidated financial statements in accordance with United States generally accepted accounting principles ("US GAAP"), which differ in certain respects from the accounting practices adopted in Brazil ("Brazilian GAAP"), compliant with International Financial Reporting Standards ("IFRS") as issued by the IASB, which are the basis for our statutory financial statements.

These financial statements reflect the retrospective adoption of the new segment information as of December 31, 2010 and the three years then ended as shown in Note 24. The new segment information was set up during 2010 based on new acquisitions and project developments. The information disclosed under Notes 15 and 24 retroactively reflects these changes for all periods covered by those Financial Statements.

Since December 2007, significant modifications have been made to Brazilian GAAP as part of a convergence project with International Financial Reporting Standards ("IFRS") and as from December 31, 2010, the convergence will be completed and therefore IFRS will be the accounting practice adopted in Brazil. The Company does not expect to discontinue the US GAAP reporting during 2011.

The Brazilian Real is the parent Company's functional currency. We have selected the US dollar as our reporting currency.

All assets and liabilities have been translated to US dollars at the closing rate of exchange at each balance sheet date (or, if unavailable, the first available exchange rate). All statement of income accounts have been translated to US dollars at the average exchange rates prevailing during the respective periods. Capital accounts are recorded at historical exchange rates. Translation gains and losses are recorded in the Cumulative Translation Adjustments account ("CTA") in stockholders' equity.

The results of operations and financial position of our entities that have a functional currency other than the US dollar, have been translated into US dollars and adjustments to translate those statements into US dollars are recorded in the CTA in stockholders' equity.

The exchange rates used to translate the assets and liabilities of the Brazilian operations at December 31, 2010 and 2009, were R\$1.6662 and R\$1.7412, respectively.

The net transaction gain (loss) included in our statement of income ("Foreign exchange and indexation gains (losses), net") was US\$102, US\$665 and US\$(1,011) in the years ended December 31, 2010, 2009 and 2008, respectively.

The Company has performed an evaluation of subsequent events through February 24, 2011 which is the date the financial statements were issued.

#### b) Cash equivalents and short-term investments

Cash flows from overnight investments and fundings are reported net. Short-term investments that have a ready market and original maturities of 90 days or less are classified as "Cash equivalents". The remaining investments, between 91 day and 360 day maturities are stated at fair value and presented as "Short-term investments".

### **c) Long-term**

Assets and liabilities that are realizable or due more than 12 months after the balance sheet date are classified as long-term.

### **d) Inventories**

Inventories are recorded at the average cost of purchase or production, reduced to market value (net realizable value less a reasonable margin) when lower. Stockpiled inventories are accounted for as processed when they are removed from the mine. The cost of finished goods of comprises depreciation and all direct costs necessary to convert stockpiled inventories into finished goods.

We classify proven and probable reserve quantities attributable to stockpiled inventories as inventories. These reserve quantities are not included in the total proven and probable reserve quantities used in the units of production, depreciation, depletion and amortization calculations.

We periodically assess our inventories to identify obsolete or slow-moving inventories, and if needed we recognize definitive allowances for them.

### **e) Removal of waste materials to access mineral deposits**

Stripping costs (the costs associated with the removal of overburdened and other waste materials) incurred during the development of a mine, before production commences, are capitalized as part of the depreciable cost of developing the property. Such costs are subsequently amortized over the useful life of the mine based on proven and probable reserves.

Post-production stripping costs are included in the cost of the inventory produced (that is extracted), at each mine individually during the period that stripping costs are incurred.

### **f) Property, plant and equipment and intangible assets**

Property, plant and equipment are recorded at cost, including interest cost incurred during the construction of major new facilities. We compute depreciation on the straight-line method at annual average rates which take into consideration the useful lives of the assets, as follows: 3.73% for railroads, 1.5% for buildings, 4.23% for installations and 7.73% for other equipment. Expenditures for maintenance and repairs are charged to operating costs and expenses as incurred.

We capitalize the costs of developing major new ore bodies or expanding the capacity of operating mines and amortize these to operations on the unit-of-production method based on the total probable and proven quantity of ore to be recovered. Exploration costs are expensed. Once the economic viability of mining activities is established, subsequent development costs are capitalized.

Separately acquired intangible assets are shown at historical cost. Intangible assets acquired in a business combination are recognized at fair value at the acquisition date. All our intangible assets have definite useful lives and are carried at cost less accumulated amortization, which is calculated using the straight-line method over their estimated useful lives.

### **g) Business combinations**

We apply accounting for business combinations to record acquisitions of interests in other companies. This “purchase method”, requires that we reasonably determine the fair value of the identifiable tangible and intangible assets and liabilities of acquired companies and segregate goodwill as an intangible asset.

We assign goodwill to reporting units and test each reporting unit's goodwill for impairment at least annually, and whenever circumstances indicating that recognized goodwill may not be fully recovered are identified. We perform the annual goodwill impairment tests during the last quarter of the year.

Goodwill is reviewed for impairment utilizing a two step process. In the first step, we compare a reporting unit's fair value with its carrying amount to identify any potential goodwill impairment loss. If the carrying amount of a reporting unit exceeds the unit's fair value, based on a discounted cash flow analysis, we carry out the second step of the impairment test, measuring and recording the amount, if any, of the unit's goodwill impairment loss.

#### **h) Impairment of long-lived assets**

All long-lived assets, are tested to determine if they are recoverable from operating earnings on an undiscounted cash flow basis over their useful lives whenever events or changes in circumstance indicate that the carrying value may not be recoverable.

When we determine that the carrying value of long-lived assets and definite-life intangible assets may not be recoverable, we measure any impairment loss based on a projected discounted cash flow method using a discount rate determined to be commensurate with the risk inherent in our current business model.

#### **i) Available-for-sale equity securities**

Equity securities classified as "available-for-sale" are recorded pursuant to accounting for certain investments in debt and equity securities. Accordingly, we classify unrealized holding gains and losses, net of taxes, as a separate component of stockholders' equity until realized.

#### **j) Compensated absences**

The liability for future compensation for employee vacations is fully accrued as earned.

#### **k) Derivatives and hedging activities**

We apply accounting for derivative financial instruments and hedging activities, as amended. This standard requires that we recognize all derivative financial instruments as either assets or liabilities on our balance sheet and measure such instruments at fair value. Changes in the fair value of derivatives are recorded in each period in current earnings or in other comprehensive income, in the latter case depending on whether a transaction is designated as an effective hedge and has been effective during the period.

#### **l) Asset retirement obligations**

Our retirement obligations consist primarily of estimated closure costs, the initial measurement of which is recognized as a liability discounted to present value and subsequently accreted through earnings. An asset retirement cost equal to the initial liability is capitalized as part of the related asset's carrying value and depreciated over the asset's useful life.

#### **m) Revenues and expenses**

Revenues are recognized when title is transferred to the customer or services are rendered. Revenue from exported products is recognized when such products are loaded on board the ship. Revenue from products sold in the domestic market is recognized when delivery is made to the customer. Revenue from logistic services is recognized when the service order has been fulfilled. Expenses and costs are recognized on the accrual basis.

#### **n) Income taxes**

The deferred tax effects of tax loss carryforwards and temporary differences are recognized pursuant to accounting for income taxes. A valuation allowance is made when we believe that it is more likely than not that tax assets will not be fully recovered in the future.

#### **o) Earnings per share**

Earnings per share are computed by dividing net income by the weighted average number of common and preferred shares outstanding during the period.

#### **p) Interest attributed to stockholders' equity (dividend)**

Brazilian corporations are permitted to distribute interest attributable to stockholders' equity. The calculation is based on the stockholders' equity amounts as stated in the statutory accounting records and the interest rate applied may not exceed the long-term interest rate (TJLP) determined by the Brazilian Central Bank. Also, such interest may not exceed 50% of net income for the year or 50% of retained earnings plus revenue reserves as determined by "Brazilian GAAP".

As the notional interest charge is tax deductible in Brazil, the benefit to us, as opposed to making a dividend payment is a reduction in our income tax charge. Income tax of 15% is withheld on behalf of the stockholders relative to the interest distribution. Under Brazilian law, interest attributed to stockholders' equity is considered as part of the annual minimum mandatory dividend (Note 18). This notional interest distribution is treated for accounting purposes as a deduction from stockholders' equity in a manner similar to a dividend and the tax credit recorded in income.

#### **q) Pension and other post retirement benefits**

We sponsor private pensions and other post retirement benefits for our employees, which are actuarially determined and recognized as an asset or liability or both depending on the funded or unfunded status of each plan in accordance with employees' accounting for defined benefit pension and other post retirement plans". The cost of our defined benefit and prior service costs or credits that arise during the period and are not components of net periodic benefit costs are recorded in other cumulative comprehensive income (deficit).

### **4 Accounting pronouncements**

#### **a) Newly issued accounting pronouncements**

Accounting Standards Update (ASU) number 2010-29 Disclosure of Supplementary Pro Forma Information for Business Combinations a consensus of the FASB Emerging Issues Task Force. The objective of this Update is to address diversity in practice about the interpretation of the pro forma revenue and earnings disclosure requirements for business combinations. The amendments in this Update specify that if a public entity presents comparative financial statements, the entity should disclose revenue and earnings of the combined entity as though the business combination(s) that occurred during the current year had occurred as of the beginning of the comparable prior annual reporting period only. The amendments also expand the supplemental pro forma disclosures to include a description of the nature and amount of material, nonrecurring pro forma adjustments directly attributable to the business combination included in the reported pro forma revenue and earnings. The impact of this statement will occur for business combinations for which the acquisition date is on or after January 1, 2011.

The Company understands that the other recently issued accounting pronouncements that are not effective as of and for the year ending December 31, 2010, are not expected to be relevant for its consolidated financial statements.

#### **b) Accounting standards adopted in 2010**

Accounting Standards Update (ASU) number 2010-25 Plan Accounting – Defined Contribution Pension Plan (Topic 962) amendments in this update require that participant loans be classified as notes receivable from participants, which are segregated from plan investments and measured at their unpaid principal balance plus any accrued but unpaid interest. This codification does not impact our financial position, results of operations or liquidity.



Accounting Standards Update (ASU) number 2010-20 Receivables (Topic 310) improves the disclosures that an entity provides about the credit quality of its financing receivables and the related allowance for credit losses. As a result of these amendments, an entity is required to disaggregate by portfolio segment or class certain existing disclosures and provide certain new disclosures about its financing receivables and related allowance for credit losses. We adopted the disclosure in our financial statements.

Accounting Standards Update (ASU) number 2010-18 Receivables (Topic 310) clarifies that modifications of loans that are accounted for within a pool under Subtopic 310-30, which provides guidance on accounting for acquired loans that have evidence of credit deterioration upon acquisition, do not result in the removal of those loans from the pool even if the modification would otherwise be considered a troubled debt restructuring. An entity will continue to be required to consider whether the pool of assets in which the loan is included is impaired if expected cash flows for the pool change. The amendments do not affect the accounting for loans under the scope of Subtopic 310-30 that are not accounted for within pools. Loans accounted for individually under Subtopic 310-30 continue to be subject to the troubled debt restructuring accounting provisions within Subtopic 310-40. We adopted the change in the disclosure of our financial statements.

Accounting Standards Update (ASU) number 2010-11 Derivatives and Hedging (Topic 815) clarifies the type of embedded credit derivative that is exempt from embedded derivative bifurcation requirements. Only one form of embedded credit derivative qualifies for the exemption one that is related only to the subordination of one financial instrument to another. As a result, entities that have contracts containing an embedded credit derivative feature in a form other than such subordination may need to separately account for the embedded credit derivative feature. This Codification does not impact our financial position, results of operations or liquidity.

Accounting Standards Update (ASU) number 2010-10 Consolidation (Topic 810) defers the effective date of the amendments to the consolidation requirements made by FASB Statement 167 to a reporting entity's interest in certain types of entities and clarifies other aspects of the Statement 167 amendments. As a result of the deferral, a reporting entity will not be required to apply the Statement 167 amendments to the Subtopic 810-10 consolidation requirements to its interest in an entity that meets the criteria to qualify for the deferral. This Update also clarifies how a related party's interests in an entity should be considered when evaluating the criteria for determining whether a decision maker or service provider fee represents a variable interest. In addition, the Update also clarifies that a quantitative calculation should not be the sole basis for evaluating whether a decision maker's or service provider's fee is a variable interest. This Codification does not impact our financial position, results of operations or liquidity.

Accounting Standards Update No. 2010-09 Subsequent Events (Topic 855) addresses both the interaction of the requirements of Topic 855, Subsequent Events, with the SEC's reporting requirements and the intended breadth of the reissuance disclosures provision related to subsequent events (paragraph 855-10-50-4). The amendments in this Update have the potential to change reporting by both private and public entities, however, the nature of the change may vary depending on facts and circumstances. This Codification does not impact our financial position, results of operations or liquidity.

Accounting Standards Update (ASU) number 2010-06 Fair Value Measurements and Disclosures (Topic 820): Improving Disclosures about Fair Value Measurements. This update provides amendments to Subtopic 820-10 and are expected to provide more robust disclosures about (1) the different classes of assets and liabilities measured at fair value, (2) the valuation techniques and inputs used, (3) the activity in Level 3 fair value measurements, and (4) the transfers between Levels 1, 2, and 3. The Company fully adopted this standard in 2010 with no impact on our financial position, results of operations or liquidity.

In June 2009, the Financial Accounting Standards Board ("FASB") issued an amendment to Interpretation No. 46(R) on the accounting and disclosure requirements for the consolidation of variable interest entities ("VIEs"). Subsequently, in December 2009, the Accounting Standards Update (ASU) number 2009-17 Amendments to FASB Interpretation No. 46(R) was issued. The amendments replace the quantitative-based risks and rewards calculation, for determining which reporting entity has a controlling financial interest in a VIE, with a qualitative analysis when determining whether or not it must consolidate a VIE. The newly required approach is focused on identifying which reporting entity has the power to direct the activities of a variable interest entity that most significantly impact the entity's economic performance and (1) the obligation to absorb losses of the entity or (2) the right to receive benefits from the entity. The amendments also require an enterprise to

continuously reassess whether it must consolidate a VIE. Additionally, the amendments eliminated the scope exception on qualifying special-purpose entities (“QSPE”) and require enhanced disclosures about: involvement with VIEs, significant changes in risk exposures, impacts on the financial statements, and, significant judgments and assumptions used to determine whether or not to consolidate a VIE. The Company adopted these amendments in 2010, with no impact on our financial position, results of operations or liquidity.

In June 2009, the “FASB” issued an amendment to the accounting and disclosure requirements for transfers of financial assets. Subsequently, in December 2009, the Accounting Standards Update (ASU) number 2009-16 Accounting for Transfers of Financial Assets – an amendment of FASB Statement No. 140 was issued. The amendments improve financial reporting by requiring greater transparency and additional disclosures for transfers of financial assets and the entity’s continuing involvement with them and also change the requirements for derecognizing financial assets. In addition, the amendments eliminate the exceptions for QSPE from the consolidation guidance and the exception that permitted sale accounting for certain mortgage securitizations when a transferor has not surrendered control over the transferred financial assets. The Company adopted these amendments in 2010, with no impact on our financial position, results of operations or liquidity.

Accounting Standards Update (ASU) number 2009-08, Earnings Per Share issued by the FASB provides additional guidance related to calculation of earnings per share. In particular, the effect on income available to common stockholders of a redemption or induced conversion of preferred stock. This guidance amends ASC 260. This codification does not impact our financial position, results of operations or liquidity.

## 5 Major acquisitions and disposals

### a) Fertilizers Businesses

In line with our strategy to become a leading global player in the fertilizer business, we acquired in May 2010, 58.6% of the equity capital of Fertilizantes Fosfatados S.A. (Fosfertil), currently Vale Fertilizantes S.A., and the Brazilian fertilizer assets of Bunge Participações e Investimentos S.A. (BPI), currently named Vale Fosfatados S.A. for a total of US\$4.7 billion in cash. An additional payment of US\$55 was made in July, as a complement of the purchase price of Vale Fosfatados.

As part of this acquisition, we exercised in September an option contract to acquire additional 20.27% stake in Vale Fertilizantes S.A., for US\$1.0 billion. Also, we launched a mandatory offer to acquire the common shares held by the noncontrolling stockholders.

As of December 31, 2010, we have 78.92% of the total capital and 99.83% of the voting capital of Vale Fertilizantes and 100% of the capital of Vale Fosfatados.

As this transaction occurred within the previous twelve months, information about the purchase price allocation presented below based on the fair values of identified assets acquired and liabilities assumed is preliminary. Such allocation, currently being performed internally by the Company with the assistance of specialists, will be finalized during future periods, and accordingly, the preliminary purchase price allocation information set forth below is subject to revision, which may be material.

Purchase price	5,795
Noncontrolling consideration	767
Book value of property, plant and equipment and mining rights	(1,987)
Book value of other assets acquired and liabilities assumed, net	(395)
Adjustment to fair value of property, plant and equipment and mining rights	(5,146)
Adjustment to fair value of inventories	(98)
Deferred taxes on the above adjustments	1,783
<b>Goodwill</b>	<b>719</b>

The acquired business contributed net revenues of US\$1,507 and reduced net income by US\$10 for the group for the period from June to December 2010. If this acquisition had been completed on January 1, 2010, our net revenues have increased by US\$770 and our net income have decreased by US\$12. These amounts have been calculated using our accounting policies and by adjusting the results of the subsidiaries to reflect additional

depreciation and amortization that would have been charged assuming the fair value adjustments to property plant and equipment and intangible assets had been applied from January 1, 2010, together with consequential tax effects.

The goodwill balance arises primarily due to the synergies between the acquired assets and the potash operations in Taquari-Vassouras, Carnalita, Rio Colorado and Neuquém and phosphates in Bayóvar I and II, in Peru, and Evate, in Mozambique. The future development of our projects combined with the acquisition of the portfolio of fertilizer assets will allow Vale to be one of the top players in the world's fertilizer business.

#### **b) Other transactions – 2010**

In September 2010, we acquired a 51% stake in Sociedade de Desenvolvimento do Corredor Norte S.A (SDCN) for US\$21. The SDCN has a concession to create a logistic infrastructure necessary for the production flow resulting from the second phase at our Moatize Coal Project.

As part of our efforts to meet our future production targets, we acquired in April, 2010 a 51% interest on iron ore concession rights in Simandou South (Zogota), Guinea, and iron ore exploration permits in Simandou North. From this amount, US\$500 is payable immediately and the remaining US\$2 billion upon achievement of specific milestones. This joint venture is also committed to renovate 660km of the Trans-Guinea railway for passenger transportation and light commercial use.

In July 2010, we concluded the sale of our minority stake in the Bayóvar project in Peru through the newly-formed company MVM Resources International B.V. (MVM). We sold 35% of the total capital of MVM to Mosaic for US\$385 and 25% to Mitsui for US\$275. Vale retains control of the Bayóvar project, holding a 40% stake of the total capital and 51% of voting shares of the newly-formed company. The capital amount invested as of June 30, 2010 was approximately US\$550. The difference between the fair value and carrying amount of US\$321 on this transaction was accounted for in equity in accordance with the accounting rules related to the gains/losses when control is retained.

In June 2010, we acquired an additional 24.5% stake in the Belvedere coal project (Belvedere) for US\$92 from AMCI Investments Pty Ltd (AMCI). As an outcome of this transaction, Vale increased its participation in Belvedere from 51.0% to 75.5%.

In May 2010, we entered into an agreement with Oman Oil Company S.A.O.C. (OOC), a company wholly-owned by the Government of the Sultanate of Oman, to sell 30% of Vale Oman Pelletizing Company LLC (VOPC), for US\$125. The transaction remains subject to the terms set forth in the definitive share purchase agreement to be signed after the fulfillment of precedent conditions.

We have entered into negotiations and agreements to sell our Kaolin, aluminum and alumina assets. For further details see Note 13.

#### **c) Other transactions – 2009**

In September 2009, we acquired from Rio Tinto Plc, Mineração Corumbá Reunidas S.A. (MCR) for US\$802. MCR is the owner of an iron ore mining operations with high iron content and a strategic importance to our product portfolio, adding a substantial volume of lump ore to our reserves. The purchase price allocation adjustment mainly refers to the fair value of inventories, property plant and equipment and intangible and there was no goodwill recorded on this transaction.

In September 2009, we concluded an agreement with ThyssenKrupp Steel AG signed in July, to increase our stake in ThyssenKrupp CSA Siderúrgica do Atlântico Ltda. (CSA) to 26.87% through a capital subscription of US\$1,424.

In April 2009, we concluded the sale of all common shares we held in, Usiminas Siderúrgicas de Minas Gerais S.A. — Usiminas, for US\$273 generating a gain of US\$153.

In March 2009, we acquired 100% of Diamond Coal Ltd, which owns coal assets in Colombia, for US\$300 from Cement Argos. Cash payment was made during the quarter ending June 30, 2009. The primary reason for the acquisition was that the coal assets are an important part of our growth strategy. Therefore, Vale is seeking to build a coal asset platform in Colombia, as it is the world's third largest exporter of high-quality thermal coal, given its low level of sulfur and high calorific value. The purchase price allocation adjustment mainly refers to the fair value of property plant and equipment, and there was no goodwill recorded on this transaction.

In March 2009, we acquired 50% of the joint venture with African Rainbow Minerals Limited of Teal Minerals Incorporated for US\$60.

In February 2009, we acquired Green Mineral Resources, which owns the Regina Project (Canada) and Colorado Project (Argentina), both of which are in development stage, from Rio Tinto, for US\$850. The acquisition of potash assets is aligned with Vale's strategy to become a large producer of fertilizers to benefit from the exposure to rising global consumption. The purchase price allocation adjustment mainly refers to the fair value of, property plant and equipment and there was no goodwill recorded on this transaction.

## 6 Income taxes

Income taxes in Brazil are comprised of federal income tax and social contribution, which is an additional federal tax. The statutory composite enacted tax rate applicable in the periods presented is 34%. In other countries where we have operations, we are subject to various taxes rates depending on the jurisdiction.

We analyze the potential tax impact associated with undistributed earnings by each of our subsidiaries. For those subsidiaries in which the undistributed earnings would be taxable when remitted to the parent company, no deferred tax is recognized, based on generally accepted accounting principles.

The amount reported as income tax expense in our condensed consolidated financial statements is reconciled to the statutory rates as follows:

	Year ended as of December 31,								
	2010			2009			2008		
	Brazil	Foreign	Total	Brazil	Foreign	Total	Brazil	Foreign	Total
Income before discontinued operations, income taxes, equity results and noncontrolling interests	16,586	3,728	20,314	10,024	(2,901)	7,123	2,434	10,783	13,217
Exchange variation (not taxable) or not deductible	-	265	265	-	5,162	5,162	-	(2,887)	(2,887)
	16,586	3,993	20,579	10,024	2,261	12,285	2,434	7,896	10,330
<b>Tax at Brazilian composite rate</b>	<b>(5,639)</b>	<b>(1,358)</b>	<b>(6,997)</b>	<b>(3,408)</b>	<b>(769)</b>	<b>(4,177)</b>	<b>(828)</b>	<b>(2,685)</b>	<b>(3,513)</b>
Adjustments to derive effective tax rate:									
Tax benefit on interest attributed to stockholders	995	-	995	502	-	502	692	-	692
Difference on tax rates of foreign income	-	1,673	1,673	-	1,079	1,079	-	1,728	1,728
Tax incentives	642	-	642	148	-	148	53	-	53
Other non-taxable, income/non deductible expenses	13	(31)	(18)	100	248	348	287	218	505
<b>Income taxes per consolidated statements of income</b>	<b>(3,989)</b>	<b>284</b>	<b>(3,705)</b>	<b>(2,658)</b>	<b>558</b>	<b>(2,100)</b>	<b>204</b>	<b>(739)</b>	<b>(535)</b>

Vale and certain subsidiaries in Brazil were granted tax incentives that provide for a partial reduction of the income tax due related to certain regional operations of iron ore, railroad, manganese, copper, bauxite, alumina, aluminum, kaolin and potash. The tax benefit is calculated based on taxable profit adjusted by the tax incentive (so-called "exploration profit") taking into consideration the operational profit of the projects that benefit from the tax incentive during a fixed period. In general, such tax incentives expire in 2018. Part of the northern railroad and iron ore operations have been granted tax incentives for a period of 10 years starting from 2009. The tax savings must be registered in a special capital (profit) reserve in the net equity of the entity that benefits from the tax incentive and cannot be distributed as dividends to the stockholders.

We are also allowed to reinvest part of the tax savings in the acquisition of new equipment to be used in the operations that enjoy the tax benefit subject to subsequent approval from the Brazilian regulatory agencies. Superintendência de Desenvolvimento da Amazônia – SUDAM and Superintendência de Desenvolvimento do Nordeste – SUDENE. When the reinvestment is approved, the corresponding tax benefit must also be accounted for in a special profit reserve and is also subject to the same restrictions with respect to future dividend distributions to the stockholders.

We also have income tax incentives related to our Goro project under development in New Caledonia ("The Goro Project"). These incentives include an income tax holiday during the construction phase of the project and throughout a 15-year period commencing in the first year in which commercial production, as defined by the applicable legislation, is achieved followed by a five-year, 50 per cent income tax holiday. The Goro Project also qualifies for certain exemptions from indirect taxes such as import duties during the construction phase and throughout the commercial life of the project. Certain of these tax benefits, including the income tax holiday, are

subject to an earlier phase out, should the project achieve a specified cumulative rate of return. We are subject to a branch profit tax commencing in the first year in which commercial production is achieved, as defined by the applicable legislation. To date, we have not recorded any taxable income for New Caledonian tax purposes. The benefits of this legislation are expected to apply with respect to taxes payable once the Goro Project is in operation. We obtained tax incentives for our projects in Mozambique, Oman and Malaysia, that will take effect when those projects start their commercial operations.

We are subject to examination by the tax authorities for up to five years regarding our operations in Brazil, up to ten years for Indonesia, and up to seven years for Canada, for income taxes.

Tax loss carryforwards in Brazil and in most of the jurisdictions where we have tax loss carryforwards have no expiration date, though in Brazil, the offset is restricted to 30% of annual taxable income.

On January 1, 2007, Company adopted the provision Accounting for Uncertainty in Income Taxes.

The reconciliation of the beginning and ending amounts is as follows: (see note 21(b)) tax – related actions)

	Year ended as of December 31,		
	2010	2009	2008
<b>Beginning of the period</b>	<b>396</b>	<b>657</b>	<b>1,046</b>
Increase resulting from tax positions taken	2,130	47	103
Decrease resulting from tax positions taken	(24)	(474)	(261)
Changes in tax legislation	-	-	2
Cumulative translation adjustments	53	166	(233)
<b>End of the period</b>	<b>2,555</b>	<b>396</b>	<b>657</b>

There has been a write-off of values that were provisioned relating to compensation for tax losses and social contribution payments, due to the withdrawal of action by the Company, resulting in the release of funds that were deposited in escrow.

Recognized deferred income tax assets and liabilities are composed as follows:

	As of December 31,	
	2010	2009
<b>Current deferred tax assets</b>		
Accrued expenses deductible only when disbursed	<b>386</b>	<b>852</b>
<b>Long-term deferred tax assets and liabilities</b>		
<b>Assets</b>		
Employee postretirement benefits provision	665	384
Tax loss carryforwards	732	324
Fair value of financial instruments	379	255
Asset retirement obligation	322	259
Other temporary differences (mainly contingencies provisions)	855	587
	<b>2,953</b>	<b>1,809</b>
<b>Liabilities</b>		
Prepaid retirement benefit	(617)	(435)
Fair value adjustments in business combinations	(7,745)	(6,003)
Social contribution	(2,145)	(758)
Other temporary differences	(421)	(262)
	<b>(10,928)</b>	<b>(7,458)</b>
<b>Valuation allowance</b>		
Beginning balance	(106)	(122)
Translation adjustments	-	(25)
Change in allowance	(4)	41
<b>Ending balance</b>	<b>(110)</b>	<b>(106)</b>
<b>Net long-term deferred tax liabilities</b>	<b>(8,085)</b>	<b>(5,755)</b>

## 7 Cash and cash equivalents

	As of December 31,	
	2010	2009
Cash	560	728
Short-term investments	7,024	6,565
	<b>7,584</b>	<b>7,293</b>

All the above mentioned short-term investments are made through the use of low risk fixed income securities, in a way that those denominated in Brazilian reais are concentrated in investments indexed to the CDI, and those denominated in US dollars are mainly time deposits, with the original due date less than three months.

## 8 Short-term investments

	As of December 31,	
	2010	2009
Time deposit	1,793	3,747

Represent low risk investments with original due date over three months.

## 9 Accounts receivable

Accounts receivable from customers in the steel industry represent 74.47% of receivables at December 31, 2010.

No single customer accounted for more than 10% of total revenues.

Additional allowances for doubtful accounts charged to the statement of income as expenses in 2010 and 2009 totaled US\$23 and US\$48, respectively. We wrote-off US\$37 in 2010 and US\$8 in 2009.

	As of December 31,	
	2010	2009
<b>Customers</b>		
Denominated in Brazilian Reais	1,227	885
Denominated in other currencies, mainly US dollars	7,102	2,362
	<b>8,329</b>	<b>3,247</b>
Allowance for doubtful accounts	(118)	(127)
<b>Total</b>	<b>8,211</b>	<b>3,120</b>

## 10 Inventories

	As of December 31,	
	2010	2009
<b>Products</b>		
Nickel (co-products and by-products)	1,310	1,083
Iron ore and pellets	825	677
Manganese and ferroalloys	203	164
Fertilizer	171	-
Aluminum products(*)	-	135
Kaolin(*)	-	42
Copper concentrate	28	35
Coal	74	51
Others	143	51
Spare parts and maintenance supplies	1,544	958
	<b>4,298</b>	<b>3,196</b>

(\*) Classified as held for sale (see note 13)

On December 31, 2010 and December 31, 2009, there were no adjustments to reduce inventories to market values.

## 11 Recoverable taxes

	As of December 31,	
	2010	2009
Income tax	459	908
Value-added tax - ICMS	484	290
PIS and COFINS	962	1,052
Others	59	78
<b>Total</b>	<b>1,964</b>	<b>2,328</b>
Current	1,603	1,511
Non-current	361	817
	<b>1,964</b>	<b>2,328</b>

## 12 Property, plant and equipment and intangible assets

### By type of assets:

	As of December 31, 2010			As of December 31, 2009		
	Cost	Accumulated Depreciation	Net	Cost	Accumulated Depreciation	Net
Land	356	-	356	284	-	284
Buildings	6,087	(1,110)	4,977	4,324	(1,143)	3,181
Installations	14,904	(4,231)	10,673	14,063	(4,160)	9,903
Equipment	10,948	(3,637)	7,311	7,499	(2,380)	5,119
Railroads	7,337	(2,357)	4,980	6,685	(2,016)	4,669
Mine development costs	28,010	(4,071)	23,939	20,205	(2,957)	17,248
Others	12,088	(2,987)	9,101	10,418	(3,123)	7,295
	<b>79,730</b>	<b>(18,393)</b>	<b>61,337</b>	<b>63,478</b>	<b>(15,779)</b>	<b>47,699</b>
Construction in progress	21,759	-	21,759	19,938	-	19,938
<b>Total</b>	<b>101,489</b>	<b>(18,393)</b>	<b>83,096</b>	<b>83,416</b>	<b>(15,779)</b>	<b>67,637</b>

Losses on disposal of property, plant and equipment totaled US\$623, US\$293 and US\$376 in 2010, 2009 and 2008, respectively. Mainly relate to write-offs of ships and trucks, locomotives and other equipment, which were replaced in the normal course of business.

Assets given in guarantee of judicial processes totaled US\$149 as of December 31, 2010 (US\$222 as of December 31, 2009).

### Hydroelectric assets

We participate in several jointly-owned hydroelectric plants, already in operation or under construction, in which we record our undivided interest in these assets as Property, plant and equipment.

At December 31, 2010, the cost of hydroelectric plants in service totaled US\$1,432 (December 31, 2009 US\$1,382) and the related depreciation in the year was US\$422 (December 31, 2009 US\$372). The cost of hydroelectric plants under construction at December 31, 2010 totaled US\$804 (December 31, 2009 US\$521). Income and operating expenses for such plants were not material.

### Intangibles

All of the intangible assets recognized in our financial statements were acquired from third parties, either directly or through a business combination and have definite useful lives from 6 to 30 years.

At December 31, 2010, the intangibles amounted to US\$1,274 (December 31, 2009 – US\$1,173), and comprised of rights granted by the government – North-South Railroad of US\$1,020 and off take-agreements of US\$254.

### 13 Assets and liabilities held for sale

#### • Aluminum

In connection with our strategy of active portfolio asset management, on May 2, 2010, we entered into an agreement with Norsk Hydro ASA (Hydro), to sell all our stakes in Albras – Alumínio Brasileiro S.A. (Albras), Alunorte – Alumina do Norte do Brasil S.A. (Alunorte) and Companhia de Alumina do Pará (CAP), 60% of our Paragominas bauxite mine and all our other Brazilian bauxite mineral rights (“Aluminum Business”).

For the participations of Albras, Alunorte, and CAP we will receive US\$405 in cash, the assumption of US\$700 of net debt by Hydro and a 22% stake in Hydro. For 60% of Paragominas and mineral rights we will receive US\$600. We will sell the remaining 40% of Paragominas in two tranches, in 2013 and 2015, each for US\$200 in cash. The sale is expected to be concluded in the near future.

The Company has assessed that the expected fair value of the transaction is higher than the net asset carrying value and accordingly has maintained the original amounts. Also, because of the significant influence retained by the Company on Hydro, aluminum was not considered a discontinued operation.

#### • Kaolin

As part of our portfolio management, we have entered into negotiations to sell our kaolin net assets. In 2010, a part of our kaolin’s assets was sold and we remeasured the remaining assets at fair value less costs to sell, and the effect of realized and unrealized loss was recorded as discontinued operations in our Statement of Income in 2010. For 2010 the values are presented below for comparative purposes.

#### Assets held for sale

Inventories	366
Property, plant and equipment	4,844
Advances to suppliers — energy	496
Recoverable taxes	627
Other assets	654
<b>Total</b>	<b>6,987</b>

#### Liabilities associated with assets held for sale

Suppliers	290
Long term debt	705
Noncontrolling interests	1,885
Other	272
<b>Total</b>	<b>3,152</b>

### 14 Impairment of goodwill and long-lived assets

As described in note 3(g), we test goodwill and long-lived assets for impairment when events or changes in circumstances indicate that they might be impaired. For impairment test purposes, goodwill is allocated to reporting units and is tested at least annually.

No impairment charges were recognized in 2010 and 2009, as a result of the annual goodwill impairment tests performed.

Management determined cash flows based on approved financial budgets. Gross margin projections were based on past performance and management’s expectations of market developments. Information about sales prices are consistent with the forecasts included in industry reports, considering quoted prices when available and when appropriate. The discount rates used, reflect specific risks relating to the relevant assets in each reporting unit, depending on their composition and location.

Recognition of additional goodwill impairment charges in the future would depend on several estimates including market conditions, recent actual results and management’s forecasts. This information shall be obtained at the time when our assessment is to be updated. It is not possible at this time to determine if any such future impairment charge would result or, if it does, whether such charge would be material.





## 15 Investments in affiliated companies and joint ventures

	Voting	December 31, 2010		Investments		Equity in earnings (losses) of investee adjustments			Dividends Received			
		Participation in capital (%)	Net equity	Net income (loss) of the period	2010	2009	Year ended as of December 31,		Year ended as of December 31,			
							2010	2009	2010	2009		
<b>Bulk Material</b>												
<b>Iron ore and pellets</b>												
Companhia Nipo-Brasileira de Pelotização — NIBRASCO(1)	51.11	51.00	334	93	171	132	48	(12)	84	20	3	-
Companhia Hispano-Brasileira de Pelotização — HISPANOBRAS(1)	51.00	50.89	250	77	128	83	40	(12)	59	-	6	6
Companhia Coreano-Brasileira de Pelotização — KOBRASCO(1)	50.00	50.00	173	86	87	58	43	(17)	44	-	11	13
Companhia Italo-Brasileira de Pelotização — ITABRASCO(1)	51.00	50.90	169	33	86	90	18	12	34	-	25	-
Minas da Serra Geral SA — MSG	50.00	50.00	73	11	36	31	6	2	1	-	-	-
SAMARCO Mineração SA — SAMARCO(2)	50.00	50.00	1,058	1,596	561	673	798	299	315	950	190	300
Baovale Mineração SA — BAOVALE	50.00	50.00	61	8	31	30	4	(3)	6	-	-	-
Zhuohai YPM Pellet e Co.Ltd — ZHUHAI	25.00	25.00	101	37	25	13	9	3	7	-	-	-
Tecnored Desenvolvimento Tecnológico SA	37.40	37.40	106	(28)	40	46	(10)	-	-	-	-	-
		Total	1,165	1,157	956	272	550	210	319			
<b>Coal</b>												
Henan Longyu Resources Co Ltd	25.00	25.00	999	305	250	74	76	74	79	83	-	27
Shandong Yankuang International Company Ltd	25.00	25.00	(106)	(77)	(27)	(7)	(19)	(18)	(17)	-	-	-
			223	243	57	62	62	56	62	83	-	27
<b>Base Metals</b>												
<b>Bauxite</b>												
Mineração Rio do Norte SA — MRN	40.00	40.00	381	(4)	152	143	(2)	(10)	62	10	42	99
<b>Copper</b>												
Teal Minerals Incorporated	50.00	50.00	181	(20)	90	80	(10)	(18)	-	-	-	-
<b>Nickel</b>												
Heron Resources Inc(3)	-	-	-	-	7	8	-	-	-	-	-	-
Korea Nickel Corp	-	-	-	-	11	13	2	-	-	-	-	-
Others(3)	-	-	-	-	5	9	-	-	(34)	-	-	-
			23	30	2	2	-	(34)	-	-	-	-
<b>Logistic</b>												
LOG-IN Logística Intermodal SA	31.33	31.33	401	10	135	125	4	2	20	3	3	3
MRS Logística SA	37.86	41.50	1,233	217	511	468	90	141	113	124	72	34
			646	593	94	143	133	143	133	127	72	37
<b>Others</b>												
<b>Steel</b>												
California Steel Industries Inc — CSI	50.00	50.00	310	25	155	150	12	(10)	11	7	-	13
THYSSENKRUPP CSA Companhia Siderúrgica	26.87	26.87	6,846	(316)	1,840	2,049	(85)	(6)	-	-	-	-
Usinas Siderúrgicas de Minas Gerais SA — USIMINAS	-	-	-	-	-	-	8	18	18	7	18	18
			1,995	2,199	(73)	(8)	29	7	31	7	7	31
<b>Other affiliates and joint ventures</b>												
Vale Soluções em Energia(1)	51.00	51.00	226	(64)	115	99	(33)	-	-	-	-	-
Others	-	-	-	-	88	41	(4)	(2)	(8)	-	-	-
			203	140	(37)	(2)	(8)	-	-	-	-	-
<b>Total</b>			4,497	4,585	987	433	794	433	794	1,161	386	513

(1) Although Vale held a majority of the voting interest of investees accounted for under the equity method, existing voting rights held by noncontrolling shareholders under shareholder agreements preclude consolidation;

(2) Investment includes goodwill of US\$62 in December, 2009 and US\$64 in December, 2010.

(3) Available for sale.

## 16 Short-term debt

Short-term borrowings outstanding on December 31, 2010 were from commercial banks for import financing denominated in US dollars with average annual interest rates of 2.0%.

## 17 Long-term debt

	Current liabilities		Long-term liabilities	
	2010	2009	2010	2009
<b>Foreign debt</b>				
Loans and financing denominated in the following currencies:				
US dollars	2,384	1,543	2,530	4,332
Others	18	29	217	411
Fixed Rate Notes				
US dollars	-	-	10,242	8,481
EUR	-	-	1,003	-
Debt securities	-	150	-	-
Perpetual notes	-	-	78	78
Accrued charges	233	198	-	-
	<b>2,635</b>	<b>1,920</b>	<b>14,070</b>	<b>13,302</b>
<b>Brazilian debt</b>				
Brazilian Reais indexed to Long-term Interest Rate — TJLP/CDI and General Price Index-Market (IGPM)	76	62	3,891	3,433
Basket of currencies	1	1	125	3
Non-convertible debentures	-	861	2,767	2,592
US dollars denominated	1	-	738	568
Accrued charges	110	89	-	-
	<b>188</b>	<b>1,013</b>	<b>7,521</b>	<b>6,596</b>
<b>Total</b>	<b>2,823</b>	<b>2,933</b>	<b>21,591</b>	<b>19,898</b>

The long-term portion at December 31, 2010 was as follows:

2012	1,117
2013	3,311
2014	1,046
2015	745
2016	14,927
No due date	445
	<b>21,591</b>

At December 31, 2010 annual interest rates on long-term debt were as follows:

Up to 3%	5,645
3.1% to 5% (*)	2,185
5.1% to 7%	7,620
7.1% to 9% (**)	4,306
9.1% to 11% (**)	2,712
Over 11% (**)	1,866
Variable	80
	<b>24,414</b>

(\*) Includes Eurobonds. For this operation we have entered into derivative transactions at a cost of 4.71% per year in US dollars.

(\*\*) Includes non-convertible debentures and other Brazilian Real denominated debt that bear interest at the Brazilian Interbank Certificate of Deposit (CDI) and Brazilian Government Long-term Interest Rates (TJLP) plus a spread. For these operations we, have entered into

derivative transactions to mitigate our exposure to the floating rate debt denominated in Brazilian Real, totaling US\$5,835 of which US\$5,461 has an original interest rate above 7.1% per year. The average cost after taking into account the derivative transactions is 3.13% per year in US dollars.

The average cost of all derivative transactions is 3.35% per year in US dollars.

Vale has non-convertible debentures at Brazilian Real denominated as follows:

Non Convertible Debentures	Quantity as of December 31, 2010			Interest	Balance	
	Issued	Outstanding	Maturity		2010	2009
1st Series	150,000	150,000	November 20, 2010	101.75% CDI	-	869
2nd Series	400,000	400,000	November 20, 2013	100% CDI + 0.25%	2,429	2,318
Tranche "B"	5	5	No due date	6.5% p.a + IGP-DI	367	295
					<b>2,796</b>	<b>3,482</b>
Short-term portion					-	861
Long-term portion					2,767	2,592
Accrued charges					29	29
					<b>2,796</b>	<b>3,482</b>

The indexation indices/ rates applied to our debt were as follows:

	Year ended as of December 31,	
	2010	2009
TJLP - Long-Term Interest Rate (effective rate)	6.0	6.2
IGP-M - General Price Index - Market	10.9	(1.7)
Appreciation (devaluation) of Real against US dollar	4.7	34.2

In September 2010, Vale also entered into agreements with The Export-Import Bank of China and the Bank of China Limited for the financing to build 12 very large ore carriers with 400,000 dwt, comprising a facility in an amount up to US\$1,229. The financing has a 13-year total term to be repaid, and the funds will be disbursed during the next 3 years according to the construction schedule. As of December 31, 2010, we had drawn US\$291 under the facility.

In September 2010, we issued US\$1 billion notes due 2020 and US\$750 notes due 2039. The 2020 notes were sold at a price of 99.030% of the principal amount and will bear a coupon of 4.625% per year, payable semi-annually. The 2039 notes that were sold at a price of 110.872% of the principal amount will be consolidated with and form a single series with Vale Overseas US\$1 billion 6.875% Guaranteed Notes due 2039 issued on November 10, 2009.

In June 2010, Vale established some facilities in the total amount of R\$774 or US\$430 with Banco Nacional de Desenvolvimento Economico Social – BNDES to finance the acquisition of certain equipment. As of December 31, 2010, we had drawn the equivalent of US\$123 under this facility.

In June 2010, we entered into a bilateral pre-export finance agreement in the amount of US\$500 and final tenor of 10 years.

In March 2010, we issued EUR750, equivalent to US\$1 billion, of 8-year euronotes at a price of 99.564% of the principal amount. These notes will mature in March 2018 and will bear a coupon of 4.375% per year, payable annually.

In January 2010, we redeemed all outstanding export receivables securitization 10-year notes issued in September 2000 at an interest rate of 8.926% per year and the notes issued in July 2003 at an interest rate of 4.43% per year. The outstanding principal amounts of those September 2010 notes were US\$28 and for the July 2013 notes were US\$122, totaling US\$150 of debt redeemed.

## Credit Lines

We have revolving credit lines available under which amounts can be drawn down and repaid at the option of the borrower. At December 31, 2010, the total amount available under revolving credit lines was US\$1,600, of which US\$850 was granted to Vale International and the balance to Vale Canada Limited. As of December 31, 2010,

neither Vale International nor Vale Canada Limited had drawn any amounts under these facilities, but US\$114 of letters of credit were issued and remained outstanding pursuant Vale Canada Limited's facility.

In January 2011 (subsequent period), we entered into an agreement with some commercial banks with the guarantee of the Italian credit agency, Servizi Assicurativi Del Commercio Estero S.p.A (SACE), to provide us with a US\$300 facility with a final tenor of 10 years.

In October 2010, we entered into agreement with Export Development Canada (EDC), for the financing of our capital expenditure program. Pursuant to the agreement, EDC will provide a facility in an amount up to US\$1 billion. US\$500 will be available for investments in Canada and the remaining US\$500 will be related to existing and future Canadian purchases of goods and services. As of December 2010, Vale had drawn US\$250 under the facility.

In May 2008, we entered into framework agreements with the Japan Bank for International Cooperation in the amount of US\$3 billion and Nippon Export and Investment Insurance in the amount of US\$2 billion for the financing of mining, logistics and power generation projects. In November, 2009, Vale signed a US\$300 export facility agreement, through its subsidiary, PT International Nickel Indonesia Tbk (PTI), with Japanese financial institutions using credit insurance provided by Nippon Export and Investment Insurance – NEXI, to finance the construction of the Karebbe hydroelectric power plant on the Larona river, island of Sulawesi, Indonesia. Through December 31, 2010, PT International had drawn down US\$150 on this facility.

In 2008, we established a credit line for R\$7,300, or US\$4 billion, with Banco Nacional de Desenvolvimento Econômico e Social – BNDES (the Brazilian National Development Bank) to support our investment program. As of December 31, 2010, we had drawn the equivalent of US\$1,153 under this facility.

#### **Guarantee**

On December 31, 2010, US\$2 (December 31, 2009 – US\$753) of the total aggregate outstanding debt was secured by receivables. The remaining outstanding debt in the amount of US\$24,412 (December 31, 2009 – US\$22,078) was unsecured.

Our principal covenants require us to maintain certain ratios, such as debt to EBITDA and interest coverage. We have not identified any events of noncompliance as of December 31, 2010.

### **18 Stockholders' equity**

Each holder of common and preferred class A stock is entitled to one vote for each share on all matters brought before stockholders' meetings, except for the election of the Board of Directors, which is restricted to the holders of common stock. The Brazilian Government holds twelve preferred special shares which confer permanent veto rights over certain matters.

Both common and preferred stockholders are entitled to receive a mandatory minimum dividend of 25% of annual adjusted net income under Brazilian GAAP, once declared at the annual stockholders' meeting. In the case of preferred stockholders, this dividend cannot be less than 6% of the preferred capital as stated in the statutory accounting records or, if greater, 3% of the Brazilian GAAP equity value per share.

In January 2011 (subsequent period), the Board of Directors approved the extraordinary payment from January 31, 2011, of interest on capital, in the total gross amount of US\$1 billion, which corresponds to approximately US\$0.191634056 per outstanding shares, common or preferred, of Vale issuance, referred to the anticipated distribution of income of the year of 2010, calculated on the balance of June 2010, this value is subject to the incidence of income tax withheld at the rate in force.

On October 14, 2010, the Board of Directors approved the following proposals: (i) payment of the second tranche of the minimum dividend of US\$1,250 billion and (ii) payment of an additional dividend of US\$500. The payments were made on October 29, 2010.

On September 23, 2010, the Board of Directors approved a share buy-back program. The shares are to be held in treasury for subsequent sale or cancellation, amounting up to US\$2 billion and involving up to 64,810,513 common shares and up to 98,367,748 preferred shares. As of December 31, 2010 we had acquired 21,682,700 common shares and 48,197,700 preferred shares. The share buy-back program was completely executed in October 2010.

In April 2010, we paid US\$1,250 as a first installment of the dividend to stockholders. The distribution was made in the form of interest on stockholders' equity.

In June 2010, the notes series Rio and Rio P were converted into ADS and represent an aggregate of 49,305,205 common shares and 26,130,033 preferred class A shares respectively. The conversion was made using 75,435,238 treasury stocks held by the Company. The difference between the conversion amount and the book value of the treasury stocks of US\$1,379 was accounted for in additional paid-in capital in the stockholder's equity.

The outstanding issued mandatory convertible notes as of December 31, 2010, are as follows:

Headings	Date		Value		Coupon
	Emission	Expiration	Gross	Net of charges	
Tranches Vale and Vale P – 2012	July/2009	June/2012	942	934	6,75% p.a.

The notes pay a coupon quarterly and are entitled to an additional remuneration equivalent to the cash distribution paid to ADS holders. These notes were classified as a capital instrument, mainly due to the fact that neither the Company nor the holders have the option to settle the operation, whether fully or partially, with cash, and the conversion is mandatory, consequently, they were recognized as a specific component of shareholders' equity, net of financial charges.

The funds linked to future mandatory conversion, net of charges are equivalent to the maximum of common shares and preferred shares, as follows. All the shares are currently held in treasury.

Headings	Maximum amount of action		Value	
	Common	Preferred	Common	Preferred
Tranches Vale and Vale P – 2012	18,415,859	47,284,800	293	649

In January 2011 (subsequent period), Vale paid additional remuneration to holders of mandatorily convertible notes, series VALE-2012 and VAPE.P-2012, R\$0.7776700 and R\$0.8994610, respectively, and in October 2010, VALE-2012 and VAPE P-2012, R\$1.381517 and R\$1.597876 per note, respectively.

In April, 2010, we paid additional interest to holders of mandatorily convertible notes: series RIO and RIO P, US\$0.417690 and US\$0.495742 per note, respectively, and series VALE-2012 and VALE.P-2012, US\$0.602336 and US\$0.696668 per note, respectively.

Brazilian law permits the payment of cash dividends only from retained earnings as stated in the BR GAAP statutory records and such payments are made in Brazilian reais. Pursuant to the Company's statutory books, undistributed retained earnings at December 31, 2010, totaled US\$26,150, comprising the unrealized income and expansion reserves, which could be freely transferred to retained earnings and paid as dividends, if approved by the stockholders, after deducting of the minimum annual mandatory dividend, which is 25% of net income of the parent Company.

No withholding tax is payable on distribution of profits earned, except for distributions in the form of interest attributed to stockholders' equity (Note 3 (p)).

Brazilian laws and our By-laws require that certain appropriations be made from retained earnings to reserve accounts on an annual basis, all determined in accordance with amounts stated in the statutory accounting records, as detailed below:

The purpose and basis of appropriation to such reserves is described below:

Unrealized income reserve – this represents principally our share of the earnings of affiliates and joint ventures, not yet received in the form of cash dividends.

Expansion reserve – this is a general reserve for expansion of our activities.

Legal reserve – this reserve is a requirement for all Brazilian corporations and represents the appropriation of 5% of annual net income up to a limit of 20% of capital stock all determined under Brazilian GAAP.

Fiscal incentive investment reserve – this reserve results from an option to designate a portion of income tax otherwise payable, for investment in government approved projects and is recorded in the year following that in which the taxable income was earned. As from 2000, this reserve basically contemplates income tax incentives (Note 6).

## Basic and diluted earnings per share

Basic and diluted earnings per share amounts have been calculated as follows:

	Year ended as of December 31,		
	2010	2009	2008
<b>Net income from continuing operations attributable to Company's stockholders</b>	<b>17,407</b>	<b>5,349</b>	<b>13,218</b>
<b>Discontinued operations, net of tax</b>	<b>(143)</b>	<b>-</b>	<b>-</b>
<b>Net income attributable to Company's stockholders</b>	<b>17,264</b>	<b>5,349</b>	<b>13,218</b>
Interest attributed to preferred convertible notes	(72)	(58)	(46)
Interest attributed to common convertible notes	(61)	(93)	(96)
<b>Net income for the period adjusted</b>	<b>17,131</b>	<b>5,198</b>	<b>13,076</b>
<b>Basic and diluted earnings per share</b>			
Income available to preferred stockholders	6,566	1,967	5,027
Income available to common stockholders	10,353	3,083	7,823
Income available to convertible notes linked to preferred shares	153	75	78
Income available to convertible notes linked to common shares	59	73	148
Weighted average number of shares outstanding (thousands of shares) – preferred shares	2,035,783	2,030,700	1,946,454
Weighted average number of shares outstanding (thousands of shares) – common shares	3,210,023	3,181,706	3,028,817
Treasury preferred shares linked to mandatorily convertible notes	47,285	77,580	30,295
Treasury common shares linked to mandatorily convertible notes	18,416	74,998	56,582
<b>Total</b>	<b>5,311,507</b>	<b>5,364,984</b>	<b>5,062,148</b>
Earnings per preferred share	3.23	0.97	2.58
Earnings per common share	3.23	0.97	2.58
Earnings per convertible notes linked to preferred share(*)	4.76	1.71	4.09
Earnings per convertible notes linked to common share(*)	6.52	2.21	4.29
<b>Continuous operations</b>			
Earnings per preferred share	3.25	-	-
Earnings per common share	3.25	-	-
Earnings per convertible notes linked to preferred share(*)	4.78	-	-
Earnings per convertible notes linked to common share(*)	6.57	-	-
<b>Discontinued operations</b>			
Earnings per preferred share	(0.02)	-	-
Earnings per common share	(0.02)	-	-
Earnings per convertible notes linked to preferred share(*)	(0.02)	-	-
Earnings per convertible notes linked to common share(*)	(0.05)	-	-

(\*) Basic earnings per share only, as dilution assumes conversion

If the conversion of the convertible notes had been included in the calculation of diluted earnings per share they would have generated the following dilutive effect as shown below:

	Year ended as of December 31,		
	2010	2009	2008
Income available to preferred stockholders	6,791	2,100	5,151
Income available to common stockholders	10,473	3,249	8,067
Weighted average number of shares outstanding (thousands of shares) – preferred shares	2,083,068	2,108,280	1,976,749
Weighted average number of shares outstanding (thousands of shares) – common shares	3,228,439	3,256,704	3,085,399
Earnings per preferred share	3.26	1.00	2.61
Earnings per common share	3.24	1.00	2.61
<b>Continuous operations</b>			
Earnings per preferred share	3.29	-	-
Earnings per common share	3.27	-	-
<b>Discontinued operations</b>			
Earnings per preferred share	(0.03)	-	-
Earnings per common share	(0.03)	-	-

## 19 Pension plans

Vale sponsors a complementary pension plan with Defined Benefits characteristics, including substantially all employees, in which its benefits are calculated based on work time, age, contribution salary and complementarity with social security benefits. This plan is managed by VALIA – Vale’s Pension Fund – and was funded by sponsor and employees contributions on a monthly basis, which were calculated based on periodic actuarial estimates.

In May 2000, it was implemented a new complementary pension plan with variable contribution characteristics, contemplating the programmed retirement income and the risk benefits (pension by death, retirement by disability and disability insurance). On this plan launching (Vale Mais Benefit Plan), it was offered to the active employees the opportunity to migrate to it. Over 98% of the active employees decided to do this migration. The Defined Benefit Plan is still running, covering almost exclusively retired participants and their beneficiaries.

Additionally, a specific group of ex-employees has the right to additional payments over the regular Valia’s benefits, through the “Abono Complementação” added by a post-retirement benefit that includes medical, dental and pharmaceutical assistance.

In 2010, with the purchase of fertilizer business, Vale consolidated commitments assumed with pension fund of defined benefit and other post-retirement benefits plans, as follows:

- Defined benefit plan maintained through the Fundação PETROBRAS de Seguridade Social – PETROS, for employees hired before September 1993 of Ultrafertil S.A., wholly owned subsidiary of Vale Fertilizers. This pension plan has 1,684 members, of which 1,466 are already receiving supplemental retirement and pension.
- Private Pension Plan, in the modality of Benefits Guarantee Fund, managed by Bradesco Previdência e Seguros S.A., aims to meet the eligible employees of Vale Fertilizantes and employees not served by PETROS of subsidiary Ultrafertil S.A.
- The Vale Fertilizantes and its wholly owned subsidiaries pay to employees who are eligible the fine FGTS according to union agreement and provide certain health benefits for retired employees who are eligible.
- Vale Fosfatados has a type of defined contribution plan administered by Bungeprev, which guarantees a minimum benefit at retirement for eligible employees; moreover, the company provides certain health benefits for retired employees.

Upon the acquisition of Inco, we assumed benefits through defined benefit pension plans that cover essentially all its employees and post retirement benefits other than pensions that also provide certain health care and life insurance benefits for retired employees.

The following information details the status of the defined benefit elements of all plans in accordance with employers' disclosure about pensions and other post retirement benefits" and employers' accounting for defined benefit pension and other postretirement plans", as amended.

We use a measurement date of December 31 for our pension and post retirement benefit plans.

### a) Change in benefit obligation

	As of December 31,					
	2010			2009		
	Overfunded pension plans	Underfunded pension plans	Underfunded other benefits	Overfunded pension plans	Underfunded pension plans	Underfunded other benefits
<b>Benefit obligation at beginning of year</b>	3,661	3,923	1,431	2,424	3,031	1,069
Benefit initial recognized consolidation	385	12	58	-	-	-
Transfers	(936)	936	-	-	-	-
Service cost	2	59	26	11	43	17
Interest cost	329	360	102	313	249	88
Plan amendment	(28)	10	(2)	-	-	-
Assumptions changes	87	65	6	-	-	-
Benefits paid/ Actual distribution	(237)	(364)	(78)	(226)	(279)	(65)
Effect of exchange rate changes	126	241	71	843	555	187
Actuarial loss	234	425	(13)	296	324	135
<b>Benefit obligation at end of year</b>	<b>3,623</b>	<b>5,667</b>	<b>1,601</b>	<b>3,661</b>	<b>3,923</b>	<b>1,431</b>

### b) Change in plan assets

	As of December 31,					
	2010			2009		
	Overfunded pension plans	Underfunded pension plans	Underfunded other benefits	Overfunded pension plans	Underfunded pension plans	Underfunded other benefits
Fair value of plan assets at beginning of year	4,996	3,229	11	3,043	2,507	9
Fair value initial recognized consolidation	451	10	-	-	-	-
Transfers	(866)	866	-	-	-	-
Actual return on plan assets	1,094	541	1	1,121	402	1
Employer contributions	2	169	80	40	155	65
Benefits paid/ Actual distribution	(265)	(364)	(80)	(226)	(279)	(65)
Effect of exchange rate changes	173	194	1	1,018	444	1
<b>Fair value of plan assets at end of year</b>	<b>5,585</b>	<b>4,645</b>	<b>13</b>	<b>4,996</b>	<b>3,229</b>	<b>11</b>

Plan assets managed by Valia on December 31, 2010, 31 December 2009 and January 1, 2009 include investments in portfolio of our own stock of US\$519, US\$587 and US\$188, investments in debentures worth US\$64, US\$69 and US\$53 and equity investments from related parties amounting to US\$81, US\$164 and US\$44, respectively. They also include on December 31, 2010, 31 December 2009 and January 1, 2009, US\$4,150, US\$3,261 and US\$2,152 of securities of the Federal Government. The assets of the pension plans of the Vale Canada Limited in securities of the Government of Canada on December 31, 2010, 2009 and January 1, 2009, amounted to US\$436, US\$391 and US\$347, respectively. As of December 31, 2010, the assets of Vale Fertilizantes, Ultrafétil and Vale Fosfatados in securities of the Federal Government equaled US\$158.

### c) Funded Status and Financial Position

	As of December 31,					
	2010			2009		
	Overfunded pension plans	Underfunded pension plans	Underfunded other benefits	Overfunded pension plans	Underfunded pension plans	Underfunded other benefits
Noncurrent assets	1,962	-	-	1,335	-	-
Current liabilities	-	(35)	(133)	-	(62)	(82)
Non-current liabilities	-	(1,042)	(1,400)	-	(632)	(1,338)
<b>Funded status</b>	<b>1,962</b>	<b>(1,077)</b>	<b>(1,533)</b>	<b>1,335</b>	<b>(694)</b>	<b>(1,420)</b>



#### d) Assumptions used (nominal terms)

All calculations involve future actuarial projections about of some parameters, such as salaries, interest, inflation, the behavior of INSS benefits, mortality, disability, etc. No actuarial results can be analyzed without prior knowledge of the scenario of assumptions used in the assessment.

The economic actuarial assumptions adopted were formulated considering the long period for its maturing and should therefore be examined in that light. So, in the short term, they may not necessarily be realized.

In the evaluations were adopted the following economic assumptions:

	Brazil					
	As of December 31,					
	2010			2009		
	Overfunded pension plans	Underfunded pension plans	Underfunded other benefits	Overfunded pension plans	Underfunded pension plans	Underfunded other benefits
Discount rate	11.30% p.a.	11.30% p.a.	11.30% p.a.	11.08% p.a.	11.08% p.a.	11.08% p.a.
Expected return on plan assets	12.00% p.a.	11.50% p.a.	N/A	11.91% p.a.	10.50% p.a.	N/A
Rate of compensation increase – up to 47 years	8.15% p.a.	8.15% p.a.	N/A	7.64% p.a.	N/A	N/A
Rate of compensation increase – over 47 years	5.00% p.a.	5.00% p.a.	N/A	4.50% p.a.	N/A	N/A
Inflation	5.00% p.a.	5.00% p.a.	5.00% p.a.	4.50% p.a.	4.50% p.a.	4.50% p.a.
Health care cost trend rate	N/A	N/A	8.15% p.a.	N/A	N/A	7.63% p.a.

	Foreign					
	As of December 31,					
	2010			2009		
	Overfunded pension plans	Underfunded pension plans	Underfunded other benefits	Overfunded pension plans	Underfunded pension plans	Underfunded other benefits
Discount rate	N/A	6.21% p.a.	5,44% p.a.	N/A	6.21% p.a.	6.20% p.a.
Expected return on plan assets	N/A	7.02% p.a.	6.50% p.a.	N/A	7.00% p.a.	6.23% p.a.
Rate of compensation increase – up to 47 years	N/A	4.11% p.a.	3,58% p.a.	N/A	4.11% p.a.	3.58% p.a.
Rate of compensation increase – over 47 years	N/A	4.11% p.a.	3,58% p.a.	N/A	4.11% p.a.	3.58% p.a.
Inflation	N/A	2.00% p.a.	2.00% p.a.	N/A	2.00% p.a.	2.00% p.a.
Initial health care cost trend rate	N/A	N/A	7.35% p.a.	N/A	N/A	7.60% p.a.
Ultimate health care cost trend rate	N/A	N/A	4.49% p.a.	N/A	N/A	4.47% p.a.

#### e) Pension costs

	Year ended of December 31,					
	2010			2009		
	Overfunded pension plans	Underfunded pension plans	Underfunded other benefits	Overfunded pension plans	Underfunded pension plans	Underfunded other benefits
Service cost – benefits earned during the year	2	59	27	11	43	17
Interest cost on projected benefit obligation	329	361	97	313	255	88
Expected return on assets	(531)	(321)	-	(431)	(202)	(1)
Amortizations and (gain) / loss	-	18	(14)	14	3	(19)
Net deferral	(1)	-	-	-	14	(14)
<b>Net periodic pension costs (credit)</b>	<b>(201)</b>	<b>117</b>	<b>110</b>	<b>(93)</b>	<b>113</b>	<b>71</b>

#### f) Accumulated benefit obligation

	2010			2009		
	Overfunded pension plans	Underfunded pension plans	Underfunded other benefits	Overfunded pension plans	Underfunded pension plans	Underfunded other benefits
Accumulated benefit obligation	3,612	5,540	1,601	3,645	3,826	1,431
Projected benefit obligation	3,623	5,667	1,601	3,661	3,923	1,431
Fair value of plan assets	(5,585)	(4,645)	(13)	(4,996)	(3,229)	(11)

### g) Impact of 1% variation in assumed health care cost trend rate

	1% increase		1% decrease	
	2010	2009	2010	2009
	Overfunded pension plans	Underfunded pension plans	Overfunded pension plans	Underfunded pension plans
Accumulated postretirement benefit obligation (APBO)	213	199	(172)	(163)
Interest and service costs	22	18	(17)	(14)

### h) Other Cumulative Comprehensive Income (Deficit)

	As of December 31,					
	2010			2009		
	Overfunded pension plans	Underfunded pension plans	Underfunded other benefits	Overfunded pension plans	Underfunded pension plans	Underfunded other benefits
Net transition (obligation) / asset	-	-	-	2	-	-
Net prior service (cost) / credit	-	(15)	-	-	(8)	-
Net actuarial (loss) / gain	243	(628)	335	79	(330)	301
Effect of exchange rate changes	(1)	-	(1)	(91)	(7)	(4)
Deferred income tax	(82)	201	(111)	3	111	(94)
<b>Amounts recognized in other cumulative comprehensive income (deficit)</b>	<b>160</b>	<b>(442)</b>	<b>223</b>	<b>(7)</b>	<b>(234)</b>	<b>203</b>

### i) Change in Other Cumulative Comprehensive Income (Deficit)

	As of December 31,					
	2010			2009		
	Overfunded pension plans	Underfunded pension plans	Underfunded other benefits	Overfunded pension plans	Underfunded pension plans	Underfunded other benefits
Net transition (obligation) / asset not yet recognized in NPPC at beginning of period	-	-	-	(12)	-	-
Net actuarial (loss) / gain not yet recognized in NPPC at beginning of period	(18)	(337)	297	(261)	(196)	406
Transfers	8	(8)	-	-	-	-
Deferred income tax at beginning of period	3	111	(94)	93	83	(147)
<b>Effect of initial recognition of cumulative comprehensive income (deficit)</b>	<b>(7)</b>	<b>(234)</b>	<b>203</b>	<b>(180)</b>	<b>(113)</b>	<b>259</b>
Reclassifications						
Amortization of net transition (obligation) / asset	-	-	-	14	-	-
Amortization of net actuarial (loss) / gain	-	(1)	9	-	5	(19)
Total net actuarial (loss) / gain arising during period	261	(277)	11	340	(112)	(142)
Transfers	(8)	8	-	-	-	-
Effect of exchange rate changes	(1)	(28)	17	(91)	(42)	52
Deferred income tax	(85)	90	(17)	(90)	28	53
<b>Total recognized in other cumulative comprehensive income (deficit)</b>	<b>160</b>	<b>(442)</b>	<b>223</b>	<b>(7)</b>	<b>(234)</b>	<b>203</b>

### j) Plan assets

#### Brazilian Plans

The Investment Policy Statements of pension plans sponsored for Brazilian employees are based on a long term macroeconomic scenario and expected returns. An Investment Policy Statement was established for each obligation by following results of this strategic asset allocation study in 2009.

Plan asset allocations comply with pension funds local regulation issued by CMN – Conselho Monetário Nacional (Resolução CMN 3792/09). We are allowed to invest in six different asset classes, defined as Segments by the law, as follows: Fixed Income, Equity, Structured Investments (Alternative Investments and Infra-Structure Projects), International Investments, Real Estate and Loans to Participants.

The Investment Policy Statements are approved by the Board, the Executive Directors and two Investment Committees. The internal and external portfolio managers are allowed to exercise the investment discretion under the limitations imposed by the Board and the Investment Committees.

The pension fund has a risk management process with established policies that intend to identify measure and control all kind of risks faced by our plans, such as: market, liquidity, credit, operational, systemic and legal.

## Foreign plans

The strategy for each of the pension plans sponsored by Vale Inco is based upon a combination of local practices and the specific characteristics of the pension plans in each country, including the structure of the liabilities, the risk versus reward trade-off between different asset classes and the liquidity required to meet benefit payments.

## Overfunded pension plans

### Brazilian Plans

The Defined Benefit Plan (the “Old Plan”) has the majority of its assets allocated in fixed income, mainly in Brazilian government bonds (like TIPS) and corporate long term inflation linked bonds with the objective to reduce the asset-liability volatility. The target is 55% of the total assets. This LDI (Liability Driven Investments) strategy, when considered together with Loans to Participants segment, aims to hedge plan’s liabilities against inflation risk and volatility. Other segments or asset classes have their targets, as follows: Fixed Income – 52%; Equity – 28%; Structured Investments – 6%; International Investments – 2%; Real estate – 7% and Loans to Participants – 5%. Structured Investments segment has invested only in Private Equity Funds in an amount of US\$128 and US\$87 at the end of December 31, 2010 and 2009, respectively.

The Investment Policy has the objective to achieve the adequate diversification, current income and long term capital growth through the combination of all asset classes described above to fulfill its obligations with the adequate level of risk. This plan has an average nominal return of 20.87% p.a. in dollars terms in the last 11 years.

### - Fair value measurements by category – Overfunded Plans

Asset by category	As of December 31,							
	2010				2009			
	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3
Cash and cash equivalents	6	6	-	-	1	1	-	-
Accounts Receivable	81	81	-	-	16	16	-	-
Equity securities – liquid	1,321	1,321	-	-	1,303	1,303	-	-
Equity securities – non-liquid	75	-	75	-	64	-	64	-
Debt securities – Corporate bonds	229	-	229	-	143	-	143	-
Debt securities – Financial Institutions	191	-	191	-	226	-	226	-
Debt securities – Government bonds	2,114	2,114	-	-	1,744	1,744	-	-
Investment funds – Fixed Income	1,610	1,610	-	-	2,037	2,037	-	-
Investment funds – Equity	513	513	-	-	577	577	-	-
International investments	23	23	-	-	-	-	-	-
Structured investments – Private Equity funds	128	-	-	128	97	-	-	97
Structured investments – Real estate funds	19	-	-	19	-	-	-	-
Real estate	288	-	-	288	249	-	-	249
Loans to Participants	182	-	-	182	282	-	-	282
<b>Total</b>	<b>6,780</b>	<b>5,668</b>	<b>495</b>	<b>617</b>	<b>6,739</b>	<b>5,678</b>	<b>433</b>	<b>628</b>
Funds not related to risk plans	(1,195)				(1,743)			
Fair value of plan assets at end of year	<b>5,585</b>				<b>4,996</b>			

## - Fair value measurements using significant unobservable inputs – Level 3 (Overfunded)

	2010					2009			
	Private Equity Funds	Real State Funds	Real State	Loans to Participants	Total	Private Equity Funds	Real State	Loans to Participants	Total
<b>Beginning of the year</b>	97	-	249	282	628	72	156	229	457
Actual return os plan assets	(3)	1	49	25	72	30	21	42	93
Initial recognized consolidation of Fosfertil	-	-	22	5	27	-	-	-	-
Assets sold during the period	(3)	(1)	(24)	(75)	(103)	(57)	(11)	(112)	(180)
Assets purchases, sales and settlements	43	-	25	62	130	28	29	45	102
Cumulative translation adjustment	4	1	9	7	21	24	54	78	156
Transfers in and/or out of Level 3	(10)	18	(42)	(124)	(158)	-	-	-	-
<b>End of the year</b>	<b>128</b>	<b>19</b>	<b>288</b>	<b>182</b>	<b>617</b>	<b>97</b>	<b>249</b>	<b>282</b>	<b>628</b>

The return target for private equity assets in 2011 is 11.51%. The target allocation is 6%, ranging between 2% and 10%. These investments have a longer investment horizon and low liquidity that aim to profit from economic growth, especially in the infrastructure sector of the Brazilian economy. Usually non-liquid assets' fair value is established considering: acquisition cost or book value. Some private equity funds, alternatively, apply the following methodologies: discounted cash flows analysis or analysis based on multiples.

The return target for loans to participants in 2011 is 16.05%. The fair value pricing of these assets includes provisions for non-paid loans, according to the local pension fund regulation.

The return target for real estate assets in 2011 is 12.89%. Fair value for these assets is considered book value. The pension fund hires companies specialized in real estate valuation that do not act in the market as brokers. All valuation techniques follow the local regulation.

### Underfunded pension plans

#### Brazilian Obligation

The Vale Mais Plan (the “New Plan”) has obligations with characteristics of defined benefit and defined contribution plans, as mentioned. The majority of its investments are in fixed income securities. It also implemented a LDI (Liability Driven Investments) strategy to reduce asset-liability volatility of the defined benefits plan's component by using inflation linked bonds (like TIPS). The target allocation is 55% in fixed income. Other segments or asset classes have their targets, as follows: Fixed Income – 59%; Equity – 24%; Structured Investments – 2%; International Investments – 1%; Real estate – 4% and Loans to Participants – 10%. Structured Investments segment has invested only in Private Equity Funds in an amount of US\$15 and US\$10 at the end of December 31, 2010 and 2009, respectively.

The Defined Contribution Vale Mais component offers three options of asset class mixes that can be chosen by participants. The options are: Fixed Income – 100%; 80% Fixed Income and 20% Equities and 65% Fixed Income and 35% Equities. Loan to participants is included in the fixed income options. Equities management is done through an investment fund that targets Ibovespa index.

The Investment Policy Statement has the objective to achieve the adequate diversification, current income and long term capital growth through the combination of all asset classes described above to fulfill its obligations and targets with the adequate level of risk. This plan has an average nominal return of 15.67% p.a. in dollars terms in the last 7 years.

The obligation of the “Abono Complementação” plan has an exclusive allocation in fixed income. It was also used a LDI (Liability Driven Investments) strategy for this plan. Most of the resources were invested in long term Brazilian government bonds (similar to TIPS) and inflation linked corporate bonds with the objective of minimizing asset-liability volatility and reduce inflation risk.

The Investment Policy Statement has the objective to achieve the adequate diversification, current income and long term capital growth to fulfill its obligations with the adequate level of risk. This obligation has an average nominal return of 16.28% per year in local currency in the last 5 years.

## Foreign plans

For all pension plans except PT Inco, this has resulted in a target asset allocation of 60% in equity investments and 40% in fixed income investments, with all securities being traded in the public markets. Fixed income investments are in domestic bonds for each plan's market and involve a mixture of government and corporate bonds. Equity investments are primarily global in nature and involve a mixture of large, mid and small capitalization companies with a modest explicit investment in domestic equities for each plan. The Canadian plans also use a currency hedging strategy (each developed currency's exposure is 50% hedged) due to the large exposure to foreign securities. For PT Inco, the target allocation is 20% equity investment and the remainder in fixed income, with the vast majority of these investments being made within the domestic market.

### - Fair value measurements by category – Underfunded Pension Plans

Asset by category	As of December 31,							
	2010				2009			
	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3
Cash and cash equivalents	52	22	30	-	33	12	21	-
Accounts Receivable	20	20	-	-	-	-	-	-
Equity securities – liquid	1,617	1,617	-	-	1,347	1,347	-	-
Equity securities – non-liquid	11	6	5	-	-	-	-	-
Debt securities – Corporate bonds	55	-	55	-	12	-	12	-
Debt securities – Financial Institutions	120	-	120	-	19	-	19	-
Debt securities – Government bonds	786	370	416	-	445	50	395	-
Investment funds – Fixed Income	1,799	1,079	720	-	988	287	701	-
Investment funds – Equity	437	91	346	-	409	87	322	-
International investments	6	3	3	-	-	-	-	-
Investment funds – Private Equity	216	216	-	-	-	-	-	-
Structured investments – Private Equity funds	15	-	-	15	-	-	-	-
Structured investments – Real estate funds	1	-	-	1	-	-	-	-
Real estate	37	-	-	37	-	-	-	-
Loans to Participants	151	-	-	151	-	-	-	-
<b>Total</b>	<b>5,323</b>	<b>3,424</b>	<b>1,695</b>	<b>204</b>	<b>3,253</b>	<b>1,783</b>	<b>1,470</b>	<b>-</b>
Funds not related to risk plans	(678)				(24)			
Fair value of plan assets at end of year	<b>4,645</b>				<b>3,229</b>			

### - Fair value measurements using significant unobservable inputs – Level 3 (Underfunded)

	As of December 31,								
	2010				2009				
	Private Equity Funds	Real State Funds	Real State	Loans to Participants	Total	Private Equity Funds	Real State	Loans to Participants	Total
Beginning of the year	-	-	-	-	-	-	-	-	-
Actual return on plan assets	(2)	-	4	20	22	-	-	-	-
Assets sold during the period	7	-	(2)	(57)	(52)	-	-	-	-
Assets purchases, sales and settlements	-	-	10	58	68	-	-	-	-
Cumulative translation adjustment	-	-	1	6	7	-	-	-	-
Transfers in and/or out of Level 3	10	1	24	124	159	-	-	-	-
<b>End of the year</b>	<b>15</b>	<b>1</b>	<b>37</b>	<b>151</b>	<b>204</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

The return target for private equity assets in 2011 is 11.51% in local currency. The Vale Mais plan target allocation is 2%, ranging between 1% and 10%. These investments have a longer investment horizon and low liquidity that aim to profit from economic growth, especially in the infra-structure sector of the Brazilian economy. Usually non-liquid assets' fair value is established considering: acquisition cost or book value. Some private equity funds can, alternatively, apply to the following valuation methodologies: discounted cash flows analysis or analysis based on multiples.

The return target for the loan to participants segment in 2011 is 16.05%. In the fair value of these assets non paid loans provisions are considered, according to local pension fund legislation.

The return target for the real estate segment in 2011 is 12.89%. The fair value of these assets is the book value. We hired specialized companies in property valuation that are not in the market as brokers. All the valuation techniques are under the local legislation.

### Underfunded other benefits

#### - Fair value measurements by category – Other Benefits

Asset by category	As of December 31,			
	2010		2009	
	Total	Level 1	Total	Level 1
Cash	13	13	11	11
<b>Total</b>	<b>13</b>	<b>13</b>	<b>11</b>	<b>11</b>

#### k) Cash flows contributions

Employer contributions expected for 2011 are US\$310.

#### l) Estimated future benefit payments

The benefit payments, which reflect future services, are expected to be made as follows:

	As of December 31, 2010			
	Overfunded pension plans	Underfunded pension plans	Underfunded other benefits	Total
2011	271	399	87	757
2012	274	398	91	763
2013	273	396	94	763
2014	275	392	96	763
2015	275	389	98	762
2016 and thereafter	1,317	1,913	488	3,718

## 20 Long-term incentive compensation plan

Under the terms of the long-term incentive compensation plan, the participants, restricted to certain executives, may elect to allocate part of their annual bonus to the plan. The allocation is applied to purchase preferred shares of Vale, through a predefined financial institution, at market conditions and with no benefit provided by Vale.

The shares purchased by each executive are unrestricted and may, at the participant's discretion, be sold at any time. However, the shares must be held for a three-year period and the executive must be continually employed by Vale during that period. The participant then becomes entitled to receive from Vale a cash payment equivalent to the total amount of shares held, based on the market rates. The total shares linked to the plan at December 31, 2010 and December 31, 2009, were 2,458,627 and 1,809,117, respectively.

Additionally, as a long-term incentive certain eligible executives have the opportunity to receive at the end of the triennial cycle, a certain number of shares at market rates, based on an evaluation of their career and performance factors measured as an indicator of total return to stockholders.

We account for the compensation cost provided to our executives under this long-term incentive compensation plan, following the requirements for Accounting for Stock-Based Compensation. Liabilities are measured at each reporting date at fair value, based on market rates. Compensation costs incurred are recognized, over the defined three-year vesting period. At December 31, 2010, December 31, 2009 and December 31, 2008, we recognized a liability of US\$120, US\$72 and US\$7, respectively, through the Statement of Income.

## 21 Commitments and contingencies

a) In connection with a tax-advantaged lease financing arrangement sponsored by the French Government, we provided certain guarantees on December 30, 2004 on behalf of Vale New Caledonia S.A.S. (VNC) pursuant to which we guaranteed payments due from VNC of up to a maximum amount of US\$100 (“Maximum Amount”) in connection with an indemnity. This guarantee was provided to BNP Paribas for the benefit of the tax investors of GniFi, the special purpose vehicle which owns a portion of the assets in our nickel cobalt processing plant in New Caledonia (“Girardin Assets”). We also provided an additional guarantee covering the payments due from VNC of (a) amounts exceeding the Maximum Amount in connection with the indemnity and (b) certain other amounts payable by VNC under a lease agreement covering the Girardin Assets. This guarantee was provided to BNP Paribas for the benefit of GniFi.

Another commitment incorporated in the tax – advantaged lease financing arrangement was that the Girardin Assets would be substantially complete by December 31, 2010. In light of the delay in the start up of VNC processing facilities, the December 31, 2010 substantially complete date was not met. Management proposed an extension to the substantially complete date from December 31, 2010 to December 31, 2011. Both the French government authorities and the tax investors have agreed to this extension, although a signed waiver has not yet been received from the tax investors. The French tax authorities issued their signed extension on December 31, 2011. Accordingly the benefits of the financing structure are fully expected to be maintained and we anticipate that there will be no recapture of the tax advantages provided under this financing structure.

In 2009, two new bank guarantees totaling US\$58 (€43 million) as of December 31, 2010 were established by us on behalf of VNC in favor of the South Province of New Caledonia in order to guarantee the performance of VNC with respect to certain environmental obligations in relation to the metallurgical plant and the Kwe West residue storage facility.

Sumic Nickel Netherlands B.V. (“Sumic”), a 21% stockholder of VNC, has a put option to sell to us 25%, 50%, or 100% of the shares they own of VNC. The put option can be exercised if the defined cost of the initial nickel-cobalt development project, as measured by funding provided to VNC, in natural currencies and converted to U.S. dollars at specified rates of exchange, in the form of Girardin funding, shareholder loans and equity contributions by stockholders to VNC, exceeded US\$4.2 billion and an agreement cannot be reached on how to proceed with the project. On February 15, 2010, we formally amended our agreement with Sumic to increase the threshold to approximately US\$4.6 billion at specified rates of exchange. On May 27, 2010 the threshold was reached and on October 22, 2010, we signed an agreement to extend the put option date into the first half of 2011. On January 25, 2011 a further extension to the agreement was signed extending the put option date into the second half of 2011.

We provided a guarantee covering certain termination payments due from VNC to the supplier under an electricity supply agreement (“ESA”) entered into in October 2004 for the VNC project. The amount of the termination payments guaranteed depends upon a number of factors, including whether any termination of the ESA is a result of a default by VNC and the date on which an early termination of the ESA were to occur. During the first quarter of 2010, the supply of electricity under the ESA to the project began and the guaranteed amount now decreases over the life of the ESA from its maximum amount. As of December 31, 2010 the guarantee was US\$169 (€ 126 million).

In February 2009, we and our subsidiary, Vale Newfoundland and Labrador Limited (“VNL”), entered into a fourth amendment to the Voisey’s Bay Development agreement with the Government of Newfoundland and Labrador, Canada, that permitted VNL to ship up to 55,000 metric tons of nickel concentrate from the Voisey’s Bay area mines. As part of the agreement, VNL agreed to provide the Government of Newfoundland and Labrador financial assurance in the form of letters of credit, each in the amount of US\$16 (CAD\$16 million) for each shipment of nickel concentrate shipped out of the province from January 1, 2009 to August 31, 2009. The amount of this financial assurance was US\$110 (CAD\$112 million) based on seven shipments of nickel concentrate and as of December 31, 2010, US\$11 (CAD\$11 million) remains outstanding.

As of December 31, 2010, there was an additional US\$114 in letters of credit issued and outstanding pursuant to our syndicate revolving credit facility, as well as an additional US\$39 of letters of credit and US\$57 in bank guarantees that were issued and outstanding. These are associated with environmental reclamation and other operating associated items such as insurance, electricity commitments and import and export duties.

**b)** We and our subsidiaries are defendants in numerous legal actions in the normal course of business. Based on the advice of our legal counsel, management believes that the amounts recognized are sufficient to cover probable losses in connection with such actions.

The provision for contingencies and the related judicial deposits are composed as follows:

	December 31, 2010		December 31, 2009	
	Provision for contingencies	Judicial deposits	Provision for contingencies	Judicial deposits
Labor and social security claims	748	874	657	657
Civil claims	510	410	582	307
Tax - related actions	746	442	489	175
Others	39	5	35	4
	<b>2,043</b>	<b>1,731</b>	<b>1,763</b>	<b>1,143</b>

Labor and social security related actions principally comprise of claims by current and former Brazilian employees for (i) payment of time spent traveling from their residences to the work-place, (ii) additional health and safety related payments and (iii) various other matters, often in connection with disputes about the amount of indemnities paid upon dismissal and the one-third extra holiday pay.

Civil actions principally relate to claims made against us by contractors in Brazil in connection with losses alleged to have been incurred by them as a result of various past Government economic plans, during which full inflation indexation of contracts was not permitted, as well, as for accidents and land appropriation disputes.

Tax related actions principally comprise challenges initiated by us, of certain taxes on revenues and uncertain tax positions. We continue to vigorously pursue our interests in all the actions but recognize that we probably will incur some losses in the final instance, for which we have made provisions.

Judicial deposits are made by us following court requirements in order to be entitled to either initiate or continue a legal action. These amounts are released to us upon receipt of a final favorable outcome from the legal action, and in the case of an unfavorable outcome, the deposits are transferred to the prevailing party.

Contingencies settled during the year ended 2010, 2009 and December 31, 2008, totaled US\$352, US\$236 and US\$856, respectively. Provisions recognized in the year ended 2010, 2009 and December 31, 2008, totaled US\$112, US\$294 and US\$331, respectively, classified as other operating expenses.

In addition to the contingencies for which we have made provisions, we are defendants in claims where in our opinion, and based on the advice of our legal counsel, the likelihood of loss is reasonably possible but not probable, in the total amount of US\$4,787 at December 31, 2010, and for which no provision has been made (2009 – US\$4,190).

**c)** At the time of our privatization in 1997, the Company issued debentures to its then-existing stockholders, including the Brazilian Government. The terms of the debentures, were set to ensure that the pre-privatization stockholders, including the Brazilian Government would participate in possible future financial benefits that could be obtained from exploiting certain mineral resources.

A total of 388,559,056 Debentures were issued at a par value of R\$0.01 (one cent), whose value will be restated in accordance with the variation in the General Market Price Index (IGP-M), as set forth in the Issue Deed.

The debentures holders have the right to receive premiums, paid semiannually, equivalent to a percentage of net revenues from specific mine resources as set forth in the indenture.

In April and October 2010 we paid remuneration on these debentures of US\$5 and US\$5, respectively.

**d)** We are committed under a take-or-pay agreement to purchase approximately 23,620 thousand metric tons of bauxite from Mineração Rio do Norte S.A. – MRN at a formula driven price, calculated based on the current London Metal Exchange – LME quotation for aluminum. Based on a market price of US\$24.50 per metric ton as of



December 31, 2010, this arrangement represents the following total commitment per metric ton as of December 31, 2010:

2011	141
2012	145
2013	146
2014	146
	<u>578</u>

**e) Description of Leasing Arrangements**

Part of our railroad operations include leased facilities. The 30-year lease, renewable for a further 30 years, expires in August, 2026 and is classified as an operating lease. At the end of the lease term, we are required to return the concession and the leased assets. In most cases, management expects that in the normal course of business, leases will be renewed.

The following is a schedule by year of future minimum rental payments required under the railroad operating leases that have initial or remaining non-cancelable lease terms in excess of one year as of December 31, 2010.

2011	90
2012	90
2013	90
2014	90
2015 thereafter	1,068
<b>Total minimum payments required</b>	<u><u>1,428</u></u>

The total expenses of operating leases for the years ended December 31, 2010, 2009 and 2008 were US\$90, US\$80 and US\$53, respectively.

During 2008, we entered into operating lease agreements with our joint ventures Nibrasco, Itabrasco and Kobrasco, under which we leased four pellet plants. The lease terms are from 5 to 30 years.

The following is a schedule by year of future minimum rental payments required under the pellet plants operating leases that have initial or remaining non-cancelable lease terms in excess of one year as of December 31, 2010:

2011	107
2012	107
2013	107
2014	107
2015 thereafter	1,092
<b>Total</b>	<u><u>1,520</u></u>

The total expenses of operating leases for the years ended December 31, 2010, 2009 and 2008 were US\$107, US\$114 and US\$49, respectively.

**f) Asset retirement obligations**

We use various judgments and assumptions when measuring our asset retirement obligations.

Changes in circumstances, law or technology may affect our estimates and we periodically review the amounts accrued and adjust them as necessary. Our accruals do not reflect unasserted claims because we are currently not aware of any such issues. Also the amounts provided are not reduced by any potential recoveries under cost sharing, insurance or indemnification arrangements because such recoveries are considered uncertain.

The changes in the provisions for asset retirement obligations are as follows:

	Year ended as of December, 31	
	2010	2009
<b>Beginning of period</b>	<b>1,116</b>	<b>887</b>
Accretion expense	113	75
Liabilities settled in the current period	(45)	(46)
Revisions in estimated cash flows(*)	125	(23)
Cumulative translation adjustment	59	223
<b>End of period</b>	<b>1,368</b>	<b>1,116</b>
Current liabilities	75	89
Non-current liabilities	1,293	1,027
<b>Total</b>	<b>1,368</b>	<b>1,116</b>

(\*) Includes US\$44 for the purchase of Vale Fertilizantes S.A. and Vale Fosfatados S.A.

## 22 Other expenses

The income statement line “Other operating expenses” totaled US\$2,205 for the year ended December 31, 2010, (US\$1,522 in 2009 and US\$1,254 in 2008). It includes pre – operational expenses of US\$360 (US\$0 in 2009 and US\$0 in 2008), loss of material of US\$108 (US\$9 in 2009 and US\$199 in 2008) and idle capacity and stoppage operations expenses of US\$757 (US\$880 in 2009 and US\$0 in 2008). In 2008, we also had US\$204 of expenses relating to tax assessments on transportation services and US\$65 of expenses relating to write-off of intangible asset (patent rights).

## 23 Fair value disclosure of financial assets and liabilities

The Financial Accounting Standards Board, through Accounting Standards Codification and Accounting Standards Updates, defines fair value and set out a framework for measuring fair value, which refers to valuation concepts and practices and requires certain disclosures about fair value measurements.

### a) Measurements

The pronouncements define fair value as the exchange price that would be received for an asset, or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability, in an orderly transaction between market participants on the measurement date. In determining fair value, the Company uses various methods including market, income and cost approaches. Based on these approaches, the Company often utilizes certain assumptions that market participants would use in pricing the asset or liability, including assumptions about risk and or the risks inherent in the inputs to the valuation technique.

These inputs can be readily observable, market corroborated, or generally unobservable inputs. The Company utilizes techniques that maximize the use of observable inputs and minimize the use of unobservable inputs. Under this standard, those inputs used to measure the fair value are required to be classified on three levels. Based on the characteristics of the inputs used in valuation techniques the Company is required to provide the following information according to the fair value hierarchy. The fair value hierarchy ranks the quality and reliability of the information used to determine fair values. Financial assets and liabilities carried at fair value are classified and disclosed as follows:

**Level 1** – Unadjusted quoted prices on an active, liquid and visible market for identical assets or liabilities that are accessible at the measurement date;

**Level 2** – Quoted prices for identical or similar assets or liabilities on active markets, inputs other than quoted prices that are observable, either directly or indirectly, for the term of the asset or liability;

**Level 3** – Assets and liabilities, for which quoted prices do not exist, or those prices or valuation techniques are supported by little or no market activity, unobservable or illiquid. At this point, fair market valuation becomes highly subjective.

## b) Measurements on a recurring basis

The description of the valuation methodologies used for recurring assets and liabilities measured at fair value in the Company's Consolidated Balance Sheet at December 31, 2010 and 2009 are summarized below:

- **Available-for-sale securities**

They are securities that are not classified either as held-for-trading or as held-to-maturity for strategic reasons and have readily available market prices. We evaluate the carrying value of some of our investments in relation to publicly quoted market prices when available. When there is no market value, we use inputs other than quoted prices.

- **Derivatives**

The market approach is used to estimate the fair value of the swaps discounting their cash flows using the interest rate of the currency they are denominated and, also for the commodities contracts, since the fair value is computed by using forward curves for each commodity.

- **Debentures**

The fair value is measured by the market approach method, and the reference price is available on the secondary market.

The tables below present the balances of assets and liabilities measured at fair value on a recurring basis as follows:

	<b>As of December 31, 2010</b>			
	<b>Carrying amount</b>	<b>Fair value</b>	<b>Level 1</b>	<b>Level 2</b>
Available-for-sale securities	12	12	12	-
Unrealized gain on derivatives	257	257	1	256
Debentures	(1,284)	(1,284)	-	(1,284)
	<b>As of December 31, 2009</b>			
	<b>Carrying amount</b>	<b>Fair value</b>	<b>Level 1</b>	<b>Level 2</b>
Available-for-sale securities	17	17	17	-
Unrealized gains on derivatives	832	832	-	832
Debentures	(752)	(752)	-	(752)

## c) Measurements on a non-recurring basis

The Company also has assets under certain conditions that are subject to measurement at fair value on a non-recurring basis. These assets include goodwill and assets acquired and liabilities assumed in business combinations. During the year ended December 31, 2010, we have not recognized any additional impairment for those items.

## d) Financial Instruments

### Long-term debt

The valuation method used to estimate the fair value of our debt is the market approach for the contracts that are quoted on the secondary market, such as bonds and debentures. The fair value of both fixed and floating rate debt is determined by discounting future cash flows of Libor and Vale's bonds curves (income approach).

### Time deposits

The method used is the income approach, through the prices available on the active market. The fair value is close to the carrying amount due to the short-term maturities of the instruments.

Our long-term debt is reported at amortized cost, and the income of time deposits is accrued monthly according to the contract rate. The estimated fair value measurement is disclosed as follows:

<b>As of December 31, 2010</b>				
	<b>Carrying amount</b>	<b>Fair value</b>	<b>Level 1</b>	<b>Level 2</b>
Time deposits	1,793	1,793	-	1,793
Long-term debt (less interests)(*)	(24,071)	(25,264)	(19,730)	(5,534)
<b>As of December 31, 2009</b>				
	<b>Carrying amount</b>	<b>Fair value</b>	<b>Level 1</b>	<b>Level 2</b>
Time deposits	3,747	3,747	-	3,747
Long-term debt (less interests)(*)	(22,544)	(23,344)	(12,424)	(10,920)

(\*) Less accrued charges of US\$343 and US\$287 as of December 31, 2010 and December 31, 2009, respectively.

## 24 Segment and geographical information

We adopt disclosures about segments of an enterprise and related information with respect to the information we present about our operating segments. The relevant standard requiring such disclosures introduced a “management approach” concept for reporting segment information, whereby such information is required to be reported on the basis that the chief decision-maker uses internally for evaluating segment performance and deciding how to allocate resources to segments. In line with our strategy to become a leading global player in the fertilizer business, on May 27, 2010 we acquired 58.6% of the equity capital of Fertilizantes Fosfatados S.A. – Fosfertil (Fosfertil) and the Brazilian fertilizer assets of Bunge Participações e Investimentos S.A. (BPI), currently renamed Vale Fosfatados S.A.. Considering this new segment acquisition, fertilizers, and the related reorganization that occurred for the operating segments are:

**Bulk Material** – comprised of iron ore mining and pellet production, as well as our Brazilian Northern and Southern transportation systems, including railroads, ports and terminals, as they pertain to mining operations. Manganese mining and ferroalloys are also included in this segment.

**Base Metals** – comprised of the production of non-ferrous minerals, including nickel (co-products and by-products), copper and aluminum – comprised of aluminum trading activities, alumina refining and aluminum metal smelting and investments in joint ventures and affiliates engaged in bauxite mining.

**Fertilizers** – comprised of the three important groups of nutrients: potash, phosphates and nitrogen. This business is being formed through a combination of acquisitions and organic growth.

**Logistic Services** – comprised of our transportation systems as they pertain to the operation of our ships, ports and railroads for third-party cargos.

**Others** – comprised of our investments in joint ventures and affiliates engaged in other businesses.

Information presented to senior management with respect to the performance of each segment is generally derived directly from the accounting records maintained in accordance with accounting practices adopted in Brazil together with certain minor inter-segment allocations.





## Operating segment – after eliminations (disaggregated)

As of and for the year ended December 31,  
2010

	Revenue	Value added tax	Net revenues	Cost and expenses	Operating profit	Depreciation, depletion and amortization	Operating income	Property, plant and equipment, net	Addition to property, plant and equipment	Investments
<b>Bulk Material</b>										
Iron ore	26,384	(366)	26,018	(7,364)	18,654	(1,307)	17,347	30,412	4,015	107
Pellets	6,402	(266)	6,136	(2,515)	3,621	(110)	3,511	1,445	353	1,058
Manganese	258	(7)	251	(136)	115	(10)	105	24	2	-
Ferrous alloys	664	(62)	602	(306)	296	(26)	270	292	26	-
Coal	770	-	770	(856)	(86)	(83)	(169)	3,020	499	223
Pig iron	31	-	31	(29)	2	(2)	-	123	1	-
<b>34,509</b>	<b>(701)</b>	<b>33,808</b>	<b>(11,206)</b>	<b>22,602</b>	<b>(1,538)</b>	<b>21,064</b>	<b>35,316</b>	<b>4,896</b>	<b>1,388</b>	
<b>Base Metals</b>										
Nickel and other products(*)	4,712	-	4,712	(3,402)	1,310	(1,145)	165	28,623	1,880	23
Copper concentrate	934	(29)	905	(621)	284	(87)	197	3,579	1,072	90
Aluminum products	2,554	(32)	2,522	(2,109)	413	(127)	286	395	342	152
<b>8,200</b>	<b>(61)</b>	<b>8,139</b>	<b>(6,132)</b>	<b>2,007</b>	<b>(1,359)</b>	<b>648</b>	<b>32,597</b>	<b>3,294</b>	<b>265</b>	
<b>Fertilizers</b>										
Polash	280	(11)	269	(269)	-	(29)	(29)	474	355	-
Phosphates	1,211	(47)	1,164	(1,070)	94	(121)	(27)	7,560	438	-
Nitrogen	337	(43)	294	(285)	9	(50)	(41)	809	47	-
Others fertilizers products	18	(6)	12	(11)	1	-	1	146	3	-
<b>1,846</b>	<b>(107)</b>	<b>1,739</b>	<b>(1,635)</b>	<b>104</b>	<b>(200)</b>	<b>(96)</b>	<b>8,989</b>	<b>843</b>	<b>843</b>	<b>-</b>
<b>Logistics</b>										
Railroads	1,107	(183)	924	(716)	208	(123)	85	1,278	160	511
Ports	353	(47)	306	(236)	70	(23)	47	1,044	783	-
Ships	5	-	5	(13)	(8)	-	(8)	-	-	135
<b>1,465</b>	<b>(230)</b>	<b>1,235</b>	<b>(965)</b>	<b>270</b>	<b>(146)</b>	<b>124</b>	<b>2,322</b>	<b>943</b>	<b>646</b>	
<b>Others</b>	461	(89)	372	(400)	(28)	(17)	(45)	3,872	2,671	2,198
<b>46,481</b>	<b>(1,188)</b>	<b>45,293</b>	<b>(20,338)</b>	<b>24,955</b>	<b>(3,260)</b>	<b>21,695</b>	<b>83,096</b>	<b>12,647</b>	<b>4,497</b>	

(\*) Includes nickel co-products and by-products (copper, precious metals, cobalt and others).



## Operating segment – after eliminations (disaggregated)

As of and for the year ended December 31,

2009

	Revenue	Value added tax	Net revenues	Cost and expenses	Operating profit	Depreciation, depletion and amortization	Operating income	Property, plant and equipment, net	Addition to property, plant and equipment	Investments
<b>Bulk Material</b>										
Iron ore	12,831	(172)	12,659	(4,957)	7,702	(1,043)	6,659	21,736	3,361	107
Pellets	1,352	(92)	1,260	(1,165)	95	(76)	19	947	84	1,050
Manganese	145	(2)	143	(103)	40	(9)	31	25	4	-
Ferroalloys	372	(45)	327	(278)	49	(15)	34	261	112	-
Coal	505	-	505	(549)	(44)	(61)	(105)	1,723	362	243
Pig iron	45	-	45	(63)	(18)	-	(18)	144	48	-
<b>15,250</b>	<b>(311)</b>	<b>14,939</b>	<b>(7,115)</b>	<b>7,824</b>	<b>(1,204)</b>	<b>6,620</b>	<b>24,836</b>	<b>3,971</b>	<b>1,400</b>	
<b>Base Metals</b>										
Nickel and other products(*)	3,947	-	3,947	(3,292)	655	(1,016)	(361)	23,967	1,464	30
Kaolin	173	(9)	164	(146)	18	(34)	(16)	190	53	-
Copper concentrate	682	(19)	663	(462)	201	(72)	129	4,127	558	80
Aluminum products	2,050	(37)	2,013	(1,969)	44	(235)	(191)	4,663	143	143
<b>6,852</b>	<b>(65)</b>	<b>6,787</b>	<b>(5,869)</b>	<b>918</b>	<b>(1,357)</b>	<b>(439)</b>	<b>32,947</b>	<b>2,218</b>	<b>253</b>	
<b>Fertilizers</b>										
Potash	413	(17)	396	(187)	209	(29)	180	159	-	-
<b>413</b>	<b>(17)</b>	<b>396</b>	<b>(187)</b>	<b>209</b>	<b>(29)</b>	<b>180</b>	<b>159</b>	<b>-</b>	<b>-</b>	
<b>Logistics</b>										
Railroads	838	(137)	701	(539)	162	(97)	65	1,045	96	468
Ports	264	(38)	226	(161)	65	(29)	36	1,441	106	-
Ships	2	-	2	(9)	(7)	-	(7)	1,104	738	125
<b>1,104</b>	<b>(175)</b>	<b>929</b>	<b>(709)</b>	<b>220</b>	<b>(126)</b>	<b>94</b>	<b>3,590</b>	<b>940</b>	<b>593</b>	
<b>320</b>	<b>(60)</b>	<b>260</b>	<b>(652)</b>	<b>(392)</b>	<b>(6)</b>	<b>(398)</b>	<b>6,105</b>	<b>967</b>	<b>2,339</b>	
<b>23,939</b>	<b>(628)</b>	<b>23,311</b>	<b>(14,532)</b>	<b>8,779</b>	<b>(2,722)</b>	<b>6,057</b>	<b>67,637</b>	<b>8,096</b>	<b>4,585</b>	

(\*) Includes nickel co-products and by-products (copper, precious metals, cobalt and others).



## Operating segment – after eliminations (disaggregated)

As of and for the year ended December 31, 2008

	Revenue	Value added tax	Net revenues	Cost and expenses	Net	Depreciation, depletion and amortization	Impairment of goodwill	Operating income	Property, plant and equipment, net	Addition to property, plant and equipment	Investments
<b>Bulk Material</b>											
Iron ore	17,775	(364)	17,411	(6,547)	10,864	(876)	-	9,988	14,595	3,645	47
Pellets	4,301	(189)	4,112	(2,394)	1,718	(112)	-	1,606	645	127	721
Manganese	266	(15)	251	(77)	174	(5)	-	169	18	3	-
Ferroalloys	1,211	(128)	1,083	(457)	626	(22)	-	604	166	32	-
Coal	577	-	577	(441)	136	(33)	-	103	826	144	187
Pig iron	146	-	146	(67)	79	(3)	-	76	144	122	-
	<b>24,276</b>	<b>(696)</b>	<b>23,580</b>	<b>(9,983)</b>	<b>13,597</b>	<b>(1,051)</b>	-	<b>12,546</b>	<b>16,394</b>	<b>4,073</b>	<b>955</b>
<b>Base Metals</b>											
Nickel and other products(*)	7,829	-	7,829	(4,425)	3,404	(1,323)	(950)	1,131	21,525	2,813	53
Kaolin	209	(9)	200	(213)	(13)	(32)	-	(45)	199	6	-
Copper concentrate	893	(22)	871	(683)	188	(77)	-	111	3,543	283	-
Aluminum products	3,042	(66)	2,976	(2,288)	688	(172)	-	516	3,831	440	140
	<b>11,973</b>	<b>(97)</b>	<b>11,876</b>	<b>(7,609)</b>	<b>4,267</b>	<b>(1,604)</b>	<b>(950)</b>	<b>1,713</b>	<b>29,098</b>	<b>3,542</b>	<b>193</b>
<b>Fertilizers</b>											
Potash	295	(16)	279	(120)	159	(19)	-	140	159	43	-
	<b>295</b>	<b>(16)</b>	<b>279</b>	<b>(120)</b>	<b>159</b>	<b>(19)</b>	-	<b>140</b>	<b>159</b>	<b>43</b>	-
<b>Logistics</b>											
Railroads	1,303	(205)	1,098	(749)	349	(103)	-	246	760	121	326
Ports	304	(39)	265	(198)	67	(26)	-	41	1,441	242	-
Ships	-	-	-	-	-	-	-	-	374	343	94
	<b>1,607</b>	<b>(244)</b>	<b>1,363</b>	<b>(947)</b>	<b>416</b>	<b>(129)</b>	-	<b>287</b>	<b>2,575</b>	<b>706</b>	<b>420</b>
	358	(30)	328	(262)	66	(4)	-	62	228	608	840
<b>Others</b>	<b>38,509</b>	<b>(1,083)</b>	<b>37,426</b>	<b>(18,921)</b>	<b>18,505</b>	<b>(2,807)</b>	<b>(950)</b>	<b>14,748</b>	<b>48,454</b>	<b>8,972</b>	<b>2,408</b>

(\*) Includes nickel co-products and by-products (copper, precious metals, cobalt and others).



## 25 Related party transactions

Balances from transactions with major related parties are as follows:

	As of December 31,			
	2010		2009	
	Assets	Liabilities	Assets	Liabilities
<b>AFFILIATED COMPANIES AND JOINT VENTURES</b>				
Companhia Hispano-Brasileira de Pelotização – HISPANOBRÁS	264	300	34	34
Companhia Ítalo-Brasileira de Pelotização – ITABRASCO	-	10	1	6
Companhia Nipo-Brasileira de Pelotização – NIBRASCO	-	23	-	22
Companhia Coreano-Brasileira de Pelotização – KOBRASCO	-	4	1	5
Baovale Mineração SA	3	30	2	22
Minas da Serra Geral SA – MSG	-	9	-	26
MRS Logística SA	1	15	10	418
Mineração Rio Norte SA	2	25	-	25
Samarco Mineração SA	61	-	55	-
Teal Minerals Incorporated	-	-	84	-
Korea Nickel Corporation	-	-	11	-
Mitsui & CO, LTD	-	61	-	26
Others	229	84	24	29
	560	561	222	613
<b>Current</b>	<b>531</b>	<b>559</b>	<b>186</b>	<b>496</b>
<b>Long-term</b>	<b>29</b>	<b>2</b>	<b>36</b>	<b>117</b>

These balances are included in the following balance sheet classifications:

	As of December 31,			
	2010		2009	
	Assets	Liabilities	Assets	Liabilities
<b>Current assets</b>				
Accounts receivable	435	-	79	-
Loans and advances to related parties	96	-	107	-
<b>Non-current assets</b>				
Loans and advances to related parties	29	-	36	-
<b>Current liabilities</b>				
Suppliers	-	538	-	463
Loans from related parties	-	21	-	33
<b>Non-current liabilities</b>				
Long-term debt	-	2	-	117
	560	561	222	613

Income and expenses from the principal transactions and financial operations carried out with major related parties are as follows:

	Year ended as of December 31,					
	2010		2009		2008	
	Income	Expense	Income	Expense	Income	Expense
<b>AFFILIATED COMPANIES AND JOINT VENTURES</b>						
Companhia Nipo-Brasileira de Pelotização – NIBRASCO	-	149	29	47	105	393
Samarco Mineração SA	448	-	97	-	259	-
Companhia Ítalo-Brasileira de Pelotização – ITABRASCO	-	50	-	18	240	163
Companhia Hispano-Brasileira de Pelotização – HISPANOBRÁS	462	513	85	75	342	378
Companhia Coreano-Brasileira de Pelotização – KOBRASCO	-	117	-	29	101	234
Usinas Siderúrgicas de Minas Gerais SA – USIMINAS(*)	-	-	46	-	651	-
Mineração Rio Norte SA	-	156	-	210	-	249
MRS Logística SA	16	561	12	484	9	829
Others	17	18	19	29	34	34
	943	1,564	288	892	1,741	2,280

(\*) Sold in April 2009.

These amounts are included in the following statement of income line items:

	Year ended as of December 31,					
	2010		2009		2008	
	Income	Expense	Income	Expense	Income	Expense
Sales / Cost of iron ore and pellets	910	785	233	193	1,698	1,369
Revenues / expense from logistic services	23	603	26	457	25	624
Sales / Cost of aluminum products	-	156	-	210	-	249
Financial income/expenses	10	20	29	32	18	38
	<b>943</b>	<b>1,564</b>	<b>288</b>	<b>892</b>	<b>1,741</b>	<b>2,280</b>

Additionally we have loans payable to Banco Nacional de Desenvolvimento Social and BNDES Participações S.A in the amounts of US\$2,172 and US\$739 respectively, accruing interest at market rates, which fall due through 2029. The operations generated interest expenses of US\$147. We also maintain cash equivalent balances with Banco Bradesco S.A. in the amount of US\$574 at December 31, 2010. The effect of these operations in results was US\$5.

## 26 Derivative financial instruments

### Risk management policy

Vale has developed its risk management strategy in order to provide an integrated approach of the risks the Company is exposed to. To do that, Vale evaluates not only the impact of market risk factors in the business results (market risk), but also the risk arising from third party obligations with Vale (credit risk) and those risks inherent in Vale's operational processes (operational risk).

Vale considers that the effective management of risk is a key objective to support its growth strategy and financial flexibility. The risk reduction on Vale's future cash flows contributes to a better perception of the Company's credit quality, improving its ability to access different markets. As a commitment to the risk management strategy, the Board of Directors has established an enterprise-wide risk management policy and a risk management committee.

The risk management policy determines that Vale should evaluate regularly its cash flow risks and potential risk mitigation strategies. Whenever considered necessary, mitigation strategies should be put in place to reduce cash flow volatility. The executive board is responsible for the evaluation and approval of long-term risk mitigation strategies recommended by the risk management committee.

The risk management committee assists our executive officers in overseeing and reviewing our enterprise risk management activities including the principles, policies, process, procedures and instruments employed to manage risk. The risk management committee reports periodically to the executive board on how risks have been monitored, what are the most important risks we are exposed to and their impact on cash flows.

The risk management policy and procedures, that complement the normative of risk management governance model, explicitly prohibit speculative transactions with derivatives and require the diversification of operations and counterparties.

Besides the risk management governance model, Vale has put in place a well defined corporate governance structure. The recommendation and execution of the derivative transactions are implemented by independent areas. The strategy and risk management department is responsible for defining and proposing to the risk management committee market risk mitigation strategies consistent with Vale's and its wholly owned subsidiaries corporate strategy. The finance department is responsible for the execution of the risk mitigation strategies through the use of derivatives. The independence of the areas guarantees an effective control on these operations.

When measuring our exposures, the correlations between market risk factors are taken into consideration once we must be able to evaluate the net impact on our cash flows from all main market variables. We are also able to identify a natural diversification of products and currencies in our portfolio and therefore a natural reduction of the overall risk of the Company.

The consolidated market risk exposure and the portfolio of derivatives are measured monthly and monitored in order to evaluate the financial results and market risk impacts on our cash flow, as well as to guarantee that the initial goals will be achieved. The mark-to-market of the derivatives portfolio is reported weekly to management.

Considering the nature of Vale's business and operations, the main market risk factors which the Company is exposed are:

- Interest rates;
- Foreign exchange;
- Product prices and input costs

### **Foreign exchange and interest rate risk**

Vale's cash flows are exposed to volatility of several different currencies. While most of our product prices are indexed to the US dollars, most of our costs, disbursements and investments are indexed to currencies other than the US dollar, mainly the Brazilian real and Canadian dollar.

Derivative instruments may be used to reduce Vale's potential cash flow volatility arising from its currency mismatch. Vale's foreign exchange and interest rate derivative portfolio consists, basically, of interest rate swaps to convert floating cash flows in Brazilian real to fixed or floating US dollar cash flows, without any leverage.

Vale is also exposed to interest rate risks on loans and financings. Our floating rate debt consists mainly of loans including export pre-payments, commercial banks and multilateral organizations loans.

In general, our US dollars floating rate debt is subject to changes in the LIBOR (London Interbank Offer Rate in US dollars). To mitigate the impact of the interest rate volatility on its cash flows, Vale takes advantage of natural hedges resulting from the correlation of metal prices and US dollar floating rates. When natural hedges are not present, we may opt to look for the same effect by using financial instruments.

Our Brazilian real denominated debt subject to floating interest rates refers to debentures, loans obtained from Banco Nacional de Desenvolvimento Econômico e Social (BNDES) and property and services acquisition financing in the Brazilian market. These debts are mainly linked to CDI and TJLP.

The swap transactions used to convert debt linked to Brazilian reais into U.S. Dollars have similar – and sometimes shorter – settlement dates than the final maturity of the debt instruments. Their amounts are similar to the principal and interest payments, subjected to liquidity market conditions. The swaps with shorter settlement date than the debts' final maturity are renegotiated through time so that their final maturity match – or become closer – to the debt final maturity. At each settlement date, the results on the swap transactions partially offset the impact of the foreign exchange rate in our obligations, contributing to stabilize the cash disbursements in U.S. Dollars for the interest and/or principal payment of our Brazilian Real denominated debt.

In the event of an appreciation (depreciation) of the Brazilian real against the US dollar, the negative (positive) impact on our Brazilian real denominated debt obligations (interest and/or principal payment) measured in US dollars will be partially offset by a positive (negative) effect from a swap transaction, regardless of the US dollar / Brazilian real exchange rate on the payment date.

We have other exposures associated with our outstanding debt portfolio. In order to reduce cash flow volatility associated with a financing from KfW (Kreditanstalt Für Wiederaufbau) indexed to Euribor, Vale entered into a swap contract where the cash flows in Euros are converted into cash flows in US dollars. We have also entered into a swap to convert the cash flow from a debt instrument issued originally in Euro into US dollars. In this derivative transaction, we receive fixed interest rates in Euros and pay fixed interest rates in US dollars.

In order to reduce the cash flows volatility associated with the foreign exchange exposure from some coal fixed price sales, Vale purchased forward Australian dollars.

### **Product price risk**

Vale is also exposed to several market risks associated with commodities price volatilities. Currently, our derivative transactions include nickel, aluminum, coal, copper, bunker oil and maritime freight (FFA) derivatives and all have the same purpose of mitigating Vale's cash flow volatility.

**Nickel** – The Company has the following derivative instruments in this category:

- Strategic derivative program – in order to protect our cash flows in 2010 and 2011, we entered into derivative transactions where we fixed the prices of some of our nickel sales during the period.
- Fixed price sales program – we use to enter into nickel future contracts on the London Metal Exchange (LME) with the purpose of maintaining our exposure to nickel price variation, regarding the fact that, in some cases, the commodity is sold at a fixed price to some customers. Whenever the ‘Strategic derivative program’ is executed, the ‘Fixed price sales program’ is interrupted.
- Nickel purchase program – Vale has also sold nickel futures on the LME, in order to minimize the risk of mismatch between the pricing on the costs of intermediate products and finished goods.

**Aluminum** – In order to protect our cash flow in 2010, we entered into derivatives transactions where we fixed the prices of some of our aluminum sales during the period. Aluminum operations are available for sale since June 2010.

**Coal** – In order to protect our cash flow in 2010, we entered into derivatives transactions where we fixed the prices of some of our coal sales during the period.

**Copper** – We entered into derivatives transactions in order to reduce the cash flow volatility due to the quotation period mismatch between the pricing period of copper scrap purchase and the pricing period of final products sale to the clients.

**Bunker Oil** – In order to reduce the impact of bunker oil price fluctuation on Vale’s freight hiring and, therefore, on Vale’s cash flow, Vale implemented a derivative program that consists of forward purchases and swaps.

**Maritime Freight** – In order to reduce the impact of freight price fluctuations on the Company’s cash flows, Vale implemented a derivative program that consists of purchasing Forward Freight Agreements (FFA).

**Embedded derivatives** – In addition to the contracts mentioned above, Vale Inco Ltd., Vale’s wholly-owned subsidiary, has nickel concentrate and raw materials purchase agreements, where there are provisions based on the movement of nickel and copper prices. These provisions are considered embedded derivatives. There is also an embedded derivative related to energy purchase in our subsidiary Albras on which there is a premium that can be charged based on the movement of aluminum prices. Aluminum operations are available for sale since June 2010.

Under the Standard Accounting for Derivative Financial Instruments and Hedging Activities, all derivatives, whether designated in hedging relationships or not, are required to be recorded in the balance sheet at fair value and the gain or loss in fair value is included in current earnings, unless if qualified as hedge accounting. A derivative must be designated in a hedging relationship in order to qualify for hedge accounting. These requirements include a determination of what portions of hedges are deemed to be effective versus ineffective. In general, a hedging relationship is effective when a change in the fair value of the derivative is offset by an equal and opposite change in the fair value of the underlying hedged item. In accordance with these requirements, effectiveness tests are performed in order to assess effectiveness and quantify ineffectiveness for all designated hedges.

At December 31, 2010, we had outstanding positions designated as cash flow hedge. A cash flow hedge is a hedge of the exposure to variability in expected future cash flows that is attributable to a particular risk, such as a forecasted purchase or sale. If a derivative is designated as cash flow hedge, the effective portion of the changes in the fair value of the derivative is recorded in other comprehensive income and recognized in earnings when the hedged item affects earnings. However, the ineffective portion of changes in the fair value of the derivatives designated as hedges is recognized in earnings. If a portion of a derivative contract is excluded for purposes of effectiveness testing, such as time value, the value of such excluded portion is included in earnings.

The assets and liabilities balances of derivatives measured at fair value and the effects of their recognition are shown in the following tables:

	Assets				Liabilities			
	As of December 31,							
	2010		2009		2010		2009	
	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term
<b>Derivatives not designated as hedge</b>								
<b>Foreign exchange and interest rate risk</b>								
CDI & TJLP vs. floating & fixed swap	-	300	-	794	-	-	-	-
EURO floating rate vs. USD floating rate swap	1	-	-	1	-	-	-	-
USD floating rate vs. fixed USD rate swap	-	-	-	-	4	-	7	1
EuroBond Swap	-	-	-	-	-	8	-	-
Pre Dollar Swap	-	1	-	-	-	-	-	-
AUD floating rate vs. fixed USD rate swap	2	-	-	9	-	-	-	-
	<b>3</b>	<b>301</b>	<b>-</b>	<b>804</b>	<b>4</b>	<b>8</b>	<b>7</b>	<b>1</b>
<b>Commodities price risk</b>								
Nickel								
Fixed price program	13	-	12	2	12	-	3	8
Strategic program	-	-	-	-	15	-	32	-
Aluminum	-	-	-	-	-	-	16	-
Bunker Oil Hedge	16	-	49	-	-	-	-	-
Coal	-	-	-	-	2	-	-	-
Maritime Freight Hiring Protection Program	-	-	29	-	2	-	-	-
	<b>29</b>	<b>-</b>	<b>90</b>	<b>2</b>	<b>31</b>	<b>-</b>	<b>51</b>	<b>8</b>
<b>Derivatives designated as hedge</b>								
Foreign exchange cash flow hedge	20	-	15	59	-	-	-	-
Strategic Nickel	-	-	-	-	-	53	-	-
Aluminum	-	-	-	-	-	-	71	-
	<b>20</b>	<b>-</b>	<b>15</b>	<b>59</b>	<b>-</b>	<b>53</b>	<b>71</b>	<b>-</b>
<b>Total</b>	<b>52</b>	<b>301</b>	<b>105</b>	<b>865</b>	<b>35</b>	<b>61</b>	<b>129</b>	<b>9</b>

The following table presents the effects of derivatives for the periods ended:

	Amount of gain or (loss) recognized as financial income (expense)			Financial settlement			Amount of gain or (loss) recognized in OCI		
	Year ended as of December 31,			Year ended as of December 31,			Year ended as of December 31,		
	2010	2009	2008	2010	2009	2008	2010	2009	2008
<b>Derivatives not designated as hedge</b>									
<b>Foreign exchange and interest rate risk</b>									
CDI & T.I.L.P. vs. USD fixed and floating rate swap	451	1,598	48	(956)	(243)	(697)	-	-	-
EURO floating rate vs. USD floating rate swap	(1)	-	(684)	1	(1)	1	-	-	-
USD floating rate vs. USD fixed rate swap	(2)	(2)	7	3	8	-	-	-	-
Swap Convertibles	37	-	-	(37)	-	-	-	-	-
Swap NDF	4	-	-	(2)	-	-	-	-	-
EuroBond Swap	(5)	-	-	(1)	-	-	-	-	-
Pre Dollar Swap	-	-	-	-	-	-	-	-	-
AUD floating rate vs. fixed USD rate swap	3	14	-	(9)	(5)	-	-	-	-
	<b>487</b>	<b>1,610</b>	<b>(629)</b>	<b>(1,001)</b>	<b>(241)</b>	<b>(696)</b>	-	-	-
<b>Commodities price risk</b>									
<b>Nickel</b>									
Fixed price program	4	5	(102)	(7)	79	48	-	-	-
Purchase program	-	-	21	-	-	-	-	-	-
Strategic program	(87)	(95)	(3)	105	73	-	-	-	-
Copper	-	-	(23)	-	-	201	-	-	-
Purchased scrap protection program	-	-	(6)	-	-	(30)	-	-	-
Strategic hedging program	-	-	(5)	-	-	26	-	-	-
Platinum	-	-	(30)	-	-	42	-	-	-
Gold	-	(4)	4	-	6	-	-	-	-
Natural gas	-	-	(68)	16	-	122	-	-	-
Aluminum	(5)	66	-	(24)	(37)	-	-	-	-
Maritime Freight Hiring Protection Program	(4)	-	-	3	-	-	-	-	-
Coal	4	50	(17)	(34)	(16)	-	-	-	-
Bunker Oil Hedge	(88)	22	(229)	59	105	409	-	-	-
<b>Embedded derivatives:</b>									
For nickel concentrate customer sales	-	(25)	29	-	(14)	-	-	-	-
Customer raw material contracts	-	(76)	10	-	-	(10)	-	-	-
Energy – Aluminum options	(51)	-	13	-	-	-	-	-	-
	(51)	(101)	52	-	(14)	(10)	-	-	-
<b>Derivatives designated as hedge</b>									
Bunker Oil Hedge	-	(16)	(6)	-	4	-	-	-	-
Aluminum	-	13	-	47	-	-	31	(36)	(29)
Strategic Nickel	(1)	-	-	-	-	-	(52)	-	-
Foreign exchange cash flow hedge	284	-	-	(330)	-	-	(5)	38	-
	<b>283</b>	<b>(3)</b>	<b>(6)</b>	<b>(283)</b>	<b>4</b>	-	<b>(26)</b>	<b>2</b>	<b>(29)</b>
<b>Total</b>	<b>631</b>	<b>1,528</b>	<b>(812)</b>	<b>(1,225)</b>	<b>(146)</b>	<b>3</b>	<b>(26)</b>	<b>2</b>	<b>(29)</b>

The following table presents the effects of derivatives for the periods ended:

Unrealized gains (losses) in the period are included in our income statement under the caption of gains (losses) on derivatives, net.

Final maturity dates for the above instruments are as follows:

Interest rates/ Currencies	December 2019
Aluminum	December 2010
Bunker Oil	December 2011
Freight	December 2010
Nickel	December 2012
Copper	February 2011
Coal	December 2010



**FREE TRANSLATION OF THE ORIGINAL PORTUGUESE**

**BY-LAWS**

**VALE S.A.**

**CHAPTER I - NAME, PURPOSE, HEAD OFFICE AND DURATION**

**Article 1** — Vale S.A., referred to in abbreviated form as Vale, is a joint-stock company governed by the present By-Laws and by applicable legislation.

**Article 2** - The purpose of the company is:

- I.** the exploitation of mineral deposits in Brazil and abroad by means of extraction, processing, industrialization, transportation, shipment and commerce of mineral assets;
- II.** the building and operation of railways and the exploitation of own or third party rail traffic;
- III.** the building and operation of own or third party marine terminals, and the exploitation of nautical activities for the provision of support within the harbor;
- IV.** the provision of logistics services integrated with cargo transport, comprising generation, storage, transshipment, distribution and delivery within the context of a multimodal transport system;
- V.** the production, processing, transport, industrialization and commerce of all and any source and form of energy, also involving activities of production, generation, transmission, distribution and commerce of its products, derivatives and subproducts;
- VI.** the carrying-on, in Brazil or abroad, of other activities that may be of direct or indirect consequence for the achievement of its corporate purpose, including research, industrialization, purchase and sale, importation and exportation, the exploitation, industrialization and commerce of forest resources and the provision of services of any kind whatsoever;
- VII.** constituting or participating in any fashion in other companies, consortia or associations directly or indirectly related to its business purpose.

**Article 3** - The head office and legal venue of the company shall be in the city of Rio de Janeiro, State of Rio de Janeiro, the company being empowered for the better realization of its activities to set up branch offices, subsidiary branch offices, depots, agencies, warehouses, representative offices or any other type of establishment in Brazil or abroad.

**Article 4** - The term of duration of the company shall be unlimited.

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## CHAPTER II - CAPITAL AND SHARES

**Article 5** - The paid-up capital amounts to R\$50,000,000,000.00 (fifty billion Reais) corresponding to 5,365,304,100 (five billion, three hundred and sixty-five million, three hundred and four thousand one hundred) shares, being R\$30,349,859,218.60 (thirty billion and three hundred forty-nine million, eight hundred and fifty-nine thousand, two hundred eighteen Reais and sixty cents), divided into 3,256,724,482 (three billion, two hundred fifty-six million, seven hundred twenty-four thousand, four hundred eighty-two) common shares and R\$19,650,140,781.40 (nineteen billion, six hundred and fifty million, one hundred and forty thousand, seven hundred and eighty-one Reais and forty cents), divided into 2,108,579,618 (two billion, one hundred and eight million, five hundred and seventy-nine thousand and six hundred and eighteen) preferred Class "A" shares, including 12 (twelve) special class shares, all without nominal value.

**§ 1** - The shares are common shares and preferred shares. The preferred shares comprise class A and special class.

**§ 2** - The special class preferred share shall belong exclusively to the Federal Government. In addition to the other rights which are expressed and specifically attributed to these shares in the current By-Laws, the special class shares shall possess the same rights as the class A preferred shares.

**§ 3** - Each common, class A preferred share and special class shares shall confer the right to one vote in decisions made at General Meetings, the provisions of § 4 following being observed.

**§ 4** - The preferred class A and special shares will have the same political rights as the common shares, with the exception of voting for the election of Board Members, excepting the provisions set forth in §§ 2 and 3 of Article 11 following, and also the right to elect and dismiss one member of the Fiscal Council, and its respective alternate.

**§ 5** - Holders of class A preferred and special class shares shall be entitled to receive dividends calculated as set forth in Chapter VII in accordance with the following criteria:

**a)** priority in receipt of dividends specified in § 5 corresponding to: (i) a minimum of 3% (three percent) of the stockholders' equity of the share, calculated based on the financial statements which served as reference for the payment of dividends, or (ii) 6% (six percent) calculated on the portion of the capital formed by this class of share, whichever higher;

**b)** entitlement to participate in the profit distributed, on the same conditions as those for common shares, once a dividend equal to the minimum priority established in accordance with letter "a" above is ensured; and

**c)** entitlement to participate in any bonuses, on the same conditions as those for common shares, the priority specified for the distribution of dividends being observed.

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**§6** - Preferred shares shall acquire full and unrestricted voting rights should the company fail to pay the minimum dividends to which they are entitled during 3 (three) consecutive fiscal years, under the terms of §5 of Article 5.

**Article 6** - The company is authorized to increase its paid-up capital up to the limit of 3,600,000,000 (three billion, six hundred million) common shares and 7,200,000,000 (seven billion, two hundred million) Preferred Class “A” shares. Within the limit authorized in this article, the Company, as a result of deliberation by the Board of Directors, may increase its paid-up capital independently of reform to its bylaws, through the issue of common and/or preferred shares.

**§ 1** - The Board of Directors shall determine the conditions for issuance, including the price and the period of time prescribed for paying up.

**§ 2** - At the option of the Board of Directors the preemptive right in the issuance of shares, bonds convertible into shares and subscription bonuses, the placement of which on the market may be by sale on the stock exchange or by public subscription as per the prescriptions set forth in Law no. 6.404/76, may be rescinded.

**§ 3** - Provided that the plans approved by the General Meeting are complied with, the company shall be entitled to delegate the option of share purchase to its administrators and employees, with shares held in Treasury or by means of the issuance of new shares, the shareholders’ preemptive right being excluded.

**Article 7** - The special class share shall possess a veto right regarding of the following subjects:

- I.** change of name of the company;
- II.** change of location of the head office;
- III.** change of the corporate purpose with reference to mineral exploitation;
- IV.** the winding-up of the company;
- V.** the sale or cessation of the activities of any part or of the whole of the following categories of the integrated iron ore systems of the company: (a) mineral deposits, reserves and mines; (b) railways; (c) ports and marine terminals;
- VI.** any alteration of the rights assigned to the types and classes of the shares issued by the company in accordance with the prescriptions set forth in the present By-Laws;
- VII.** any alteration of the present Article 7 or of any of the other rights assigned to the special class share by the present By-Laws.

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### CHAPTER III - GENERAL MEETING

**Article 8** - The ordinary Shareholders' General Meeting shall be held within the first four months following the end of the fiscal year and, extraordinarily, whenever called by the Board of Directors.

§ 1 - An extraordinary Shareholders' General Meeting shall be competent to discuss the subjects specified in Article 7.

§ 2 - The holder of the special class share shall be formally requested by the company to attend for the purpose of discussing the subjects specified in Article 7 by means of personal correspondence addressed to its legal representative, a minimum period of notice of 15 (fifteen) days being given.

§ 3 - Should the holder of the special class share be absent from the General Meeting called for this purpose or should it abstain from voting, the subjects specified in Article 7 shall be deemed as having been approved by the holder of the said special class.

**Article 9** - At an Ordinary or Extraordinary General Meeting, the chair shall be taken by the Chairman, or in his absence by the Vice-Chairman of the Board of Directors of the company, and the Secretary of the Board of Directors shall act as secretary, as per § 14 of Article 11.

Sole Paragraph - In the case of temporary absence or impediment of the Chairman or Vice-Chairman of the Board of Directors, the General Meeting of Shareholders shall be chaired by their respective alternates, or in the absence or impediment of such alternates, by an Officer specially appointed by the Chairman of the Board of Directors.

### CHAPTER IV - ADMINISTRATION

**Article 10** - The Board of Directors and the Executive Board shall be responsible for the administration of the company.

§ 1 - The members of the Board of Directors and the Executive Board shall take office by means of signing the Minute Book of the Board of Directors or the Executive Board, as the case may be.

§ 2 - The term of office of the members of the Board of Directors and the Executive Board shall be extended until their respective successors have taken office.

§ 3 - The General Meeting shall fix the overall amount for the remuneration of the administrators, benefits of any kind and allowances being included therein, taking into account the responsibilities of the administrators, the time devoted to the performance of their duties, their competence and professional repute and the market value of their duties, their competence and professional repute and the market value of their services. The Board of Directors shall apportion the fixed remuneration among its members and the Executive Board.

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§4 - The Board of Directors shall be supported by technical and consultant bodies, denominated Committees, regulated as set forth in **Section II - Committees hereinafter**.

## **SECTION I - BOARD OF DIRECTORS**

### **Subsection I - Composition**

**Article 11** - The Board of Directors, a joint decision-making body, shall be elected by the General Meeting and shall be formed of 11 (eleven) effective members and their respective alternates, all being shareholders in the company, and one of whom shall be the Chairman of the Board and another shall be the Vice-Chairman.

§1 - The term of office of the members of the Board of Directors shall be 2 (two) years, their re-election being permitted.

§2 - Under the terms of Article 141 of Law # 6,404/76, 1 (one) member and his alternate of the Board of Directors, may be elected and removed, by means of a separate vote at the general meeting of shareholders, excluding the controlling shareholder, by the majority of holders, respectively, of:

**I** - common shares representing at least 15% (fifteen percent) of the total shares with voting rights; and

**II** - preferred shares representing at least 10% (ten percent) of share capital.

§3 - Having ascertained that neither the holders of common shares or preferred shares have respectively formed the quorum required in sections I and II of §2 above, they shall be entitled to combine their shares to jointly elect a member and an alternate to the Board of Directors, and in such hypothesis the quorum established in section II of §2 of this Article shall be observed.

§4 - The entitlement set forth in §2 of this Article may only be exercised by those shareholders who are able to prove uninterrupted ownership of the shares required therein for a period of at least 3 (three) months, immediately prior to the general shareholders meeting which elected the members of the Board of Directors.

§5 - From among the 11 (eleven) effective members and their respective alternates of the Board of Directors, 1 (one) member and his alternate shall be elected and/or removed, by means of a separate vote, by the employees of the company.

§6 - The Chairman and the Vice-Chairman of the Board of Directors shall be elected among the members thereof during a Meeting of the Board of Directors to be held immediately after the General Meeting which has elected them.

§7 - In the case of impediment or temporary absence, the Vice-Chairman shall replace the Chairman, and during the period of such replacement the Vice-Chairman shall have powers identical to those of the Chairman, the alternate of the Chairman

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being nevertheless entitled to exercise the right to vote in his capacity as a member of the Board of Directors.

- §8 -** Should a vacancy occur in the office of Chairman or Vice-Chairman, the Board of Directors shall elect the respective alternates in the first Meeting to be held after the vacancy.
- §9 -** During their impediments or temporary absences, the members of the Board of Directors shall be replaced by their respective alternates.
- §10 -** Should a vacancy occur in the office of a member of the Board of Directors or of an alternate, the vacancy shall be filled by nomination by the remaining members of an alternate who shall serve until the next General Meeting, which shall decide on his election. Should vacancies occur in the majority of such offices, a General Meeting shall be convened in order to proceed with a new election.
- §11 -** Whenever the Board of Directors is elected under the multiple vote regime, as established in Article 141 of Law # 6,404/1976, the Chairman of the shareholders meeting shall inform those shareholders present that the share which elected a member of the Board of Directors, by means of a separate vote in accordance with §§2 and 3 of Article 11, may not participate in the multiple vote regime and, evidently, may not participate in the calculation of the respective quorum. Once the separate vote has been held, then the ratio may be definitively defined in order to proceed with the multiple vote.
- §12-** With the exception of the effective members and their respective alternates, elected by means of separate vote, respectively, by the employees of the company and by the holders of preferred shares, under section II, §2 of Article 11, whenever the election for the Board of Directors is held under the multiple vote regime, the removal of any member of the Board of Directors, effective or alternate, by the general shareholders meeting, shall imply in the removal of the other members of the Board of Directors, and consequently a new election shall be held; in other cases of vacancy, in the absence of an alternate, the first general shareholders meeting shall elect the whole Board.
- §13 -** Whenever, cumulatively, the election of the Board of Directors is held under the multiple vote system and the holders of common shares or preferred shares or company employees exercise the right established in §§ 2, 3 and 5 above, the shareholder or group of shareholders under vote agreement who hold over 50% (fifty percent) of shares with voting rights, shall be ensured the right to elect officers in a number equal to those elected by the other shareholders, plus one, irrespective of the number of officers established in the caption of Article 11.
- §14 -** The Board of Directors shall have a Secretary, appointed by the Chairman of the Board of Directors, who shall necessarily be an employee or administrator of the company, in whose absence or impediment shall be replaced by another employee or administrator as designated by the Chairman of the Board of Directors.

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## **Subsection II — Workings**

**Article 12** - The Board of Directors shall meet on an ordinary basis once a month and extraordinary whenever called by the Chairman or, in his absence, by the Vice-Chairman of the Board or by any 2 (two) members acting together.

**Sole Paragraph** - The meetings of the Board of Directors shall be held at the Company's headquarters, but, under exceptional circumstances, may be held at a different location.

**Article 13** - Meetings of the Board of Directors shall only be held with the presence of and decisions shall only be taken by the affirmative vote of a majority of its members.

- §1 - The minutes of the meetings of the Board of Directors shall be recorded in the Book of Minutes of Meetings of the Board of Directors which, after having been read and approved by the officers present at the meetings, shall be signed in a number sufficient to constitute the majority necessary for approval of the subjects examined.
- §2 - The Secretary shall be responsible for the recording, distribution, filing and safeguard of the respective minutes of the meetings of the Board of Directors, as well as for the issuance of abstracts of the minutes and certificates of approvals of the Board of Directors.

## **Subsection III — Responsibilities**

**Article 14** - The Board of Directors shall be responsible for:

- I. electing, evaluating and at any time removing the Executive Officers of the company, and assigning functions to them;
- II. distributing the remuneration established by the general shareholders meeting among its members and those of the Executive Board;
- III. assigning the functions of Investor Relations to an Executive Officer;
- IV. approving the policies relating to selection, evaluation, development and remuneration of members of the Executive Board;
- V. approving the company's human resources general policies as submitted to it by the Executive Board;
- VI. establishing the general guidance of the business of the company, its wholly owned subsidiary companies and controlled companies;

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- VII.** approving the strategic guidelines and the strategic plan of the company submitted annually by the Executive Board;
- VIII.** approving the company's annual and multi-annual budgets, submitted to it by the Executive Board;
- IX.** monitoring and evaluating the economic and financial performance of the company, and may request the Executive Board to provide reports with specific performance indicators;
- X.** approving investments and/or divestiture opportunities submitted by the Executive Board which exceed the limits established for the Executive Board as defined by the Board of Directors;
- XI.** issuing opinions on operations relating to merger, split-off, incorporation in which the company is a party, as well as share purchases submitted by the Executive Board;
- XII.** with the provisions set forth in Article 2 of the present By-Laws being complied with, making decisions concerning the setting-up of companies, or its transformation into another kind of company, direct or indirect participation in the capital of other companies, consortia, foundations and other organizations, by means of the exercise of rights withdrawal, the exercise of non-exercise of rights of subscription, or increase or sale, both direct and indirect, of corporate equity, or in any other manner prescribed by law, including but not limited to, merger, split-off and incorporation in companies in which it participates;
- XIII.** approving the corporate risks and financial policies of the company submitted by the Executive Board;
- XIV.** approving the issuance of simple debentures, not convertible into share and without collateral submitted by the Executive Board;
- XV.** approving the accounts of the Executive Board, substantiated in the Annual Report and the Financial Statements, for subsequent submission to the Ordinary General Meeting;
- XVI.** approving the employment of profit for the year, the distribution of dividends and, when necessary, the capital budget, submitted by the Executive Board, to the later direction to the appreciation of the Ordinary Shareholders Meeting;
- XVII.** selecting and removing external auditors of the company, based on the Fiscal Council's recommendation, in accordance with section (ii) of §1° of Article 39;
- XVIII.** appointing and removing the person responsible for the internal auditing and for the Ombud of the company, who shall report directly to the Board of Directors;
- XIX.** approving the policies and the annual audit plan of the company submitted by the person responsible for internal auditing, as well as to acknowledge the respective reports and determine the adoption of necessary measures;

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- XX.** overseeing the management of the company by the Executive Officers and examining at any time, the books and documents of the Company, requesting information about contracts signed or about to be signed, and about any other actions, in order to ensure the financial integrity of the Company;
- XXI.** approving alterations in corporate governance rules, including, but not limited to, the process of rendering of accounts and the process of disclosure of information;
- XXII.** approving policies of employee conducts based on ethical and moral standards described in the Code of Ethics of the Company, to be observed by all administrators and employees of the Company, its subsidiaries and controlled companies;
- XXIII.** approving policies to avoid conflicts of interests between the Company and its shareholders or its administrators, as well as the adoption of the measures considered necessary in the event such conflicts arise;
- XXIV.** approving policies of corporate responsibility of the Company, mainly those related to: the environment, health and labor safety, and social responsibility of the Company, submitted by the Executive Board;
- XXV.** establishing criteria for the Executive Board in relation to the purchase of, sale of and placing of liens on fixed assets and for the constitution of encumbrances, the provisions set forth in Article 7 of the present By-Laws being complied with;
- XXVI.** approving the provision of guarantees in general, and establishing criteria for the Executive Board in relation to the contracting of loans and financing and for the signing of other contracts;
- XXVII.** establishing criteria for the Executive Board in relation to the signing of commitments, waiving of rights and transactions of any nature, except for the waiver of its preemptive rights in the subscription and purchase of shares, under section XII of Article 14;
- XXVIII.** approving any matters which are not the competence of the Executive Board, under the terms of the present By-Laws, as well as matters whose limits exceed the criteria established for the Executive Board, as established in Article 14;
- XXIX.** approving any reformulation, alteration, or amendment of shareholders' agreements or consortia contracts, or of agreements among the shareholders or among the consortia parties of companies in which the company participates, as well as approving the signing of new agreements and/or consortia contracts that address subjects of this nature;
- XXX.** authorize the negotiation, signing or alteration of contracts of any kind of value between the company and (i) its shareholders, either directly or through intermediary companies (ii) companies which directly or indirectly participate in the capital of the controlling shareholder or which are controlled, or are under joint control, by companies which participate in the capital of the controlling shareholder,

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and/or (iii) companies in which the controlling shareholder of the company participates, and the Board of Directors may establish delegations, with standards and procedures, which meet the requirements and nature of the operations, without prejudice of keeping the aforementioned group duly informed of all company transactions with related parties;

- XXXI.** expressing its opinion regarding any matter to be submitted to the General Meeting of Shareholders;
  - XXXII.** authorizing the purchase of shares of its own issuance for maintenance in treasury, cancellation or subsequent sale;
  - XXXIII.** approving the recommendations submitted by the Fiscal Council of the Company in the exercise of its legal and statutory attributions.
- §1 -** The Board of Directors shall be responsible for appointing, as submitted by the Executive Board, the persons who shall form part of the Administrative, Consulting and Audit bodies of those companies and organizations in which the company participates, directly or indirectly.
- §2 -** The Board of Directors may, at its discretion, delegate the assignment mentioned in the prior paragraph to the Executive Board.

## **SECTION II - COMMITTEES**

**Article 15 -** The Board of Directors, shall have, for advice on a permanent basis, 5 (five) technical and advisory committees, denominated as follows: Executive Development Committee, Strategic Committee, Finance Committee, Accounting Committee and Governance and Sustainability Committee.

- §1 -** The Board of Directors, at its discretion, may also establish, for its consulting support, other committees to fulfill consultant or technical tasks, other than those permanent committees as set forth in the caption of this Article.
- §2 -** The members of the committees shall be remunerated as established by the Board of Directors, and those members who are administrators of the company shall not be entitled to additional remuneration for participating on the committees.

### **Subsection I — Mission**

**Article 16 -** The mission of the committees shall be to provide support to the Board of Directors, which includes the follow up of the activities of the Company, in order to increase the efficiency and quality of its decisions.

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## **Subsection II — Composition**

**Article 17** - The members of the committees shall have proven experience and technical skills in relation to matters that are the object of the respective committee's responsibility and shall be subject to the same legal duties and responsibilities as the administrators.

**Article 18** - The composition of each committee shall be defined by the Board of Directors.

**§1** - The members of the committees shall be appointed by the Board of Directors and may belong to company administration bodies or not.

**§2** - The term of management for the members of the committees shall begin as of their appointment by the Board of Directors, and termination shall coincide with the end of the management term of the members of the Board of Directors, and reappointment shall be permitted.

**§3** - During their management, members of the committees may be removed from office by the Board of Directors.

## **Subsection III — Workings**

**Article 19** - Standards relating to the workings of each committee shall be defined by the Board of Directors.

**§1** - The committees established within the company shall not have decision making power and their reports and proposals shall be submitted to the Board of Directors for approval.

**§2** - The committees' reports do not constitute a necessary condition for the presentation of matters for scrutiny and approval by the Board of Directors.

## **Subsection IV — Responsibilities**

**Article 20** - The main duties of the committees are set forth in Article 21 and subsequent articles, whereas their detailed duties shall be defined by the Board of Directors.

**Article 21** - The Executive Development Committee shall be responsible for:

- I** - issuing reports on the human resources general policies of the Company submitted by the Executive Board to the Board of Directors;
- II** - analyzing and issuing reports to the Board of Directors on the restatement of remuneration of members of the Executive Board;
- III** - submitting and ensuring up-to-dateness of the performance evaluation methodology of the members of the Executive Board; and

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**IV** - issuing reports on health and safety policies proposed by the Executive Board.

**Article 22** - The Strategic Committee shall be responsible for:

- I** - issuing reports on the strategic guidelines and the strategic plan submitted annually by the Executive Board;
- II** - issuing reports on the company's annual and multi-annual investment budgets submitted by the Executive Board to the Board of Directors;
- III** - issuing reports on investment and/or divestiture opportunities submitted by the Executive Board to the Board of Directors; and
- IV** - issuing reports on operations relating to merger, split-off, incorporation in which the company and its controlled subsidiaries are a party, and on share purchases submitted by the Executive Board to the Board of Directors.

**Article 23** - The Finance Committee shall be responsible for:

- I** - issuing reports on the corporate risks and financial policies and the internal financial control systems of the Company; and
- II** - issuing reports on the compatibility between the remuneration level of shareholders and the parameters established in the annual budget and financial scheduling, as well as its consistency with the general policy on dividends and the capital structure of the company.

**Article 24** - The Accounting Committee shall be responsible for:

- I** - recommending the appointment of the person responsible for the internal auditing of the Company to the Board of Directors;
- II** - issuing reports on the policies and the Company's annual auditing plan submitted by the employee responsible for internal auditing, and on its execution;
- III** - tracking the results of the Company's internal auditing, and identifying, prioritizing, and submitting actions to be accompanied by the Executive Board to the Board of Directors; and
- IV** - analyzing the Annual Report, as well as the Financial Statements of the company and making recommendations to the Board of Directors.

**Article 25** - The Governance and Ethics Committee shall be responsible for:

- I** - evaluating the efficiency of the company's governance practices and the workings of the Board of Directors, and submitting improvements;
- II** - submitting improvements to the code of ethics and in the management system in order to avoid conflicts of interests between the company and its shareholders or company administrators; and

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- III -** issuing reports on potential conflicts of interest between the company and its shareholders or administrators, and
- IV -** issuing reports on policies related to the Company's institutional social responsibilities, such as environmental-related issues and the Company's social responsibilities, proposed by the Executive Board.

### **SECTION III - EXECUTIVE BOARD**

#### **Subsection I — Composition**

**Article 26 -** The Executive Board, which shall be the executive management body of the company, shall consist of 6 (six) to 11 (eleven) members, one of whom shall be the Chief Executive Officer and the others Executive Officers.

**§1 -** The Chief Executive Officer shall submit to the Board of Directors the names of candidates for the Executive Board with renowned knowledge and specialization in the subject of responsibility of the respective operational area, and may also at any time submit to the Board of Directors a motion to remove.

**§2 -** The Executive Officers shall have their individual duties defined by the Board of Directors.

**§3 -** The management term of the members of the Executive Board shall be 2 (two) years, and re-election shall be permitted.

#### **Subsection II — Workings**

**Article 27 -** The Chief Executive Officer and other members of the Executive Board shall continue in their respective official capacities when physically distant from headquarters realizing their respective duties on business-related travel. In the case of a permanent vacancy, or an impairment which temporarily impedes an officer from performing his respective duties, or a temporary absence or leave due to extraordinary circumstances, the respective procedures for replacing the Chief Executive Officer and other Executive Officers shall be as follows:

**§1º -** In the case of an impairment which temporarily impedes the Chief Executive Officer from performing his respective duties, the Chief Financial Officer shall assume, in addition to his own legal, statutory, and regulatory rights and responsibilities, the legal, statutory, and regulatory responsibilities of Chief Executive Officer, provided that the Board of Directors ratifies such replacement. In the case of the Chief Executive Officer's temporary absence or leave due to extraordinary circumstances, the Chief Executive Officer shall designate his own substitute, who shall assume all legal, statutory, and regulatory rights and responsibilities of the Chief Executive Officer.

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- §2° - In the case of an impairment which temporarily impedes an Executive Officer from performing his respective duties or in the case of an Executive Officer's temporary absence or leave due to extraordinary circumstances, such Executive Officer shall be replaced, in accordance with the Chief Executive Officer's nomination, by any of the other Executive Officers, and such nominated Executive Officer shall assume, in addition to his own legal, statutory, and regulatory rights and responsibilities, the legal, statutory, and regulatory responsibilities of the temporarily impaired or absent Executive Officer, excluding voting rights at Executive Board meetings, for the duration of the temporarily impaired or absent Executive Officer's term.
- §3° - Should there be a permanent vacancy in the position of Executive Officer, the Chief Executive Officer shall select a substitute officer and submit such officer's name to the Board of Directors who shall appoint such substitute officer to complete the remaining term of the vacant executive officer.
- §4° - Should there be a permanent vacancy in the position of the Chief Executive Officer, the Chief Financial Officer shall replace the Chief Executive Officer and shall assume the duties, rights, and responsibilities of both the Chief Executive Officer and the Chief Financial Officer, until the Board of Directors holds an election to fill the position of Chief Executive Officer.

**Article 28** - In respect of the limits established for each Executive Officer, the decisions on matters affecting his specific operational area, provided that the matter does not affect the operational area of another Executive Officer, shall be taken by himself or in conjunction with the Chief Executive Officer, in matters or situations pre-established by the latter.

**Article 29** - The Executive Board shall meet on an ordinary basis once each fifteen days and extraordinarily whenever called by the Chief Executive Officer or his substitute; and Executive Board members may participate in ordinary or extraordinary meetings in person, by teleconference, videoconference, or other means of communication.

**Sole Paragraph** - The Chief Executive Officer shall convene an extraordinary meeting of the Executive Board by virtue of the request of at least 3 (three) members of the Executive Board;

**Article 30** - The meetings of the Executive Board shall only begin with the presence of the majority of its members.

**Article 31** - The Chief Executive Officer shall chair the meetings of the Executive Board in order to prioritize consensual approvals amongst its members.

§1 - When there is no consent among members of the Board, the Chief Executive Officer may (i) withdraw the issue from the agenda, (ii) attempt to form a majority, with the use of his casting vote or, (iii) in the interests of the company and by grounded presentation, decide individually on the matters raised for joint approval, including those listed in Article 32, and in respect of the exceptions stated in §2 following;

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- §2 - Decisions relating to annual and multi-annual budgets and to the strategic plan and the Annual Report of the company shall be taken by majority vote, considered to be all Executive Officers, provided that the favorable vote of the Chief Executive Officer is included therein.
- §3 - The Chief Executive Officer shall inform the Board of Directors the utilization of the prerogative concerning item (iii), §1 stated above, in the first Board of Directors meeting which succeed the corresponding decision.

### **Subsection III — Responsibilities**

**Article 32** - The Executive Board shall be responsible for:

- I** - approving the creation and elimination of Executive Departments subordinated to each Executive Director;
- II** - preparing and submitting to the Board of Directors the company's general policies on human resources, and executing the approved policies;
- III** - complying with and ensuring compliance with the general guidelines and business policies of the Company laid down by the Board of Directors;
- IV** - preparing and submitting, annually, to the Board of Directors, the company's strategic guidelines and the strategic plan, and executing the approved strategic plan;
- V** - preparing and submitting the Company's annual and multi-annual budgets to the Board of Directors, and executing the approved budgets;
- VI** - planning and steering the company's operations and reporting the company's economic and financial performance to the Board of Directors, and producing reports with specific performance indicators;
- VII** - identifying, evaluating and submitting investment and/or divestiture opportunities to the Board of Directors which exceed the limits of the Executive Board as defined by the Board of Directors, and executing the approved investments and/or divestitures;
- VIII** - identifying, evaluating and submitting to the Board of Directors operations relating to merger, split-off, incorporation in which the company is a party, as well as share purchases, and conducting the approved mergers, split-offs, incorporations and purchases;
- IX** - preparing and submitting the company's finance policies to the Board of Directors, and executing the approved policies;
- X** - submitting to the Board of Directors the issuance of simple debentures, not convertible into shares and without collateral;
- XI** - defining and submitting to the Board of Directors, after the drawing up of the balance sheet, the employment of profit for the year, the distribution of company dividends and, when necessary, the capital budget;

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- XII** - preparing in each fiscal year the Annual Report and Financial Statements to be submitted to the Board of Directors and the General Meeting;
- XIII** - adhere to and encourage adhesion to the company's code of ethics, established by the Board of Directors;
- XIV** - preparing and submitting to the Board of Directors the company's policies on corporate responsibility, such as the environment, health, safety and social responsibility, and implementing the approved policies;
- XV** - authorizing the purchase of, sale of and placing of liens on fixed and non fixed assets including securities, the contracting of services, the company being the provider or receiver of such, being empowered to establish standards and delegate powers, all in accordance with the criteria and standards established by the Board of Directors;
- XVI** - authorizing the signing of agreements, contracts and settlements that constitute liabilities, obligations or commitments on the company, being empowered to establish standards and delegate powers, all in accordance with the criteria and standards established by the Board of Directors;
- XVII** - propose to the Board of Directors any reformulation, alteration, or amendment of shareholders' agreements or of agreements among the shareholders of companies in which the company participates, as well as suggesting the signing of new agreements and consortia contracts that address subjects of this nature;
- XVIII** - authorizing the opening and closing of branch offices, subsidiary branch offices, depots, agencies, warehouses, representative officer or any other type of establishment in Brazil or abroad;
- XIX** - authorizing the undertaking of commitments, waiver of rights and transactions of any nature, liens on securities being excepted, under the terms of section XII of Article 14, being empowered to establish standards and delegate powers in accordance with the criteria and standards established by the Board of Directors;
- XX** - establishing and informing the Board of Directors on the individual limits of the Executive Officers, in respect of the limits of the Executive Board jointly, as established by the Board of Directors;
- XXI** - establishing, based on the limits fixed for the Board of Directors, the limits throughout the whole of the company's administrative organization hierarchy.
- §1** - The Executive Board shall be empowered to lay down voting guidelines to be followed at the General Meetings by its proxies in the companies, foundations and other organizations in which the company participates, directly or indirectly, the investment plans and programs of the company, as well as the respective budgets being complied with, the limit of responsibility being observed as regards, among others, indebtedness, the sale of assets, the waiver of rights and the reduction of corporate equity investments.

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§ 2 - The Executive Board shall take steps to appoint persons who shall form part of the Administrative, Consultant and Audit bodies of those companies and organizations in which the company participates directly or indirectly.

**Article 33** - The responsibilities of the Chief Executive Officer are to:

- I - take the chair at meetings of the Executive Board;
- II - exercise executive direction of the Company, with powers to coordinate and supervise the activities of the other Executive Officers, exerting his best efforts to ensure faithful compliance with the decisions and guidelines laid down by the Board of Directors and the General Meeting;
- III - coordinate and supervise the activities of the business areas and units that are directly subordinated to him;
- IV - select and submit to the Board of Directors the names of candidates for Executive Officer posts to be elected by the Board of Directors, and also to propose the respective removal;
- V - coordinate the decision making process of the Executive Board, as provided for in Article 31 of Subsection II — **Workings**;
- VI - indicate, whom among the Executive Officers shall substitute an Executive Officer in case of an impairment that temporarily impedes an officer from performing his respective duties or temporary absence or leave, in compliance to Article 27 Subsection II — **Workings**;
- VII - keep the Board of Directors informed about the activities of the company;
- VIII - together with the other Executive Officers, prepare the annual report and draw up the balance sheet;

**Article 34** - The Executive Officers are to:

- I - organize the services for which they are responsible;
- II - participate in meetings of the Executive Board, contributing to the definition of the policies to be followed by the company and reporting on matters of the respective areas of supervision and coordination;
- III - comply with and ensure compliance with the policy and general guidance of the company's business laid down by the Board of Directors, each Executive Officer being responsible for his business units and specific area of activities;
- IV - contract the services described in §2º of Article 39, in compliance with determinations of the Fiscal Council.

**Article 35** - The company shall be represented as plaintiff or defendant in courts of law or otherwise, including as regards the signature of documents constituting responsibility for

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this, by 2 (two) members of the Executive Board, or by 2 (two) proxies established in accordance with § 1 of this Article, or by 1 (one) proxy jointly with an Executive Officer.

- § 1 - Except when otherwise required by law, proxies shall be appointed by a power of attorney in the form of a private instrument in which the powers granted shall be specified, the term of validity of powers of attorney “ad negotia” expiring on December 31 of the year in which it is granted.
- § 2 - The company may, moreover, be represented by a single proxy at the General Meetings of shareholders of the companies, consortia and other organizations in which it participates or for acts arising out the exercise of powers specified in a power of attorney “ad judicia” or: (a) at agencies at any level of government, customs houses and public service concessionaires for specific acts for which a second proxy is not necessary or not permitted; (b) for signing of contract instruments in solemnity or at which the presence of a second proxy is not possible; (c) for signing of documents of any kind which imply in an obligation for the company whose monetary limits shall be established by the Executive Board.
- § 3 In the case of commitments assumed abroad, the company may be represented by a single member of the Executive Board, or by an attorney in-fact with specific and limited powers according to the present By-Laws.
- § 4 - Summons and judicial or extrajudicial notifications shall be made in the name of the Executive Officer responsible for Investor Relations, or by proxy as established in § 1 of this Article.

#### **CHAPTER V - FISCAL COUNCIL**

**Article 36** - The Fiscal Council, a permanently functioning body, shall be formed of 3 (three) to 5 (five) effective members and an equal number of alternates, elected by the General Meeting, which shall fix their remuneration.

**Article 37** - The members of the Fiscal Council shall carry out their duties until the first Ordinary General Meeting to be held following their election, their re-election being permitted.

**Article 38** - In their absence or impediment, or in cases of vacancy of office, the members of the Fiscal Council shall be replaced by their respective alternates.

**Article 39** — The Fiscal Council shall be responsible to exercise the functions attributed to it by the applicable prevailing legislation, in these By-Laws, and as regulated by its own Internal Rules to be approved by its members;

§ 1º- The Internal Rules of the Fiscal Council shall regulate, in addition to the attributions already established in Law 6.404/76, imperatively, the following:

- (i) to establish the procedures to be adopted by the Company to receive, process and treat denunciations and complaints related to accounting, internal

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accounting controls and auditing matters, and ensure that the procedures for receiving complaints will guarantee secrecy and anonymity to the complainants;

- (ii) to recommend and assist the Board of Directors in the selection, remuneration and dismissal of the external auditors of the Company;
- (iii) to deliberate concerning the contracting of new services that may be rendered by the external auditors of the Company;
- (iv) to supervise and evaluate the work of the external auditors, and to direct the management of the Company concerning any need to withhold the remuneration of the external auditor, as well as to mediate any disputes between management and the external auditors regarding the financial statements of the Company.

§ 2º - For adequate performance of its duties, the Fiscal Council may determine the contracting of services from lawyers, consultants and analysts, and other resources that may be necessary for the performance of its duties, while observing the budget, proposed by the Fiscal Council and approved by the Board of Directors, without prejudice to the provisions established in §8º of Article 163 of Law 6.404/76.

§3º - The members of the Fiscal Council shall provide, within at least 30 (thirty) days before the Annual Shareholders' Meeting is held, their analysis of the management report and the financial statements.

#### **CHAPTER VI - COMPANY PERSONNEL**

**Article 40** - The company shall maintain a social security plan for its employees administered by a foundation established for this purpose, the provisions of prevailing legislation being complied with.

#### **CHAPTER VII - FINANCIAL YEAR AND DISTRIBUTION OF PROFITS**

**Article 41** - The fiscal year of the company shall coincide with the calendar year, thus finishing on December 31, when the balance sheets shall be prepared.

**Article 42** - After the constitution of the legal reserve, the employment of the remaining portion of the net profit verified at the end of each financial year (which shall coincide with the calendar year) shall, on the motion of the Administration, be submitted to the decision of the General Meeting.

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**Sole Paragraph** - The amount of the interest, paid or credited in the form of interest on stockholders' equity in accordance with the prescriptions of Article 9, § 7 of Law # 9,249 dated December 26, 1995 and of relevant legislation and regulations, may be ascribed to the compulsory dividend and to the minimum annual dividend on the preferred shares, such amount for all legal purposes forming the sum of the dividends distributed by the company.

**Article 43** - The proposal for distribution of profit shall include the following reserves:

- I.** Depletion Reserve, to be constituted in accordance with prevailing fiscal legislation;
- II.** Investments Reserve, in order to ensure the maintenance and development of the main activities which comprise the company's purpose, in an amount not greater than 50% (fifty percent) of distributable net profit up to a maximum of the company's share capital.

**Article 44** - At least 25% (twenty-five percent) of the net annual profit, adjusted as per the law, shall be devoted to the payment of dividends.

**Article 45** - At the proposal of the Executive Board, the Board of Directors may determine the preparation of the balance sheets in periods of less than a year and declare dividends or interest on stockholders' equity on account of the profit verified in these balances as well as to declare for the account of accrued profits or profit reserves existing in the latest annual or semi-annual balance sheet.

**Article 46** - The dividends and interest on stockholders' equity mentioned in the Sole Paragraph of Article 42 shall be paid at the times and at the places specified by the Executive Board, those not claimed within 3 (three) years after the date of payment reverting in favor of the company.

I hereby attest that the above Amended and Restated By-Laws reflects all the resolutions approved by the Shareholders' Meetings held on August 30, 2007, May 22, 2009 and May 19, 2010, all contained in the Vale's corporate records.

Rio de Janeiro, October 29, 2010.

Maria Isabel dos Santos Vieira  
Secretary

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**ESTATUTO SOCIAL**  
**VALE**

**Consolidado na AGE 30/08/2007,  
com alterações na AGE de  
22/05/2009 e 19/05/2010**

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## ESTATUTO SOCIAL

### CAPÍTULO I - DA DENOMINAÇÃO, OBJETO, SEDE E PRAZO DE DURAÇÃO

**Art. 1º** - A Vale S.A., abreviadamente Vale, é uma sociedade anônima regida pelo presente Estatuto e pelas disposições legais que lhe forem aplicáveis.

**Art. 2º** - A sociedade tem por objeto:

- I.** realizar o aproveitamento de jazidas minerais no território nacional e no exterior, através da pesquisa, exploração, extração, beneficiamento, industrialização, transporte, embarque e comércio de bens minerais;
- II.** construir ferrovias, operar e explorar o tráfego ferroviário próprio ou de terceiros;
- III.** construir e operar terminais marítimos próprios ou de terceiros, bem como explorar as atividades de navegação e de apoio portuário;
- IV.** prestar serviços de logística integrada de transporte de carga, compreendendo a captação, armazenagem, transbordo, distribuição e entrega no contexto de um sistema multimodal de transporte;
- V.** produzir, beneficiar, transportar, industrializar e comercializar toda e qualquer fonte e forma de energia, podendo, ainda, atuar na produção, geração, transmissão, distribuição e comercialização de seus produtos, derivados e subprodutos;
- VI.** exercer, no País ou no exterior, outras atividades que possam interessar, direta ou indiretamente, à realização do objeto social, inclusive pesquisa, industrialização, compra e venda, importação e exportação, bem como a exploração, industrialização e comercialização de recursos florestais e a prestação de serviços de qualquer natureza;
- VII.** constituir ou participar, sob qualquer modalidade, de outras sociedades, consórcios ou entidades cujos objetos sociais sejam direta ou indiretamente, vinculados, acessórios ou instrumentais ao seu objeto social.

**Art. 3º** - A sociedade tem sede e foro na cidade do Rio de Janeiro, Estado do Rio de Janeiro, podendo, para melhor desempenho de suas atividades, criar sucursais, filiais, depósitos, agências, armazéns, escritórios de representação ou qualquer outro tipo de estabelecimento no País e no exterior.

**Art. 4º** - O prazo de duração da sociedade é indeterminado.

## **CAPÍTULO II - DO CAPITAL E DAS AÇÕES**

**Art. 5º** - O capital social é de R\$50.000.000.000,00 (cinquenta bilhões de reais) correspondendo a 5.365.304.100 (cinco bilhões, trezentos e sessenta e cinco milhões, trezentas e quatro mil e cem) ações escriturais, sendo R\$30.349.859.218,60 (trinta bilhões, trezentos e quarenta e nove milhões, oitocentos e cinquenta e nove mil, duzentos e dezoito reais e sessenta centavos), divididos em 3.256.724.482 (três bilhões, duzentos e cinquenta e seis milhões, setecentas e vinte e quatro mil, quatrocentas e oitenta e duas) ações ordinárias e R\$19.650.140.781,40 (dezenove bilhões, seiscentos e cinquenta milhões, cento e quarenta mil, setecentos e oitenta e um reais e quarenta centavos), divididos em 2.108.579.618 (dois bilhões, cento e oito milhões, quinhentas e setenta e nove mil e seiscentas e dezoito) ações preferenciais classe “A”, incluindo 12 (doze) de classe especial, todas sem valor nominal.

- § 1º - As ações são ordinárias e preferenciais. As ações preferenciais são das classes “A” e “especial”.
- § 2º - As ações preferenciais da classe especial pertencerão exclusivamente à União Federal. Além dos demais direitos que lhe são expressa e especificamente atribuídos no presente Estatuto Social, as ações preferenciais da classe especial terão os mesmos direitos das ações preferenciais classe “A”.
- § 3º - Cada ação ordinária, cada ação preferencial classe “A” e cada ação preferencial de classe especial dá direito a um voto nas deliberações das Assembléias Gerais, respeitado o disposto no § 4º a seguir.
- § 4º - As ações preferenciais das classes “A” e especial terão os mesmos direitos políticos das ações ordinárias, com exceção do voto para a eleição dos membros do Conselho de Administração, ressalvado o disposto nos §§ 2º e 3º do **Art. 11** a seguir, bem como o direito de eleger e destituir, um membro do Conselho Fiscal e o respectivo suplente.
- § 5º - Os titulares das ações preferenciais das classes “A” e especial terão direito de participar do dividendo a ser distribuído calculado na forma do Capítulo VII, de acordo com o seguinte critério:
  - a) prioridade no recebimento dos dividendos mencionados neste §5º correspondente a (i) no mínimo 3% (três por cento) do valor do patrimônio

líquido da ação, calculado com base nas demonstrações financeiras levantadas que serviram como referência para o pagamento dos dividendos ou (ii) 6% (seis por cento) calculado sobre a parcela do capital constituída por essa classe de ação, o que for maior entre eles;

b) direito de participar dos lucros distribuídos, em igualdade de condições com as ações ordinárias, depois de a estas assegurado dividendo igual ao mínimo prioritário estabelecido em conformidade com a alínea “a” acima; e

c) direito de participar de eventuais bonificações, em igualdade de condições com as ações ordinárias, observada a prioridade estabelecida para a distribuição de dividendos.

§ 6º - As ações preferenciais adquirirão o exercício pleno e irrestrito do direito de voto se a sociedade deixar de pagar, pelo prazo de 03 (três) exercícios sociais consecutivos, os dividendos mínimos conferidos às ações preferenciais, a que fizerem jus nos termos do §5º do **Art. 5º**.

**Art. 6º** - A sociedade fica autorizada a aumentar seu capital social até o limite de 3.600.000.000 (três bilhões e seiscentos milhões) de ações ordinárias e de 7.200.000.000 (sete bilhões e duzentos milhões) de ações preferenciais classe “A”. Dentro do limite autorizado neste Artigo, poderá a sociedade, mediante deliberação do Conselho de Administração, aumentar o capital social independentemente de reforma estatutária, mediante a emissão de ações ordinárias e/ou preferenciais.

§ 1º - O Conselho de Administração estabelecerá as condições de emissão, inclusive preço e prazo de integralização.

§ 2º - A critério do Conselho de Administração, poderá ser excluído o direito de preferência nas emissões de ações, debêntures conversíveis em ações e bônus de subscrição, cuja colocação seja feita mediante venda em bolsa de valores ou por subscrição pública, nos termos estabelecidos na Lei 6.404/76.

§ 3º - Obedecidos os planos aprovados pela Assembléia Geral, a sociedade poderá outorgar opção de compra de ações a seus administradores e empregados, com ações em tesouraria ou mediante emissão de novas ações, excluindo o direito de preferência para os acionistas.

**Art. 7º** - A ação de classe especial terá direito de veto sobre as seguintes matérias:

I - alteração da denominação social;

II - mudança da sede social;

- III - mudança no objeto social no que se refere à exploração mineral;
- IV - liquidação da sociedade;
- V - alienação ou encerramento das atividades de qualquer uma ou do conjunto das seguintes etapas dos sistemas integrados de minério de ferro da sociedade: (a) depósitos minerais, jazidas, minas; (b) ferrovias; (c) portos e terminais marítimos;
- VI - qualquer modificação dos direitos atribuídos às espécies e classes das ações de emissão da sociedade previstos neste Estatuto Social;
- VII - qualquer modificação deste Artigo 7º ou de quaisquer dos demais direitos atribuídos neste Estatuto Social à ação de classe especial.

### **CAPÍTULO III - DA ASSEMBLÉIA GERAL**

**Art. 8º** - A Assembléia Geral dos acionistas reunir-se-á, ordinariamente, dentro dos quatro primeiros meses após o término do exercício social e, extraordinariamente, sempre que convocada pelo Conselho de Administração.

- § 1º - É competência da Assembléia Geral Extraordinária deliberar sobre as matérias objeto do **Art. 7º**.
- § 2º - O acionista titular da ação de classe especial será convocado formalmente pela sociedade, através de correspondência pessoal dirigida ao seu representante legal, com antecedência mínima de 15 (quinze) dias, para apreciar as matérias objeto do **Art. 7º**.
- § 3º - Em caso de ausência do titular da ação de classe especial na Assembléia Geral convocada para esse fim ou em caso de abstenção de seu voto, as matérias objeto do **Art. 7º** serão consideradas aprovadas pelo detentor da referida classe especial.

**Art. 9º** - A Assembléia Geral Ordinária ou Extraordinária será presidida pelo Presidente ou, na sua ausência, pelo Vice-Presidente do Conselho de Administração da sociedade, e secretariada pelo Secretário do Conselho de Administração designado na forma do §14 do **Art. 11**.

**Parágrafo Único** - Nos casos de ausência ou impedimento temporário do Presidente ou do Vice-Presidente do Conselho de Administração, a Assembléia Geral dos Acionistas será presidida pelos seus respectivos suplentes, ou na ausência ou impedimentos dos mesmos, por Conselheiro especialmente indicado pelo Presidente do Conselho de Administração.



## CAPÍTULO IV - DA ADMINISTRAÇÃO

**Art. 10** - A administração da sociedade competirá ao Conselho de Administração e à Diretoria Executiva.

- §1º - Os membros do Conselho de Administração e da Diretoria Executiva serão investidos nos seus cargos mediante assinatura de termo de posse no Livro de Atas do Conselho de Administração ou da Diretoria Executiva, conforme o caso.
- §2º - O prazo de gestão dos membros do Conselho de Administração e da Diretoria Executiva se estenderá até a investidura dos respectivos sucessores.
- §3º - A remuneração global e anual dos administradores será fixada pela assembléia geral, nesta incluídos os benefícios de qualquer natureza e verbas de representação, tendo em conta suas responsabilidades, o tempo dedicado às suas funções, sua competência e reputação profissional e o valor dos seus serviços no mercado. O Conselho de Administração distribuirá a remuneração fixada pela assembléia geral entre os seus membros e os membros da Diretoria Executiva.
- §4º - O Conselho de Administração será assessorado por órgãos técnicos e consultivos, denominados Comitês, regulados conforme **Seção II — Dos Comitês** adiante.

### SEÇÃO I - DO CONSELHO DE ADMINISTRAÇÃO

#### Subseção I - Da Composição

**Art. 11** - O Conselho de Administração, órgão de deliberação colegiada, será eleito pela assembléia geral e composto por 11 (onze) membros titulares e respectivos suplentes, acionistas da sociedade, sendo um deles o Presidente do Conselho e outro o Vice-Presidente.

- §1º - O prazo de gestão dos membros do Conselho de Administração é de 2 (dois) anos, permitida a reeleição.
- §2º - Nos termos do Artigo 141 da Lei 6.404/76, terão direito de eleger e destituir 01 (um) membro e seu suplente do Conselho de Administração, em

votação em separado na assembléia geral, excluído o acionista controlador, a maioria dos titulares, respectivamente:

- I -** de ações ordinárias, que representem, pelo menos, 15% (quinze por cento) do total das ações com direito a voto; e
  - II -** de ações preferenciais, que representem, pelo menos, 10% (dez por cento) do capital social.
- §3º -** Verificando-se que nem os titulares de ações ordinárias e nem os titulares de ações preferenciais perfizeram, respectivamente, o quorum exigido nos **incisos I e II** do **§2º** acima, ser-lhes-á facultado agregar suas ações para elegerem em conjunto um membro e seu suplente para o Conselho de Administração, observando-se, nessa hipótese, o quorum exigido pelo **inciso II** do **§2º** deste Artigo.
- §4º -** Somente poderão exercer o direito previsto no **§2º** deste Artigo, os acionistas que comprovarem a titularidade ininterrupta da participação acionária ali exigida durante o período de 3 (três) meses, no mínimo, imediatamente anterior à realização da assembléia geral que eleger membros do Conselho de Administração.
- §5º -** Dentre os 11 (onze) membros titulares e respectivos suplentes do Conselho de Administração, 01 (um) membro e seu suplente, serão eleitos e/ou destituídos, em votação em separado, pelo conjunto de empregados da sociedade.
- §6º -** O Presidente e o Vice-Presidente do Conselho de Administração serão eleitos dentre os Conselheiros, na primeira reunião do Conselho de Administração realizada após a assembléia geral que os eleger.
- §7º -** Em caso de impedimento ou ausência temporária, o Presidente será substituído pelo Vice-Presidente, o qual, no período de substituição, terá atribuições idênticas às do Presidente, cabendo, entretanto, ao membro suplente do Presidente, o exercício do direito de voto na condição de Conselheiro.
- §8º -** Ocorrendo vacância do cargo de Presidente ou de Vice-Presidente, o Conselho de Administração elegerá seus substitutos na primeira reunião a ser realizada após a vacância.
- §9º -** Em seus impedimentos ou ausências temporárias, os Conselheiros serão substituídos pelos respectivos suplentes.
- §10 -** No caso de vacância do cargo de Conselheiro ou de seu suplente, o substituto poderá ser nomeado pelos membros remanescentes, e servirá até a primeira assembléia geral, que deliberará sobre a sua eleição. Se

ocorrer vacância da maioria dos cargos, será convocada assembléia geral para proceder nova eleição para os cargos vagos.

- §11 -** Sempre que a eleição para o Conselho de Administração se der pelo regime de voto múltiplo previsto no Artigo 141 da Lei nº 6.404/1976, a Presidência da assembléia geral deverá informar aos acionistas presentes que as ações que elegerem um membro do Conselho de Administração, utilizando o direito de votação em separado, de que tratam os §§2º e 3º deste **Art. 11**, não poderão participar do regime de voto múltiplo e, evidentemente, não participarão do cálculo do respectivo quorum. Após a realização da votação em separado é que apurar-se-á, definitivamente, o coeficiente para fins do procedimento de voto múltiplo.
- §12-** Com exceção dos membros efetivos e respectivos suplentes, eleitos em votação em separado, respectivamente, pelo conjunto de empregados da sociedade e pelos titulares de ações preferenciais, conforme **inciso II, §2º** deste **Art. 11**, sempre que a eleição para o Conselho de Administração for realizada pelo regime de voto múltiplo, a destituição de qualquer membro do Conselho de Administração, titular ou suplente, pela assembléia geral, implicará na destituição dos demais membros do Conselho de Administração, procedendo-se, conseqüentemente, à nova eleição; nos demais casos de vaga, não havendo suplente, a primeira assembléia geral procederá à nova eleição de todo o Conselho.
- §13-** Sempre que, cumulativamente, a eleição do Conselho de Administração se der pelo sistema do voto múltiplo e os titulares de ações ordinárias ou preferenciais ou conjunto de empregados exercerem a prerrogativa prevista nos §§ 2º, 3º e 5º acima, será assegurado a acionista ou grupo de acionistas vinculados por acordo de votos que detenham mais do que 50% (cinquenta por cento) das ações com direito de voto, o direito de eleger conselheiros em número igual ao dos eleitos pelos demais acionistas, mais um, independentemente do número de conselheiros previsto no “**caput**” deste **Art. 11**.
- §14 -** O Conselho de Administração terá um Secretário, designado pelo Presidente do Conselho de Administração, que será, necessariamente, um empregado ou administrador da sociedade, em cuja ausência ou impedimento será substituído por outro empregado ou administrador que o Presidente do Conselho de Administração designar.

#### **Subseção II - Do Funcionamento**

**Art. 12 -** O Conselho de Administração reunir-se-á, ordinariamente, uma vez por mês e, extraordinariamente, sempre que convocado pelo Presidente ou, na sua ausência, pelo Vice-Presidente deste órgão ou ainda por quaisquer 02 (dois) Conselheiros em conjunto.

**Parágrafo Único** - As reuniões do Conselho de Administração serão realizadas na sede da sociedade, podendo, excepcionalmente, ser realizadas em local diverso.

**Art. 13** - As reuniões do Conselho de Administração somente se instalarão com a presença da maioria de seus membros e estes somente deliberarão mediante o voto favorável da maioria dos membros presentes.

- §1º** - Das reuniões do Conselho de Administração serão lavradas atas no Livro de Atas de Reunião do Conselho de Administração que, após lidas e aprovadas pelos conselheiros presentes às reuniões, serão assinadas em número suficiente por quantos bastem para constituir a maioria necessária à aprovação das matérias examinadas.
- §2º** - O Secretário será o responsável pela lavratura, distribuição, arquivamento e guarda das respectivas atas de reunião do Conselho de Administração, bem como pela emissão de extratos das atas e certificados das deliberações do Conselho de Administração.

### **Subseção III - Das Atribuições**

**Art. 14** - Compete ao Conselho de Administração:

- I.** eleger, avaliar e destituir, a qualquer tempo, os Diretores Executivos da sociedade, e fixar-lhes as suas atribuições;
- II.** distribuir a remuneração fixada pela assembléia geral entre os seus membros e os da Diretoria Executiva;
- III.** atribuir a um Diretor Executivo a função de Relações com os Investidores;
- IV.** deliberar sobre as políticas de seleção, avaliação, desenvolvimento e remuneração dos membros da Diretoria Executiva;
- V.** deliberar sobre as políticas gerais de recursos humanos da sociedade propostas pela Diretoria Executiva;
- VI.** fixar a orientação geral dos negócios da sociedade, suas subsidiárias integrais e sociedades controladas;
- VII.** deliberar sobre as diretrizes estratégicas e o plano estratégico da sociedade propostos, anualmente, pela Diretoria Executiva;

- VIII. deliberar sobre os orçamentos anual e plurianual da sociedade, propostos pela Diretoria Executiva;
- IX. acompanhar e avaliar o desempenho econômico-financeiro da sociedade, podendo solicitar à Diretoria Executiva, relatórios com indicadores de desempenho específicos;
- X. deliberar sobre oportunidades de investimento e/ou desinvestimento propostas pela Diretoria Executiva que ultrapassem os limites de alçada da Diretoria Executiva definidos pelo Conselho de Administração;
- XI. manifestar-se sobre operações de fusão, cisão, incorporação em que a sociedade seja parte, bem como sobre aquisições de participações acionárias propostas pela Diretoria Executiva;
- XII. observado o disposto no **Art. 2º** deste Estatuto Social, deliberar sobre a constituição de sociedades ou a sua transformação em outro tipo de sociedade, a participação ou retirada, direta ou indireta, no capital de outras sociedades, consórcios, fundações e outras entidades, através do exercício do direito de retirada, do exercício ou renúncia de direitos de preferência na subscrição e na aquisição, direta ou indiretamente, de participações societárias, ou de qualquer outra forma de participação ou retirada admitida em lei, nela incluídas, mas não limitadas às operações de fusão, cisão e incorporação nas sociedades em que participe;
- XIII. deliberar sobre as políticas de riscos corporativos e financeiras da sociedade propostas pela Diretoria Executiva;
- XIV. deliberar sobre a emissão de debêntures simples, não conversíveis em ações e sem garantia real proposta pela Diretoria Executiva;
- XV. deliberar sobre as contas da Diretoria Executiva, consubstanciadas no Relatório Anual de Administração, bem como sobre as Demonstrações Financeiras, para posterior encaminhamento à apreciação da assembléia geral ordinária de acionistas;
- XVI. deliberar sobre a destinação do lucro do exercício, a distribuição de dividendos e, quando necessário, o orçamento de capital, propostos pela Diretoria Executiva, para posterior encaminhamento à apreciação da assembléia geral ordinária de acionistas;
- XVII. escolher e destituir os auditores externos da sociedade, por recomendação do Conselho Fiscal, em conformidade com o inciso (ii) do §1º do Artigo 39;

- XVIII.** nomear e destituir o responsável pela auditoria interna e pela ouvidoria da sociedade, os quais se subordinarão diretamente ao Conselho de Administração;
- XIX.** deliberar sobre as políticas e o plano anual de auditoria interna da sociedade, propostos por seu responsável, bem como tomar conhecimento dos seus relatórios e determinar a adoção de medidas necessárias;
- XX.** fiscalizar a gestão dos Diretores Executivos e examinar a qualquer tempo, os livros e papéis da sociedade, solicitando informações sobre contratos celebrados ou em via de celebração, e sobre quaisquer outros atos, de forma a garantir a integridade financeira da sociedade;
- XXI.** deliberar sobre as alterações nas regras de governança corporativa, que incluem mas não se limitam ao processo de prestação de contas e ao processo de divulgação de informações;
- XXII.** deliberar sobre políticas de condutas funcionais pautadas em padrões éticos e morais consubstanciados no código de ética da sociedade, a ser respeitado por todos os administradores e empregados da sociedade, suas subsidiárias e controladas;
- XXIII.** deliberar sobre políticas para evitar conflitos de interesses entre a sociedade e seus acionistas ou seus administradores, bem como sobre a adoção de providências julgadas necessárias na eventualidade de surgirem conflitos dessa natureza;
- XXIV.** deliberar sobre as políticas de responsabilidade institucional da sociedade em especial aquelas referentes a: meio-ambiente, saúde e segurança do trabalho, e responsabilidade social da sociedade propostas pela Diretoria Executiva;
- XXV.** estabelecer alçadas da Diretoria Executiva para aquisição, alienação e oneração de bens do ativo permanente e para a constituição de ônus reais, observado o disposto no **Art. 7º** deste Estatuto Social;
- XXVI.** deliberar sobre prestação de garantias em geral, e estabelecer alçadas da Diretoria Executiva para a contratação de empréstimos e financiamentos e para a celebração de demais contratos;
- XXVII.** estabelecer alçadas da Diretoria Executiva para a celebração de compromissos, renúncia de direitos e transações de qualquer natureza, exceto quanto à renúncia aos direitos de preferência na subscrição e na aquisição de participação societária, nos termos do **inciso XII** deste **Art. 14**;

- XXVIII.** deliberar sobre quaisquer matérias que não são de competência da Diretoria Executiva, nos termos do presente Estatuto Social, bem como matérias cujos limites ultrapassem a alçada estabelecida para a Diretoria Executiva, conforme previsto neste **Art. 14**;
- XXIX.** deliberar sobre quaisquer reformulações, alterações, ou aditamentos de acordos de acionistas, ou de contratos de consórcios, ou entre acionistas ou entre consorciados de sociedades ou consórcios dos quais a sociedade participe e, ainda, a celebração de novos acordos e/ou contratos de consórcios que contemplem matérias desta natureza;
- XXX.** autorizar a negociação, celebração ou alteração de contrato de qualquer espécie ou valor entre a sociedade e (i) seus acionistas, diretamente ou através de sociedades interpostas, (ii) sociedades que participem, direta, ou indiretamente, do capital do acionista controlador ou sejam controladas, ou estejam sob controle comum, por entidades que participem do capital do acionista controlador, e/ou (iii) sociedades nas quais o acionista controlador da sociedade participe, podendo o Conselho de Administração estabelecer delegações, com alçadas e procedimentos, que atendam as peculiaridades e a natureza das operações, sem prejuízo de manter-se o referido colegiado devidamente informado sobre todas as transações da sociedade com partes relacionadas;
- XXXI.** manifestar-se sobre qualquer assunto a ser submetido à assembléia geral de acionistas;
- XXXII.** autorizar a aquisição de ações de sua emissão para manutenção em tesouraria, cancelamento ou posterior alienação;
- XXXIII.** deliberar sobre recomendações encaminhadas pelo Conselho Fiscal da sociedade decorrentes de suas atribuições legais e estatutárias.

**§1º** - Caberá ao Conselho de Administração deliberar sobre a indicação, proposta pela Diretoria Executiva, das pessoas que devam integrar órgãos da administração, consultivo e fiscal das sociedades e entidades em que a sociedade tenha participação, inclusive indireta.

**§2º**- O Conselho de Administração pode, nos casos em que julgar conveniente, delegar a atribuição mencionada no parágrafo anterior à Diretoria Executiva.

## SEÇÃO II - DOS COMITÊS

**Art. 15** - O Conselho de Administração, para seu assessoramento, contará, em caráter permanente, com 05 (cinco) comitês técnicos e consultivos, a seguir denominados: Comitê de Desenvolvimento Executivo, Comitê Estratégico, Comitê Financeiro, Comitê de Controladoria e Comitê de Governança e Sustentabilidade.

- §1º - O Conselho de Administração, sempre que julgar necessário, poderá criar, ainda, para o seu assessoramento, outros comitês que preencham funções consultivas ou técnicas, que não aquelas previstas para os comitês de caráter permanente de que trata o “*caput*” deste Artigo.
- §2º - Os membros dos comitês serão remunerados conforme estabelecido pelo Conselho de Administração, sendo que aqueles que forem administradores da sociedade, não farão jus a percepção de remuneração adicional por participação nos comitês.

### Subseção I - Da Missão

**Art. 16** - A missão dos comitês é assessorar o Conselho de Administração, inclusive no acompanhamento das atividades da sociedade, a fim de conferir maior eficiência e qualidade às suas decisões.

### Subseção II - Da Composição

**Art. 17** - Os membros dos comitês deverão ter notória experiência e capacidade técnica em relação às matérias objeto de responsabilidade do comitê em que participam e estarão sujeitos aos mesmos deveres e responsabilidades legais dos administradores.

**Art. 18** - A composição de cada comitê será definida pelo Conselho de Administração.

- §1º - Os membros dos comitês serão nomeados pelo Conselho de Administração e poderão ou não pertencer aos órgãos de administração da sociedade.
- §2º - O início do prazo de gestão dos membros dos comitês se dará a partir da sua nomeação pelo Conselho de Administração, e o término coincidirá sempre com o término do prazo de gestão dos membros do Conselho de Administração, permitida a recondução.
- §3º - Durante sua gestão, os membros dos comitês poderão ser destituídos do seu mandato pelo Conselho de Administração.



### **Subseção III - Do Funcionamento**

**Art. 19** - As normas relativas ao funcionamento de cada comitê serão definidas pelo Conselho de Administração.

- §1º - Os comitês instituídos no âmbito da sociedade não terão funções executivas ou caráter deliberativo e seus pareceres e propostas serão encaminhados ao Conselho de Administração para deliberação.
- §2º - Os pareceres dos comitês não constituem condição necessária para a apresentação de matérias ao exame e deliberação do Conselho de Administração.

### **Subseção IV - Das Atribuições**

**Art. 20** - As principais atribuições dos comitês estão previstas no **Art. 21** e subsequentes, enquanto as atribuições detalhadas serão definidas pelo Conselho de Administração.

**Art. 21** - Compete ao Comitê de Desenvolvimento Executivo:

- I** - emitir parecer sobre as políticas gerais de recursos humanos da sociedade propostas pela Diretoria Executiva ao Conselho de Administração;
- II** - analisar e emitir parecer ao Conselho de Administração sobre a adequação da remuneração dos membros da Diretoria Executiva;
- III** - propor e manter atualizada a metodologia de avaliação de desempenho dos membros da Diretoria Executiva; e
- IV** - emitir parecer sobre as políticas de saúde e segurança da sociedade, apresentadas pela Diretoria Executiva.

**Art. 22** - Compete ao Comitê Estratégico:

- I** - emitir parecer sobre as diretrizes estratégicas e o plano estratégico da sociedade propostos, anualmente, pela Diretoria Executiva;
- II** - emitir parecer sobre os orçamentos de investimentos anual e plurianual da sociedade propostos pela Diretoria Executiva ao Conselho de Administração;

- III - emitir parecer sobre as oportunidades de investimento e/ou desinvestimento propostas pela Diretoria Executiva ao Conselho de Administração;
- IV - emitir parecer sobre as operações de fusão, cisão e incorporação em que a sociedade e suas controladas sejam parte, bem como sobre aquisições de participações acionárias propostas pela Diretoria Executiva ao Conselho de Administração.

**Art. 23** - Compete ao Comitê Financeiro:

- I - emitir parecer sobre as políticas de riscos corporativos e financeiras e sistemas internos de controle financeiro da sociedade;
- II - emitir parecer sobre a compatibilidade entre o nível de remuneração dos acionistas e os parâmetros estabelecidos no orçamento e na programação financeira anuais, bem como sua consistência com a política geral de dividendos e a estrutura de capital da sociedade.

**Art. 24** - Compete ao Comitê de Controladoria:

- I - propor indicação ao Conselho de Administração do responsável pela auditoria interna da sociedade;
- II - emitir parecer sobre as políticas e o plano anual de auditoria da sociedade apresentados pelo responsável pela auditoria interna, bem como sobre a sua execução;
- III - acompanhar os resultados da auditoria interna da sociedade, e identificar, priorizar, e propor ao Conselho de Administração ações a serem acompanhadas junto à Diretoria Executiva;
- IV - analisar o Relatório Anual de Administração, bem como as Demonstrações Financeiras da sociedade e fazer recomendação ao Conselho de Administração.

**Art. 25** - Compete ao Comitê de Governança e Sustentabilidade:

- I - avaliar a eficácia das práticas de governança da companhia e de funcionamento do Conselho de Administração, e propor melhorias;
- II - propor melhorias no código de ética e no sistema de gestão para evitar a ocorrência de conflitos de interesse entre a sociedade e seus acionistas ou administradores da sociedade;

- III - emitir parecer sobre potenciais conflitos de interesse entre a sociedade e seus acionistas ou administradores; e
- IV - emitir parecer sobre as políticas de responsabilidade institucional da sociedade, tais como meio-ambiente e responsabilidade social da sociedade, apresentadas pela Diretoria Executiva.

### **SEÇÃO III - DA DIRETORIA EXECUTIVA**

#### **Subseção I — Da Composição**

**Art. 26** - A Diretoria Executiva, órgão de administração executiva da sociedade, será composta de 06 (seis) a 11 (onze) membros, sendo um deles o Diretor-Presidente, e os demais, Diretores Executivos.

- §1º - O Diretor-Presidente submeterá ao Conselho de Administração os nomes dos candidatos à Diretoria Executiva com notório conhecimento e especialização sobre a matéria de responsabilidade de sua área de atuação, podendo, inclusive, propor ao Conselho de Administração sua destituição a qualquer tempo.
- §2º - Os Diretores Executivos terão suas atribuições individuais definidas pelo Conselho de Administração.
- §3º - O prazo de gestão dos membros da Diretoria Executiva é de 2 (dois) anos, permitida a reeleição.

#### **Subseção II — Do Funcionamento**

**Art. 27** - O Diretor-Presidente e os demais membros da Diretoria Executiva responderão por suas respectivas atribuições mesmo que afastados da sede por motivo de viagem no exercício de suas funções. Nos casos de vacância, de impedimento temporário ou quaisquer outras formas de ausência por razões particulares, as substituições do Diretor-Presidente e dos demais Diretores Executivos observarão os seguintes procedimentos.

- §1º - Em caso de impedimento temporário do Diretor-Presidente, este será substituído pelo Diretor Executivo responsável pela área de Finanças, que acumulará as atribuições e responsabilidades legais, estatutárias e regulamentares do Diretor-Presidente, substituição esta sujeita a ratificação pelo Conselho de Administração. No caso de sua ausência, o Diretor-Presidente designará o seu próprio substituto, o qual assumirá todas as suas atribuições e responsabilidades legais, estatutárias e regulamentares.

- §2º - Em caso de impedimento temporário ou ausência de qualquer outro Diretor Executivo, este será substituído, mediante indicação do Diretor-Presidente, por qualquer um dos demais Diretores Executivos, que acumulará as atribuições e responsabilidades legais, estatutárias e regulamentares do Diretor Executivo impedido, enquanto no exercício do cargo do Diretor Executivo substituído, excluído o direito de voto nas reuniões da Diretoria Executiva.
- § 3º - Em caso de vacância no cargo de Diretor Executivo, o membro substituto será selecionado e o seu nome será submetido pelo Diretor-Presidente ao Conselho de Administração que o elegerá para completar o prazo de gestão remanescente do substituído.
- § 4º - Em caso de vacância no cargo de Diretor-Presidente, o Diretor Executivo responsável pela área de Finanças substituirá o Diretor-Presidente, acumulando as suas atribuições, direitos e responsabilidades com as do Diretor-Presidente até que o Conselho de Administração realize nova eleição para o cargo de Diretor-Presidente.

**Art. 28** - Respeitados os limites de alçada estabelecidos para cada Diretor Executivo, as decisões sobre as matérias afetas a área específica de sua atuação, desde que a matéria não afete a área de atuação de outro Diretor Executivo, serão tomadas por ele próprio ou em conjunto com o Diretor-Presidente, em matérias ou situações preestabelecidas por este último.

**Art. 29** - A Diretoria Executiva reunir-se-á, ordinariamente, pelo menos uma vez a cada quinzena, e extraordinariamente, sempre que convocada pelo Diretor-Presidente ou seu substituto, sendo facultada a participação de seus membros por tele-conferência, por vídeo-conferência ou por outro meio de comunicação.

**Parágrafo Único** - O Diretor-Presidente deverá convocar reunião extraordinária da Diretoria Executiva em virtude de solicitação de pelo menos 3 (três) membros da Diretoria Executiva;

**Art. 30** - As reuniões da Diretoria Executiva somente se instalarão com a presença da maioria dos seus membros.

**Art. 31** - O Diretor-Presidente conduzirá as reuniões da Diretoria Executiva de modo a priorizar as deliberações consensuais dentre os seus membros.

- §1º - Não obtido o consenso dentre os membros da Diretoria, o Diretor-Presidente poderá (i) retirar a matéria da pauta, (ii) articular a formação da maioria, inclusive fazendo uso do voto de qualidade ou, (iii) no

interesse da sociedade e mediante exposição fundamentada, decidir individualmente sobre matérias de deliberação colegiada, inclusive aquelas relacionadas no **Art. 32**, e não excetuadas no **§2º** a seguir.

- §2º -** As decisões relativas aos orçamentos anual e plurianual e ao plano estratégico e ao Relatório Anual de Administração da sociedade serão tomadas pela maioria dos votos, quando considerados todos os Diretores Executivos, desde que dentre os quais conste o voto favorável do Diretor-Presidente.
- §3º -** O Diretor-Presidente deverá dar ciência ao Conselho de Administração da utilização da prerrogativa de que trata o item (iii) do §1º acima, na primeira reunião do Conselho de Administração que suceder à decisão correspondente.

### **Subseção III — Das Atribuições**

**Art. 32 -** Compete à Diretoria Executiva:

- I -** deliberar sobre a criação e a eliminação das Diretorias de Departamento subordinadas a cada Diretor Executivo;
- II -** elaborar e propor ao Conselho de Administração as políticas gerais de recursos humanos da sociedade, e executar as políticas aprovadas;
- III -** cumprir e fazer cumprir a orientação geral dos negócios da sociedade estabelecida pelo Conselho de Administração;
- IV -** elaborar e propor, anualmente, ao Conselho de Administração as diretrizes estratégicas e o plano estratégico da sociedade, e executar o plano estratégico aprovado;
- V -** elaborar e propor ao Conselho de Administração os orçamentos anual e plurianual da sociedade, e executar os orçamentos aprovados;
- VI -** planejar e conduzir as operações da sociedade e reportar ao Conselho de Administração o desempenho econômico-financeiro da sociedade, produzindo inclusive relatórios com indicadores de desempenho específicos;
- VII -** identificar, avaliar e propor ao Conselho de Administração oportunidades de investimento e/ou desinvestimento que ultrapassem os limites de alçada da Diretoria Executiva estabelecidos pelo Conselho de Administração, e executar os investimentos e/ou desinvestimentos aprovados;

- VIII -** identificar, avaliar e propor ao Conselho de Administração operações de fusão, cisão e incorporação em que a sociedade seja parte, bem como aquisições de participações acionárias, e conduzir as fusões, cisões, incorporações e aquisições aprovadas;
- IX -** elaborar e propor ao Conselho de Administração as políticas financeiras da sociedade, e executar as políticas aprovadas;
- X -** propor ao Conselho de Administração a emissão de debêntures simples, não conversíveis em ações e sem garantia real;
- XI -** definir e propor ao Conselho de Administração, após o levantamento do balanço, a destinação do lucro do exercício, a distribuição dos dividendos da sociedade e, quando necessário, o orçamento de capital;
- XII -** elaborar, em cada exercício, o Relatório Anual de Administração e as Demonstrações Financeiras a serem submetidas ao Conselho de Administração e, posteriormente, à assembléia geral;
- XIII -** aderir e promover a adesão dos empregados ao código de ética da sociedade, estabelecido pelo Conselho de Administração;
- XIV -** elaborar e propor ao Conselho de Administração as políticas de responsabilidade institucional da sociedade, tais como meio-ambiente, saúde, segurança e responsabilidade social da sociedade e implementar as políticas aprovadas;
- XV -** autorizar a aquisição, alienação e oneração de bens móveis ou imóveis, inclusive valores mobiliários, contratação de serviços, sendo a sociedade prestadora ou tomadora dos mesmos, podendo estabelecer normas e delegar poderes, tudo conforme as alçadas da Diretoria Executiva estabelecidas pelo Conselho de Administração;
- XVI -** autorizar a celebração de acordos, contratos e convênios que constituam ônus, obrigações ou compromissos para a sociedade, podendo estabelecer normas e delegar poderes, tudo conforme as alçadas da Diretoria Executiva estabelecidas pelo Conselho de Administração;
- XVII -** propor ao Conselho de Administração quaisquer reformulações, alterações, ou aditamentos de acordos de acionistas ou entre acionistas, ou de contratos de consórcio ou entre consorciados, de sociedades ou consórcios dos quais a sociedade participe e, ainda, propor a celebração de novos acordos e contratos de consórcio que contemplem matérias desta natureza;

- XVIII -** autorizar a criação e o encerramento de filiais, sucursais, agências, depósitos, armazéns, escritório de representação ou qualquer outro tipo de estabelecimento no País e no exterior;
- XIX -** autorizar a celebração de compromissos, renúncia de direitos e transações de qualquer natureza, exceto quanto à renúncia aos direitos de preferência na subscrição e na aquisição, nos termos do **inciso XII** do **Art. 14**, podendo estabelecer normas e delegar poderes, tudo conforme as alçadas da Diretoria Executiva estabelecidas pelo Conselho de Administração;
- XX -** estabelecer e informar ao Conselho de Administração os limites de alçada individual de Diretores Executivos, respeitados os limites de alçadas da Diretoria Executiva colegiada estabelecidos pelo Conselho de Administração;
- XXI -** estabelecer, a partir dos limites de alçada fixados pelo Conselho de Administração para a Diretoria Executiva, os limites de alçada ao longo da linha hierárquica da organização administrativa da sociedade.
- §1º -** Caberá à Diretoria Executiva a fixação da orientação de voto a ser seguida por seus representantes, em assembléias gerais ou equivalentes nas sociedades, fundações e outras entidades de que participa a sociedade, direta ou indiretamente, respeitadas as oportunidades de investimento da sociedade e orientações aprovadas pelo Conselho de Administração, bem como o respectivo orçamento, e observado sempre o limite de sua alçada com respeito, dentre outros, ao endividamento, à alienação ou oneração de ativos, à renúncia de direitos e ao aumento ou redução de participação societária.
- § 2º -** Caberá à Diretoria Executiva indicar para deliberação do Conselho de Administração as pessoas que devam integrar órgãos da administração, consultivo e fiscal das sociedades e entidades em que a sociedade tenha participação, inclusive indireta.

**Art. 33 -** São atribuições do Diretor-Presidente:

- I -** presidir as reuniões da Diretoria Executiva;
- II -** exercer a direção executiva da sociedade, cumprindo-lhe, para tanto, a coordenação e a supervisão das atividades dos demais Diretores Executivos, diligenciando para que sejam fielmente observadas as deliberações e as diretrizes fixadas pelo Conselho de Administração e pela assembléia geral;

- III - coordenar e supervisionar as atividades das áreas e unidades de negócio que lhe estiverem diretamente subordinadas;
- IV - selecionar e submeter ao Conselho de Administração os nomes dos candidatos a cargos de Diretor Executivo, a serem eleitos pelo Conselho de Administração, bem como propor a respectiva destituição;
- V - coordenar o processo de tomada de decisão da Diretoria Executiva, conforme disposto no **Art. 31** da **Subseção II — Do Funcionamento**;
- VI - indicar, dentre os membros da Diretoria Executiva, os substitutos dos Diretores Executivos nos casos de impedimento temporário ou ausência destes, nos termos do **Art. 27** da **Subseção II — Do Funcionamento**;
- VII - manter o Conselho de Administração informado das atividades da sociedade; e
- VIII - elaborar, junto com os demais Diretores Executivos, o Relatório Anual de Administração e levantar as demonstrações financeiras;

**Art. 34** - São atribuições dos Diretores Executivos:

- I - executar as atribuições relativas à sua área de atuação;
- II - participar das reuniões da Diretoria Executiva, concorrendo para a definição das políticas a serem seguidas pela sociedade e relatando os assuntos da sua respectiva área de atuação;
- III - cumprir e fazer cumprir a orientação geral dos negócios da sociedade estabelecida pelo Conselho de Administração na gestão de sua área específica de atuação;
- IV - contratar os serviços previstos no §2º do Artigo 39, em atendimento às determinações do Conselho Fiscal.

**Art. 35** - A representação da sociedade, ativa e passivamente, em juízo ou fora dele, inclusive na assinatura de documentos que importem em responsabilidade para esta, deverá ser realizada sempre por 2 (dois) Diretores Executivos em conjunto, ou por 2 (dois) procuradores constituídos na forma do § 1º deste Artigo, ou por 01 (um) procurador em conjunto com um Diretor Executivo.

§ 1º - Salvo quando da essência do ato for obrigatória a forma pública, os mandatários serão constituídos por procuração sob a forma de instrumento particular, no qual serão especificados os poderes



outorgados, limitado o prazo de validade das procurações “*ad negotia*” ao dia 31 de dezembro do ano em que for outorgada a procuração.

- § 2º - Pode, ainda, a sociedade ser representada por um único procurador nas assembléias gerais de acionistas, ou equivalentes, de sociedades, consórcios e outras entidades das quais participe a sociedade, ou em atos decorrentes do exercício de poderes constantes de procuração “*ad judicia*” ou: (a) perante órgãos de qualquer esfera de governo, alfândega e concessionárias de serviço público para atos específicos nos quais não seja necessária ou até permitida a presença do segundo procurador; (b) na assinatura de instrumentos contratuais em solenidade e/ou circunstâncias nas quais não seja possível a presença do segundo procurador; e (c) na assinatura de documentos de qualquer espécie que importem em obrigação para a sociedade cujos limites de valores sejam estabelecidos pela Diretoria Executiva.
- § 3º - No caso de obrigações a serem assumidas no exterior, a sociedade poderá ser representada por apenas um membro da Diretoria Executiva, ou por um único procurador com poderes específicos e limitados, nos termos deste Estatuto Social.
- § 4º - As citações e notificações judiciais ou extra-judiciais serão feitas na pessoa do Diretor Executivo responsável pelas funções de Relações com Investidores, ou por procurador constituído na forma do § 1º deste Artigo.

## **CAPÍTULO V - DO CONSELHO FISCAL**

**Art. 36** - O Conselho Fiscal, órgão de funcionamento permanente, será composto de 03 (três) a 05 (cinco) membros efetivos e igual número de suplentes, eleitos pela Assembléia Geral, que fixará a sua remuneração.

**Art. 37** - Os membros do Conselho Fiscal exercerão suas funções até a primeira Assembléia Geral Ordinária que se realizar após a sua eleição, podendo ser reeleitos.

**Art. 38** - Em suas ausências, impedimentos ou nos casos de vacância, os membros do Conselho Fiscal serão substituídos pelos respectivos suplentes.

**Art. 39** - Ao Conselho Fiscal compete exercer as atribuições previstas na legislação aplicável em vigor, neste estatuto social, e regulamentadas em Regimento Interno próprio a ser aprovado por seus membros.

- § 1º - O Regimento Interno do Conselho Fiscal deverá regulamentar, além das atribuições já estabelecidas na Lei 6.404/76, necessariamente, as seguintes:
- (i) estabelecer procedimentos a serem utilizados pela sociedade para receber, processar e tratar denúncias e reclamações relacionadas a questões contábeis, de controles contábeis e matérias de auditoria, bem como assegurar que os mecanismos de recebimento de denúncias garantam sigilo e anonimato aos denunciantes;
  - (ii) recomendar e auxiliar o Conselho de Administração na escolha, remuneração e destituição dos auditores externos da sociedade;
  - (iii) deliberar sobre a contratação de novos serviços passíveis de serem prestados pelos auditores externos da sociedade;
  - (iv) supervisionar e avaliar os trabalhos dos auditores externos, e determinar à administração da sociedade a eventual retenção da remuneração do auditor externo, bem como mediar eventuais divergências entre a administração e os auditores externos sobre as demonstrações financeiras da sociedade.
- § 2º - Para o adequado desempenho de suas funções, o Conselho Fiscal poderá determinar a contratação de serviços de advogados, consultores e analistas, e outros recursos que sejam necessários ao desempenho de suas funções, observado o orçamento, proposto pelo Conselho Fiscal e aprovado pelo Conselho de Administração, sem prejuízo do estabelecido no § 8º do Artigo 163 da Lei 6.404/76.
- §3º - Os membros do Conselho Fiscal deverão disponibilizar, com antecedência mínima de 30 (trinta) dias à realização da Assembléia Geral Ordinária, manifestação sobre o relatório da administração e as demonstrações financeiras.

#### **CAPÍTULO VI - DO PESSOAL DA SOCIEDADE**

**Art. 40** - A sociedade manterá um plano de seguridade social para os empregados, gerido por fundação instituída para este fim, observado o disposto na legislação específica.

## CAPÍTULO VII - DO EXERCÍCIO SOCIAL E DA DISTRIBUIÇÃO DOS LUCROS

**Art. 41** - O exercício social coincidirá com o ano civil, terminando, portanto, em 31 de dezembro de cada ano, quando serão elaboradas as demonstrações financeiras.

**Art. 42** - Depois de constituída a reserva legal, a destinação da parcela remanescente do lucro líquido apurado ao fim de cada exercício social (que coincidirá com o ano civil) será, por proposta da Administração, submetida à deliberação da Assembléia Geral.

**Parágrafo Único** - O valor dos juros, pago ou creditado, a título de juros sobre o capital próprio nos termos do Artigo 9º, § 7º da lei nº 9249, de 26/12/95 e legislação e regulamentação pertinentes, poderá ser imputado ao dividendo obrigatório e ao dividendo anual mínimo para as ações preferenciais, integrando tal valor o montante dos dividendos distribuídos pela sociedade para todos os efeitos legais.

**Art. 43** - Deverá ser considerada na proposta para distribuição de lucros, a constituição das seguintes reservas:

- I. Reserva de Exaustão, a ser constituída na forma da legislação fiscal;
- II. Reserva de Investimentos, com a finalidade de assegurar a manutenção e o desenvolvimento das atividades principais que compõem o objeto social da sociedade, em montante não superior a 50% (cinquenta por cento) do lucro líquido distribuível até o limíte máximo do capital social da sociedade.

**Art. 44** - Pelo menos 25% (vinte e cinco por cento) dos lucros líquidos anuais, ajustados na forma da lei, serão destinados ao pagamento de dividendos.

**Art. 45** - O Conselho de Administração, por proposta da Diretoria Executiva, poderá determinar o levantamento de balanços em períodos inferiores ao período anual e declarar dividendos ou juros sobre capital próprio à conta do lucro apurado nesses balanços, bem como declará-los à conta de lucros acumulados ou de reservas de lucros existentes no último balanço anual ou intermediário.

**Art. 46** - Os dividendos e os juros sobre capital próprio de que trata o Parágrafo único do Art. 42 serão pagos nas épocas e locais indicados pela Diretoria Executiva, revertendo a favor da sociedade os que não forem reclamados dentro de 3 (três) anos após a data do início do pagamento.

## List of Subsidiaries

Subsidiary	Jurisdiction of Organization	Commonly Referred to As
3254054 Canada Limited	Canada	
Aços Laminados do Pará S.A.	Brazil	ALPA
Aegis Indemnity Ltd.	Bermudas	AEGIS
Ananke Alumina S.A.	Brazil	
Associação Vale para Desenvolvimento Sustentável	Brazil	FUNDO VALE
Atlas Alumino S.A.	Brazil	
Belcoal Pty Ltd.	Australia	
Belvedere Australia (BP) Pty. Ltd.	Australia	
Belvedere Coal Management Pty. Ltd. (ACN 112 868 461)	Australia	BELVEDERE
Belvedere JV (Unincorporated)	Australia	
Bowen Central Coal JV (Unincorporated)	Australia	
Bowen Central Coal Management Pty. Ltd.(170) - (ACN 107 199 619)	Australia	
Bowen Central Coal Pty. Ltd. - (ACN107 198 676)	Australia	
Bowen Central Coal Sales Pty. Ltd. - (ACN 107 201 230)	Australia	
Brasamerican Ltd.	Bermudas	BRASAMERICAN
Broadlea Coal Management Pty. Ltd. - (ACN 104 885 994)	Australia	
Broadlea JV (Unincorporated)	Australia	
BSG Resources (Guinea) Limited	Guernsey	
BSG Resources (Liberia) Limited	Virgin Islands	
Cadam Overseas Ltd.	Bermudas	CADAM OVERSEAS
Cadam S.A.	Brazil	CADAM
Calypso Alumina S.A.	Brazil	
Camberwell Coal Pty. Ltd. - (ACN 003 825 018)	Australia	
Canico Resources Corp.	Bahamas	CANICO
Carborough Downs Coal Management Pty. Ltd. - (ACN 108 803 461)	Australia	
Carborough Downs Coal Sales Pty. Ltd - (ACN 108 803 470)	Australia	
Carborough Downs JV (Unincorporated)	Australia	
CMM Overseas Ltd.	Bermudas	CMM OVERSEAS
Companhia de Maracás S.A.	Brazil	MARACÁS
Companhia Paulista de Ferro-Ligas	Brazil	CPFL
Companhia Portuaria Baia de Sepetiba	Brazil	CPBS
Companhia Siderúrgica Ubu	Brazil	CSU
Compañía Minera Andino-Brasileira Ltda	Chile	CMAB
Compañía Minera Miski Mayo S.Ac.	Peru	MISKI MAYO
Consórcio UHE Porto Estrela	Brazil	PORTO ESTRELA

CPP Participações S.A.	Brazil	CPP
CVRD Overseas Ltd.	Cayman	CVRD OVERSEAS
CVRD Venezuela S.A.	Venezuela	CVRD VENEZUELA
Docepar S.A.	Brazil	DOCEPAR
Ellensfield Coal Management Pty. Ltd. - (ACN 123 542 754)	Australia	ELLENSFIELD
Empreendimentos Brasileiros de Mineração S.A.	Brazil	EBM
Empresa de Mineração Curuá Ltda.	Brazil	CURUÁ
Exide Group Incorporated	United States	EXIDE
Ferrovia Centro-Atlântica S.A.	Brazil	FCA
Ferrovia Norte Sul S.A.	Brazil	FNS
Ferteco Europa S.à.r.l	Luxembourg	FERTECO EUROPA
Fertilizantes Participações S.A.	Brazil	
Florestas Rio Doce S.A.	Brazil	FLORESTAS
Fortlee Investments Limited	Virgin Islands	
Fundação Caemi de Previdência Social	Brazil	FUNDAÇÃO CAEMI
Glennies Creek JV (Unincorporate)	Australia	
Goro Funding, LLC	United States	GORO
Heckbert 8 Ltd.	Hungary	HECKBERT 8
Inco Australia Holdings Pty. Ltd.	Australia	IAH
Inco Australia Management Pty. Ltd.	Australia	IAM
Indústria de Fosfatados Catarinense Ltda	Brazil	IFC
Infostrata S.A.	Brazil	INFOSTRATA
Integra Coal Sales Pty. Ltd. - (ACN 080 537 033)	Australia	
Isaac Plains Coal Management Pty. Ltd. - (ACN 114 277 315)	Australia	
Isaac Plains Coal Sales Pty. Ltd. - (ACN 114 276 701)	Australia	
Isaac Plains JV (Unincorporated)	Australia	
Itabira Int. Serviços e Comércio Ltda.	Portugal	ITABIRA
Kaolin International BV	Netherlands	KIBV
Kaolin International N.V.	Belgium	KINV
Kaolin International Oy	Finland	KIOY
Kaolin Overseas Ltd.	Cayman	KAOLIN OVERSEAS
Kaserge Serviços Gerais Ltda.	Brazil	KSG
Kobrasco Int. Trading Co. Ltd.	Bahamas	KOBIN
Machadinho Energética S.A.	Brazil	MAESA
Maitland Main Collieries Pty. Ltd. - (ACN 000 021 652)	Australia	
Mineração Corumbaense Reunida S.A.	Brazil	MCR
Mineração Dobrados S.A. Indústria e Comércio	Brazil	MINERAÇÃO DOBRADOS
Mineração Guanhões Ltda.	Brazil	GUANHÃES

Mineração Guariba S.A.	Brazil	GUARIBA
Mineração Japurá Ltda.	Brazil	JAPURÁ
Mineração Manati Ltda.	Brazil	
Mineração Mato Grosso S.A.	Brazil	MMT
Mineração Naque S.A.	Brazil	NAQUE
Mineração Paragominas S.A.	Brazil	PARAGOMINAS
Mineração Urucum Ltda.	Brazil	URUCUM
Mineração Zarzuela Ltda.	Brazil	
Minerações BR Holding GmbH	Austria	MBR HOLDINGS GMBH
Minerações Brasileiras Reunidas S.A.	Brazil	MBR
Minérios Metalúrgicos do Nordeste S.A.	Brazil	MMN
Monticello Insurance Ltd.	Barbados	MIL
MS Empreendimentos e Participações Ltda.	Brazil	MSEP
MSE Serv. de Oper., Manut. e Montagens Ltda.	Brazil	MSE
MSL Minerais S.A.	Brazil	MSL
MSL Overseas Ltd.	Bermudas	MSL OVERSEAS
Multiplex Resource Ltd.	United Kingdom	MULTIPLY
MVM Resources International B.V.	Netherlands	MVM
Mystery Lake Nickel Mines Limited	Canada	MYSTERY LAKE
Namoi Coal Pty. Ltd. - (ACN 065 759 882)	Australia	
Namoi Highwall Pty. Ltd. - (ACN 074 013 719)	Australia	
Namoi Hunter Pty. Ltd. - (ACN 080 537 006)	Australia	
Nebo Central Coal Pty. Ltd. - (ACN 079 942 377)	Australia	NEBO
NH2 Pty. Ltd. - (ACN 097 547 969)	Australia	NH2
NORPEL - Pelotização do Norte S.A.	Brazil	NORPEL
NSW Coal Resources Pty. Ltd. - (ACN 077 459 735)	Australia	NSW
Pineland Timber Company Limited	Canada	
Ponta Ubu Agropecuária Ltda.	Brazil	PONTA UBU
Potássio Rio Colorado S.A.	Argentina	PRC
Prairie Potash Mines Limited	Canada	
Prony Branch	New Caledonia	PRONY BRANCH
Prony Nickel S.A.S.	France	PRONY
PT International Nickel Indonesia Tbk	Indonesia	PT INCO
PT Vale Eksplorasi Indonesia	Indonesia	PTVEI
Qld Coal Holdings Pty. Ltd. - (ACN 081 724 129)	Australia	
Queensland Coal Resources Pty. Ltd. - (ACN 075 176 395)	Australia	
Rio Doce America Inc.	United States	RDA
Rio Doce Amsterdam BV	Netherlands	RD AMSTERDAM
Rio Doce Australia Pty. Ltd.	Australia	RD AUSTRALIA

Rio Doce International Finance Ltd.	Cayman	RDIF
Rio Doce International S.A.	Belgium	RDI
Rio Doce Netherlands BV	Netherlands	RD NETHERLANDS
Rio Paranoá Participações Ltda.	Brazil	
Salobo Metais S.A.	Brazil	SALOBO
Seamar Shipping Corporation	Liberia	SEAMAR SHIPPING
SL Serviços Logísticos Ltda.	Brazil	SL
Sociedad Contractual Minera Tres Valles	Chile	SMTR
Sociedad Portuária Rio Cordoba S.A.	Colombia	SPRC
Sociedade de Mineração Constelação de Apolo	Brazil	CONSTELAÇÃO DE APOLO
Société Indust. et Com. Brasilo-Luxemborgoise	Luxembourg	BRASILUX
SRV Insurance Company Ltd.	Switzerland	SRV
Swanbank Queensland Pty. Ltd. - (ACN 108 563 373)	Australia	SWANBANK
Taiwan Nickel Refining Corporation	Taiwan	
Tethys Mining LLC	Mongolia	TETHYS
Tiebaghi Nickel S.A.S (Branch)	New Caledonia	TIEBAGHI BRANCH
Tiebaghi Nickel S.A.S.	France	TIEBAGHI
Transbarge Navegacion S.A.	Paraguay	TBN
UF Distribuidora de Combustíveis Ltda.	Brazil	UF DISTRIBUIDORA
Ultrafértil S.A.	Brazil	ULTRAFÉRTIL
Urucum Mineração S.A.	Brazil	URUCUM
Vale Americas Inc	United States	
Vale Asia K.K Shanghai Representative Office	China	Vale SHANGHAI
Vale Ásia Kabushiki Kaisha	Japan	VALE ASIA
Vale Australia (CQ) Pty Ltd - (ACN 103 902 389)	Australia	VALE AUSTRALIA CQ
Vale Australia (EA) Pty. Ltd. - (ACN 081 724 101)	Australia	VALE AUSTRALIA EA
Vale Australia (EF) Pty. Ltd. - (ACN 108 555 111)	Australia	VALE AUSTRALIA EF
Vale Australia (GC) Pty. Ltd. - (ACN 097 238 349)	Australia	VALE AUSTRALIA GC
Vale Australia (IP) Pty. Ltd. - (ACN 114 276 694)	Australia	VALE AUSTRALIA IP
Vale Australia Ellensfield Pty. Ltd. - (ACN 123 542 487)	Australia	
Vale Australia Holdings Pty. Ltd. (ACN 075 176 386)	Australia	
Vale Australia Pty. Ltd. (ACN 062 536 270)	Australia	VALE AUSTRALIA
Vale Austria Holdings GmbH	Austria	A1
Vale Belvedere (BC) Pty. Ltd.	Australia	
Vale Belvedere (SEQ) Pty. Ltd.	Australia	
Vale Belvedere Pty. Ltd. (ACN 128 403 645)	Australia	
Vale Canada Holdings Inc.	Canada	
Vale Canadá Limited	Canada	

Vale Canadian Nickel Holdings Inc.	Canada	
Vale Capital II	Cayman	
Vale Capital Ltd.	Cayman	VALE CAPITAL
Vale China Holdings (Barbados) Ltd.	Barbados	
Vale Coal Colombia Ltd.	Bermudas	
Vale Coal Exploration Pty. Ltd. - (ACN 108 568 725)	Australia	
Vale Colombia C.I. SAS	Colombia	VALE COLOMBIA
Vale Colombia Holdings Ltd.	Bermudas	
Vale Colombia Port Ltd.	Bermudas	
Vale Comércio Internacional SE	Austria	VCI
Vale Empreendimentos e Participações Ltda.	Brazil	
Vale Energia Limpa S.A.	Brazil	
Vale Energia S.A.	Brazil	VALE ENERGIA
Vale Europa S.à.r.l.	Luxembourg	RDE
Vale Europe Ltd.	United Kingdom	VEL
Vale Europe Pension Trustees Ltd.	United Kingdom	VEPT
Vale Exploracion Argentina S.A.	Argentina	VALE ARGENTINA
Vale Exploraciones Chile Ltda.	Chile	VALE CHILE
Vale Exploration Canada Inc.	Canada	VEC
Vale Exploration Peru SAC	Peru	VALE PERU
Vale Exploration Philippines Inc	Philippines	VALE PHILIPPINES
Vale Exploration Pty Ltd. (ACN 127 080 219)	Australia	
Vale Explorations USA, Inc.	United States	
Vale Fertilizantes S.A.	Brazil	FOSFERTIL
Vale Fertilizer International Holding B.V.	Netherlands	
Vale Fertilizer Netherlands B.V.	Netherlands	VF NETHERLANDS
Vale Florestar S.A.	Brazil	VALE FLORESTAR
Vale Fosfatados S.A.	Brazil	
Vale Guínee S.A.	Guinea	VALE GUINEE
Vale Holdings (Barbados) Limited	Barbados	VIAP
Vale Holdings AG	Austria	A2
Vale Inco Asia Ltd.	Barbados	VIAL
Vale Inco Atlantic Sales Limited	Canada	
Vale Inco Australia Ltd. Partnership	Australia	
Vale Inco Europe Holdings	United Kingdom	VIEH
Vale Inco Ltd Branch (Australia)	Australia	
Vale Inco Management Advisory Services (Shangai) Co., Ltd.	China	
Vale Inco Metals (Shangai) Co., Ltd.	China	
Vale Inco Nouvelle-Calédonie Branch	New Caledonia	

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Vale Inco Pacific Ltd. Branch (Taiwan)	Taiwan	
Vale Inco Pacific Ltd. Branch (Thailand)	Thailand	
Vale Inco Pacific Ltd.	Hong Kong	
Vale Inco Resources (Australia) Pty. Ltd.	Australia	VIRA
Vale India Private Limited	India	VALE INDIA
Vale International Korea	Korea	VALE KOREA
Vale International Oman	Oman	VALE OMAN
Vale International S.A.	Switzerland	VALE INTERNATIONAL
Vale International Singapore	Singapore	VALE SINGAPORE
Vale Investments Ltd.	Jersey	VALE INVESTMENTS
Vale Japan Ltd.	Japan	VJL
Vale Kazakhstan LLP	Kazakhstan	VALE KAZAKH
Vale Limited	United States	VALE LIMITED
Vale Logística da Argentina S.A.	Argentina	VLA
Vale Logística de Carga Geral S.A.	Brazil	
Vale Logística de Uruguay S.A.	Uruguay	
Vale Malaysia Manufacturing SDN. BHD.	Malaysia	
Vale Manganês S.A.	Brazil	VALE MANGANÊS
Vale Manganese France	France	VALE MANGANESE FRANCE
Vale Manganese Norway AS	Norway	VALE NORWAY
Vale Mauritius Ltd.	Mauritius	VALE MAURITIUS
Vale Mina do Azul S.A.	Brazil	
Vale Minerals China Co. Ltd.	China	VALE CHINA
Vale Moçambique Ltda.	Mozambique	VMZ
Vale Newfoundland & Labrador Ltd.	Canada	VINLL
Vale Nickel (Dalian) Co. Ltd.	China	
Vale Nouvelle-Calédonie S.A.S.	France	
Vale Óleo e Gás S.A.	Brazil	
Vale Oman Distribution Center LLC	Oman	VALE OMAN DISTRIBUTION
Vale Oman Pelletizing Company LLC	Oman	VALE OMAN PELLETTIZING
Vale Operações Ferroviárias S.A.	Brazil	
Vale Operações Portuárias S.A.	Brazil	VOP
Vale Overseas Ltd.	Cayman	VALE OVERSEAS
Vale Potash Canada Limited	Canada	VPCL
Vale Potássio Nordeste S.A.	Brazil	
Vale Projectos e Desenvolvimento Moçambique Limitada	Mozambique	VPDM
Vale Proyectos Minerales S.A.	Argentina	VPM
Vale Republic Democratique Du Congo	Congo	VALE CONGO
Vale S.A.	Brazil	VALE
Vale Salzach GmbH	Austria	VALE SALZACH
Vale Shipping Company Pte. Limited	Singapore	VSC
Vale Shipping Enterprise Pte. Ltd.	Singapore	VSE
Vale Slab S.A.	Switzerland	
Vale South Africa (Proprietary) Ltd.	South Africa	VALE SOUTH AFRICA
Vale Technology Development (Canada) Limited	Canada	
Valesul Alumínio S.A.	Brazil	VALESUL
VBG - VALE BSGR GUINEA	Guinea	
VBG - Vale BSGR LIBERIA Limited	Liberia	
VEL (ME) Ltd.	Dubai	VEL (DUBAI)
Vistaerea S.A.	Brazil	VISTAEREA

I, Roger Agnelli, certify that:

1. I have reviewed this annual report on Form 20-F of Vale S.A.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15-d-15(f)) for the company and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting; and
5. The company's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of the company's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

April 28, 2011

/s/ ROGER AGNELLI

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Chief Executive Officer

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I, Guilherme Perboyre Cavalcanti, certify that:

1. I have reviewed this annual report on Form 20-F of Vale S.A.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15-d-15(f)) for the company and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting; and
5. The company's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of the company's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

April 28, 2011

/s/ GUILHERME PERBOYRE CAVALCANTI

Chief Financial Officer

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**Certification**  
**Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002**  
**(Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code)**

Pursuant to section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of section 1350, chapter 63 of Title 18, United States Code), each of the undersigned officers of Vale S.A. (the "Company"), does hereby certify, to such officer's knowledge, that:

The Annual Report on Form 20-F for the year ended December 31, 2010 of the Company fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 and information contained in the Form 20-F fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ ROGER AGNELLI

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Name: Roger Agnelli  
Title: Chief Executive Officer  
Date: April 28, 2011

/s/ GUILHERME PERBOYRE CAVALCANTI

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Name: Guilherme Perboyre Cavalcanti  
Title: Chief Financial Officer  
Date: April 28, 2011

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**Consent of Independent Registered  
Public Accounting Firm**

We hereby consent to the incorporation by reference in the Registration Statements on Form F-3 of Vale S.A. (formerly Companhia Vale do Rio Doce) (File Nos. 333-160448 and 333-162822), Vale Capital II (File No. 333-160448-01) and Vale Overseas Limited (File No. 333-162822-01) of our report dated February 24, 2011 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 20-F.

/s/ PricewaterhouseCoopers

PricewaterhouseCoopers  
Auditores Independentes  
Rio de Janeiro, Brazil  
April 28, 2011

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ABN 15 142 552 985

Level 40, Riverside Centre  
123 Eagle Street  
GPO Box 2579  
Brisbane QLD 4000

Tel: 07 3226 9100

Fax: 07 3226 9101

E-mail: [imc@imcmining.com.au](mailto:imc@imcmining.com.au)



To the Board of Directors of  
Vale S.A. ("Vale")

Ladies and Gentlemen:

**Gary John Benson** hereby consents to (a) being named in the Annual Report on Form 20-F of Vale S.A. ("Vale") for the year ended December 31, 2010 (the "2010 20-F") as having prepared certain coal reserve estimates and (b) the incorporation by reference of the 2010 20-F into the Registration Statements on Form F-3 of: Vale and Vale Overseas Limited (File Nos. 333-162822 and 333-162822-01); Vale and Vale Capital II (File Nos. 333-160448 and 333-160448-01); and Vale and Vale Capital Limited (File Nos. 333-143857 and 333-143857-01).

/s/ Gary John Benson

Gary John Benson

**Principal Mining Consultant**  
IMC Mining Group Pty Ltd

**19 January 2011**

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ABN 15 142 552 985

Level 40, Riverside Centre  
123 Eagle Street  
GPO Box 2579  
Brisbane QLD 4000

Tel: 07 3226 9100

Fax: 07 3226 9101

E-mail: [imc@imcmining.com.au](mailto:imc@imcmining.com.au)



To the Board of Directors of  
Vale S.A. ("Vale")

Ladies and Gentlemen:

**David A. Thomas** hereby consents to (a) being named in the Annual Report on Form 20-F of Vale S.A. ("Vale") for the year ended December 31, 2010 (the "2010 20-F") as having prepared certain coal reserve estimates and (b) the incorporation by reference of the 2010 20-F into the Registration Statements on Form F-3 of: Vale and Vale Overseas Limited (File Nos. 333-162822 and 333-162822-01); Vale and Vale Capital II (File Nos. 333-160448 and 333-160448-01); and Vale and Vale Capital Limited (File Nos. 333-143857 and 333-143857-01).

Very truly,

/s/ David A. Thomas

**David A. Thomas**

**Principal Consultant (Mining)**

**IMC Mining Group Pty Ltd**

**19 January 2011**

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SRK Consulting  
Suites 7-9, Level 6  
141 Queen Street, Brisbane QLD 4000, Australia  
GPO Box 1881, Brisbane QLD 4001, Australia

Email: [brisbane@srk.com.au](mailto:brisbane@srk.com.au)  
[www.srk.com.au](http://www.srk.com.au)

**Tel: 61 7 3832 9999**  
**Fax: 61 7 3832 9330**

To the Board of Directors of  
Vale S.A. ("Vale")

Ladies and Gentlemen:

**Neville Terry of SRK Consulting** hereby consents to

(a) being named in the Annual Report on Form 20-F of Vale S.A. ("Vale") for the year ended December 31, 2010 (the "2010 20-F") as having prepared certain coal reserve estimates and

(b) the incorporation by reference of the 2010 20-F into the Registration Statements on Form F-3 of: Vale and Vale Overseas Limited (File Nos. 333-162822 and 333-162822-01); Vale and Vale Capital II (File Nos. 333-160448 and 333-160448-01); and Vale and Vale Capital Limited (File Nos. 333-143857 and 333-143857-01).

Very truly,

/s/ N Terry

**N Terry**

**Principal Consultant (Coal Mining)**

**20<sup>th</sup> January 2011**

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To the Board of Directors of  
Vale S.A. ("Vale")

Ladies and Gentlemen:

**Mark Bowater** hereby consents to (a) being named in the Annual Report on Form 20-F of Vale S.A. ("Vale") for the year ended December 31, 2010 (the "2010 20-F") as having prepared certain coal reserve estimates and (b) the incorporation by reference of the 2010 20-F into the Registration Statements on Form F-3 of: Vale and Vale Overseas Limited (File Nos. 333-162822 and 333-162822-01); Vale and Vale Capital II (File Nos. 333-160448 and 333-160448-01); and Vale and Vale Capital Limited (File Nos. 333-143857 and 333-143857-01).

Very truly,

/s/ Mark Bowater  
\_\_\_\_\_  
**Mark Bowater**

**Director**

**31 January 2011**

**[www.echelonmining.com](http://www.echelonmining.com)**

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Level 15/300 Adelaide Street Brisbane QLD 4000  
GPO Box 2207 Brisbane QLD 4001  
Telephone (+61 7) 3231 3800  
Facsimile (+61 7) 3211 9815  
Email: brisbane@snowdengroup.com  
www.snowdengroup.com

*Perth, Brisbane, Vancouver, Johannesburg, London, Belo Horizonte*

To the Board of Directors of  
Vale S.A. ("Vale")

Ladies and Gentlemen:

**Snowden Mining Industry Consultants Pty Ltd** hereby consents to (a) being named in the Annual Report on Form 20-F of Vale S.A. ("Vale") for the year ended December 31, 2010 (the "2010 20-F") as having prepared certain coal reserve estimates and (b) the incorporation by reference of the 2010 20-F into the Registration Statements on Form F-3 of: Vale and Vale Overseas Limited (File Nos. 333-162822 and 333-162822-01); Vale and Vale Capital II (File Nos. 333-160448 and 333-160448-01); and Vale and Vale Capital Limited (File Nos. 333-143857 and 333-143857-01).

Very truly,

/s/ Craig Morley

**Craig Morley**

**CEO**

**Snowden Mining Industry Consultants Pty Ltd**

**February 09, 2011**



**John T. Boyd Company**  
Mining and Geological Consultants

**Chairman**  
James W. Boyd

February 15, 2011  
File: 3423.001

**President and CEO**  
John T. Boyd II

**Managing Director and COO**  
Ronald L. Lewis

**Vice Presidents**  
Richard L. Bate  
James F. Kvitkovich  
Russell P. Moran  
John L. Weiss  
William P. Wolf

**Vice President  
Business Development**  
George Stepanovich, Jr.

**Managing Director - Australia**  
Ian L. Alexander

**Managing Director - China**  
Dehui (David) Zhong

**Assistant to the President**  
Mark P. Davic  
**Denver**  
Dominion Plaza, Suite 710S  
600 17<sup>th</sup> Street  
Denver, CO 80202-5404  
(303) 293-8988  
(303) 293-2232 Fax  
jtboydd@jtboyd.com

**Pittsburgh**  
(724) 873-4400  
jtboydp@jtboyd.com

**Brisbane**  
61 7 3232-5000  
jtboydau@jtboyd.com

**Beijing**  
86 10 6500-5854  
jtboydcn@jtboyd.com

**London**  
44 208 748-5344 Tel/Fax

**www.jtboyd.com**

To the Board of Directors of  
Vale S.A. ("Vale")

Ladies and Gentlemen:

**The John T. Boyd Company** hereby consents to (a) being named in the Annual Report on Form 20-F of Vale S.A. ("Vale") for the year ended December 31, 2010 (the "2010 20-F") as having conducted the review and preparation of certain coal reserve estimates and (b) the incorporation by reference of the 2010 20-F into the Registration Statements on Form F-3 of: Vale and Vale Overseas Limited (File Nos. 333-162822 and 333-162822-01); Vale and Vale Capital II (File Nos. 333-160448 and 333-160448-01); and Vale and Vale Capital Limited (File Nos. 333-143857 and 333-143857-01).

Very truly yours,

JOHN T. BOYD COMPANY

By:

/s/ Richard L. Bate

Richard L. Bate  
Vice President

