

Vale S.A.  
Form 6-K  
October 24, 2018  
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**United States**  
**Securities and Exchange Commission**

Washington, D.C. 20549

**FORM 6-K**

**Report of Foreign Private Issuer**

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

**of the**

**Securities Exchange Act of 1934**

**For the month of**

**October 2018**

**Vale S.A.**

**Praia de Botafogo, 186**  
**22250-145 Rio de Janeiro, RJ, Brazil**

(Address of principal executive office)

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

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

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

(Check One) Yes  No

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

(Check One) Yes  No

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

(Check One) Yes  No

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

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**Interim Financial Statements**

**September 30, 2018**

IFRS in US\$

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**Vale S.A. Interim Financial Statements**

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KPMG Auditores Independentes

Rua do Passeio, 38 - Setor 2 - 17º andar - Centro

20021-290 - Rio de Janeiro/RJ - Brasil

Caixa Postal 2888 - CEP 20001-970 - Rio de Janeiro/RJ - Brasil

Telefone +55 (21) 2207-9400, Fax +55 (21) 2207-9000

www.kpmg.com.br

Report of Independent Public Accounting Firm

**To the Stockholders and Board of Directors of**

**Vale S.A.**

Rio de Janeiro - RJ

**Results of review of interim financial information**

We have reviewed the accompanying condensed consolidated statement of financial position of Vale S.A. and subsidiaries ( the Company ) as of September 30, 2018, the related condensed consolidated statements of income, comprehensive income and cash flows for the three and nine-month periods ended Septemebr 30, 2018 and 2017, and the related condensed consolidated statement of changes in equity for the nine-month periods ended on September 30, 2018 and 2017 and the related notes (collectively, the consolidated interim financial information). Based on our reviews, we are not aware of any material modifications that should be made to the condensed consolidated interim financial information for it to be in conformity with IAS 34 Interim Financial Reporting as issued by the International Accounting Standards Board (IASB).

We have previously audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated statement of financial position of the Company as of December 31, 2017, and the related consolidated statements of income and comprehensive income, changes in equity and cash flows for the year then ended (not presented herein); and in our report dated February 27, 2018, we expressed an unqualified opinion on those consolidated financial statements. In our opinion, the information set forth in the accompanying condensed consolidated statement of financial position as of December 31, 2017, is fairly stated, in all material respects, in

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relation to the consolidated statement of financial position from which it has been derived.

KPMG Auditores Independentes, uma sociedade simples brasileira e firma-membro da rede KPMG de firmas-membro independentes e afiliadas à KPMG International Cooperative ( KPMG International ), uma entidade suíça.

*KPMG Auditores Independentes, a Brazilian entity and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ( KPMG International ), a Swiss entity.*

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**Basis for review results**

This consolidated interim financial information is the responsibility of the Company's management. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our reviews in accordance with the standards of the PCAOB. A review of consolidated interim financial information consists principally of applying analytical procedures and making inquiries of persons responsible for financial and accounting matters. It is substantially less in scope than an audit conducted in accordance with the standards of the PCAOB, the objective of which is the expression of an opinion regarding the financial statements taken as a whole. Accordingly, we do not express such an opinion.

KPMG Auditores Independentes

Rio de Janeiro, Brazil

October 24, 2018



Table of Contents**Consolidated Income Statement**

In millions of United States dollars, except earnings per share data

|  | Notes | Three-month period ended<br>September 30, |              | Nine-month period ended<br>September 30, |                |
|--|-------|---|--------------|--|----------------|
|  |       | 2018                                      | 2017         | 2018                                     | 2017           |
| <b>Continuing operations</b>   |       |   |              |  |                |
| Net operating revenue  | 3(c)  | 9,543                                     | 9,050        | 26,762                                   | 24,800         |
| Cost of goods sold and services rendered   | 5(a)  | (5,756)                                   | (5,412)      | (16,357)                                 | (15,248)       |
| <b>Gross profit</b>  |       | <b>3,787</b>                              | <b>3,638</b> | <b>10,405</b>                            | <b>9,552</b>   |
| <b>Operating expenses</b>  |       |   |              |  |                |
| Selling and administrative expenses  | 5(b)  | (136)                                     | (129)        | (382)                                    | (385)          |
| Research and evaluation expenses   |       | (87)                                      | (91)         | (248)                                    | (236)          |
| Pre operating and operational stoppage   |       | (60)                                      | (83)         | (205)                                    | (288)          |
| Other operating expenses, net  | 5(c)  | (61)                                      | (151)        | (295)                                    | (316)          |
|  |       | <b>(344)</b>                              | <b>(454)</b> | <b>(1,130)</b>                           | <b>(1,225)</b> |
| Impairment and other results on non-current assets                               | 4     | (172)                                     | (169)        | (185)                                    | 123            |
| <b>Operating income</b>  |       | <b>3,271</b>                              | <b>3,015</b> | <b>9,090</b>                             | <b>8,450</b>   |
| Financial income   | 6     | 111                                       | 152          | 310                                      | 332            |
| Financial expenses   | 6     | (367)                                     | (758)        | (1,795)                                  | (2,513)        |
| Other financial items  | 6     | (1,007)                                   | 826          | (3,457)                                  | 449            |
| Equity results in associates and joint ventures                                  | 13    | 32  | 115          | 158                                      | 164            |
| Impairment and other results in associates and joint ventures                    | 17    | (20)                                      | (26)         | (445)                                    | (121)          |
| <b>Income before income taxes</b>  |       | <b>2,020</b>                              | <b>3,324</b> | <b>3,861</b>                             | <b>6,761</b>   |
| <b>Income taxes</b>  |       |   |              |  |                |
|  | 7     |   |              |  |                |
| Current tax  |       | 77  | (522)        | (143)                                    | (1,092)        |
| Deferred tax   |       | (724)                                     | (457)        | (561)                                    | (561)          |
|  |       | <b>(647)</b>                              | <b>(979)</b> | <b>(704)</b>                             | <b>(1,653)</b> |
| <b>Net income from continuing operations</b>                                     |       | <b>1,373</b>                              | <b>2,345</b> | <b>3,157</b>                             | <b>5,108</b>   |
| Net income (loss) attributable to noncontrolling interests                       |       | (35)                                      | 7            | (9)                                      | 53             |
| <b>Net income from continuing operations attributable to Vale's stockholders</b> |       | <b>1,408</b>                              | <b>2,338</b> | <b>3,166</b>                             | <b>5,055</b>   |
| <b>Discontinued operations</b>   |       |   |              |  |                |
|  | 12    |   |              |  |                |
| Loss from discontinued operations  |       |   | (106)        | (92)                                     | (313)          |
| Net income attributable to noncontrolling interests                              |       |   | 2            |  | 6              |
| <b>Loss from discontinued operations attributable to Vale's stockholders</b>     |       |   | <b>(108)</b> | <b>(92)</b>                              | <b>(319)</b>   |
| <b>Net income</b>  |       | <b>1,373</b>                              | <b>2,239</b> | <b>3,065</b>                             | <b>4,795</b>   |

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|  |              |              |              |              |
|--|--------------|--------------|--------------|--------------|
| Net income (loss) attributable to noncontrolling interests     | (35)         | 9            | (9)          | 59           |
| <b>Net income attributable to Vale's stockholders</b>          | <b>1,408</b> | <b>2,230</b> | <b>3,074</b> | <b>4,736</b> |
| <b>Earnings per share attributable to Vale's stockholders:</b> |              |              |              |              |
| <b>Basic and diluted earnings per share (restated):</b>        | 8            |              |              |              |
| Common share (US\$)  | 0.27         | 0.43         | 0.59         | 0.91         |

The accompanying notes are an integral part of these interim financial statements.

Table of Contents**Consolidated Statement of Comprehensive Income**

In millions of United States dollars

|  | Three-month period ended<br>September 30, |              | Nine-month period ended<br>September 30, |              |
|--|---|--------------|--|--------------|
|  | 2018                                      | 2017         | 2018                                     | 2017         |
| <b>Net income</b>  | <b>1,373</b>                              | <b>2,239</b> | <b>3,065</b>                             | <b>4,795</b> |
| <b>Other comprehensive income (loss):</b>  |   |              |  |              |
| <b>Items that will not be reclassified subsequently to the income statement</b>                      |   |              |  |              |
| Translation adjustments  | (1,521)                                   | 1,797        | (8,069)                                  | 1,158        |
| Retirement benefit obligations   | 34  | 45           | 32                                       | (173)        |
| Fair value adjustment to investment in equity securities   | 170                                       |              | 212                                      |              |
| Transfer to retained earnings  |   |              | (16)                                     |              |
| <b>Total of items that will not be reclassified subsequently to the income statement, net of tax</b> | <b>(1,317)</b>                            | <b>1,842</b> | <b>(7,841)</b>                           | <b>985</b>   |
| <b>Items that may be reclassified subsequently to the income statement</b>                           |   |              |  |              |
| Translation adjustments  | 1,324                                     | (684)        | 5,218                                    | (66)         |
| Net investments hedge  | (81)                                      | 191          | (646)                                    | 107          |
| Transfer of realized results to net income   |   |              | (78)                                     |              |
| <b>Total of items that may be reclassified subsequently to the income statement, net of tax</b>      | <b>1,243</b>                              | <b>(493)</b> | <b>4,494</b>                             | <b>41</b>    |
| <b>Total comprehensive income (loss)</b>   | <b>1,299</b>                              | <b>3,588</b> | <b>(282)</b>                             | <b>5,821</b> |
| Comprehensive income (loss) attributable to noncontrolling interests                                 | (80)                                      | 37           | (150)                                    | 78           |
| <b>Comprehensive income (loss) attributable to Vale's stockholders</b>                               | <b>1,379</b>                              | <b>3,551</b> | <b>(132)</b>                             | <b>5,743</b> |
| From continuing operations   | 1,379                                     | 3,537        | (124)                                    | 5,758        |
| From discontinued operations   |   | 14           | (8)                                      | (15)         |
|  | <b>1,379</b>                              | <b>3,551</b> | <b>(132)</b>                             | <b>5,743</b> |

Items above are stated net of tax and the related taxes are disclosed in note 7.

The accompanying notes are an integral part of these interim financial statements.

Table of Contents**Consolidated Statement of Cash Flows**

In millions of United States dollars

|   | Three-month period ended<br>September 30, |              | Nine-month period ended<br>September 30, |                |
|---|---|--------------|--|----------------|
|   | 2018                                      | 2017         | 2018                                     | 2017           |
| <b>Cash flow from operating activities:</b>   |   |              |  |                |
| Income before income taxes from continuing operations                                 | 2,020                                     | 3,324        | 3,861                                    | 6,761          |
| <b>Continuing operations adjustments for:</b>   |   |              |  |                |
| Equity results in associates and joint ventures                                       | (32)                                      | (115)        | (158)                                    | (164)          |
| Impairment and other results on non-current assets and associates and joint ventures  | 192                                       | 195          | 630                                      | (2)            |
| Depreciation, amortization and depletion  | 849                                       | 920          | 2,583                                    | 2,732          |
| Financial results, net  | 1,263                                     | (220)        | 4,942                                    | 1,732          |
| <b>Changes in assets and liabilities:</b>   |   |              |  |                |
| Accounts receivable   | (149)                                     | (936)        | 69                                       | 1,104          |
| Inventories   | (200)                                     | (52)         | (406)                                    | (496)          |
| Suppliers and contractors   | 336                                       | 37           | (41)                                     | 363            |
| Provision - Payroll, related charges and other remunerations                          | 200                                       | 205          | (166)                                    | 162            |
| Proceeds from cobalt stream transaction   |   |              | 690                                      |                |
| Other assets and liabilities, net   | 10  | (235)        | (535)                                    | (928)          |
|   | <b>4,489</b>                              | <b>3,123</b> | <b>11,469</b>                            | <b>11,264</b>  |
| Interest on loans and borrowings paid   | (248)                                     | (407)        | (903)                                    | (1,334)        |
| Derivatives paid, net   | (22)                                      | (113)        | (35)                                     | (223)          |
| Interest on participative stockholders' debentures paid                               |   |              | (72)                                     | (70)           |
| Income taxes  | (220)                                     | (84)         | (506)                                    | (489)          |
| Income taxes - Settlement program   | (104)                                     | (124)        | (342)                                    | (365)          |
| <b>Net cash provided by operating activities from continuing operations</b>           | <b>3,895</b>                              | <b>2,395</b> | <b>9,611</b>                             | <b>8,783</b>   |
| <b>Cash flow from investing activities:</b>   |   |              |  |                |
| Financial investments invested  | (20)                                      | (34)         | (44)                                     | (53)           |
| Loans and advances - net receipts (payments) (note 25)                                | (87)                                      | (101)        | 2,454                                    | (332)          |
| Additions to property, plant and equipment, intangibles and investments               | (692)                                     | (913)        | (2,310)                                  | (2,927)        |
| Proceeds from disposal of assets and investments (note 12 and 13)                     | 116                                       | 198          | 1,476                                    | 721            |
| Dividends and interest on capital received from associates and joint ventures         | 7   | 21           | 153                                      | 103            |
| Other investing activities  | (25)                                      | 4            | (27)                                     | (30)           |
| <b>Net cash provided by (used in) investing activities from continuing operations</b> | <b>(701)</b>                              | <b>(825)</b> | <b>1,702</b>                             | <b>(2,518)</b> |
| <b>Cash flow from financing activities:</b>   |   |              |  |                |
| <b>Loans and borrowings</b>   |   |              |  |                |
| Additions   | 211                                       | 351          | 976                                      | 1,801          |
| Repayments  | (1,169)                                   | (2,818)      | (6,045)                                  | (5,788)        |
| <b>Transactions with stockholders:</b>  |   |              |  |                |

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|  |                |                |                |                |
|--|----------------|----------------|----------------|----------------|
| Dividends and interest on capital paid to stockholders                             | (1,876)        |                | (3,313)        | (1,454)        |
| Dividends and interest on capital paid to noncontrolling interests                 | (82)           | (116)          | (179)          | (124)          |
| Share buyback program (note 24)  | (489)          |                | (489)          |                |
| Transactions with noncontrolling stockholders                                      |                |                | (17)           | (98)           |
| <b>Net cash used in financing activities from continuing operations</b>            | <b>(3,405)</b> | <b>(2,583)</b> | <b>(9,067)</b> | <b>(5,663)</b> |
| <b>Net cash used in discontinued operations (note 12)</b>                          |                | <b>(18)</b>    | <b>(46)</b>    | <b>(171)</b>   |
| <b>Increase (decrease) in cash and cash equivalents</b>                            | <b>(210)</b>   | <b>(1,031)</b> | <b>2,201</b>   | <b>431</b>     |
| Cash and cash equivalents in the beginning of the period                           | 6,369          | 5,720          | 4,328          | 4,262          |
| Effect of exchange rate changes on cash and cash equivalents                       | (59)           | 28             | (312)          | 38             |
| Effects of disposals of subsidiaries and merger, net of cash and cash equivalents  |                | 2              | (117)          | (12)           |
| <b>Cash and cash equivalents at end of the period</b>                              | <b>6,100</b>   | <b>4,719</b>   | <b>6,100</b>   | <b>4,719</b>   |
| <b>Non-cash transactions:</b>  |                |                |                |                |
| Additions to property, plant and equipment - capitalized loans and borrowing costs | 50             | 111            | 154            | 297            |

The accompanying notes are an integral part of these interim financial statements.

Table of Contents**Consolidated Statement of Financial Position**

In millions of United States dollars

|  | Notes | September 30,<br>2018 | December 31,<br>2017 |
|--|-------|-----------------------|----------------------|
| <b>Assets</b>  |       |                       |                      |
| <b>Current assets</b>  |       |                       |                      |
| Cash and cash equivalents                                    | 16    | 6,100                 | 4,328                |
| Accounts receivable  | 9     | 2,450                 | 2,600                |
| Other financial assets                                       | 11    | 413                   | 2,022                |
| Inventories  | 10    | 4,056                 | 3,926                |
| Prepaid income taxes   |       | 645                   | 781                  |
| Recoverable taxes  |       | 949                   | 1,172                |
| Others   |       | 518                   | 538                  |
|  |       | <b>15,131</b>         | <b>15,367</b>        |
| Non-current assets held for sale                             | 12    |                       | 3,587                |
|  |       | <b>15,131</b>         | <b>18,954</b>        |
| <b>Non-current assets</b>                                    |       |                       |                      |
| Judicial deposits  | 22(c) | 1,681                 | 1,986                |
| Other financial assets                                       | 11    | 3,217                 | 3,232                |
| Prepaid income taxes   |       | 561                   | 530                  |
| Recoverable taxes  |       | 543                   | 638                  |
| Deferred income taxes  | 7(a)  | 5,713                 | 6,638                |
| Others   |       | 271                   | 267                  |
|  |       | <b>11,986</b>         | <b>13,291</b>        |
| Investments in associates and joint ventures                 | 13    | 3,146                 | 3,568                |
| Intangibles  | 14    | 7,790                 | 8,493                |
| Property, plant and equipment                                | 15    | 47,433                | 54,878               |
|  |       | <b>70,355</b>         | <b>80,230</b>        |
| <b>Total assets</b>  |       | <b>85,486</b>         | <b>99,184</b>        |
| <b>Liabilities</b>   |       |                       |                      |
| <b>Current liabilities</b>                                   |       |                       |                      |
| Suppliers and contractors                                    |       | 4,038                 | 4,041                |
| Loans and borrowings   | 16    | 1,373                 | 1,703                |
| Other financial liabilities                                  | 11    | 885                   | 986                  |
| Taxes payable  | 7(c)  | 631                   | 697                  |
| Provision for income taxes                                   |       | 159                   | 355                  |
| Liabilities related to associates and joint ventures         | 17    | 292                   | 326                  |
| Provisions   | 21    | 1,173                 | 1,394                |
| Dividends and interest on capital                            |       |                       | 1,441                |
| Others   |       | 619                   | 992                  |
|  |       | <b>9,170</b>          | <b>11,935</b>        |
| Liabilities associated with non-current assets held for sale | 12    |                       | 1,179                |
|  |       | <b>9,170</b>          | <b>13,114</b>        |

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|  |      |               |               |
|--|------|---------------|---------------|
| <b>Non-current liabilities</b>                       |      |               |               |
| Loans and borrowings                                 | 16   | 15,437        | 20,786        |
| Other financial liabilities                          | 11   | 2,818         | 2,894         |
| Taxes payable  | 7(c) | 3,858         | 4,890         |
| Deferred income taxes                                | 7(a) | 1,711         | 1,719         |
| Provisions   | 21   | 6,367         | 7,027         |
| Liabilities related to associates and joint ventures | 17   | 761           | 670           |
| Deferred revenue - Gold stream                       |      | 1,669         | 1,849         |
| Others   |      | 2,054         | 1,463         |
|  |      | <b>34,675</b> | <b>41,298</b> |
| <b>Total liabilities</b>                             |      | <b>43,845</b> | <b>54,412</b> |
| <b>Stockholders equity</b>                           |      |               |               |
|  | 24   |               |               |
| Equity attributable to Vale's stockholders           |      | 40,783        | 43,458        |
| Equity attributable to noncontrolling interests      |      | 858           | 1,314         |
| <b>Total stockholders equity</b>                     |      | <b>41,641</b> | <b>44,772</b> |
| <b>Total liabilities and stockholders equity</b>     |      | <b>85,486</b> | <b>99,184</b> |

The accompanying notes are an integral part of these interim financial statements.

Table of Contents**Consolidated Statement of Changes in Equity**

In millions of United States dollars

|  | Share capital | Results on conversion of shares | Capital reserve | Results from operation with noncontrolling interest | Profit reserves | Treasury stocks | Unrealized fair value gains (losses) | Cumulative translation adjustments | Retained earnings | Equity attributable to Vale s stockholders | attribution non i |
|--|---------------|---------------------------------|-----------------|---|-----------------|-----------------|--------------------------------------|------------------------------------|-------------------|--|-------------------|
| <b>Balance at December 31, 2017</b>                      | <b>61,614</b> | <b>(152)</b>                    | <b>1,139</b>    | <b>(954)</b>  | <b>7,419</b>    | <b>(1,477)</b>  | <b>(1,183)</b>                       | <b>(22,948)</b>                    |                   | <b>43,458</b>                              |                   |
| <b>Net income</b>  |               |                                 |                 |   |                 |                 |                                      |                                    | <b>3,074</b>      | <b>3,074</b>                               |                   |
| <b>Other comprehensive income:</b>                       |               |                                 |                 |   |                 |                 |                                      |                                    |                   |  |                   |
| Retirement benefit obligations                           |               |                                 |                 |   |                 |                 | 32                                   |                                    | (16)              | 16   |                   |
| Net investments hedge                                    |               |                                 |                 |   |                 |                 |                                      | (646)                              |                   | (646)                                      |                   |
| Fair value adjustment to investment in equity securities |               |                                 |                 |   |                 |                 | 212                                  |                                    |                   | 212  |                   |
| Translation adjustments                                  |               |                                 |                 |   | (1,289)         |                 | 58                                   | (1,557)                            |                   | (2,788)                                    |                   |
| <b>Transactions with stockholders:</b>                   |               |                                 |                 |   |                 |                 |                                      |                                    |                   |  |                   |
| Dividends and interest on capital of Vale s stockholders |               |                                 |                 |   |                 |                 |                                      |                                    | (2,054)           | (2,054)                                    |                   |
| Dividends of noncontrolling interest                     |               |                                 |                 |   |                 |                 |                                      |                                    |                   |  |                   |
| Acquisitions and disposal of noncontrolling interest     |               |                                 |                 |   |                 |                 |                                      |                                    |                   |  |                   |
| Capitalization of noncontrolling interest advances       |               |                                 |                 |   |                 |                 |                                      |                                    |                   |  |                   |
| Share buyback program                                    |               |                                 |                 |   |                 | (489)           |                                      |                                    |                   | (489)                                      |                   |
| <b>Balance at September 30,</b>                          | <b>61,614</b> | <b>(152)</b>                    | <b>1,139</b>    | <b>(954)</b>  | <b>6,130</b>    | <b>(1,966)</b>  | <b>(881)</b>                         | <b>(25,151)</b>                    | <b>1,004</b>      | <b>40,783</b>                              |                   |



2018

|  | Share capital | Results on conversion of shares | Capital reserve | Results from operation with noncontrolling interest | Profit reserves | Treasury stocks | Unrealized fair value gains (losses) | Cumulative translation adjustments | Retained earnings | Equity attributable to Vale's stockholders | attributable to noncontrolling interest |
|--|---------------|---------------------------------|-----------------|---|-----------------|-----------------|--------------------------------------|------------------------------------|-------------------|--|---|
| <b>Balance at December 31, 2016</b>                      | <b>61,614</b> | <b>(152)</b>                    |                 | <b>(699)</b>  | <b>4,203</b>    | <b>(1,477)</b>  | <b>(1,147)</b>                       | <b>(23,300)</b>                    |                   | <b>39,042</b>                              |   |
| <b>Net income</b>  |               |                                 |                 |   |                 |                 |                                      |                                    | <b>4,736</b>      | <b>4,736</b>                               |   |
| <b>Other comprehensive income:</b>                       |               |                                 |                 |   |                 |                 |                                      |                                    |                   |  |   |
| Retirement benefit obligations                           |               |                                 |                 |   |                 |                 | (173)                                |                                    |                   |  | (173)                                   |
| Net investments hedge                                    |               |                                 |                 |   |                 |                 |                                      | 107                                |                   |  | 107                                     |
| Translation adjustments                                  |               |                                 |                 |   | 127             |                 | (18)                                 | 936                                | 28                |  | 1,073                                   |
| <b>Transactions with stockholders:</b>                   |               |                                 |                 |   |                 |                 |                                      |                                    |                   |  |   |
| Dividends and interest on capital of Vale's stockholders |               |                                 |                 |   | (658)           |                 |                                      |                                    |                   |  | (658)                                   |
| Dividends of noncontrolling interest                     |               |                                 |                 |   |                 |                 |                                      |                                    |                   |  |   |
| Acquisitions and disposal of noncontrolling interest     |               |                                 |                 | (277)   |                 |                 |                                      |                                    |                   |  | (277)                                   |
| Capitalization of noncontrolling interest advances       |               |                                 |                 |   |                 |                 |                                      |                                    |                   |  |   |
| Merger of Valepar  |               |                                 | 1,158           |   |                 |                 |                                      |                                    |                   |  | 1,158                                   |
| <b>Balance at September 30, 2017</b>                     | <b>61,614</b> | <b>(152)</b>                    | <b>1,158</b>    | <b>(976)</b>  | <b>3,672</b>    | <b>(1,477)</b>  | <b>(1,338)</b>                       | <b>(22,257)</b>                    | <b>4,764</b>      | <b>45,008</b>                              |   |

The accompanying notes are an integral part of these interim financial statements.

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**Selected Notes to the Interim Financial Statements**

**Expressed in millions of United States dollar, unless otherwise stated**

**1. Corporate information**

Vale S.A. (the Parent Company) is a public company headquartered in the city of Rio de Janeiro, Brazil with securities traded on the stock exchanges of São Paulo B3 S.A. (Vale3), New York - NYSE (VALE), Paris - NYSE Euronext (Vale3) and Madrid LATIBEX (XVALO).

Vale S.A. and its direct and indirect subsidiaries (Vale or Company) are global producers of iron ore and iron ore pellets, key raw materials for steelmaking, and producers of nickel, which is used to produce stainless steel and metal alloys employed in the production of several products. The Company also produces copper, metallurgical and thermal coal, manganese ore, ferroalloys, platinum group metals, gold, silver and cobalt. The information by segment is presented in note 3.

**2. Basis for preparation of the interim financial statements**

**a) Statement of compliance**

The condensed consolidated interim financial statements of the Company (interim financial statements) have been prepared and are being presented in accordance with IAS 34 Interim Financial Reporting of the International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).

**b) Basis of presentation**

The interim financial statements have been prepared to update users about relevant events and transactions occurred in the period and should be read in conjunction with the financial statements for the year ended December 31, 2017. The accounting policies, accounting estimates and judgments, risk management and measurement methods are the same as those applied when preparing the last annual financial statements, except for new accounting policies related to the application of IFRS 9 Financial instrument and IFRS 15 Revenue from contracts with customers, which were adopted by the Company from January 1, 2018. The accounting policy for recognizing and measuring income taxes in

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the interim period is described in note 7.

The interim financial statements of the Company and its associates and joint ventures are measured using the currency of the primary economic environment in which the entity operates ( functional currency ), which in the case of the Parent Company is the Brazilian real ( R\$ ). For presentation purposes, these interim financial statements are presented in United States dollars ( US\$ ) as the Company believes that this is the relevant currency used by international investors.

The exchange rates used by the Company to translate its foreign operations are as follows:

|                              | Closing rate          |                   | Average rate                                      |   | Average rate                                     |  |
|------------------------------|-----------------------|-------------------|---|---|--|--|
|                              | September 30,<br>2018 | December 31, 2017 | Three-month period ended<br>September 30,<br>2018 | Three-month period ended<br>September 30,<br>2017 | Nine-month period ended<br>September 30,<br>2018 | Nine-month period ended<br>September 30,<br>2017 |
| US Dollar ( US\$ )           | 4.0039                | 3.3080            | 3.9505  | 3.1639  | 3.6055   | 3.1750   |
| Canadian dollar<br>( CAD )   | 3.0992                | 2.6344            | 3.0232  | 2.5235  | 2.7973   | 2.4319   |
| Australian dollar<br>( AUD ) | 2.8980                | 2.5849            | 2.8899  | 2.4969  | 2.7255   | 2.4320   |
| Euro ( EUR or )              | 4.6545                | 3.9693            | 4.5950  | 3.7162  | 4.2969   | 3.5392   |

The issue of these interim financial statements was authorized by the Board of Directors on October 24, 2018.

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**c) Changes in significant accounting policies**

**i) IFRS 9 Financial instrument** The Company has adopted IFRS 9 Financial Instruments starting January 1, 2018. This standard addresses the classification and measurement of financial assets and liabilities, new impairment model and new rules for hedge accounting. The main changes are described below:

- Classification and measurement - Under IFRS 9, the Company's financial assets are initially measured at fair value (plus transaction costs if is not measured at fair value through profit or loss).

The investments in debt financial instruments are subsequently measured at fair value through profit or loss ( FVTPL ), amortized cost, or fair value through other comprehensive income ( FVOCI ). The classification is based on two conditions: the Company's business model in which the asset is held; and whether the contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding ( SPPI ).

The FVOCI category only includes equity instruments, which is not held for trading and the Company has irrevocably elected to designate upon initial recognition. The gains or losses from equity instruments at FVOCI are not recycled to income statement on derecognition and these financial assets are not subject to an impairment assessment under IFRS 9.

The Company has assessed its business models as of the date of IFRS 9 initial application, 1 January 2018, and no significant impact were identified in the financial statements.

- Impairment - IFRS 9 has replaced the IAS 39's incurred loss approach with a forward-looking expected credit loss (ECL) approach.

For accounts receivables, the Company has applied the standard's simplified approach and has calculated ECLs based on lifetime expected credit losses. The Company has established a provision matrix that is based on its historical credit loss experience, adjusted for forward-looking factors specific to the economic environment and by any financial guarantees related to these accounts receivables.

For other financial assets, the ECL is based on the 12-month ECL. The 12-month ECL is the proportion of lifetime ECLs that results from default events on a financial instrument that are possible within 12 months after the reporting date. However, when there has been a significant increase in credit risk since origination, the allowance will be based on the lifetime ECL.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECLs, the Company considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis, based on the Company's historical experience and informed credit assessment including forward-looking information.

At each reporting date, the Company assesses whether financial assets carried at amortized cost are credit-impaired. A financial asset is credit-impaired when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred.

There is no significant impact on its financial statements resulting from this new impairment approach given Vale's credit rating and risk management policies in place.

- Hedge accounting - The Company has elected to adopt the new general hedge accounting model in IFRS 9. The changes introduced by IFRS 9 relating to hedge accounting currently have no impact, as the Company does not currently apply cash flow or fair value hedge accounting. The Company currently applies the net investment hedge for which there are no changes introduced by this new standard.

**ii) IFRS 15 Revenue from contracts with customers** - The Company has adopted IFRS 15 Revenue from contracts with customers starting January 1, 2018. IFRS 15 establishes a comprehensive framework for revenue recognition and replaced IAS 18 Revenue, IAS 11 Construction Contracts and related

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interpretations. The Company has adopted IFRS 15 using the modified retrospective method. Accordingly, the information presented for 2017 has not been restated.

- Sales of commodities - IFRS 15 introduced the five-step model for revenue recognition from contracts with customers. The new standard is based on the core principle that revenue is recognized when the control of a good or service transfers to a customer of an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services.

There is no significant impact on the timing of commodities revenue recognition under IFRS 15, since usually the transfer of risks and rewards and the transfer of control under the sales contracts are at the same point in time.

The disaggregated revenue information is disclosed in note 3.

- Shipping services - A proportion of Vale's sales are under Cost and Freight ( CFR ) or Cost, Insurance and Freight ( CIF ) Incoterms, in which the Company is responsible for providing shipping services after the date that Vale transfers control of the goods to the customers. According to the previous standard (IAS 18), the revenue from shipping services was recognized upon loading, as well as the related costs, and was not considered a separate service.

Under IFRS 15, the provision of shipping services for CFR and CIF contracts should be considered as a separate performance obligation in which a proportion of the transaction price would be allocated and recognized over time as the shipping services are provided. The impact on the timing of revenue recognition of the proportion allocated to the shipping service is not significant to the Company's quarter-end results ended September 30, 2018. Therefore, such revenue has not been presented separately in these interim financial statements.

- Provisionally priced commodities sales - Under IFRS 9 and 15, the treatment of the provisional pricing mechanisms embedded within the provisionally priced commodities sales remains unmodified. Therefore, these revenues are recognized based on the estimated fair value of the total consideration receivable, and the provisionally priced sales mechanism embedded within these sale arrangements has the character of a derivative.

The Company is mostly exposed to the fluctuations in the iron ore and copper price.

The selling price of these products can be measured reliably at each period, since the price is quoted on an active market. The fair value of the sales price adjustment was recognized as operational revenue in the income statement.

**d) Accounting standards issued but not yet effective**

The standards and interpretations issued by IASB relevant to the Company but not yet effective are the same as those applicable when preparing the financial statements for the year ended December 31, 2017, except for IFRS 9 and IFRS 15 adopted by the Company from January 1, 2018. There is no significant impact in the interim financial statements resulting from the application of IFRS 9 and IFRS 15.

Table of Contents**3. Information by business segment and by geographic area**

The information presented to the Executive Board on the performance of each segment is derived from the accounting records, adjusted for reclassifications between segments.

**a) Adjusted EBITDA**

Management uses adjusted EBITDA to assess each segment's contribution to the Company's performance and to support the decision making process. Adjusted EBITDA is calculated for each segment using operating income or loss plus dividends received and interest from associates and joint ventures, and adding back the amounts charged as (i) depreciation, depletion and amortization and (ii) special events (note 4).

In 2018, the Company has allocated general and corporate expenses to "Others" as these expenses are not directly related to the performance of each business segment. Therefore, "Others" includes unallocated corporate expenses. The comparative period was restated in order to reflect this change in the criteria for allocation.

|                                     | Three-month period ended September 30, 2018 |  |  |                         |  |  | Adjusted EBITDA |
|-------------------------------------|---|--|--|-------------------------|--|--|-----------------|
|                                     | Net operating revenue                       | Cost of goods sold and services rendered | Selling, administrative and other operating expenses (i) | Research and evaluation | Pre operating and operational stoppage | Dividends received and interest from associates and joint ventures |                 |
| <b>Ferrous minerals</b>             |   |  |  |                         |  |  |                 |
| Iron ore                            | 5,594                                       | (2,459)                                  | (1)  | (27)                    | (24)                                   |  | 3,083           |
| Iron ore Pellets                    | 1,627                                       | (811)                                    | (4)  | (6)                     | (6)                                    |  | 800             |
| Ferrous alloys and manganese        | 104   | (72)                                     |  |                         |  |  | 32              |
| Other ferrous products and services | 114   | (74)                                     | (1)  | (1)                     |  | 7  | 45              |
|                                     | <b>7,439</b>                                | <b>(3,416)</b>                           | <b>(6)</b>   | <b>(34)</b>             | <b>(30)</b>                            | <b>7</b>   | <b>3,960</b>    |
| <b>Coal</b>                         | <b>425</b>                                  | <b>(433)</b>                             | <b>2</b>   | <b>(4)</b>              |  | <b>26</b>  | <b>16</b>       |
| <b>Base metals</b>                  |   |  |  |                         |  |  |                 |
| Nickel and other products           | 1,086                                       | (804)                                    | (3)  | (11)                    | (8)                                    |  | 260             |
| Copper                              | 500   | (226)                                    | (2)  | (4)                     |  |  | 268             |
|                                     | <b>1,586</b>                                | <b>(1,030)</b>                           | <b>(5)</b>   | <b>(15)</b>             | <b>(8)</b>                             |  | <b>528</b>      |



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|                                       |              |                |              |             |             |           |              |
|---------------------------------------|--------------|----------------|--------------|-------------|-------------|-----------|--------------|
| Others                                | 93           | (63)           | (121)        | (34)        | (5)         |           | (130)        |
| <b>Total of continuing operations</b> | <b>9,543</b> | <b>(4,942)</b> | <b>(130)</b> | <b>(87)</b> | <b>(43)</b> | <b>33</b> | <b>4,374</b> |

(i) Adjusted for a loss of US\$49 refers to provision for litigation classified as special events.

|  | Three-month period ended September 30, 2017 |  |  |                         |  |  |                 |
|--|---|--|--|-------------------------|--|--|-----------------|
|  | Net operating revenue                       | Cost of goods sold and services rendered | Selling, administrative and other operating expenses | Research and evaluation | Pre operating and operational stoppage | Dividends received and interest from associates and joint ventures | Adjusted EBITDA |
| <b>Ferrous minerals</b>                      |   |  |  |                         |  |  |                 |
| Iron ore                                     | 5,131                                       | (2,086)                                  | (16)   | (22)                    | (47)                                   | 1  | 2,961           |
| Iron ore Pellets                             | 1,441                                       | (733)                                    | (8)  | (5)                     | (3)                                    |  | 692             |
| Ferrous alloys and manganese                 | 131   | (71)                                     | (3)  |                         | 1                                      |  | 58              |
| Other ferrous products and services          | 117   | (77)                                     |  |                         |  | 12   | 52              |
|  | <b>6,820</b>                                | <b>(2,967)</b>                           | <b>(27)</b>  | <b>(27)</b>             | <b>(49)</b>                            | <b>13</b>  | <b>3,763</b>    |
| <b>Coal</b>                                  | <b>360</b>                                  | <b>(368)</b>                             | <b>(2)</b>   | <b>(4)</b>              |  | <b>67</b>  | <b>53</b>       |
| <b>Base metals</b>                           |   |  |  |                         |  |  |                 |
| Nickel and other products                    | 1,168                                       | (883)                                    | (21)   | (14)                    |  |  | 250             |
| Copper                                       | 594   | (246)                                    | (5)  | (6)                     |  |  | 337             |
|  | <b>1,762</b>                                | <b>(1,129)</b>                           | <b>(26)</b>  | <b>(20)</b>             |  |  | <b>587</b>      |
| Others                                       | 108   | (80)                                     | (208)  | (40)                    | 1                                      | 8  | (211)           |
| <b>Total of continuing operations</b>        | <b>9,050</b>                                | <b>(4,544)</b>                           | <b>(263)</b>   | <b>(91)</b>             | <b>(48)</b>                            | <b>88</b>  | <b>4,192</b>    |
| <b>Discontinued operations (Fertilizers)</b> | <b>533</b>                                  | <b>(490)</b>                             | <b>(23)</b>  | <b>(3)</b>              | <b>(5)</b>                             |  | <b>12</b>       |
| <b>Total</b>                                 | <b>9,583</b>                                | <b>(5,034)</b>                           | <b>(286)</b>   | <b>(94)</b>             | <b>(53)</b>                            | <b>88</b>  | <b>4,204</b>    |

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|  | Nine-month period ended September 30, 2018 |  |  |                         |  |  | Adjusted EBITDA |
|--|--|--|--|-------------------------|--|--|-----------------|
|  | Net operating revenue                      | Cost of goods sold and services rendered | Selling, administrative and other operating expenses (i) | Research and evaluation | Pre operating and operational stoppage | Dividends received and interest from associates and joint ventures |                 |
| <b>Ferrous minerals</b>                      |  |  |  |                         |  |  |                 |
| Iron ore                                     | 14,867                                     | (6,681)                                  | (40)   | (72)                    | (86)                                   | 1  | 7,989           |
| Iron ore Pellets                             | 4,730                                      | (2,432)                                  | (11)   | (17)                    | (15)                                   | 105  | 2,360           |
| Ferrous alloys and manganese                 | 343  | (211)                                    | (3)  | (1)                     |  |  | 128             |
| Other ferrous products and services          | 347  | (231)                                    | (3)  | (1)                     |  | 7  | 119             |
|  | <b>20,287</b>                              | <b>(9,555)</b>                           | <b>(57)</b>  | <b>(91)</b>             | <b>(101)</b>                           | <b>113</b>   | <b>10,596</b>   |
| <b>Coal</b>                                  | <b>1,161</b>                               | <b>(1,095)</b>                           | <b>(3)</b>   | <b>(13)</b>             |  | <b>115</b>   | <b>165</b>      |
| <b>Base metals</b>                           |  |  |  |                         |  |  |                 |
| Nickel and other products                    | 3,558                                      | (2,319)                                  | (36)   | (28)                    | (23)                                   |  | 1,152           |
| Copper                                       | 1,532                                      | (719)                                    | (3)  | (12)                    |  |  | 798             |
|  | <b>5,090</b>                               | <b>(3,038)</b>                           | <b>(39)</b>  | <b>(40)</b>             | <b>(23)</b>                            |  | <b>1,950</b>    |
| Others                                       | 224  | (200)                                    | (407)  | (104)                   | (17)                                   | 40   | (464)           |
| <b>Total of continuing operations</b>        | <b>26,762</b>                              | <b>(13,888)</b>                          | <b>(506)</b>   | <b>(248)</b>            | <b>(141)</b>                           | <b>268</b>   | <b>12,247</b>   |
| <b>Discontinued operations (Fertilizers)</b> | 121  | (120)                                    | (4)  |                         |  |  | (3)             |
| <b>Total</b>                                 | <b>26,883</b>                              | <b>(14,008)</b>                          | <b>(510)</b>   | <b>(248)</b>            | <b>(141)</b>                           | <b>268</b>   | <b>12,244</b>   |

(i) Adjusted for a loss of US\$121 refers to provision for litigation classified as special events.

|                              | Nine-month period ended September 30, 2017 |  |  |                         |  |  | Adjusted EBITDA |
|------------------------------|--|--|--|-------------------------|--|--|-----------------|
|                              | Net operating revenue                      | Cost of goods sold and services rendered | Selling, administrative and other operating expenses | Research and evaluation | Pre operating and operational stoppage | Dividends received and interest from associates and joint ventures |                 |
| <b>Ferrous minerals</b>      |  |  |  |                         |  |  |                 |
| Iron ore                     | 13,501                                     | (5,648)                                  | 27   | (61)                    | (128)                                  | 1  | 7,692           |
| Iron ore Pellets             | 4,231                                      | (2,097)                                  | (5)  | (13)                    | (5)                                    | 37   | 2,148           |
| Ferrous alloys and manganese | 334  | (196)                                    | (5)  |                         | (3)                                    |  | 130             |
|                              | 365  | (230)                                    | 10   | (1)                     |  | 12   | 156             |

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|  |               |                 |              |              |              |            |               |
|--|---------------|-----------------|--------------|--------------|--------------|------------|---------------|
| Other ferrous products and services          | 18,431        | (8,171)         | 27           | (75)         | (136)        | 50         | 10,126        |
| <b>Coal</b>                                  | <b>1,165</b>  | <b>(921)</b>    | <b>(8)</b>   | <b>(11)</b>  | <b>(4)</b>   | <b>67</b>  | <b>288</b>    |
| <b>Base metals</b>                           |               |                 |              |              |              |            |               |
| Nickel and other products                    | 3,309         | (2,563)         | (44)         | (34)         | (50)         |            | 618           |
| Copper                                       | 1,562         | (723)           | (6)          | (10)         |              |            | 823           |
|  | <b>4,871</b>  | <b>(3,286)</b>  | <b>(50)</b>  | <b>(44)</b>  | <b>(50)</b>  |            | <b>1,441</b>  |
| Others                                       | 333           | (304)           | (600)        | (106)        | (2)          | 53         | (626)         |
| <b>Total of continuing operations</b>        | <b>24,800</b> | <b>(12,682)</b> | <b>(631)</b> | <b>(236)</b> | <b>(192)</b> | <b>170</b> | <b>11,229</b> |
| <b>Discontinued operations (Fertilizers)</b> | <b>1,304</b>  | <b>(1,201)</b>  | <b>(58)</b>  | <b>(8)</b>   | <b>(26)</b>  |            | <b>11</b>     |
| <b>Total</b>                                 | <b>26,104</b> | <b>(13,883)</b> | <b>(689)</b> | <b>(244)</b> | <b>(218)</b> | <b>170</b> | <b>11,240</b> |

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Adjusted EBITDA is reconciled to net income (loss) as follows:

**From continuing operations**

|  | Three-month period ended<br>September 30, |              | Nine-month period ended<br>September 30, |               |
|--|---|--------------|--|---------------|
|  | 2018                                      | 2017         | 2018                                     | 2017          |
| <b>Net income from continuing operations</b>                       | <b>1,373</b>                              | <b>2,345</b> | <b>3,157</b>                             | <b>5,108</b>  |
| Depreciation, depletion and amortization                           | 849                                       | 920          | 2,583                                    | 2,732         |
| Income taxes   | 647                                       | 979          | 704                                      | 1,653         |
| Financial results, net   | 1,263                                     | (220)        | 4,942                                    | 1,732         |
| <b>EBITDA</b>  | <b>4,132</b>                              | <b>4,024</b> | <b>11,386</b>                            | <b>11,225</b> |
| <b>Items to reconcile adjusted EBITDA</b>                          |   |              |  |               |
| Special events (note 4)  | 221                                       | 169          | 306                                      | (123)         |
| Equity results in associates and joint ventures                    | (32)                                      | (115)        | (158)                                    | (164)         |
| Impairment and other results in associates and joint ventures      | 20  | 26           | 445                                      | 121           |
| Dividends received and interest from associates and joint ventures | 33  | 88           | 268                                      | 170           |
| <b>Adjusted (EBITDA) from continuing operations</b>                | <b>4,374</b>                              | <b>4,192</b> | <b>12,247</b>                            | <b>11,229</b> |

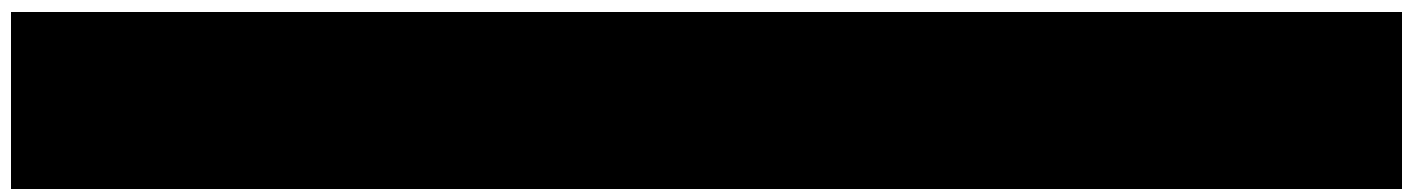
**From discontinued operations**

|   | Three-month period ended<br>September 30, |              | Nine-month period ended<br>September 30, |              |
|---|---|--------------|--|--------------|
|   | 2017                                      | 2018         | 2017                                     | 2018         |
| <b>Loss from discontinued operations</b>            | <b>(106)</b>                              | <b>(92)</b>  | <b>(313)</b>                             | <b>(92)</b>  |
| Depreciation, depletion and amortization            | 1   |              | 1  |              |
| Income taxes  | (103)                                     |              | (284)                                    |              |
| Financial results, net                              |   |              | 10                                       | 5            |
| <b>EBITDA</b>                                       | <b>(208)</b>                              | <b>(127)</b> | <b>(586)</b>                             | <b>(127)</b> |
| <b>Items to reconcile adjusted EBITDA</b>           |   |              |  |              |
| Impairment of non-current assets                    | 220                                       |              | 597                                      | 124          |
| <b>Adjusted EBITDA from discontinued operations</b> | <b>12</b>                                 | <b>(3)</b>   | <b>11</b>                                | <b>(3)</b>   |

**b) Assets by segment**

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|                  | September 30, 2018 |  |  | December 31, 2017 |  |  |
|------------------|--------------------|--|--|-------------------|--|--|
|                  | Product inventory  | Investments in associates and joint ventures | Property, plant and equipment and intangible (i) | Product inventory | Investments in associates and joint ventures | Property, plant and equipment and intangible (i) |
| Ferrous minerals | 1,867              | 1,763  | 30,112   | 1,770             | 1,922  | 36,103   |
| Coal             | 122                | 318  | 1,615  | 82                | 317  | 1,719  |
| Base metals      | 1,099              | 14   | 21,797   | 1,009             | 13   | 23,603   |
| Others           | 13                 | 1,051  | 1,699  | 6                 | 1,316  | 1,946  |
| <b>Total</b>     | <b>3,101</b>       | <b>3,146</b>                                 | <b>55,223</b>                                    | <b>2,867</b>      | <b>3,568</b>                                 | <b>63,371</b>                                    |



|                  |            |            |            |              |            |              |
|------------------|------------|------------|------------|--------------|------------|--------------|
| Ferrous minerals | 315        | 123        | 408        | 928          | 627        | 1,265        |
| Base metals      | 223        |            | 354        | 593          | 34         | 1,071        |
| <b>Total</b>     | <b>569</b> | <b>123</b> | <b>849</b> | <b>1,597</b> | <b>690</b> | <b>2,583</b> |

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|                  |            |            |            |              |              |              |
|------------------|------------|------------|------------|--------------|--------------|--------------|
| Ferrous minerals | 278        | 272        | 456        | 829          | 1,171        | 1,300        |
| Base metals      | 276        | 13         | 398        | 724          | 27           | 1,176        |
| <b>Total</b>     | <b>566</b> | <b>290</b> | <b>920</b> | <b>1,600</b> | <b>1,253</b> | <b>2,732</b> |

(i) Goodwill is allocated mainly to ferrous minerals and base metals segments in the amount of US\$1,782 and US\$1,902 in September 30, 2018 and US\$2,157 and US\$1,953 in December 31, 2017, respectively.

(ii) Includes only cash outflows.

(iii) Refers to amounts recognized in the income statement.

**Base metals****Onça Puma**

In September 2017, the Federal Court granted an injunction suspending certain of nickel mining operations at Onça Puma. The Company has appealed this decision to seek a suspension of this injunction, but it is not possible to anticipate when Onça Puma activities will resume. In December 31, 2017, the Company has calculated the recoverable amount and no losses were identified. The Company has assessed the impairment risk related to this specific cash-generating unit and concluded that no significant changes occurred that could lead to a loss that should be recognized in the income statement for the period ended September 30, 2018.

**Cobalt streaming transaction**

In June 2018, the Company entered into two different agreements, one with Wheaton Precious Metals Corp ( Wheaton ) and the other with Cobalt 27 Capital Corp. ( Cobalt 27 ), to sell a stream equivalent to 75% of the cobalt extracted as a by-product from the Voisey's Bay mine, in Canada, starting on January 1, 2021. Furthermore, the Company restarted the Voisey's Bay underground mine expansion project, which is going to increase the expected useful life of Voisey's Bay mine from 2023 to 2034. The first year of underground production is expected to be 2021, when the current operations on the open pit mine begins to ramp down.

Upon completion of the transaction, the Company received upfront payments of US\$690 in cash, US\$390 from Wheaton and US\$300 from Cobalt 27, which had been recorded as other non-current liabilities. Vale will receive additional payments of 20%, on average, of the market reference price for cobalt, for each pound of finished cobalt delivered.

Thus, from January 1, 2021 onwards, Wheaton and Cobalt 27 will be entitled to receive 42.4% and 32.6%, respectively, of cobalt equivalent to the production from the Voisey's Bay mine, while Vale remains exposed to approximately 40% of the cobalt economic exposure, as Vale retains the rights to 25% of the future cobalt production and will receive 20% additional payments for the cobalt stream. The result of the sale of the mineral rights will be accounted for once certain production thresholds have been met at Voisey's Bay mine and is not expected to be significant.

Table of Contentsc) **Net operating revenue by geographic area**

|   | Three-month period ended September 30, 2018 |            |              |           |              |
|---|---|------------|--------------|-----------|--------------|
|   | Ferrous minerals                            | Coal       | Base metals  | Others    | Total        |
| Americas, except United States and Brazil | 187   |            | 210          |           | 397          |
| United States of America                  | 130   |            | 222          |           | 352          |
| Germany                                   | 262   |            | 106          |           | 368          |
| Europe, except Germany                    | 532   | 104        | 423          |           | 1,059        |
| Middle East/Africa/Oceania                | 631   | 45         | 7            |           | 683          |
| Japan                                     | 516   | 55         | 126          |           | 697          |
| China                                     | 4,078                                       |            | 188          |           | 4,266        |
| Asia, except Japan and China              | 520   | 192        | 234          |           | 946          |
| Brazil                                    | 583   | 29         | 70           | 93        | 775          |
| <b>Net operating revenue</b>              | <b>7,439</b>                                | <b>425</b> | <b>1,586</b> | <b>93</b> | <b>9,543</b> |

|   | Three-month period ended September 30, 2017 |            |              |            |              |
|---|---|------------|--------------|------------|--------------|
|   | Ferrous minerals                            | Coal       | Base metals  | Others     | Total        |
| Americas, except United States and Brazil | 137   |            | 246          | 15         | 398          |
| United States of America                  | 83  |            | 244          | 25         | 352          |
| Germany                                   | 296   |            | 72           |            | 368          |
| Europe, except Germany                    | 463   | 42         | 536          |            | 1,041        |
| Middle East/Africa/Oceania                | 529   | 56         | 3            |            | 588          |
| Japan                                     | 601   | 34         | 101          |            | 736          |
| China                                     | 3,684                                       |            | 138          |            | 3,822        |
| Asia, except Japan and China              | 374   | 200        | 388          |            | 962          |
| Brazil                                    | 653   | 28         | 34           | 68         | 783          |
| <b>Net operating revenue</b>              | <b>6,820</b>                                | <b>360</b> | <b>1,762</b> | <b>108</b> | <b>9,050</b> |

|   | Nine-month period ended September 30, 2018 |              |              |            |               |
|---|--|--------------|--------------|------------|---------------|
|   | Ferrous minerals                           | Coal         | Base metals  | Others     | Total         |
| Americas, except United States and Brazil | 601  |              | 551          |            | 1,152         |
| United States of America                  | 301  |              | 731          | 8          | 1,040         |
| Germany                                   | 873  |              | 318          |            | 1,191         |
| Europe, except Germany                    | 1,578                                      | 293          | 1,382        |            | 3,253         |
| Middle East/Africa/Oceania                | 1,724                                      | 121          | 17           |            | 1,862         |
| Japan                                     | 1,587                                      | 88           | 386          |            | 2,061         |
| China                                     | 10,520                                     |              | 604          |            | 11,124        |
| Asia, except Japan and China              | 1,289                                      | 564          | 875          |            | 2,728         |
| Brazil                                    | 1,814                                      | 95           | 226          | 216        | 2,351         |
| <b>Net operating revenue</b>              | <b>20,287</b>                              | <b>1,161</b> | <b>5,090</b> | <b>224</b> | <b>26,762</b> |



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Nine-month period ended September 30, 2017

|   | Ferrous<br>minerals | Coal         | Base metals  | Others     | Total         |
|---|---------------------|--------------|--------------|------------|---------------|
| Americas, except United States and Brazil | 417                 |              | 740          | 70         | 1,227         |
| United States of America                  | 257                 |              | 619          | 83         | 959           |
| Germany                                   | 804                 |              | 211          | 16         | 1,031         |
| Europe, except Germany                    | 1,534               | 242          | 1,421        | 14         | 3,211         |
| Middle East/Africa/Oceania                | 1,310               | 144          | 9            |            | 1,463         |
| Japan                                     | 1,431               | 113          | 279          |            | 1,823         |
| China                                     | 9,811               |              | 383          |            | 10,194        |
| Asia, except Japan and China              | 929                 | 547          | 1,090        |            | 2,566         |
| Brazil                                    | 1,938               | 119          | 119          | 150        | 2,326         |
| <b>Net operating revenue</b>              | <b>18,431</b>       | <b>1,165</b> | <b>4,871</b> | <b>333</b> | <b>24,800</b> |

**Provisionally priced commodities sales** - As at September 30, 2018, there were 26 million metric tons of iron ore (2017: 30 million metric tons) and 77 thousand metric tons of copper (2017: 106 thousand metric tons) provisionally priced based on forward prices. The final price of these sales will be determined during the fourth quarter of 2018. A 10% change in the realized prices compared to the provisionally priced sales, all other factors held constant, would increase or reduce iron ore net income by US\$178 and copper net income by US\$55.

Table of Contents**4. Special events occurred during the period**

The special events occurred during the period are those that, in the Company's judgment, have non-operational effect on the performance of the period due to their size and nature. To determine whether an event or transaction should be disclosed as special events, the Company considers quantitative and qualitative factors, such as frequency and magnitude.

The special events identified by the Company are as follows:

|                                  | Three-month period ended September 30, |              | Nine-month period ended September 30, |            |
|----------------------------------|--|--------------|---------------------------------------|------------|
|                                  | 2018                                   | 2017         | 2018                                  | 2017       |
| Result in disposal of assets     | (172)                                  | (158)        | (185)                                 | (248)      |
| Provision for litigation         | (49)                                   |              | (121)                                 |            |
| Nacala Logistic Corridor         |  | (11)         |                                       | 504        |
| Impairment of non-current assets |  |              |                                       | (133)      |
| <b>Total</b>                     | <b>(221)</b>                           | <b>(169)</b> | <b>(306)</b>                          | <b>123</b> |

**Result in disposal of assets** Refers to non-viable projects and operating assets written off through sale or obsolescence, recognized in the income statement as Impairment and other results on non-current assets.

**Provision for litigation** Refers to the update on the likelihood of loss for various litigations.

**Nacala Logistic Corridor** In March 2017, the Company concluded the transaction with Mitsui to sell 15% of its stake in Vale Moçambique and 50% of its stake in the Nacala Logistics Corridor and recognized a gain in the income statement of US\$504.

**Impairment of non-current assets** In the second quarter of 2017, the Company placed an underground mine in Sudbury in care and maintenance and an impairment of US\$133 was recognized in the income statement.

Table of Contents5. **Costs and expenses by nature**a) **Cost of goods sold and services rendered**

|                            | Three-month period ended<br>September 30, |              | Nine-month period ended<br>September 30, |               |
|----------------------------|---|--------------|--|---------------|
|                            | 2018                                      | 2017         | 2018                                     | 2017          |
| Personnel                  | 572                                       | 565          | 1,698                                    | 1,668         |
| Materials and services     | 1,001                                     | 1,070        | 2,849                                    | 2,751         |
| Fuel oil and gas           | 382                                       | 331          | 1,113                                    | 949           |
| Maintenance                | 685                                       | 778          | 2,098                                    | 2,254         |
| Energy                     | 210                                       | 246          | 688                                      | 693           |
| Acquisition of products    | 114                                       | 145          | 337                                      | 468           |
| Depreciation and depletion | 814                                       | 868          | 2,469                                    | 2,566         |
| Freight                    | 1,272                                     | 890          | 3,113                                    | 2,320         |
| Others                     | 706                                       | 519          | 1,992                                    | 1,579         |
| <b>Total</b>               | <b>5,756</b>                              | <b>5,412</b> | <b>16,357</b>                            | <b>15,248</b> |
| Cost of goods sold         | 5,624                                     | 5,256        | 15,916                                   | 14,797        |
| Cost of services rendered  | 132                                       | 156          | 441                                      | 451           |
| <b>Total</b>               | <b>5,756</b>                              | <b>5,412</b> | <b>16,357</b>                            | <b>15,248</b> |

b) **Selling and administrative expenses**

|                               | Three-month period ended<br>September 30, |            | Nine-month period ended<br>September 30, |            |
|-------------------------------|---|------------|--|------------|
|                               | 2018                                      | 2017       | 2018                                     | 2017       |
| Personnel                     | 61  | 56         | 164                                      | 172        |
| Services                      | 21  | 19         | 58                                       | 48         |
| Depreciation and amortization | 18  | 19         | 50                                       | 70         |
| Others                        | 36  | 35         | 110                                      | 95         |
| <b>Total</b>                  | <b>136</b>                                | <b>129</b> | <b>382</b>                               | <b>385</b> |

c) **Other operating expenses, net**

|                          | Three-month period ended<br>September 30, |      | Nine-month period ended<br>September 30, |      |
|--------------------------|---|------|--|------|
|                          | 2018                                      | 2017 | 2018                                     | 2017 |
| Provision for litigation | 49  | 60   | 121                                      | 89   |

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|                        |           |            |            |            |
|------------------------|-----------|------------|------------|------------|
| Profit sharing program | 36        | 34         | 144        | 103        |
| Others                 | (24)      | 57         | 30         | 124        |
| <b>Total</b>           | <b>61</b> | <b>151</b> | <b>295</b> | <b>316</b> |

6. **Financial results**

|   | Three-month period ended<br>September 30, |              | Nine-month period ended<br>September 30, |                |
|---|---|--------------|--|----------------|
|   | 2018                                      | 2017         | 2018                                     | 2017           |
| <b>Financial income</b>                                     |   |              |  |                |
| Short-term investments                                      | 50  | 51           | 125                                      | 139            |
| Others  | 61  | 101          | 185                                      | 193            |
|   | <b>111</b>                                | <b>152</b>   | <b>310</b>                               | <b>332</b>     |
| <b>Financial expenses</b>                                   |   |              |  |                |
| Loans and borrowings gross interest                         | (272)                                     | (417)        | (902)                                    | (1,319)        |
| Capitalized loans and borrowing costs                       | 50  | 111          | 154                                      | 297            |
| Participative stockholders' debentures                      | (3)                                       | (72)         | (490)                                    | (571)          |
| Expenses of REFIS   | (48)                                      | (94)         | (157)                                    | (328)          |
| Others  | (94)                                      | (286)        | (400)                                    | (592)          |
|   | <b>(367)</b>                              | <b>(758)</b> | <b>(1,795)</b>                           | <b>(2,513)</b> |
| <b>Other financial items</b>                                |   |              |  |                |
| Net foreign exchange gains (losses) on loans and borrowings | (689)                                     | 673          | (3,182)                                  | 432            |
| Derivative financial instruments                            | (105)                                     | 365          | (321)                                    | 483            |
| Other net foreign exchange gains (losses)                   | 4   | (222)        | 487                                      | (351)          |
| Net indexation gains (losses)                               | (217)                                     | 10           | (441)                                    | (115)          |
|   | <b>(1,007)</b>                            | <b>826</b>   | <b>(3,457)</b>                           | <b>449</b>     |
| <b>Financial results, net</b>                               | <b>(1,263)</b>                            | <b>220</b>   | <b>(4,942)</b>                           | <b>(1,732)</b> |

Table of Contents7. **Income taxes**a) **Deferred income tax assets and liabilities**

Changes in deferred tax are as follows:

|                                      | Assets       | Liabilities  | Deferred taxes, net |
|--------------------------------------|--------------|--------------|---------------------|
| <b>Balance at June 30, 2018</b>      | <b>6,535</b> | <b>1,678</b> | <b>4,857</b>        |
| Effect in income statement           | (729)        | (5)          | (724)               |
| Translation adjustment               | (119)        | 23           | (142)               |
| Other comprehensive income           | 26           | 15           | 11                  |
| <b>Balance at September 30, 2018</b> | <b>5,713</b> | <b>1,711</b> | <b>4,002</b>        |

|  | Assets       | Liabilities  | Deferred taxes, net |
|--|--------------|--------------|---------------------|
| <b>Balance at June 30, 2017</b>          | <b>7,095</b> | <b>1,565</b> | <b>5,530</b>        |
| Effect in income statement               | (487)        | (30)         | (457)               |
| Translation adjustment                   | 214          | 41           | 173                 |
| Other comprehensive income               | (171)        | 28           | (199)               |
| <b>Effect of discontinued operations</b> |              |              |                     |
| Effect in income statement               | 103          |              | 103                 |
| Transfer to net assets held for sale     | (103)        |              | (103)               |
| <b>Balance at September 30, 2017</b>     | <b>6,651</b> | <b>1,604</b> | <b>5,047</b>        |

|  | Assets       | Liabilities  | Deferred taxes, net |
|--|--------------|--------------|---------------------|
| <b>Balance at December 31, 2017</b>      | <b>6,638</b> | <b>1,719</b> | <b>4,919</b>        |
| Effect in income statement               | (549)        | 12           | (561)               |
| Transfers between asset and liabilities  | 9            | 9            |                     |
| Translation adjustment                   | (815)        | (40)         | (775)               |
| Other comprehensive income               | 402          | 11           | 391                 |
| <b>Effect of discontinued operations</b> |              |              |                     |
| Effect in income statement               | 40           |              | 40                  |
| Transfer to net assets held for sale     | (12)         |              | (12)                |
| <b>Balance at September 30, 2018</b>     | <b>5,713</b> | <b>1,711</b> | <b>4,002</b>        |

|  | Assets       | Liabilities  | Deferred taxes, net |
|--|--------------|--------------|---------------------|
| <b>Balance at December 31, 2016</b>      | <b>7,343</b> | <b>1,700</b> | <b>5,643</b>        |
| Effect in income statement               | (674)        | (113)        | (561)               |
| Translation adjustment                   | 176          | 78           | 98                  |
| Other comprehensive income               | (194)        | (61)         | (133)               |
| <b>Effect of discontinued operations</b> |              |              |                     |

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|                                      |              |              |              |
|--------------------------------------|--------------|--------------|--------------|
| Effect in income statement           | 284          |              | 284          |
| Transfer to net assets held for sale | (284)        |              | (284)        |
| <b>Balance at September 30, 2017</b> | <b>6,651</b> | <b>1,604</b> | <b>5,047</b> |

b) **Income tax reconciliation** **Income statement**

The total amount presented as income taxes in the income statement is reconciled to the statutory rate, as follows:

|   | Three-month period ended<br>September 30, |                | Nine-month period ended<br>September 30, |                |
|---|---|----------------|--|----------------|
|   | 2018                                      | 2017           | 2018                                     | 2017           |
| <b>Income before income taxes</b>                       | <b>2,020</b>                              | <b>3,324</b>   | <b>3,861</b>                             | <b>6,761</b>   |
| <b>Income taxes at statutory rates - 34%</b>            | <b>(687)</b>                              | <b>(1,130)</b> | <b>(1,313)</b>                           | <b>(2,299)</b> |
| <b>Adjustments that affect the basis of taxes:</b>      |   |                |  |                |
| Income tax benefit from interest on stockholders equity | 201                                       | 125            | 665                                      | 377            |
| Tax incentives  | 150                                       | 134            | 339                                      | 313            |
| Equity results  | 11  | 40             | 55                                       | 57             |
| Unrecognized tax losses of the period                   | (205)                                     | (176)          | (461)                                    | (445)          |
| Gain on sale of subsidiaries                            |   |                |  | 175            |
| Others  | (117)                                     | 28             | 11                                       | 169            |
| <b>Income taxes</b>                                     | <b>(647)</b>                              | <b>(979)</b>   | <b>(704)</b>                             | <b>(1,653)</b> |

Income tax expense is recognized based on the estimate of the weighted average effective tax rate expected for the full year, adjusted for the tax effect of certain items recognized in full in the interim period. Therefore, the effective tax rate in the interim financial statement may differ from management's estimate of the effective tax rate for the annual financial statement.

Table of Contentsc) **Income taxes - Settlement program ( REFIS )**

The balance mainly relates to REFIS to settle most of the claims related to the collection of income tax and social contribution on equity gains of foreign subsidiaries and affiliates from 2003 to 2012. As at September 30, 2018, the balance of US\$4,272 (US\$414 as current and US\$3,858 as non-current) is due in 121 remaining monthly installments, bearing interest at the SELIC rate (Special System for Settlement and Custody).

8. **Basic and diluted earnings (loss) per share**

The basic and diluted earnings (loss) per share are presented below:

|  | Three-month period ended<br>September 30, |              | Nine-month period ended<br>September 30, |              |
|--|---|--------------|--|--------------|
|  | 2018                                      | 2017 (i)     | 2018                                     | 2017 (i)     |
| <b>Net income (loss) attributable to Vale's stockholders:</b>            |   |              |  |              |
| Net income from continuing operations                                    | 1,408                                     | 2,338        | 3,166                                    | 5,055        |
| Loss from discontinued operations  |   | (108)        | (92)                                     | (319)        |
| <b>Net income</b>  | <b>1,408</b>                              | <b>2,230</b> | <b>3,074</b>                             | <b>4,736</b> |
| <b>Thousands of shares</b>   |   |              |  |              |
| Weighted average number of shares outstanding - common shares (note 24b) | 5,180,238                                 | 5,197,432    | 5,191,638                                | 5,197,432    |
| <b>Basic and diluted earnings per share from continuing operations:</b>  |   |              |  |              |
| Common share (US\$)  | 0.27                                      | 0.45         | 0.61                                     | 0.97         |
| <b>Basic and diluted loss per share from discontinued operations:</b>    |   |              |  |              |
| Common share (US\$)  |   | (0.02)       | (0.02)                                   | (0.06)       |
| <b>Basic and diluted earnings per share:</b>                             |   |              |  |              |
| Common share (US\$)  | 0.27                                      | 0.43         | 0.59                                     | 0.91         |

(i) Restated to reflect the conversion of the class A preferred shares into common shares.

The Company does not have potential outstanding shares or other instruments with dilutive effect on the earnings per share.

## 9. Accounts receivable

|  | September 30, 2018 | December 31, 2017 |
|--|--------------------|-------------------|
| Accounts receivable  | 2,507              | 2,660             |
| Impairment of accounts receivable                          | (57)               | (60)              |
|  | <b>2,450</b>       | <b>2,600</b>      |
| <b>Accounts receivable related to the steel sector - %</b> | <b>80.50%</b>      | <b>82.90%</b>     |

|  | Three-month period ended |                       | Nine-month period ended |                       |
|--|--------------------------|-----------------------|-------------------------|-----------------------|
|  | 2018                     | September 30,<br>2017 | 2018                    | September 30,<br>2017 |
| Impairment of trade receivables recorded in the income statement | 2                        | (2)                   | (2)                     | (6)                   |

There is no customer that individually represents over 10% of accounts receivable or revenues.



Table of Contents**10. Inventories**

|                      | September 30, 2018 |  | December 31, 2017 |  |
|----------------------|--------------------|--|-------------------|--|
| Finished products    | 2,387              |  | 2,219             |  |
| Work in progress     | 714                |  | 648               |  |
| Consumable inventory | 955                |  | 1,059             |  |
| <b>Total</b>         | <b>4,056</b>       |  | <b>3,926</b>      |  |

|   | Three-month period ended<br>September 30, |      | Nine-month period ended<br>September 30, |      |
|---|---|------|--|------|
|   | 2018                                      | 2017 | 2018                                     | 2017 |
| Reversal (provision) for net realizable value | 3   | 25   | (14)                                     | 84   |

Finished and work in progress product inventory by segments is presented in note 3(b).

**11. Other financial assets and liabilities**

|  | Current            |                   | Non-Current        |                   |
|--|--------------------|-------------------|--------------------|-------------------|
|  | September 30, 2018 | December 31, 2017 | September 30, 2018 | December 31, 2017 |
| <b>Other financial assets</b>              |                    |                   |                    |                   |
| Financial investments                      | 6                  | 18                |                    |                   |
| Loans                                      |                    |                   | 155                | 151               |
| Derivative financial instruments (note 20) | 73                 | 106               | 347                | 453               |
| Investments in equity securities (note 12) |                    |                   | 1,110              |                   |
| Related parties - Loans (note 25)          | 334                | 1,898             | 1,605              | 2,628             |
|  | <b>413</b>         | <b>2,022</b>      | <b>3,217</b>       | <b>3,232</b>      |
| <b>Other financial liabilities</b>         |                    |                   |                    |                   |
| Derivative financial instruments (note 20) | 382                | 104               | 492                | 686               |
| Related parties (note 25)                  | 503                | 882               | 959                | 975               |
| Participative stockholders debentures      |                    |                   | 1,367              | 1,233             |
|  | <b>885</b>         | <b>986</b>        | <b>2,818</b>       | <b>2,894</b>      |

**Participative stockholders debentures**

On October 2, 2018 (subsequent event), the Company paid the amount of R\$261 million (US\$63) as remuneration to stockholders debentures.

12. **Non-current assets and liabilities held for sale and discontinued operations**

|   | December 31, 2017<br>Fertilizers |
|---|----------------------------------|
| <b>Assets</b>                                 |                                  |
| Accounts receivable                           | 90                               |
| Inventories                                   | 460                              |
| Other current assets                          | 110                              |
| Investments in associates and joint ventures  | 83                               |
| Property, plant and equipment and Intangibles | 2,149                            |
| Other non-current assets                      | 695                              |
| <b>Total assets</b>                           | <b>3,587</b>                     |
| <b>Liabilities</b>                            |                                  |
| Suppliers and contractors                     | 324                              |
| Other current liabilities                     | 215                              |
| Other non-current liabilities                 | 640                              |
| <b>Total liabilities</b>                      | <b>1,179</b>                     |
| <b>Net non-current assets held for sale</b>   | <b>2,408</b>                     |

Table of Contents**a) Fertilizers (discontinued operations)**

In December 2016, the Company entered into an agreement with The Mosaic Company ( Mosaic ) to sell (i) the phosphate assets located in Brazil, except for the assets located in Cubatão, Brazil; (ii) the control of Compañia Minera Miski Mayo S.A.C., in Peru; (iii) the potassium assets located in Brazil; and (iv) the potash projects in Canada.

In January 2018, the Company and Mosaic concluded the transaction and the Company received US\$1,080 in cash and 34.2 million common shares, corresponding to 8.9% of Mosaic 's equity after the issuance of these shares (US\$899, based on the Mosaic 's quotation at closing date of the transaction) and a loss of US\$55 was recognized in the income statement from discontinued operations.

Mosaic 's shares received were accounted for as an equity investment measured at fair value through other comprehensive income. For the three and nine-month periods ended September 30, 2018, the Company recognized a gain of US\$170 and US\$212 in other comprehensive income as Fair value adjustment to investment in equity securities .

**b) Cubatão (part of the fertilizer segment)**

In November 2017, the Company entered into an agreement with Yara International ASA ( Yara ) to sell its assets located in Cubatão, Brazil. In May 2018, the transaction was concluded and the Company received US\$255 in cash and a loss of US\$69 was recognized in the second quarter of 2018, in the income statement from discontinued operations.

The results and cash flows of discontinued operations of the Fertilizer segment are presented as follows:

**Income statement**

|  | Three-month period ended<br>September 30,<br>2017 | 2018  | Nine-month period ended<br>September 30,<br>2017 |
|--|---|-------|--|
| <b>Discontinued operations</b>           |   |       |  |
| Net operating revenue                    | 533   | 121   | 1,304  |
| Cost of goods sold and services rendered | (491)   | (120) | (1,201)  |
| Operating expenses                       | (31)  | (4)   | (93)   |

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|   |              |              |              |
|---|--------------|--------------|--------------|
| Impairment of non-current assets                    | (220)        | (124)        | (597)        |
| <b>Operating loss</b>                               | <b>(209)</b> | <b>(127)</b> | <b>(587)</b> |
| Financial Results, net                              |              | (5)          | (10)         |
| <b>Loss before income taxes</b>                     | <b>(209)</b> | <b>(132)</b> | <b>(597)</b> |
| Income taxes  | 103          | 40           | 284          |
| <b>Loss from discontinued operations</b>            | <b>(106)</b> | <b>(92)</b>  | <b>(313)</b> |
| Net income attributable to noncontrolling interests | 2            |              | 6            |
| <b>Loss attributable to Vale's stockholders</b>     | <b>(108)</b> | <b>(92)</b>  | <b>(319)</b> |

Statement of cash flow

|  | Three-month period ended<br>September 30,<br>2017 | 2018        | Nine-month period ended<br>September 30,<br>2017 |
|--|---|-------------|--|
| <b>Discontinued operations</b>                             |   |             |  |
| <b>Cash flow from operating activities</b>                 |   |             |  |
| Loss before income taxes                                   | (209)   | (132)       | (597)  |
| <b>Adjustments:</b>  |   |             |  |
| Depreciation, amortization and depletion                   | 1   |             | 1  |
| Impairment of non-current assets                           | 220   | 124         | 597  |
| Others   |   | 5           |  |
| Increase (decrease) in assets and liabilities              | 75  | (34)        | 77   |
| <b>Net cash provided by (used in) operating activities</b> | <b>87</b>   | <b>(37)</b> | <b>78</b>  |
| <b>Cash flow from investing activities</b>                 |   |             |  |
| Additions to property, plant and equipment                 | (71)  | (9)         | (215)  |
| <b>Net cash used in investing activities</b>               | <b>(71)</b>                                       | <b>(9)</b>  | <b>(215)</b>                                     |
| <b>Cash flow from financing activities</b>                 |   |             |  |
| <b>Loans and borrowings</b>                                |   |             |  |
| Repayments   | (34)  |             | (34)   |
| <b>Net cash used in financing activities</b>               | <b>(34)</b>                                       |             | <b>(34)</b>                                      |
| <b>Net cash used in discontinued operations</b>            | <b>(18)</b>                                       | <b>(46)</b> | <b>(171)</b>                                     |

Table of Contents**13. Investments in associates and joint ventures****a) Changes during the period**

Changes in investments in associates and joint ventures as follows:

|  | Associates   | Joint ventures | Total        |
|--|--------------|----------------|--------------|
| <b>Balance at December 31, 2017</b>                | <b>1,441</b> | <b>2,127</b>   | <b>3,568</b> |
| Additions  |              | 23             | 23           |
| Translation adjustment                             | (211)        | (324)          | (535)        |
| Equity results in income statement                 | 28           | 130            | 158          |
| Dividends declared                                 |              | (154)          | (154)        |
| Transfer from non-current assets held for sale (i) | 87           |                | 87           |
| Others   | 6            | (7)            | (1)          |
| <b>Balance at September 30, 2018</b>               | <b>1,351</b> | <b>1,795</b>   | <b>3,146</b> |

(i) Refers to 18% interest held by Vale Fertilizantes at Ultrafertil which was transferred to Vale as part of the final settlement in January 2018 (note 12)

|   | Associates   | Joint ventures | Total        |
|---|--------------|----------------|--------------|
| <b>Balance at December 31, 2016</b>                 | <b>1,437</b> | <b>2,259</b>   | <b>3,696</b> |
| Additions   | 1            | 90             | 91           |
| Translation adjustment                              | 35           | 56             | 91           |
| Equity results in income statement                  | 47           | 117            | 164          |
| Equity results in statement of comprehensive income |              | (172)          | (172)        |
| Dividends declared                                  | (43)         | (91)           | (134)        |
| Others  |              | 119            | 119          |
| <b>Balance at September 30, 2017</b>                | <b>1,477</b> | <b>2,378</b>   | <b>3,855</b> |

The investments by segments are presented in note 3(b).

**b) Guarantees provided**

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As of September 30, 2018, corporate guarantees provided by Vale (within the limit of its direct or indirect interest) for the companies Norte Energia S.A. and Companhia Siderúrgica do Pecém S.A. were US\$320 and US\$1,405, respectively.

### c) Acquisitions and divestiture

#### 2017

**Nacala Logistic Corridor** - In December 2014 and as amended in November 2016, the Company signed an agreement with Mitsui & Co., Ltd. ( Mitsui ) to transfer 50% of its stake of 66.7% in Nacala Logistic Corridor, which comprises entities that holds railroads and port concessions located in Mozambique and Malawi. Also, Mitsui committed to acquire 15% participation in the holding entity of Vale Moçambique, which holds the Moatize Coal Project.

In March 2017, the transaction was concluded and Vale received a consideration of US\$690. After the completion of the transaction, the Company (i) holds 81% of Vale Moçambique and retains the control of the Moatize Coal Project and (ii) shares control of the Nacala Logistic Corridor structure (Nacala BV), with Mitsui.

The result of the transaction regarding the assets from Nacala s logistic corridor was recognized in the income statement as Impairment and other results on non-current assets .

The consideration received was recognized in the statement of cash flows in Proceeds from disposal of assets and investments in the amount of US\$435 and Transactions with noncontrolling stockholders in the amount of US\$255.

After the conclusion of the transaction, Vale has outstanding loan balances with Nacala BV and Pangea Emirates Ltd due to the deconsolidation of Nacala Logistic Corridor are disclosed in note 25.

Table of Contents**Investments in associates and joint ventures (continued)**

| Associates and joint ventures                   | % ownership | % voting capital | Investments in associates and joint ventures |                   | Equity results in the income statement      |   |   |   | Dividends received                          |   |            |            |
|---|-------------|------------------|--|-------------------|---|---|---|---|---|---|------------|------------|
|   |             |                  | September 30, 2018                           | December 31, 2017 | Three-month period ended September 30, 2018 | Three-month period ended September 30, 2017 | Three-month period ended September 30, 2018 | Three-month period ended September 30, 2017 | Three-month period ended September 30, 2018 | Three-month period ended September 30, 2017 |            |            |
| <b>Ferrous minerals</b>                         |             |                  |  |                   |   |   |   |   |   |   |            |            |
| Baovale Mineração S.A. Companhia                | 50.00       | 50.00            | 26   | 26                | 1   | 1   | 4   | 5   |   |   | 1          |            |
| Coreano-Brasileira de Pelotização Companhia     | 50.00       | 50.00            | 100  | 89                | 16  | 11  | 49  | 36  |   |   | 15         |            |
| Hispano-Brasileira de Pelotização (i) Companhia | 50.89       | 51.00            | 80   | 82                | 15  | 9   | 38  | 30  |   |   | 23         | 5          |
| Ítalo-Brasileira de Pelotização (i) Companhia   | 50.90       | 51.00            | 91   | 80                | 14  | 9   | 45  | 29  |   |   | 33         | 17         |
| Nipo-Brasileira de Pelotização (i)              | 51.00       | 51.11            | 169  | 137               | 31  | 22  | 92  | 68  |   |   | 34         | 15         |
| MRS Logística S.A.                              | 48.16       | 46.75            | 453  | 517               | 12  | 22  | 42  | 59  |   |   |            |            |
| VLI S.A.  | 37.60       | 37.60            | 822  | 968               | 21  | 17  | 22  | 23  | 7   | 12  | 7          | 12         |
| Zhuhai YPM Pellet Co.                           | 25.00       | 25.00            | 22   | 23                |   |   |   |   |   |   |            |            |
|   |             |                  | <b>1,763</b>                                 | <b>1,922</b>      | <b>110</b>                                  | <b>91</b>                                   | <b>292</b>                                  | <b>250</b>                                  | <b>7</b>                                    | <b>12</b>                                   | <b>113</b> | <b>49</b>  |
| <b>Coal</b>                                     |             |                  |  |                   |   |   |   |   |   |   |            |            |
| Henan Longyu Energy Resources Co., Ltd.         | 25.00       | 25.00            | 318  | 317               | 1   | 4   | 13  | 20  |   |   |            |            |
|   |             |                  | <b>318</b>                                   | <b>317</b>        | <b>1</b>                                    | <b>4</b>                                    | <b>13</b>                                   | <b>20</b>                                   |   |   |            |            |
| <b>Base metals</b>                              |             |                  |  |                   |   |   |   |   |   |   |            |            |
| Korea Nickel Corp.                              | 25.00       | 25.00            | 14   | 13                | 1   | 1   | 2   | 1   |   |   |            |            |
|   |             |                  | <b>14</b>                                    | <b>13</b>         | <b>1</b>                                    | <b>1</b>                                    | <b>2</b>                                    | <b>1</b>                                    |   |   |            |            |
| <b>Others</b>                                   |             |                  |  |                   |   |   |   |   |   |   |            |            |
| Aliança Geração de Energia S.A. (i)             | 55.00       | 55.00            | 473  | 571               | 2   | 3   | 27  | 18  |   | 9   | 25         | 20         |
| Aliança Norte Energia Participações S.A. (i)    | 51.00       | 51.00            | 156  | 160               | 4   | (3)   | 14  |   |   |   |            |            |
| California Steel Industries, Inc.               | 50.00       | 50.00            | 249  | 200               | 24  | 10  | 64  | 35  |   |   | 15         | 13         |
| Companhia Siderúrgica do Pecém                  | 50.00       | 50.00            |  | 262               | (119)                                       | (1)   | (243)                                       | (143)                                       |   |   |            |            |
| Mineração Rio do Norte S.A.                     | 40.00       | 40.00            | 85   | 101               | 2   | 9   | (4)   | 10  |   |   |            | 21         |
| Others  |             |                  | 88   | 22                | 7   | 1   | (7)   | (27)  |   |   |            |            |
|   |             |                  | <b>1,051</b>                                 | <b>1,316</b>      | <b>(80)</b>                                 | <b>19</b>                                   | <b>(149)</b>                                | <b>(107)</b>                                |   | <b>9</b>                                    | <b>40</b>  | <b>54</b>  |
| <b>Total</b>                                    |             |                  | <b>3,146</b>                                 | <b>3,568</b>      | <b>32</b>                                   | <b>115</b>                                  | <b>158</b>                                  | <b>164</b>                                  | <b>7</b>                                    | <b>21</b>                                   | <b>153</b> | <b>103</b> |

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(i) Although the Company held a majority of the voting capital, the entities are accounted under equity method due to the stockholders agreement where relevant decisions are shared with other parties.



Table of Contents**14. Intangibles**

Changes in intangibles are as follows:

|                                      | Goodwill     | Concessions  | Right of use | Software   | Total        |
|--------------------------------------|--------------|--------------|--------------|------------|--------------|
| <b>Balance at December 31, 2017</b>  | <b>4,110</b> | <b>4,002</b> | <b>152</b>   | <b>229</b> | <b>8,493</b> |
| Additions                            |              | 698          |              | 7          | 705          |
| Disposals                            |              | (21)         |              |            | (21)         |
| Amortization                         |              | (95)         | (6)          | (80)       | (181)        |
| Translation adjustment               | (426)        | (747)        | (8)          | (25)       | (1,206)      |
| <b>Balance at September 30, 2018</b> | <b>3,684</b> | <b>3,837</b> | <b>138</b>   | <b>131</b> | <b>7,790</b> |
| Cost                                 | 3,684        | 4,775        | 218          | 1,082      | 9,759        |
| Accumulated amortization             |              | (938)        | (80)         | (951)      | (1,969)      |
| <b>Balance at September 30, 2018</b> | <b>3,684</b> | <b>3,837</b> | <b>138</b>   | <b>131</b> | <b>7,790</b> |

|                                      | Goodwill     | Concessions  | Right of use | Software   | Total        |
|--------------------------------------|--------------|--------------|--------------|------------|--------------|
| <b>Balance at December 31, 2016</b>  | <b>3,081</b> | <b>3,301</b> | <b>147</b>   | <b>342</b> | <b>6,871</b> |
| Additions                            |              | 740          |              | 23         | 763          |
| Disposals                            |              | (5)          |              |            | (5)          |
| Amortization                         |              | (115)        | (1)          | (108)      | (224)        |
| Translation adjustment               | 167          | 94           | 9            | 12         | 282          |
| Merger of Valepar                    | 964          |              |              |            | 964          |
| <b>Balance at September 30, 2017</b> | <b>4,212</b> | <b>4,015</b> | <b>155</b>   | <b>269</b> | <b>8,651</b> |
| Cost                                 | 4,212        | 5,256        | 246          | 1,608      | 11,322       |
| Accumulated amortization             |              | (1,241)      | (91)         | (1,339)    | (2,671)      |
| <b>Balance at September 30, 2017</b> | <b>4,212</b> | <b>4,015</b> | <b>155</b>   | <b>269</b> | <b>8,651</b> |

**Concessions**

During the third quarter of 2018, the Company started the process of early renewal of its railway concessions, which expire in 2027. The early renewal of the concessions will be submitted to the Board of Directors, subject to the analysis of the compensations required by the government, including the implementation of the Midwest Integration Railroad ( FICO ), totaling 377 km between the Brazilian states of Mato Grosso and Goias. The compensations required for the renewal will be formalized after the stage of public hearing.

**15. Property, plant and equipment**

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Changes in property, plant and equipment are as follows:

|  | Land       | Building      | Facilities    | Equipment    | Mineral properties | Others       | Constructions in progress | Total         |
|--|------------|---------------|---------------|--------------|--------------------|--------------|---------------------------|---------------|
| <b>Balance at December 31, 2017</b>      | <b>718</b> | <b>12,100</b> | <b>11,786</b> | <b>6,893</b> | <b>9,069</b>       | <b>8,193</b> | <b>6,119</b>              | <b>54,878</b> |
| Additions (i)                            |            |               |               |              |                    |              | 1,669                     | 1,669         |
| Disposals                                |            | (38)          | (41)          | (220)        | (5)                | (55)         | (14)                      | (373)         |
| Asset retirement obligation              |            |               |               |              | (125)              |              |                           | (125)         |
| Depreciation, amortization and depletion |            | (429)         | (519)         | (628)        | (391)              | (503)        |                           | (2,470)       |
| Translation adjustment                   | (97)       | (1,525)       | (1,668)       | (625)        | (678)              | (1,102)      | (451)                     | (6,146)       |
| Transfers                                | 7          | 534           | 1,286         | 942          | 339                | 739          | (3,847)                   |               |
| <b>Balance at September 30, 2018</b>     | <b>628</b> | <b>10,642</b> | <b>10,844</b> | <b>6,362</b> | <b>8,209</b>       | <b>7,272</b> | <b>3,476</b>              | <b>47,433</b> |
| Cost                                     | 628        | 17,809        | 17,166        | 12,325       | 16,620             | 11,602       | 3,476                     | 79,626        |
| Accumulated depreciation                 |            | (7,167)       | (6,322)       | (5,963)      | (8,411)            | (4,330)      |                           | (32,193)      |
| <b>Balance at September 30, 2018</b>     | <b>628</b> | <b>10,642</b> | <b>10,844</b> | <b>6,362</b> | <b>8,209</b>       | <b>7,272</b> | <b>3,476</b>              | <b>47,433</b> |

|  | Land       | Building      | Facilities    | Equipment    | Mineral properties | Others       | Constructions in progress | Total         |
|--|------------|---------------|---------------|--------------|--------------------|--------------|---------------------------|---------------|
| <b>Balance at December 31, 2016</b>      | <b>724</b> | <b>10,674</b> | <b>9,471</b>  | <b>6,794</b> | <b>8,380</b>       | <b>7,515</b> | <b>11,861</b>             | <b>55,419</b> |
| Additions (i)                            |            |               |               |              |                    |              | 2,229                     | 2,229         |
| Disposals                                |            |               | (48)          | (31)         | (125)              | (115)        | (141)                     | (460)         |
| Asset retirement obligation              |            |               |               |              | (74)               |              |                           | (74)          |
| Depreciation, amortization and depletion |            | (440)         | (543)         | (638)        | (480)              | (568)        |                           | (2,669)       |
| Translation adjustment                   | 18         | 321           | 282           | 124          | 452                | 285          | 353                       | 1,835         |
| Transfers                                | 19         | 1,821         | 2,652         | 734          | 655                | 1,399        | (7,280)                   |               |
| <b>Balance at September 30, 2017</b>     | <b>761</b> | <b>12,376</b> | <b>11,814</b> | <b>6,983</b> | <b>8,808</b>       | <b>8,516</b> | <b>7,022</b>              | <b>56,280</b> |
| Cost                                     | 761        | 19,195        | 18,463        | 12,888       | 17,226             | 12,841       | 7,022                     | 88,396        |
| Accumulated depreciation                 |            | (6,819)       | (6,649)       | (5,905)      | (8,418)            | (4,325)      |                           | (32,116)      |
| <b>Balance at September 30, 2017</b>     | <b>761</b> | <b>12,376</b> | <b>11,814</b> | <b>6,983</b> | <b>8,808</b>       | <b>8,516</b> | <b>7,022</b>              | <b>56,280</b> |

(i) Includes capitalized borrowing costs.

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There are no material changes to the net book value of consolidated property, plant and equipment pledged to secure judicial claims and loans and borrowings (note 16(c)) compared to those disclosed in the financial statements as at December 31, 2017.

## 16. Loans, borrowings, cash and cash equivalents and financial investments

### a) Net debt

The Company analyzes the net debt in order to ensure its business continuity in the long term.

|   | September 30, 2018 | December 31, 2017 |
|---|--------------------|-------------------|
| Debt contracts in the international markets | 13,027             | 17,288            |
| Debt contracts in Brazil                    | 3,783              | 5,201             |
| <b>Total of loans and borrowings</b>        | <b>16,810</b>      | <b>22,489</b>     |
| (-) Cash and cash equivalents               | 6,100              | 4,328             |
| (-) Financial investments (note 11)         | 6                  | 18                |
| <b>Net debt</b>                             | <b>10,704</b>      | <b>18,143</b>     |

### b) Cash and cash equivalents

Cash and cash equivalents include cash, immediately redeemable deposits and short-term investments with an insignificant risk of change in value. They are readily convertible to cash, partly in R\$, indexed to the Brazilian Interbank Interest rate ( DI Rate or CDI ) and partly in US\$, denominated time deposits.

### c) Loans and borrowings

### i) Total debt

Current liabilities

Non-current liabilities

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|  | September 30, 2018 | December 31, 2017 | September 30, 2018 | December 31, 2017 |
|--|--------------------|-------------------|--------------------|-------------------|
| <b>Debt contracts in the international markets</b> |                    |                   |                    |                   |
| <b>Floating rates in:</b>                          |                    |                   |                    |                   |
| US\$   | 389                | 310               | 1,786              | 2,764             |
| EUR  |                    |                   |                    | 240               |
| <b>Fixed rates in:</b>                             |                    |                   |                    |                   |
| US\$   | 6                  |                   | 9,342              | 12,588            |
| EUR  |                    |                   | 1,104              | 900               |
| Other currencies                                   | 34                 | 17                | 163                | 206               |
| <b>Accrued charges</b>                             | <b>203</b>         | <b>263</b>        |                    |                   |
|  | <b>632</b>         | <b>590</b>        | <b>12,395</b>      | <b>16,698</b>     |
| <b>Debt contracts in Brazil</b>                    |                    |                   |                    |                   |
| <b>Floating rates in:</b>                          |                    |                   |                    |                   |
| R\$, indexed to TJLP, TR, IPCA, IGP-M and CDI      | 382                | 447               | 2,406              | 3,195             |
| Basket of currencies and US\$ indexed to LIBOR     | 265                | 339               | 529                | 708               |
| <b>Fixed rates in:</b>                             |                    |                   |                    |                   |
| R\$  | 55                 | 68                | 102                | 173               |
| <b>Accrued charges</b>                             | <b>39</b>          | <b>259</b>        | <b>5</b>           | <b>12</b>         |
|  | <b>741</b>         | <b>1,113</b>      | <b>3,042</b>       | <b>4,088</b>      |
|  | <b>1,373</b>       | <b>1,703</b>      | <b>15,437</b>      | <b>20,786</b>     |

The future cash out flows of debt principal, per nature of funding and interest are as follows:

|                       | Principal    |                 |                      | Total         | Estimated future interest payments (i) |
|-----------------------|--------------|-----------------|----------------------|---------------|--|
|                       | Bank loans   | Capital markets | Development agencies |               |  |
| 2018                  | 234          |                 | 197                  | 431           | 223                                    |
| 2019                  | 145          |                 | 730                  | 875           | 891                                    |
| 2020                  | 178          | 331             | 638                  | 1,147         | 854                                    |
| 2021                  | 346          | 380             | 586                  | 1,312         | 784                                    |
| Between 2022 and 2026 | 1,532        | 4,607           | 1,000                | 7,139         | 2,958                                  |
| 2027 onwards          | 92           | 5,490           | 77                   | 5,659         | 4,197                                  |
|                       | <b>2,527</b> | <b>10,808</b>   | <b>3,228</b>         | <b>16,563</b> | <b>9,907</b>                           |

(i) Estimated future payments of interest, calculated based on interest rate curves and foreign exchange rates applicable as at September 30, 2018 and considering that all amortization payments and payments at maturity on loans and borrowings will be made on their contracted payments dates. The amount includes the estimated values of future interest payments (not yet accrued), in addition to interest already recognized in the financial statements.

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At September 30, 2018, the average annual interest rates by currency are as follows:

| Loans and borrowings | Average interest rate (i) | Total debt    |
|----------------------|---------------------------|---------------|
| US\$                 | 5.59%                     | 12,495        |
| R\$ (ii)             | 9.40%                     | 2,982         |
| EUR (iii)            | 3.81%                     | 1,136         |
| Other currencies     | 3.00%                     | 197           |
|                      |                           | <b>16,810</b> |

(i) In order to determine the average interest rate for debt contracts with floating rates, the Company used the rate applicable at September 30, 2018.

(ii) R\$ denominated debt that bears interest at IPCA, CDI, TR or TJLP, plus spread. For a total of US\$1,789 the Company entered into derivative transactions to mitigate the exposure to the cash flow variations of the floating rate debt denominated in R\$, resulting in an average cost of 1.95% per year in US\$.

(iii) Eurobonds, for which the Company entered into derivatives to mitigate the exposure to the cash flow variations of the debt denominated in EUR, resulting in an average cost of 4.29% per year in US\$.

#### ii) Reconciliation of debt to cash flows arising from financing activities

|                             | December 31,<br>2017 | Additions  | Cash flow<br>Repayments | Interest<br>paid | Transferences | Non-cash changes<br>Effect of<br>exchange rate | Interest<br>accretion | September 30,<br>2018 |
|-----------------------------|----------------------|------------|-------------------------|------------------|---------------|--|-----------------------|-----------------------|
| <b>Loans and borrowings</b> |                      |            |                         |                  |               |  |                       |                       |
| Current                     | 1,703                |            | (6,045)                 | (903)            | 5,751         | (122)  | 989                   | 1,373                 |
| Non-current                 | 20,786               | 976        |                         |                  | (5,751)       | (582)  | 8                     | 15,437                |
| <b>Total</b>                | <b>22,489</b>        | <b>976</b> | <b>(6,045)</b>          | <b>(903)</b>     |               | <b>(704)</b>                                   | <b>997</b>            | <b>16,810</b>         |

#### iii) Credit and financing lines

| Type                        | Contractual<br>currency | Date of agreement | Period of the<br>agreement | Total amount | Available amount<br>September 30, 2018 |
|-----------------------------|-------------------------|-------------------|----------------------------|--------------|--|
| <b>Credit lines</b>         |                         |                   |                            |              |  |
| Revolving credit facilities | US\$                    | May 2015          | 5 years                    | 3,000        | 3,000                                  |
| Revolving credit facilities | US\$                    | June 2017         | 5 years                    | 2,000        | 2,000                                  |

**Financing lines**

|                               |     |                |          |       |     |
|-------------------------------|-----|----------------|----------|-------|-----|
| BNDES - CLN 150               | R\$ | September 2012 | 10 years | 970   | 5   |
| BNDES - S11D e S11D Logística | R\$ | May 2014       | 10 years | 1,539 | 252 |

**iv) Repayments**

During the first half of 2018, the Company conducted a cash tender offer for Vale Overseas 5.875% guaranteed notes due 2021, 4.375% guaranteed notes due 2022 and a cash tender offer for Vale S.A. 5.625% guaranteed notes due 2042 and repurchased a total of US\$2,730. The Company also redeemed all of Vale Overseas 4.625% guaranteed notes due 2020 totaling US\$499.

**v) Guarantees**

As at September 30, 2018 and December 31, 2017, loans and borrowings are secured by property, plant and equipment in the amount of US\$221 and US\$275, respectively.

The securities issued through Vale's 100%-owned finance subsidiary Vale Overseas Limited are fully and unconditionally guaranteed by Vale.

**vi) Covenants**

Some of the Company's debt agreements with lenders contain financial covenants. The primary financial covenants in those agreements require maintaining certain ratios, such as debt to EBITDA and interest coverage. The Company has not identified any instances of noncompliance as at September 30, 2018.

Table of Contents**17. Liabilities related to associates and joint ventures**

The movement of the provision to comply with the obligations under the agreement related to the dam failure of Samarco Mineração S.A. ( Samarco ), which is a Brazilian joint venture between Vale S.A. and BHP Billiton Brasil Ltda. ( BHPB ), in the nine-month periods ended September 30, 2018 and 2017 are as follows:

|                                 | 2018         | 2017         |
|---------------------------------|--------------|--------------|
| <b>Balance at January 01,</b>   | <b>996</b>   | <b>1,077</b> |
| Payments                        | (194)        | (216)        |
| Present value valuation         | 47           | 136          |
| Provision increase              | 391          |              |
| Translation adjustment          | (187)        | 29           |
| <b>Balance at September 30,</b> | <b>1,053</b> | <b>1,026</b> |
| Current liabilities             | 292          | 301          |
| Non-current liabilities         | 761          | 725          |
| <b>Liabilities</b>              | <b>1,053</b> | <b>1,026</b> |

In 2018, the Fundação Renova reviewed the estimates for the expenditures required to mitigate and compensate for the impacts of the disruption from Samarco's tailing dam. As a result of this revision, Vale S.A. recognized in the second quarter of 2018 an additional provision of US\$391 (R\$1,476 million), which amounts to the present value of Vale's new estimated secondary responsibility to support the Renova Foundation works and is equivalent to 50% of Samarco's additional obligations over the next 12 years.

In addition to the provision above, Vale S.A. made available in the three and nine-month periods ended September 30, 2018 the amount of US\$22 and US\$56, respectively, which was fully used to fund Samarco's working capital and was recognized in Vale's income statement as Impairment and other results in associates and joint ventures. Vale S.A. intends to make available until December 31, 2018 up to US\$33 to support Samarco's working capital requirements, without any binding obligation to Samarco in this regard. Such amounts will be released by the shareholders, simultaneously and pursuant to the same terms and conditions, subject to the fulfillment of certain milestones.

Under Brazilian legislation and the terms of the joint venture agreement, Vale does not have an obligation to provide funding to Samarco. Therefore, Vale's investment in Samarco was impaired in full and no provision was recognized in relation to the Samarco's negative reserves.

The contingencies related to the Samarco dam failure are disclosed in note 22.





Table of Contents**18. Financial instruments classification**

|                                       | September 30, 2018 |                           |                                      | December 31, 2017 |                |                                      |               |
|---------------------------------------|--------------------|---------------------------|--------------------------------------|-------------------|----------------|--------------------------------------|---------------|
|                                       | Amortized cost     | At fair value through OCI | At fair value through profit or loss | Total             | Amortized cost | At fair value through profit or loss | Total         |
| <b>Financial assets</b>               |                    |                           |                                      |                   |                |                                      |               |
| <b>Current</b>                        |                    |                           |                                      |                   |                |                                      |               |
| Cash and cash equivalents             | 6,100              |                           |                                      | 6,100             | 4,328          |                                      | 4,328         |
| Financial investments                 | 6                  |                           |                                      | 6                 | 18             |                                      | 18            |
| Derivative financial instruments      |                    |                           | 73                                   | 73                |                | 106                                  | 106           |
| Accounts receivable                   | 2,472              |                           | (22)                                 | 2,450             | 2,600          |                                      | 2,600         |
| Related parties                       | 334                |                           |                                      | 334               | 1,898          |                                      | 1,898         |
|                                       | <b>8,912</b>       |                           | <b>51</b>                            | <b>8,963</b>      | <b>8,844</b>   | <b>106</b>                           | <b>8,950</b>  |
| <b>Non-current</b>                    |                    |                           |                                      |                   |                |                                      |               |
| Derivative financial instruments      |                    |                           | 347                                  | 347               |                | 453                                  | 453           |
| Investments in equity securities      |                    | 1,110                     |                                      | 1,110             |                |                                      |               |
| Loans                                 | 155                |                           |                                      | 155               | 151            |                                      | 151           |
| Related parties                       | 1,605              |                           |                                      | 1,605             | 2,628          |                                      | 2,628         |
|                                       | <b>1,760</b>       | <b>1,110</b>              | <b>347</b>                           | <b>3,217</b>      | <b>2,779</b>   | <b>453</b>                           | <b>3,232</b>  |
| <b>Total of financial assets</b>      | <b>10,672</b>      | <b>1,110</b>              | <b>398</b>                           | <b>12,180</b>     | <b>11,623</b>  | <b>559</b>                           | <b>12,182</b> |
| <b>Financial liabilities</b>          |                    |                           |                                      |                   |                |                                      |               |
| <b>Current</b>                        |                    |                           |                                      |                   |                |                                      |               |
| Suppliers and contractors             | 4,038              |                           |                                      | 4,038             | 4,041          |                                      | 4,041         |
| Derivative financial instruments      |                    |                           | 382                                  | 382               |                | 104                                  | 104           |
| Loans and borrowings                  | 1,373              |                           |                                      | 1,373             | 1,703          |                                      | 1,703         |
| Related parties                       | 503                |                           |                                      | 503               | 882            |                                      | 882           |
|                                       | <b>5,914</b>       |                           | <b>382</b>                           | <b>6,296</b>      | <b>6,626</b>   | <b>104</b>                           | <b>6,730</b>  |
| <b>Non-current</b>                    |                    |                           |                                      |                   |                |                                      |               |
| Derivative financial instruments      |                    |                           | 492                                  | 492               |                | 686                                  | 686           |
| Loans and borrowings                  | 15,437             |                           |                                      | 15,437            | 20,786         |                                      | 20,786        |
| Related parties                       | 959                |                           |                                      | 959               | 975            |                                      | 975           |
| Participative stockholders debentures |                    |                           | 1,367                                | 1,367             |                | 1,233                                | 1,233         |
|                                       | <b>16,396</b>      |                           | <b>1,859</b>                         | <b>18,255</b>     | <b>21,761</b>  | <b>1,919</b>                         | <b>23,680</b> |
| <b>Total of financial liabilities</b> | <b>22,310</b>      |                           | <b>2,241</b>                         | <b>24,551</b>     | <b>28,387</b>  | <b>2,023</b>                         | <b>30,410</b> |

**19. Fair value estimate**

a) **Assets and liabilities measured and recognized at fair value:**

|                                       | September 30, 2018 |              |            | Total        | December 31, 2017 |            |              |
|---------------------------------------|--------------------|--------------|------------|--------------|-------------------|------------|--------------|
|                                       | Level 1            | Level 2      | Level 3    |              | Level 2           | Level 3    | Total        |
| <b>Financial assets</b>               |                    |              |            |              |                   |            |              |
| Derivative financial instruments      |                    | 179          | 241        | 420          | 289               | 270        | 559          |
| Accounts receivable                   |                    | (22)         |            | (22)         |                   |            |              |
| Investments in equity securities      | 1,110              |              |            | 1,110        |                   |            |              |
| <b>Total</b>                          | <b>1,110</b>       | <b>157</b>   | <b>241</b> | <b>1,508</b> | <b>289</b>        | <b>270</b> | <b>559</b>   |
| <b>Financial liabilities</b>          |                    |              |            |              |                   |            |              |
| Derivative financial instruments      |                    | 708          | 166        | 874          | 581               | 209        | 790          |
| Participative stockholders debentures |                    | 1,367        |            | 1,367        | 1,233             |            | 1,233        |
| <b>Total</b>                          |                    | <b>2,075</b> | <b>166</b> | <b>2,241</b> | <b>1,814</b>      | <b>209</b> | <b>2,023</b> |

The Company changed its accounting estimate on the calculation of the participative stockholders debentures from January 1, 2018. The Company has replaced in the calculation the assumption of spot price at the reporting date to the weighted average price traded on the market within the last month of the quarter.

There were no transfers between Level 1 and Level 2, or between Level 2 and Level 3 for the nine-month period ended on September 30, 2018.

The following table presents the changes in Level 3 assets and liabilities for the nine-month period ended on September 30, 2018:

|   | Derivative financial instruments |                       |
|---|----------------------------------|-----------------------|
|   | Financial assets                 | Financial liabilities |
| <b>Balance at December 31, 2017</b>             | <b>270</b>                       | <b>209</b>            |
| Gains and losses recognized in income statement | (29)                             | (43)                  |
| <b>Balance at September 30, 2018</b>            | <b>241</b>                       | <b>166</b>            |

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**Methods and techniques of evaluation**

**Derivative financial instruments**

Financial instruments are evaluated by calculating their present value through the use of instrument yield curves at the closing dates. The curves and prices used in the calculation for each group of instruments are detailed in the market curves (note 26j).

The pricing method used for European options is the Black & Scholes model. In this model, the fair value of the derivative is a function of the volatility in the price of the underlying asset, the exercise price of the option, the interest rate and period to maturity. In the case of options where income is a function of the average price of the underlying asset over the period of the option, the Company uses Turnbull & Wakeman model. In this model, in addition to the factors that influence the option price in the Black-Scholes model, the formation period of the average price is also considered.

In the case of swaps, both the present value of the assets and liabilities are estimated by discounting the cash flow by the interest rate of the currency in which the swap is denominated. The difference between the present value of assets and liabilities of the swap generates its fair value.

For the TJLP swaps, the calculation of the fair value assumes that TJLP is constant, that is the projections of future cash flow in Brazilian Reais are made on the basis of the last TJLP disclosed.

Contracts for the purchase or sale of products, inputs and costs of selling with future settlement are priced using the forward yield curves for each product. Typically, these curves are obtained on the stock exchanges where the products are traded, such as the London Metals Exchange ( LME ), the Commodity Exchange ( COMEX ) or other providers of market prices. When there is no price for the desired maturity, Vale uses an interpolation between the available maturities.

The fair value for derivatives within level 3 are measured using discounted cash flows and option model valuation techniques with main unobservable inputs discount rates, stock prices and commodities prices.

**b) Fair value of financial instruments not measured at fair value**

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The fair values and carrying amounts of loans and borrowings (net of interest) are as follows:

| <b>Financial liabilities</b> | <b>Balance</b> | <b>Fair value</b> | <b>Level 1</b> | <b>Level 2</b> |
|------------------------------|----------------|-------------------|----------------|----------------|
| <b>September 30, 2018</b>    |                |                   |                |                |
| Debt principal               | 16,563         | 17,499            | 11,867         | 5,632          |
| <b>December 31, 2017</b>     |                |                   |                |                |
| Debt principal               | 21,955         | 23,088            | 14,935         | 8,153          |

Due to the short-term cycle, the fair value of cash and cash equivalents balances, financial investments, accounts receivable and accounts payable approximate their book values.

Table of Contents**20. Derivative financial instruments****a) Derivatives effects on the statement of financial position**

|   | September 30, 2018 |             | December 31, 2017 |             |
|---|--------------------|-------------|-------------------|-------------|
|   | Current            | Non-current | Current           | Non-current |
| <b>Assets</b>   |                    |             |                   |             |
| <b>Derivatives not designated as hedge accounting</b> |                    |             |                   |             |
| <b>Foreign exchange and interest rate risk</b>        |                    |             |                   |             |
| CDI & TJLP vs. US\$ fixed and floating rate swap      | 12                 |             | 38                |             |
| IPCA swap   | 3                  | 72          | 9                 | 82          |
| Eurobonds swap  |                    | 25          |                   | 27          |
| Pré-dolar swap  | 18                 |             | 22                | 32          |
|   | <b>33</b>          | <b>97</b>   | <b>69</b>         | <b>141</b>  |
| <b>Commodities price risk</b>                         |                    |             |                   |             |
| Nickel  | 2                  |             | 22                | 3           |
| Bunker oil  | 38                 |             | 15                |             |
|   | <b>40</b>          |             | <b>37</b>         | <b>3</b>    |
| <b>Others (note 26)</b>                               |                    | 250         |                   | 309         |
|   |                    | <b>250</b>  |                   | <b>309</b>  |
| <b>Total</b>  | <b>73</b>          | <b>347</b>  | <b>106</b>        | <b>453</b>  |

|   | September 30, 2018 |             | December 31, 2017 |             |
|---|--------------------|-------------|-------------------|-------------|
|   | Current            | Non-current | Current           | Non-current |
| <b>Liabilities</b>                                    |                    |             |                   |             |
| <b>Derivatives not designated as hedge accounting</b> |                    |             |                   |             |
| <b>Foreign exchange and interest rate risk</b>        |                    |             |                   |             |
| CDI & TJLP vs. US\$ fixed and floating rate swap      | 320                | 233         | 95                | 410         |
| IPCA swap   | 41                 | 53          |                   | 41          |
| Eurobonds swap  | 5                  |             | 4                 |             |
| Pré-dolar swap  | 10                 | 38          | 5                 | 24          |
|   | <b>376</b>         | <b>324</b>  | <b>104</b>        | <b>475</b>  |
| <b>Commodities price risk</b>                         |                    |             |                   |             |
| Nickel  | 6                  | 1           |                   |             |
|   | <b>6</b>           | <b>1</b>    |                   |             |
| <b>Others (note 26)</b>                               |                    | 167         |                   | 211         |
|   |                    | <b>167</b>  |                   | <b>211</b>  |
| <b>Total</b>  | <b>382</b>         | <b>492</b>  | <b>104</b>        | <b>686</b>  |

## b) Effects of derivatives on the income statement and cash flow

|   | Gain (loss) recognized in the income statement |            |                                       |             |
|---|--|------------|---------------------------------------|-------------|
|   | Three-month period ended September 30,         |            | Nine-month period ended September 30, |             |
|   | 2018   | 2017       | 2018                                  | 2017        |
| <b>Derivatives not designated as hedge accounting</b> |  |            |                                       |             |
| <b>Foreign exchange and interest rate risk</b>        |  |            |                                       |             |
| CDI & TJLP vs. US\$ fixed and floating rate swap      | (67)   | 186        | (264)                                 | 273         |
| IPCA swap   | (5)  | 48         | (50)                                  | 54          |
| Eurobonds swap  | 1  | 21         | (7)                                   | 23          |
| Euro forward  |  |            |                                       | 46          |
| Pré-dolar swap  | (9)  | 40         | (42)                                  | 50          |
|   | <b>(80)</b>                                    | <b>295</b> | <b>(363)</b>                          | <b>446</b>  |
| <b>Commodities price risk</b>                         |  |            |                                       |             |
| Nickel  | (20)   | 10         | (10)                                  | 6           |
| Bunker oil  | (9)  | (6)        | 57                                    | (96)        |
|   | <b>(29)</b>                                    | <b>4</b>   | <b>47</b>                             | <b>(90)</b> |
| <b>Others</b>   | <b>4</b>                                       | <b>66</b>  | <b>(5)</b>                            | <b>127</b>  |
| <b>Total</b>  | <b>(105)</b>                                   | <b>365</b> | <b>(321)</b>                          | <b>483</b>  |

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|   | Financial settlement inflows (outflows)     |                    |  |                    |
|---|---|--------------------|--|--------------------|
|   | Three-month period ended September 30, 2018 | September 30, 2017 | Nine-month period ended September 30, 2018 | September 30, 2017 |
| <b>Derivatives not designated as hedge accounting</b> |   |                    |  |                    |
| <b>Foreign exchange and interest rate risk</b>        |   |                    |  |                    |
| CDI & TJLP vs. US\$ fixed and floating rate swap      | (42)  | (97)               | (104)                                      | (138)              |
| IPCA swap   |   | (20)               | 7  | (20)               |
| Eurobonds swap  |   |                    | (4)  | (39)               |
| Pré-dolar swap  | (3)   |                    | 13   | (1)                |
|   | <b>(45)</b>                                 | <b>(117)</b>       | <b>(88)</b>                                | <b>(198)</b>       |
| <b>Commodities price risk</b>                         |   |                    |  |                    |
| Nickel  | (2)   | 4                  | 20   | (2)                |
| Bunker oil  | 25  |                    | 33   | (23)               |
|   | <b>23</b>                                   | <b>4</b>           | <b>53</b>                                  | <b>(25)</b>        |
| <b>Total</b>  | <b>(22)</b>                                 | <b>(113)</b>       | <b>(35)</b>                                | <b>(223)</b>       |

The maturity dates of the derivative financial instruments are as follows:

|                               | Last maturity dates |
|-------------------------------|---------------------|
| Currencies and interest rates | January 2024        |
| Bunker oil                    | December 2018       |
| Nickel                        | September 2020      |
| Others                        | December 2027       |

### c) Hedge in foreign operations

As at September 30, 2018 the carrying value of the debts designated as instrument hedge of the Company's investment in foreign operations (Vale International S.A. and Vale International Holding GmbH; hedging objects) are US\$3,250 and EUR750, respectively. The foreign exchange loss of US\$122 and US\$978 (US\$81 and US\$646, net of taxes), was recognized in the Cumulative translation adjustments in stockholders' equity for the three and nine-month period ended September 30, 2018, respectively, while the foreign exchange gains of US\$290 and US\$162 (US\$191 and US\$107, net of taxes), were recognized for the three and nine-month period ended September 30, 2017, respectively. This hedge was highly effective throughout the period ended September 30, 2018.

## 21. Provisions

Current liabilities

Non-current liabilities

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|  | September 30, 2018 | December 31, 2017 | September 30, 2018 | December 31, 2017 |
|--|--------------------|-------------------|--------------------|-------------------|
| Payroll, related charges and other remunerations | 879                | 1,101             |                    |                   |
| Onerous contracts                                | 110                | 102               | 268                | 364               |
| Environment restoration                          | 17                 | 30                | 89                 | 79                |
| Asset retirement obligations                     | 63                 | 87                | 2,821              | 3,081             |
| Provisions for litigation (note 22)              |                    |                   | 1,296              | 1,473             |
| Employee postretirement obligations (note 23)    | 104                | 74                | 1,893              | 2,030             |
| <b>Provisions</b>                                | <b>1,173</b>       | <b>1,394</b>      | <b>6,367</b>       | <b>7,027</b>      |



Table of Contents**22. Litigation****a) Provision for litigation**

Vale is a party to labor, civil, tax and other ongoing lawsuits, at administrative and court levels. Provisions for losses resulting from lawsuits are estimated and updated by the Company, based on analysis from the Company's legal consultants.

Changes in provision for litigation are as follows:

|                                      | Tax litigation | Civil litigation | Labor litigation | Environmental litigation | Total of litigation provision |
|--------------------------------------|----------------|------------------|------------------|--------------------------|-------------------------------|
| <b>Balance at December 31, 2017</b>  | <b>750</b>     | <b>131</b>       | <b>582</b>       | <b>10</b>                | <b>1,473</b>                  |
| Additions (reversals)                | 14             | 18               | 93               | (4)                      | 121                           |
| Payments                             | (7)            | (17)             | (78)             | (2)                      | (104)                         |
| Additions - discontinued operations  | 21             | 1                | 16               |                          | 38                            |
| Indexation and interest              | 18             | 15               | (5)              | (1)                      | 27                            |
| Translation adjustment               | (126)          | (30)             | (103)            |                          | (259)                         |
| <b>Balance at September 30, 2018</b> | <b>670</b>     | <b>118</b>       | <b>505</b>       | <b>3</b>                 | <b>1,296</b>                  |

|                                      | Tax litigation | Civil litigation | Labor litigation | Environmental litigation | Total of litigation provision |
|--------------------------------------|----------------|------------------|------------------|--------------------------|-------------------------------|
| <b>Balance at December 31, 2016</b>  | <b>214</b>     | <b>84</b>        | <b>534</b>       | <b>7</b>                 | <b>839</b>                    |
| Additions (reversals)                | (15)           | 13               | 87               | 4                        | 89                            |
| Payments                             | (91)           | (7)              | (83)             | (1)                      | (182)                         |
| Merger of Valepar                    | 631            |                  |                  |                          | 631                           |
| Indexation and interest              | 3              | 12               | 31               |                          | 46                            |
| Translation adjustment               | 19             | 3                | 16               |                          | 38                            |
| <b>Balance at September 30, 2017</b> | <b>761</b>     | <b>105</b>       | <b>585</b>       | <b>10</b>                | <b>1,461</b>                  |

**b) Contingent liabilities**

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Contingent liabilities are administrative and judicial claims, with expectation of loss classified as possible, and for which the recognition of a provision is not considered necessary by the Company, based on legal advice. The contingent liabilities are as follows:

|                          | September 30, 2018 | December 31, 2017 |
|--------------------------|--------------------|-------------------|
| Tax litigation           | 8,410              | 8,840             |
| Civil litigation         | 1,636              | 1,623             |
| Labor litigation         | 1,635              | 1,952             |
| Environmental litigation | 1,977              | 2,190             |
| <b>Total</b>             | <b>13,658</b>      | <b>14,605</b>     |

**i - Tax litigation** - Our most significant tax-related contingent liabilities result from disputes related to (i) the deductibility of our payments of social security contributions on the net income ( CSLL ) from our taxable income, (ii) challenges of certain tax credits we deducted from our PIS and COFINS payments, (iii) assessments of CFEM ( royalties ), and (iv) charges of value-added tax on services and circulation of goods ( ICMS ), especially relating to certain tax credits we claimed from the sale and transmission of energy, ICMS charges to anticipate the payment in the entrance of goods to Pará State and ICMS/penalty charges on our own transportation. The changes reported in the period resulted, mainly, from new proceedings related to PIS, COFINS, CFEM, ICMS e ISS and the application of interest and inflation adjustments to the disputed amounts.

**ii - Civil litigation** - Most of those claims have been filed by suppliers for indemnification under construction contracts, primarily relating to certain alleged damages, payments and contractual penalties. A number of other claims related to contractual disputes regarding inflation index. The changes reported in the period resulted, mainly from review of the process related to commercial divergences of supply contracts.

**iii - Labor litigation** - Represents individual claims by employees and service providers, primarily involving demands for additional compensation for overtime work, time spent commuting or health and safety conditions; and the Brazilian federal social security administration ( INSS ) regarding contributions on compensation programs based on profits.

**iv - Environmental litigation** - The most significant claims concern alleged procedural deficiencies in licensing processes, non-compliance with existing environmental licenses or damage to the environment.

Table of Contents**c) Judicial deposits**

In addition to the provisions and contingent liabilities, the Company is required by law to make judicial deposits to secure a potential adverse outcome of certain lawsuits. These court-ordered deposits are monetarily adjusted and reported as non-current assets until a judicial decision to draw the deposit occurs.

|                          | September 30, 2018 | December 31, 2017 |
|--------------------------|--------------------|-------------------|
| Tax litigation           | 1,027              | 1,201             |
| Civil litigation         | 41                 | 60                |
| Labor litigation         | 598                | 712               |
| Environmental litigation | 15                 | 13                |
| <b>Total</b>             | <b>1,681</b>       | <b>1,986</b>      |

**d) Contingencies related to Samarco accident***(i) Public civil claim filed by the Federal Government and others*

The federal government, the two Brazilian states affected by the failure (Espírito Santo and Minas Gerais) and other governmental authorities have initiated a public civil lawsuit against Samarco and its shareholders, Vale S.A. and BHPB ( ACP ), with an estimated value indicated by the plaintiffs of US\$5 billion (R\$20.2 billion).

The Framework Agreement signed in March 2016, was ratified by the Regional Federal Court ( TRF ) in May 2016. This ratification was suspended by the Superior Court of Justice ( STJ ) in June 2016 and resulted in the restoration of the public civil action, and maintained other measures, such as: (a) the prohibition of the defendants from transferring or conveying any of their interest in its Brazilian iron ore concessions, without, however, limiting their production and commercial activities and; (b) the order of the deposit with the court of US\$300 (R\$1.2 billion) by January 2017, which was provisionally replaced by the guarantees provided for under the agreements with Federal Prosecution Office ( MPF ), as detailed in the item (ii) below.

On June 2018, the parties that proposed the ACP mentioned above, together with the Federal Public Prosecutor's Office and the Public Defender's Offices of the Union and the States of Minas Gerais and Espírito Santo, entered into a new Agreement ( Term of Adjustment of Conduct ), which extinguishes important lawsuits, including the ACP, without judgment of merit. Afterwards, on August 8, 2018, the Agreement was ratified by the judge of the 12th Federal Court of Belo Horizonte, producing its legal and procedural effects.

*(ii) Public civil action filed by Federal Prosecution Office*

On May 3, 2016, the Federal Prosecution Office (MPF) filed a public civil action against Samarco and its shareholders and presented several claims, including: (i) the adoption of measures for mitigating the social, economic and environmental impacts resulting from the dam failure and other emergency measures; (ii) the payment of compensation to the community; and (iii) payments for the collective moral damage. The action value indicated by the MPF is US\$38.7 billion (R\$155 billion).

In January 2017 Samarco, Vale S.A. and BHPB entered into two preliminary agreements with the MPF. The first agreement ( *First Agreement* ) aims to outline the process and timeline for negotiations of a Final Agreement ( *Final Agreement* ), initially expected to occur by June 30, 2017, which was, nevertheless, extended by the parties to late June 2018.

This First Agreement establishes a timeline and actions to set the ground for conciliation of two public civil actions in the amounts of US\$5 billion (R\$20.2 billion) and US\$38.7 billion (R\$155 billion), mentioned above.

In addition, the First Agreement provides for: (a) the appointment of experts to give support to the Federal Prosecutors and paid for by the companies to conduct a diagnosis and monitor the progress of the programs under the Framework Agreement, and (b) holding at public hearings and the engagement of technical assistance to the affected people, in order to allow the communities to take part in the definition of the content of the Final Agreement.

Samarco, Vale S.A. and BHPB has agreed to provide a guarantee for fulfillment of the obligations regarding the financing and payment of the socio-environmental and socio-economic remediation programs resulting from the Fundão dam failure, pursuant to the two public civil actions, until the signing of the Final Agreement, amounting to US\$550 (R\$2.2 billion), of which (i) US\$24.9 (R\$100 million) in financial investments; (ii) US\$320 (R\$1.3 billion) in insurance bonds; and (iii) US\$199,5 (R\$800 million) in assets of Samarco. If, by the deadline negotiated by the parties, the negotiations have not been completed, the Federal Prosecutor's Office may require that the Court re-institute the order for the deposit of US\$300 (R\$1.2 billion) in relation to the US\$5 billion (R\$20.2 billion) public civil action and US\$1.9 billion (R\$7.7 billion) related US\$38.7 billion (R\$155 billion), mentioned above.

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On March 16, 2017, the 12th Judicial Federal Court of Belo Horizonte partially ratified the First Agreement, which decision includes: (i) ratification of the engagement of experts to perform a socio-environmental impact assessment and assessment of programs under the Framework Agreement and a period for the companies to engage an expert to perform the socio-economic impact assessment; (ii) the consolidation and suspension of related claims aiming to avoid contradictory or conflicting decisions and to establish a unified judicial procedure in order for the parties to be able to reach a final agreement; (iii) accepted the guarantees proposed by Samarco and its shareholders under the Preliminary Agreement on a temporary basis.

In addition, the Second Agreement ( Second Agreement ) was signed on January 19, 2017, which establishes a timetable to make funds available to remediate the social, economic and environmental damages caused by the Fundão dam failure in the municipalities of Barra Longa, Rio Doce, Santa Cruz do Escalvado and Ponte Nova, amounting to US\$49,9 (R\$200 million). The 12th Judicial Federal Court of Belo Horizonte ratified this Second Agreement.

Parties are still negotiating an agreement regarding the choice of the expert to perform the socio-economic impact assessment. In this regard, on November 16, 2017, they signed an addendum to the First Agreement, in which the parties defined matters related to the socio-economic impact assessment, its institutional structure and the respective experts, which, in the period of 90 days from the signing of the addendum, shall present their technical and commercial proposals. As the deadline already expired the proposals are being negotiated for service agreements.

On June 25, 2018, a Term of Conduct Adjustment (TACGov) was signed among Samarco and its shareholders, Vale and BHP Billiton Brasil, the Public Prosecutors (the Federal one and the ones from the States of Espírito Santo and Minas Gerais), the Public Defender Office (from the União and the States of Espírito Santo and Minas Gerais) and the Public Attorneys (from the Union and the States of Espírito Santo and Minas Gerais). The agreement established some innovations regarding the governance previously defined by the Frame Work Agreement and aim to improve the participation of people affected by the dawn break of the Fundão dam in the programs under the responsibility of Renova Foundation. It also establishes a negotiation process in order to allow the possible renegotiation of the programs dedicated to repair the impacts resulting from the event, to be discussed after the conclusion of the studies of the specialists hired by Samarco to advise the Public Prosecutor s Office ( Experts ). In addition, the TACGov extinguished some important lawsuits, including but not limited to, the ACP of US\$5 billion (R\$20 billion) proposed by the Federal Government and the States of Minas Gerais and Espírito Santo, and part of the ACP of US\$38.7 billion (R\$155 billion), as well address the discussions about some legal guarantees in the amount of US\$550 (R\$2.2 billion), bringing, therefore, greater legal certainty for the companies. On August 8, the TACGov was ratified by the judge of the 12th Federal Court of Belo Horizonte, producing its legal and procedural effects.

*(iii) U.S. Securities class action suits*

Related to the Vale's American Depositary Receipts

Vale S.A. and certain of its officers were named as defendants in securities class action suits in the Federal Court in New York brought by holders of Vale s American Depositary Receipts under U.S. federal securities laws. The lawsuits allege that Vale S.A. made false and misleading

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statements or did not make disclosures concerning the risks and dangers of the operations of Samarco's Fundão dam and the adequacy of related programs and procedures. The plaintiffs have not specified an amount of alleged damages or indemnities in these actions.

On March 23, 2017 the judge issued a decision rejecting a significant portion of the claims against Vale S.A. and the individual defendants, and determining the prosecution of the action with respect to more limited claims. The portion of plaintiffs' case that remains is related to certain statements about procedures, policies and risk mitigation plans contained in Vale S.A.'s sustainability reports in 2013 and 2014, and certain statements regarding the responsibility of Vale S.A. for the Fundão dam failure made in a conference call in November 2015.

This lawsuit is currently ongoing under discovery with the gathering of documents to be provided to the plaintiffs. In addition, depositions of some custodians indicated by the parties.

Vale S.A. continues to contest the outstanding points related to this lawsuit.

### Related to the Samarco bonds

In March 2017, holders of bonds issued by Samarco filed a class action suit in the Federal Court in New York against Samarco, Vale S.A. and BHPB under U.S. federal securities laws demanding for indemnification for alleged violation of U.S. federal securities laws. The plaintiffs allege that false and misleading statements were made or disclosures omitted concerning the risks and dangers of the operations of Samarco's Fundão dam and the adequacy of related programs and procedures. It is alleged that with the Fundão dam collapse, the securities have dramatically decreased, in order that the investors who have purchased such securities in a misleading way should be compensated, without, however, specifying an amount for the alleged damages or indemnities in this action.

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In June 2017 the defendants presented a joint motion to dismiss the claims requested by the plaintiffs. In March 2018, the Judge issued an order dismissing defendant's motion to dismiss without prejudice and ordering leading plaintiff to submit a final amended complaint, which was presented by the plaintiffs on March 21, 2018. As a result, a second joint motion to dismiss the claims was filed by the defendants a new decision regarding the merits of the motion to dismiss is expected to be issued by the Judge on the following months.

Vale S.A. continues to contest this lawsuit.

*(iv) Criminal lawsuit*

On October 20, 2016, the MPF brought a criminal lawsuit in the Brazilian Federal Justice Court against Vale S.A., BHPB, Samarco, VogBr Recursos Hídricos e Geotecnia Ltda. and 22 individuals for alleged crimes against the environment, urban planning and cultural heritage, flooding, landslide, as well as for alleged crimes against the victims of the Fundão dam failure.

In November 2016, the Federal Court of Ponte Nova received the complaint and began the criminal action.

On June 12 and 13, 2018, two hearings were conducted for the deposition of the first prosecution witness. On the second semester, hearings were conducted on September 12, 20 and 26 and October 3 and 4, 2018, for the depositions of the other prosecution witnesses. At this point, the criminal action is temporarily suspended according to a decision from October 15, 2018, due to two Habeas Corpuses judged by the 1st Regional Federal Court and therefore it is not possible to precise at this point when there will be a decision and/or trial of Federal Prosecution's indictment.

*(v) Other lawsuits*

In addition, Samarco and its shareholders were named and have been still named as defendants in several other lawsuits brought by individuals, corporations, governmental entities or public prosecutor seeking personal and property damages.

After the ratification by the judge of the 12th Federal Lower Court of the new Agreement with public authorities and public prosecutors, some public civil actions shall be extinguished.

Given the status of these lawsuits, it is not possible at this time to provide a range of possible outcomes or a reliable estimates of potential exposures for Vale S.A. Consequently, no contingent liability has been quantified and no provision was recognized for lawsuits related to Samarco's dam failure.

**e) Contingent assets**

In 2015, the Company filed an enforceable action in the amount of US\$131 (R\$524 million) referring to the final court decision in favor of the Company of the accrued interest of compulsory deposits from 1987 to 1993. Currently it is not possible to estimate the economic benefit inflow as the counterparty can appeal on the calculation. Consequently, the asset was not recognized in the financial statements.



Table of Contents23. **Employee postretirement obligations****Reconciliation of net liabilities recognized in the statement of financial position**

|   | September 30, 2018       |                           |                | December 31, 2017        |                           |                | Total          |                |
|---|--------------------------|---------------------------|----------------|--------------------------|---------------------------|----------------|----------------|----------------|
|   | Overfunded pension plans | Underfunded pension plans | Other benefits | Overfunded pension plans | Underfunded pension plans | Other benefits |                |                |
| <b>Amount recognized in the statement of financial position</b> |                          |                           |                |                          |                           |                |                |                |
| Present value of actuarial liabilities                          | (2,797)                  | (4,278)                   | (1,351)        | (8,426)                  | (3,397)                   | (4,470)        | (1,410)        | (9,277)        |
| Fair value of assets  | 4,038                    | 3,632                     |                | 7,670                    | 4,828                     | 3,776          |                | 8,604          |
| Effect of the asset ceiling                                     | (1,241)                  |                           |                | (1,241)                  | (1,431)                   |                |                | (1,431)        |
| <b>Liabilities</b>  |                          | <b>(646)</b>              | <b>(1,351)</b> | <b>(1,997)</b>           |                           | <b>(694)</b>   | <b>(1,410)</b> | <b>(2,104)</b> |
| Current liabilities   |                          | (51)                      | (53)           | (104)                    |                           | (16)           | (58)           | (74)           |
| Non-current liabilities   |                          | (595)                     | (1,298)        | (1,893)                  |                           | (678)          | (1,352)        | (2,030)        |
| <b>Liabilities</b>  |                          | <b>(646)</b>              | <b>(1,351)</b> | <b>(1,997)</b>           |                           | <b>(694)</b>   | <b>(1,410)</b> | <b>(2,104)</b> |

24. **Stockholders equity**a) **Share capital**

As at September 30, 2018, the share capital was US\$61,614 corresponding to 5,284,474,782 shares issued and fully paid without par value.

| Stockholders   | September 30, 2018 |     | Total         |
|--|--------------------|-----|---------------|
|  | ON                 | PNE |               |
| Litel Participações S.A. and Litela Participações S.A. | 1,108,483,410      |     | 1,108,483,410 |
| BNDES Participações S.A.                               | 394,939,557        |     | 394,939,557   |
| Bradespar S.A.   | 332,965,266        |     | 332,965,266   |
| Mitsui & Co., Ltd                                      | 286,347,055        |     | 286,347,055   |
| Foreign investors - ADRs                               | 1,268,100,202      |     | 1,268,100,202 |

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|  |                      |           |                      |
|--|----------------------|-----------|----------------------|
| Foreign institutional investors in local market        | 1,161,261,895        |           | 1,161,261,895        |
| FMP - FGTS   | 56,378,941           |           | 56,378,941           |
| PIBB - Fund  | 2,524,029            |           | 2,524,029            |
| Institutional investors                                | 268,604,777          |           | 268,604,777          |
| Retail investors in Brazil                             | 280,989,231          |           | 280,989,231          |
| Brazilian Government (Golden Share)                    |                      | 12        | 12                   |
| <b>Outstanding shares</b>                              | <b>5,160,594,363</b> | <b>12</b> | <b>5,160,594,375</b> |
| Shares in treasury                                     | 123,880,407          |           | 123,880,407          |
| <b>Total issued shares</b>                             | <b>5,284,474,770</b> | <b>12</b> | <b>5,284,474,782</b> |
| <b>Share capital per class of shares (in millions)</b> | <b>61,614</b>        |           | <b>61,614</b>        |
| <b>Total authorized shares</b>                         | <b>7,000,000,000</b> |           | <b>7,000,000,000</b> |

**b) Share buyback program**

On July 25, 2018, the Board of Directors approved a share buyback program for Vale's common share which will be limited to a maximum of 80,000,000 common shares, and their respective ADSs, and up to US\$1 billion. The program will be carried out over up to a 12-month period and the repurchased shares will be cancelled after the expiration of the program and/or alienated through the executive compensation programs. The shares have been acquired in the stock market based on regular trading conditions. As at September 30, 2018, the Company repurchased of 36,837,718 common shares (including their respective ADSs), at an average price of US\$13.27 per share, for a total aggregate purchase price of US\$489. The shares acquired will be held in treasury for future sale or cancellation.

**c) Remuneration to the Company's stockholders**

On September, 2018, the Company paid to stockholders' remuneration in the amount of US\$1,876 (R\$7,694 million), US\$1,659 (R\$6,801 million) based on the interest on capital and US\$217 (R\$893 million) based on dividends, approved by Board of Directors on July 25, 2018. This payment is due to the new policy of stockholders' remuneration of the Company, approved in March 2018, which provides for a semi-annual payment of 30% of Adjusted EBITDA from continuing operations less sustaining investments. This amount will be reduced from the minimum mandatory remuneration for the year ended 2018 and/or deducted from the profit reserve, if necessary.

Table of Contents**25. Related parties**

The Company's related parties are subsidiaries, joint ventures, associates, shareholders and its related entities and key management personnel of the Company. Transactions between the parent company and its subsidiaries are eliminated on consolidation and are not disclosed in this note.

Related party transactions were made by the Company on terms equivalent to those that prevail in arm's-length transactions, with respect to price and market conditions that are no less favorable to the Company than those arranged with third parties.

Purchases, accounts receivable and other assets, and accounts payable and other liabilities relates largely to amounts charged by joint ventures and associates related to the pelletizing plants operational lease and railway transportation services.

Information about related party transactions and effects on the interim financial statements is set out below:

**a) Transactions with related parties**

|                             | Three-month period ended September 30, |            |                    |              |                |            |                    |        |              |
|-----------------------------|--|------------|--------------------|--------------|----------------|------------|--------------------|--------|--------------|
|                             | 2018                                   |            |                    |              | 2017           |            |                    |        |              |
|                             | Joint Ventures                         | Associates | Major stockholders | Total        | Joint Ventures | Associates | Major stockholders | Others | Total        |
| Net operating revenue       | 83                                     | 74         | 61                 | <b>218</b>   | 125            | 80         | 31                 | 4      | <b>240</b>   |
| Cost and operating expenses | (602)                                  | (6)        |                    | <b>(608)</b> | (552)          | (7)        | (8)                |        | <b>(567)</b> |
| Financial result            | 22                                     |            | (39)               | <b>(17)</b>  | 37             | (17)       | 313                | 10     | <b>343</b>   |

|                             | Nine-month period ended September 30, |            |                    |                |                |            |                    |        |                |
|-----------------------------|---------------------------------------|------------|--------------------|----------------|----------------|------------|--------------------|--------|----------------|
|                             | 2018                                  |            |                    |                | 2017           |            |                    |        |                |
|                             | Joint Ventures                        | Associates | Major stockholders | Total          | Joint Ventures | Associates | Major stockholders | Others | Total          |
| Net operating revenue       | 259                                   | 229        | 162                | <b>650</b>     | 314            | 243        | 96                 | 17     | <b>670</b>     |
| Cost and operating expenses | (1,610)                               | (31)       |                    | <b>(1,641)</b> | (1,378)        | (22)       | (20)               | (2)    | <b>(1,422)</b> |
| Financial result            | 124                                   |            | (188)              | <b>(64)</b>    | 50             | (17)       |                    | 1      | <b>34</b>      |

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Net operating revenue relates to sale of iron ore to the steelmakers and right to use capacity on railroads. Cost and operating expenses mostly relates to the operational leases of the pelletizing plants.

b) **Outstanding balances with related parties**

|                                   | September 30, 2018 |            |                    |        |              | December 31, 2017 |            |                    |        |              |
|-----------------------------------|--------------------|------------|--------------------|--------|--------------|-------------------|------------|--------------------|--------|--------------|
|                                   | Joint Ventures     | Associates | Major stockholders | Others | Total        | Joint Ventures    | Associates | Major stockholders | Others | Total        |
| <b>Assets</b>                     |                    |            |                    |        |              |                   |            |                    |        |              |
| Cash and cash equivalents         |                    |            | 513                |        | <b>513</b>   |                   |            | 817                |        | <b>817</b>   |
| Accounts receivable               | 74                 | 21         | 3                  | 14     | <b>112</b>   | 73                | 38         | 3                  | 17     | <b>131</b>   |
| Dividends receivable              | 82                 |            |                    |        | <b>82</b>    | 112               | 14         |                    |        | <b>126</b>   |
| Loans                             | 1,939              |            |                    |        | <b>1,939</b> | 4,526             |            |                    |        | <b>4,526</b> |
| Derivatives financial instruments |                    |            | 244                |        | <b>244</b>   |                   |            | 284                |        | <b>284</b>   |
| Other assets                      | 38                 |            |                    |        | <b>38</b>    | 17                |            |                    |        | <b>17</b>    |
| <b>Liabilities</b>                |                    |            |                    |        |              |                   |            |                    |        |              |
| Supplier and contractors          | 648                | 39         |                    | 12     | <b>699</b>   | 192               | 20         | 201                | 15     | <b>428</b>   |
| Loans                             |                    | 1,281      | 2,798              |        | <b>4,079</b> |                   | 1,245      | 4,508              |        | <b>5,753</b> |
| Derivatives financial instruments |                    |            | 117                |        | <b>117</b>   |                   |            | 109                |        | <b>109</b>   |
| Other liabilities                 | 181                | 29         |                    |        | <b>210</b>   | 612               |            | 16                 |        | <b>628</b>   |

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**Major stockholders**

Refers to regular financial instruments with large financial institutions of which the stockholders are part of the controlling shareholders agreement .

**Coal segment transactions**

In March 2018, Nacala BV, a joint venture between Vale and Mitsui on the Nacala's logistic corridor, closed the project financing and repaid a portion of the shareholders loans from Vale, in the amount of US\$2,572. The outstanding receivable of US\$1,939 carries interest at 7.44% p.a. The Company has issued a financial guarantee in connection with the Project Finance of Nacala, in the proportion equivalent to its share in the Concessionaires (50%), and the fair value of this instrument is US\$40 as at September 30, 2018.

The loan from associates mainly relates to the loan from Pangea Emirates Ltd, part of the group of shareholders which owns 15% interest on Vale Moçambique, in the amount of US\$1,218 (US\$1,166 as at December 31, 2017), which carries interest at 6.54% p.a.

**26. Additional information about derivatives financial instruments**

The risk of the derivatives portfolio is measured using the delta-Normal parametric approach, and considers that the future distribution of the risk factors and its correlations tends to present the same statistic properties verified in the historical data. The value at risk estimate considers a 95% confidence level for a one-business day time horizon.

The following tables detail the derivatives positions for Vale and its controlled companies as of September 30, 2018, with the following information: notional amount, fair value including credit risk, gains or losses in the period, value at risk and the fair value breakdown by year of maturity.

Table of Contentsa) **Foreign exchange and interest rates derivative positions**(i) **Protection programs for the R\$ denominated debt instruments**

In order to reduce cash flow volatility, swap transactions were implemented to convert into US\$ the cash flows from certain debt instruments denominated in R\$ with interest rates linked mainly to CDI, TJLP and IPCA. In those swaps, Vale pays fixed or floating rates in US\$ and receives payments in R\$ linked to the interest rates of the protected debt instruments.

The swap transactions were negotiated over-the-counter and the protected items are the cash flows from debt instruments linked to R\$. These programs transform into US\$ the obligations linked to R\$ to achieve a currency offset in the company's cash flows, by matching its receivables - mainly linked to US\$ - with its payables.

| Flow   | Notional           |                   | Index   | Average rate | Fair value         |                   | Financial Settlement Inflows (Outflows) | Value at Risk      | Fair value by year |       |       |
|--|--------------------|-------------------|---------|--------------|--------------------|-------------------|---|--------------------|--------------------|-------|-------|
|  | September 30, 2018 | December 31, 2017 |         |              | September 30, 2018 | December 31, 2017 | September 30, 2018                      | September 30, 2018 | 2018               | 2019  | 2020+ |
| <b>CDI vs. US\$ fixed rate swap</b>            |                    |                   |         |              |                    |                   |   |                    |                    |       |       |
| Receivable                                     | R\$ 1,690          | R\$ 3,540         | CDI     | 101.39%      | (58)               | (33)              | (27)                                    | 7                  | (3)                | (15)  | (40)  |
| Payable  | US\$ 487           | US\$ 1,104        | Fix     | 3.29%        |                    |                   |   |                    |                    |       |       |
| <b>TJLP vs. US\$ fixed rate swap</b>           |                    |                   |         |              |                    |                   |   |                    |                    |       |       |
| Receivable                                     | R\$ 2,459          | R\$ 2,982         | TJLP +  | 1.20%        | (423)              | (380)             | (74)                                    | 20                 | (30)               | (325) | (68)  |
| Payable  | US\$ 1,074         | US\$ 1,323        | Fix     | 1.46%        |                    |                   |   |                    |                    |       |       |
| <b>TJLP vs. US\$ floating rate swap</b>        |                    |                   |         |              |                    |                   |   |                    |                    |       |       |
| Receivable                                     | R\$ 193            | R\$ 216           | TJLP +  | 0.85%        | (60)               | (54)              | (3)                                     | 2                  | (3)                | (57)  |       |
| Payable  | US\$ 114           | US\$ 123          | Libor + | -1.24%       |                    |                   |   |                    |                    |       |       |
| <b>R\$ fixed rate vs. US\$ fixed rate swap</b> |                    |                   |         |              |                    |                   |   |                    |                    |       |       |
| Receivable                                     | R\$ 1,098          | R\$ 1,158         | Fix     | 8.14%        | (30)               | 25                | 13                                      | 17                 | (2)                | 37    | (65)  |
| Payable  | US\$ 360           | US\$ 385          | Fix     | -0.49%       |                    |                   |   |                    |                    |       |       |
| <b>IPCA vs. US\$ fixed rate swap</b>           |                    |                   |         |              |                    |                   |   |                    |                    |       |       |
|  |                    |                   |         |              | (93)               | (35)              | 4                                       | 7                  |                    | (38)  | (55)  |

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|                          |      |       |      |       |     |        |  |    |    |   |     |   |    |
|--------------------------|------|-------|------|-------|-----|--------|--|----|----|---|-----|---|----|
| Receivable               | R\$  | 1,306 | R\$  | 1,000 | +   | 6.55%  |  |    |    |   |     |   |    |
| Payable                  | US\$ | 434   | US\$ | 434   | Fix | 3.98%  |  |    |    |   |     |   |    |
| <b>IPCA vs. CDI swap</b> |      |       |      |       |     |        |  | 74 | 85 | 3 | 0.2 | 2 | 72 |
| Receivable               | R\$  | 1,350 | R\$  | 1,350 | +   | 6.62%  |  |    |    |   |     |   |    |
| Payable                  | R\$  | 1,350 | R\$  | 1,350 | CDI | 98.58% |  |    |    |   |     |   |    |

(ii) Protection program for EUR denominated debt instruments

In order to reduce the cash flow volatility, swap transactions were implemented to convert into US\$ the cash flows from certain debt instruments issued in Euros by Vale. In those swaps, Vale receives fixed rates in EUR and pays fixed rates in US\$.

The swap transactions were negotiated over-the-counter and the protected items are the cash flows from debt instruments linked to EUR. The financial settlement inflows/outflows are offset by the protected items losses/gains due to EUR/US\$ exchange rate.

| Flow   | Notional           |                   | Index | Average rate | Fair value         |                   | Financial Settlement Inflows (Outflows) September 30, 2018 | Value at Risk September 30, 2018 | Fair value by year |      |       |
|--|--------------------|-------------------|-------|--------------|--------------------|-------------------|--|----------------------------------|--------------------|------|-------|
|  | September 30, 2018 | December 31, 2017 |       |              | September 30, 2018 | December 31, 2017 |  |                                  | 2018               | 2019 | 2020+ |
| <b>EUR fixed rate vs. US\$ fixed rate swap</b> |                    |                   |       |              |                    |                   |  |                                  |                    |      |       |
| Receivable                                     | 500                | 500               | Fix   | 3.75%        | 20                 | 23                | (4)  | 8                                | (5)                | 25   |       |
| Payable  | US\$ 613           | US\$ 613          | Fix   | 4.29%        |                    |                   |  |                                  |                    |      |       |

Table of Contents**b) Commodities derivative positions****(i) Bunker Oil purchase cash flows protection program**

In order to reduce the impact of bunker oil price fluctuation on maritime freight hiring/supply and, consequently, reducing the company's cash flow volatility, bunker oil hedging transactions were implemented, through options contracts.

The derivative transactions were negotiated over-the-counter and the protected item is part of the Vale's costs linked to bunker oil prices. The financial settlement inflows/outflows are offset by the protected items' losses/gains due to bunker oil prices changes.

| Flow         | Notional (ton)        |                         | Bought / Sold | Average strike<br>(US\$/ton) | Fair value            |                         | Financial<br>settlement<br>Inflows<br>(Outflows) | Value at Risk | Fair value<br>by year |
|--------------|-----------------------|-------------------------|---------------|------------------------------|-----------------------|-------------------------|--|---------------|-----------------------|
|              | September<br>30, 2018 | December<br>31,<br>2017 |               |                              | September<br>30, 2018 | December<br>31,<br>2017 |  |               |                       |
| Call options | 1,200,000             |                         | B             | 464                          | 27                    |                         | 29   | 7             | 27                    |
| Put options  | 1,200,000             |                         | S             | 344                          |                       |                         |  |               |                       |
| <b>Total</b> |                       |                         |               |                              | <b>27</b>             |                         | <b>29</b>  | <b>7</b>      | <b>27</b>             |

As at September 30, 2018 and December 31, 2017, includes US\$11 and US\$15, respectively, of transactions in which the financial settlement occurs subsequently of the closing month.

**(ii) Protection programs for base metals raw materials and products**

In the operational protection program for nickel sales at fixed prices, derivatives transactions were implemented to convert into floating prices the contracts with clients that required a fixed price, in order to keep nickel revenues exposed to nickel price fluctuations. Those operations are usually implemented through the purchase of nickel forwards.

In the operational protection program for the purchase of raw materials and products, derivatives transactions were implemented, usually through the sale of nickel and copper forward or futures, in order to reduce the mismatch between the pricing period of purchases (concentrate, cathode, sinter, scrap and others) and the pricing period of the final product sales to the clients.



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The derivative transactions are negotiated at London Metal Exchange or over-the-counter and the protected item is part of Vale's revenues and costs linked to nickel and copper prices. The financial settlement inflows/outflows are offset by the protected items' losses/gains due to nickel and copper prices changes.

| Flow                                    | Notional (ton)        |                      | Bought /<br>Sold | Average<br>strike<br>(US\$/ton) | Fair value            |                      | Financial<br>settlement<br>Inflows<br>(Outflows)<br>September<br>30, 2018 | Value at<br>Risk<br>September<br>30, 2018 | Fair value by year |      |
|---|-----------------------|----------------------|------------------|---------------------------------|-----------------------|----------------------|---|---|--------------------|------|
|   | September<br>30, 2018 | December<br>31, 2017 |                  |                                 | September<br>30, 2018 | December<br>31, 2017 |   |   | 2018               | 2019 |
| <b>Fixed price sales protection</b>     |                       |                      |                  |                                 |                       |                      |   |   |                    |      |
| Nickel forwards                         | 9,155                 | 9,621                | B                | 13,351                          | (7)                   | 24                   | 21  | 3   | (7)                |      |
| <b>Raw material purchase protection</b> |                       |                      |                  |                                 |                       |                      |   |   |                    |      |
| Nickel forwards                         | 126                   | 292                  | S                | 12,426                          |                       |                      | (1)   |   |                    |      |
| Copper forwards                         | 101                   | 79                   | S                | 6,064                           |                       |                      |   |   |                    |      |
| <b>Total</b>                            |                       |                      |                  |                                 | <b>(7)</b>            | <b>24</b>            | <b>20</b>   | <b>3</b>                                  | <b>(7)</b>         |      |

Table of Contents**c) Freight derivative positions**

In order to reduce the impact of maritime freight price volatility on the company's cash flow, freight hedging transactions were implemented, through Forward Freight Agreements (FFAs). The protected item is part of Vale's costs linked to maritime freight spot prices. The financial settlement inflows/outflows of the FFAs are offset by the protected items' losses/gains due to freight prices changes.

The Forward Freight Agreements (FFAs) are contracts traded over the counter and can be cleared through a Clearing House, in this case subject to margin requirements.

| Flow                | Notional (days)       |                      | Bought /<br>Sold | Average<br>strike<br>(US\$/day) | Fair value            |                      | Financial<br>Settlement<br>Inflows<br>(Outflows)<br>September 30,<br>2018 | Value at Risk<br>September 30,<br>2018 | Fair value<br>by year<br>2018 |
|---------------------|-----------------------|----------------------|------------------|---------------------------------|-----------------------|----------------------|---|--|-------------------------------|
|                     | September 30,<br>2018 | December 31,<br>2017 |                  |                                 | September 30,<br>2018 | December 31,<br>2017 |   |  |                               |
| Freight<br>forwards | 380                   |                      | B                | 24,161                          |                       |                      |   | 0.7                                    |                               |

**d) Wheaton Precious Metals Corp. warrants**

The company owns warrants of Wheaton Precious Metals Corp. (WPM), a Canadian company with stocks negotiated in Toronto Stock Exchange and New York Stock Exchange. Such warrants configure American call options and were received as part of the payment regarding the sale of part of gold payable flows produced as a sub product from Salobo copper mine and some nickel mines in Sudbury.

| Flow         | Notional (quantity)   |                      | Bought /<br>Sold | Average<br>strike<br>(US\$/share) | Fair value            |                      | Value at Risk<br>September 30,<br>2018 | Fair value<br>by year<br>2023 |
|--------------|-----------------------|----------------------|------------------|-----------------------------------|-----------------------|----------------------|--|-------------------------------|
|              | September 30,<br>2018 | December 31,<br>2017 |                  |                                   | September 30,<br>2018 | December 31,<br>2017 |  |                               |
| Call options | 10,000,000            | 10,000,000           | B                | 44                                | 9                     | 39                   | 1                                      | 9                             |

**e) Debentures convertible into shares of Valor da Logística Integrada ( VLI )**

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The company has debentures in which lenders have the option to convert the outstanding debt into a specified quantity of shares of VLI owned by the company.

| Flow               | Notional (quantity) |                   |               | Average strike (R\$/share) | Fair value         |                   | Value at Risk      | Fair value by year |
|--------------------|---------------------|-------------------|---------------|----------------------------|--------------------|-------------------|--------------------|--------------------|
|                    | September 30, 2018  | December 31, 2017 | Bought / Sold |                            | September 30, 2018 | December 31, 2017 | September 30, 2018 | 2027               |
| Conversion options | 140,239             | 140,239           | S             | 8,099                      | (56)               | (57)              | 3                  | (56)               |

### f) Options related to Minerações Brasileiras Reunidas S.A. ( MBR ) shares

The Company entered into a stock sale and purchase agreement that has options related to MBR shares. Mainly, the Company has the right to buy back this non-controlling interest in the subsidiary. Moreover, under certain restrict and contingent conditions, which are beyond the buyer's control, such as illegality due to changes in the law, the contract has a clause that gives the buyer the right to sell back its stake to the Company. In this case, the Company could settle through cash or shares.

| Flow    | Notional (quantity, in millions) |                   |               | Average strike (R\$/share) | Fair value         |                   | Value at Risk      | Fair value by year |
|---------|----------------------------------|-------------------|---------------|----------------------------|--------------------|-------------------|--------------------|--------------------|
|         | September 30, 2018               | December 31, 2017 | Bought / Sold |                            | September 30, 2018 | December 31, 2017 | September 30, 2018 | 2018+              |
| Options | 2,139                            | 2,139             | B/S           | 1.7                        | 223                | 251               | 13                 | 223                |

Table of Contents**g) Embedded derivatives in contracts**

The Company has some nickel concentrate and raw materials purchase agreements in which there are provisions based on nickel and copper future prices behavior. These provisions are considered as embedded derivatives.

| Flow            | Notional (ton)     |                   | Bought / Sold | Average strike (US\$/ton) | Fair value         |                   | Value at Risk September 30, 2018 | Fair value by year 2018 |
|-----------------|--------------------|-------------------|---------------|---------------------------|--------------------|-------------------|----------------------------------|-------------------------|
|                 | September 30, 2018 | December 31, 2017 |               |                           | September 30, 2018 | December 31, 2017 |                                  |                         |
| Nickel forwards | 1,552              | 2,627             | S             | 13,418                    | 2                  | 1                 | 1                                | 2                       |
| Copper forwards | 1,678              | 2,718             | S             | 6,105                     |                    |                   |                                  |                         |
| <b>Total</b>    |                    |                   |               |                           | <b>2</b>           | <b>1</b>          | <b>1</b>                         | <b>2</b>                |

The Company has also a natural gas purchase agreement in which there's a clause that defines that a premium can be charged if the Company's pellet sales prices trade above a pre-defined level. This clause is considered an embedded derivative.

| Flow         | Notional (volume/month) |                   | Bought / Sold | Average strike (US\$/ton) | Fair value         |                   | Value at Risk September 30, 2018 | Fair value by year |       |
|--------------|-------------------------|-------------------|---------------|---------------------------|--------------------|-------------------|----------------------------------|--------------------|-------|
|              | September 30, 2018      | December 31, 2017 |               |                           | September 30, 2018 | December 31, 2017 |                                  | 2018               | 2019+ |
| Call options | 746,667                 | 746,667           | S             | 233                       | (1)                | (2)               | 1                                |                    | (1)   |

In August 2014 the Company sold part of its stake in Valor da Logística Integrada ( VLI ) to an investment fund managed by Brookfield Asset Management ( Brookfield ). The sales contract includes a clause that establishes, under certain conditions, a minimum return guarantee on Brookfield's investment. This clause is considered an embedded derivative, with payoff equivalent to that of a put option.

| Flow       | Notional (quantity) |                   | Bought / Sold | Average strike (R\$/share) | Fair value         |                   | Value at Risk September 30, 2018 | Fair value by year 2027 |
|------------|---------------------|-------------------|---------------|----------------------------|--------------------|-------------------|----------------------------------|-------------------------|
|            | September 30, 2018  | December 31, 2017 |               |                            | September 30, 2018 | December 31, 2017 |                                  |                         |
| Put option | 1,105,070,863       | 1,105,070,863     | S             | 3.86                       | (92)               | (133)             | 9                                | (92)                    |

Table of Contents**h) Sensitivity analysis of derivative financial instruments**

The following tables present the potential value of the instruments given hypothetical stress scenarios for the main market risk factors that impact the derivatives positions. The scenarios were defined as follows:

- *Probable*: the probable scenario was based on the estimated risk variables that were used on pricing the derivative instruments as at September 30, 2018
- *Scenario I*: fair value estimated considering a 25% deterioration in the associated risk variables
- *Scenario II*: fair value estimated considering a 50% deterioration in the associated risk variables

| Instrument                                     | Instrument's main risk events            | Probable | Scenario I | Scenario II |
|--|--|----------|------------|-------------|
| <b>CDI vs. US\$ fixed rate swap</b>            | R\$depreciation                          | (58)     | (180)      | (302)       |
|  | US\$interest rate inside Brazil decrease | (58)     | (63)       | (67)        |
|  | Brazilian interest rate increase         | (58)     | (59)       | (59)        |
| Protected item: R\$ denominated debt           | R\$depreciation                          | n.a.     |            |             |
| <b>TJLP vs. US\$ fixed rate swap</b>           | R\$depreciation                          | (423)    | (684)      | (945)       |
|  | US\$interest rate inside Brazil decrease | (423)    | (433)      | (444)       |
|  | Brazilian interest rate increase         | (423)    | (434)      | (445)       |
|  | TJLP interest rate decrease              | (423)    | (432)      | (442)       |
| Protected item: R\$ denominated debt           | R\$depreciation                          | n.a.     |            |             |
| <b>TJLP vs. US\$ floating rate swap</b>        | R\$depreciation                          | (60)     | (88)       | (116)       |
|  | US\$interest rate inside Brazil decrease | (60)     | (61)       | (63)        |
|  | Brazilian interest rate increase         | (60)     | (61)       | (62)        |
|  | TJLP interest rate decrease              | (60)     | (61)       | (62)        |
| Protected item: R\$ denominated debt           | R\$depreciation                          | n.a.     |            |             |
| <b>R\$ fixed rate vs. US\$ fixed rate swap</b> | R\$depreciation                          | (30)     | (105)      | (180)       |
|  | US\$interest rate inside Brazil decrease | (30)     | (41)       | (54)        |
|  | Brazilian interest rate increase         | (30)     | (49)       | (66)        |
| Protected item: R\$ denominated debt           | R\$depreciation                          | n.a.     |            |             |
| <b>IPCA vs. US\$ fixed rate swap</b>           | R\$depreciation                          | (93)     | (205)      | (317)       |
|  | US\$interest rate inside Brazil decrease | (93)     | (97)       | (102)       |
|  | Brazilian interest rate increase         | (93)     | (102)      | (111)       |
|  | IPCA index decrease                      | (93)     | (98)       | (104)       |
| Protected item: R\$ denominated debt           | R\$depreciation                          | n.a.     |            |             |

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|  |                                  |      |       |       |
|--|----------------------------------|------|-------|-------|
| <b>IPCA vs. CDI swap</b>                               | Brazilian interest rate increase | 74   | 51    | 31    |
|  | IPCA index decrease              | 74   | 61    | 49    |
| Protected item: R\$ denominated debt linked to<br>IPCA | IPCA index decrease              | n.a. | (61)  | (49)  |
|  |                                  |      |       |       |
| <b>EUR fixed rate vs. US\$ fixed rate swap</b>         | EUR depreciation                 | 20   | (151) | (321) |
|  | Euribor increase                 | 20   | 13    | 6     |
|  | US\$Libor decrease               | 20   | 1     | (20)  |
| Protected item: EUR denominated debt                   | EUR depreciation                 | n.a. | 151   | 321   |

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| Instrument  | Instrument's main risk events | Probable | Scenario I | Scenario II |
|---|-------------------------------|----------|------------|-------------|
| <b>Bunker Oil protection</b>                                    |                               |          |            |             |
| Options   | Bunker Oil price decrease     | 27       | (8)        | (127)       |
| Protected item: Part of costs linked to bunker oil prices       | Bunker Oil price decrease     | n.a.     | 8          | 127         |
| <b>Maritime Freight protection</b>                              |                               |          |            |             |
| Forwards  | Freight price decrease        |          | (2.3)      | (4.6)       |
| Protected item: Part of costs linked to maritime freight prices | Freight price decrease        | n.a.     | 2.3        | 4.6         |
| <b>Nickel sales fixed price protection</b>                      |                               |          |            |             |
| Forwards  | Nickel price decrease         | (8)      | (35)       | (63)        |
| Protected item: Part of nickel revenues with fixed prices       | Nickel price fluctuation      | n.a.     | 35         | 63          |
| <b>Purchase protection program</b>                              |                               |          |            |             |
| Nickel forwards   | Nickel price increase         |          |            | (1)         |
| Protected item: Part of costs linked to nickel prices           | Nickel price increase         | n.a.     |            | 1           |
| Copper forwards   | Copper price increase         |          | (0.2)      | (0.3)       |
| Protected item: Part of costs linked to copper prices           | Copper price increase         | n.a.     | 0.2        | 0.3         |
| <b>Wheaton Precious Metals Corp. warrants</b>                   | WPM stock price decrease      | 9        | 3          |             |
| <b>Conversion options - VLI</b>                                 | VLI stock value increase      | (57)     | (89)       | (132)       |
| <b>Options - MBR</b>  | MBR stock value decrease      | 223      | 150        | 102         |

| Instrument   | Main risks               | Probable | Scenario I | Scenario II |
|--|--------------------------|----------|------------|-------------|
| Embedded derivatives - Raw material purchase (nickel)  | Nickel price increase    | 1        | (3)        | (8)         |
| Embedded derivatives - Raw material purchase (copper)  | Copper price increase    |          | (2)        | (5)         |
| Embedded derivatives - Gas purchase                    | Pellet price increase    | (1)      | (3)        | (5)         |
| Embedded derivatives - Guaranteed minimum return (VLI) | VLI stock value decrease | (92)     | (211)      | (407)       |

Table of Contentsi) **Financial counterparties ratings**

The transactions of derivative instruments, cash and cash equivalents as well as investments are held with financial institutions whose exposure limits are periodically reviewed and approved by the delegated authority. The financial institutions credit risk is performed through a methodology that considers, among other information, ratings provided by international rating agencies.

The table below presents the ratings published by agencies Moody's and S&P regarding the main financial institutions that we had outstanding positions as of September 30, 2018.

| <b>Long term ratings by counterparty</b> | <b>Moody's</b> | <b>S&amp;P</b> |
|--|----------------|----------------|
| ANZ Australia and New Zealand Banking    | Aa3            | AA-            |
| Banco ABC                                | Ba3            | BB-            |
| Banco Bradesco                           | Ba3            | BB-            |
| Banco do Brasil                          | Ba3            | BB-            |
| Banco de Credito del Peru                | Baa1           | BBB+           |
| Banco do Nordeste                        | Ba3            | BB-            |
| Banco Safra                              | Ba3            | BB-            |
| Banco Santander                          | A2             | A              |
| Banco Votorantim                         | Ba3            | BB-            |
| Bank of America                          | A3             | A-             |
| Bank of China                            | A1             | A              |
| Bank of Mandiri                          | Baa2           | BB+            |
| Bank of Nova Scotia                      | Aa2            | A+             |
| Bank Rakyat                              | Baa2           | BB+            |
| Bank of Tokyo Mitsubishi UFJ             | A1             | A-             |
| Banpará                                  |                | BB-            |
| Barclays                                 | Baa3           | BBB            |
| BNP Paribas                              | Aa3            | A              |
| BTG Pactual                              | Ba3            | BB-            |
| Caixa Economica Federal                  | Ba3            | BB-            |
| Canadian Imperial Bank                   | Aa2            | A+             |
| China Construction Bank                  | A1             | A              |
| CIMB Bank                                | A3             | A-             |
| Citigroup                                | Baa1           | BBB+           |
| Deutsche Bank                            | A3             | BBB+           |
| Goldman Sachs                            | A3             | BBB+           |
| HSBC                                     | A2             | A              |
| Intesa Sanpaolo Spa                      | Baa1           | BBB            |
| Itaú Unibanco                            | Ba3            | BB-            |
| JP Morgan Chase & Co                     | A3             | A-             |
| Macquarie Group Ltd                      | A3             | BBB            |
| Mega Int. Commercial Bank                | A1             | A              |



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|                           |      |      |
|---------------------------|------|------|
| Morgan Stanley            | A3   | BBB+ |
| National Bank of Canada   | Aa3  | A    |
| National Bank of Oman     | Baa3 |      |
| Natixis                   | A1   | A    |
| Societe Generale          | A1   | A    |
| Standard Bank Group       | Ba1  |      |
| Standard Chartered        | A2   | BBB+ |
| Sumitomo Mitsui Financial | A1   | A-   |
| UBS                       | Aa3  | A-   |
| Unicredit                 | Baa1 | BBB  |

**j) Market curves**

The curves used on the pricing of derivatives instruments were developed based on data from B3, Central Bank of Brazil, London Metals Exchange and Bloomberg.

**(i) Products**

**Nickel**

| Maturity | Price (US\$/ton) | Maturity | Price (US\$/ton) | Maturity | Price (US\$/ton) |
|----------|------------------|----------|------------------|----------|------------------|
| SPOT     | 12,480           | MAR19    | 12,690           | SEP19    | 12,836           |
| OCT18    | 12,541           | APR19    | 12,719           | SEP20    | 13,041           |
| NOV18    | 12,573           | MAY19    | 12,743           | SEP21    | 13,202           |
| DEC18    | 12,604           | JUN19    | 12,764           | SEP22    | 13,351           |
| JAN19    | 12,634           | JUL19    | 12,789           |          |                  |
| FEB19    | 12,661           | AUG19    | 12,812           |          |                  |

**Copper**

| Maturity | Price (US\$/lb) | Maturity | Price (US\$/lb) | Maturity | Price (US\$/lb) |
|----------|-----------------|----------|-----------------|----------|-----------------|
| SPOT     | 2.81            | MAR19    | 2.84            | SEP19    | 2.84            |
| OCT18    | 2.84            | APR19    | 2.84            | SEP20    | 2.85            |
| NOV18    | 2.84            | MAY19    | 2.84            | SEP21    | 2.85            |
| DEC18    | 2.84            | JUN19    | 2.84            | SEP22    | 2.85            |
| JAN19    | 2.84            | JUL19    | 2.84            |          |                 |
| FEB19    | 2.84            | AUG19    | 2.84            |          |                 |

Table of Contents**Bunker Oil**

| Maturity | Price (US\$/ton) | Maturity | Price (US\$/ton) | Maturity | Price (US\$/ton) |
|----------|------------------|----------|------------------|----------|------------------|
| SPOT     | 479              | MAR19    | 455              | SEP19    | 417              |
| OCT18    | 480              | APR19    | 451              | SEP20    | 360              |
| NOV18    | 474              | MAY19    | 446              | SEP21    | 332              |
| DEC18    | 469              | JUN19    | 441              | SEP22    | 294              |
| JAN19    | 464              | JUL19    | 435              |          |                  |
| FEB19    | 459              | AUG19    | 427              |          |                  |

**Maritime Freight (Capesize 5TC)**

| Maturity | Price (US\$/day) | Maturity | Price (US\$/day) | Maturity | Price (US\$/day) |
|----------|------------------|----------|------------------|----------|------------------|
| SPOT     | 18,350           | MAR19    | 15,640           | SEP19    | 21,800           |
| OCT18    | 21,783           | APR19    | 16,575           | Cal 2019 | 20,538           |
| NOV18    | 25,167           | MAY19    | 16,575           | Cal 2020 | 21,392           |
| DEC18    | 24,258           | JUN19    | 16,575           | Cal 2021 | 17,820           |
| JAN19    | 17,492           | JUL19    | 21,800           |          |                  |
| FEB19    | 14,367           | AUG19    | 21,800           |          |                  |

**(ii) Foreign exchange and interest rates****US\$-Brazil Interest Rate**

| Maturity | Rate (% p.a.) | Maturity | Rate (% p.a.) | Maturity | Rate (% p.a.) |
|----------|---------------|----------|---------------|----------|---------------|
| 11/01/18 | 3.79          | 09/02/19 | 4.02          | 01/03/22 | 4.56          |
| 12/03/18 | 3.44          | 10/01/19 | 4.11          | 04/01/22 | 4.59          |
| 01/02/19 | 3.50          | 01/02/20 | 4.25          | 07/01/22 | 4.60          |
| 02/01/19 | 3.59          | 04/01/20 | 4.32          | 10/03/22 | 4.64          |
| 03/01/19 | 3.68          | 07/01/20 | 4.36          | 01/02/23 | 4.70          |
| 04/01/19 | 3.71          | 10/01/20 | 4.43          | 04/03/23 | 4.75          |
| 05/02/19 | 3.80          | 01/04/21 | 4.46          | 07/03/23 | 4.76          |
| 06/03/19 | 3.85          | 04/01/21 | 4.50          | 10/02/23 | 4.82          |
| 07/01/19 | 3.91          | 07/01/21 | 4.54          | 01/02/24 | 4.88          |
| 08/01/19 | 3.97          | 10/01/21 | 4.56          | 07/01/24 | 4.92          |

**US\$ Interest Rate**

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| Maturity | Rate (% p.a.) | Maturity | Rate (% p.a.) | Maturity | Rate (% p.a.) |
|----------|---------------|----------|---------------|----------|---------------|
| 1M       | 2.26          | 6M       | 2.66          | 11M      | 2.78          |
| 2M       | 2.31          | 7M       | 2.70          | 12M      | 2.79          |
| 3M       | 2.41          | 8M       | 2.72          | 2Y       | 3.06          |
| 4M       | 2.54          | 9M       | 2.74          | 3Y       | 3.17          |
| 5M       | 2.61          | 10M      | 2.76          | 4Y       | 3.24          |

**TJLP**

| Maturity | Rate (% p.a.) | Maturity | Rate (% p.a.) | Maturity | Rate (% p.a.) |
|----------|---------------|----------|---------------|----------|---------------|
| 11/01/18 | 6.56          | 09/02/19 | 6.56          | 01/03/22 | 6.56          |
| 12/03/18 | 6.56          | 10/01/19 | 6.56          | 04/01/22 | 6.56          |
| 01/02/19 | 6.56          | 01/02/20 | 6.56          | 07/01/22 | 6.56          |
| 02/01/19 | 6.56          | 04/01/20 | 6.56          | 10/03/22 | 6.56          |
| 03/01/19 | 6.56          | 07/01/20 | 6.56          | 01/02/23 | 6.56          |
| 04/01/19 | 6.56          | 10/01/20 | 6.56          | 04/03/23 | 6.56          |
| 05/02/19 | 6.56          | 01/04/21 | 6.56          | 07/03/23 | 6.56          |
| 06/03/19 | 6.56          | 04/01/21 | 6.56          | 10/02/23 | 6.56          |
| 07/01/19 | 6.56          | 07/01/21 | 6.56          | 01/02/24 | 6.56          |
| 08/01/19 | 6.56          | 10/01/21 | 6.56          | 07/01/24 | 6.56          |

**BRL Interest Rate**

| Maturity | Rate (% p.a.) | Maturity | Rate (% p.a.) | Maturity | Rate (% p.a.) |
|----------|---------------|----------|---------------|----------|---------------|
| 11/01/18 | 6.42          | 09/02/19 | 7.87          | 01/03/22 | 10.51         |
| 12/03/18 | 6.53          | 10/01/19 | 7.98          | 04/01/22 | 10.67         |
| 01/02/19 | 6.70          | 01/02/20 | 8.32          | 07/01/22 | 10.84         |
| 02/01/19 | 6.87          | 04/01/20 | 8.63          | 10/03/22 | 10.97         |
| 03/01/19 | 7.03          | 07/01/20 | 8.95          | 01/02/23 | 11.12         |
| 04/01/19 | 7.15          | 10/01/20 | 9.29          | 04/03/23 | 11.25         |
| 05/02/19 | 7.30          | 01/04/21 | 9.58          | 07/03/23 | 11.33         |
| 06/03/19 | 7.47          | 04/01/21 | 9.84          | 01/02/24 | 11.51         |
| 07/01/19 | 7.59          | 07/01/21 | 10.06         | 07/01/24 | 11.64         |
| 08/01/19 | 7.75          | 10/01/21 | 10.30         |          |               |

Table of Contents**Implicit Inflation (IPCA)**

| Maturity | Rate (% p.a.) | Maturity | Rate (% p.a.) | Maturity | Rate (% p.a.) |
|----------|---------------|----------|---------------|----------|---------------|
| 11/01/18 | 3.73          | 09/02/19 | 5.15          | 01/03/22 | 5.01          |
| 12/03/18 | 3.85          | 10/01/19 | 5.26          | 04/01/22 | 5.03          |
| 01/02/19 | 4.01          | 01/02/20 | 5.13          | 07/01/22 | 5.09          |
| 02/01/19 | 4.17          | 04/01/20 | 5.14          | 10/03/22 | 5.12          |
| 03/01/19 | 4.34          | 07/01/20 | 5.03          | 01/02/23 | 5.19          |
| 04/01/19 | 4.44          | 10/01/20 | 5.02          | 04/03/23 | 5.25          |
| 05/02/19 | 4.59          | 01/04/21 | 4.97          | 07/03/23 | 5.28          |
| 06/03/19 | 4.76          | 04/01/21 | 4.96          | 10/02/23 | 5.33          |
| 07/01/19 | 4.88          | 07/01/21 | 4.94          | 01/02/24 | 5.38          |
| 08/01/19 | 5.03          | 10/01/21 | 4.97          | 07/01/24 | 5.46          |

**EUR Interest Rate**

| Maturity | Rate (% p.a.) | Maturity | Rate (% p.a.) | Maturity | Rate (% p.a.) |
|----------|---------------|----------|---------------|----------|---------------|
| 1M       | -0.40         | 6M       | -0.28         | 11M      | -0.24         |
| 2M       | -0.37         | 7M       | -0.27         | 12M      | -0.24         |
| 3M       | -0.35         | 8M       | -0.26         | 2Y       | -0.11         |
| 4M       | -0.32         | 9M       | -0.25         | 3Y       | 0.07          |
| 5M       | -0.30         | 10M      | -0.25         | 4Y       | 0.24          |

**CAD Interest Rate**

| Maturity | Rate (% p.a.) | Maturity | Rate (% p.a.) | Maturity | Rate (% p.a.) |
|----------|---------------|----------|---------------|----------|---------------|
| 1M       | 1.84          | 6M       | 2.18          | 11M      | 1.26          |
| 2M       | 1.91          | 7M       | 1.88          | 12M      | 1.17          |
| 3M       | 2.03          | 8M       | 1.66          | 2Y       | 2.61          |
| 4M       | 2.11          | 9M       | 1.51          | 3Y       | 2.73          |
| 5M       | 2.16          | 10M      | 1.37          | 4Y       | 2.81          |

**Currencies - Ending rates**

|          |        |          |        |          |        |
|----------|--------|----------|--------|----------|--------|
| CAD/US\$ | 0.7738 | US\$/BRL | 4.0039 | EUR/US\$ | 1.1614 |
|----------|--------|----------|--------|----------|--------|



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**Signatures**

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

Vale S.A.  
(Registrant)

By:

/s/ André Figueiredo  
Director of Investor Relations

Date: October 24, 2018

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