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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

July 2012

Vale S.A.

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

(Address of principal executive office)

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

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

(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))

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(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.)

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2Q12 Production Report

THE FIVE-BILLION TON MARK

Rio de Janeiro, July 18, 2012- Vale S.A. (Vale) celebrated its 70th anniversary on June 1, 2012. Simultaneously, we crossed the extraordinary mark of five billion metric tons of iron ore production accumulated since the company s incorporation(1). The volume of iron ore produced by Vale during these seven decades is sufficient to feed more than two years of global crude steel output at the current pace of 1.5 billion metric tons per annum.

This is a major achievement stemming from a combination of hard work, technological innovation and a generous endowment of natural resources dedicated to suppling the best iron ore in the world to the global steel industry. Metals are the backbone of the modern economy, and Vale as a global mining leader will continue to play an important role in supporting the economic development of nations.

In this context, on June 27, 2012, we obtained the preliminary environmental license (LP) to develop the Carajás S11D (S11D) iron ore project. Located in the Southern Range of Carajás, state of Pará, Brazil, S11D has a nominal capacity to deliver 90 million metric tons per year, with an average ferrous content of 66.48% and low concentration of impurities.

S11D is the largest project not only in Vale s history but also in the entire iron ore industry, being our major lever for production growth and maintenance of Vale s undisputed leadership in the global market in terms of volume, mining costs and quality.

Iron ore output reached 80.5 Mt in 2Q12, a record for a second quarter, thus recovering from the poor performance of the previous quarter, which was caused by adverse weather conditions². Production increased 15.1% against 1Q12 and 0.4% against 2Q11.

The ramp up of new operations, including Moatize, Oman and Bayóvar, was instrumental for achieving all-time high figures for metallurgical coal, 1.3 Mt, pellets, 14.3 Mt, and phosphate rock production, 2.0 Mt.

Production

| | | | % |
|-----------------|--------|--------|--------|
| 000 metric tons | 1Q12 | 2Q12 | change |
| Iron ore(a) | 69,994 | 80,542 | 15.1% |
| Pellets(b) | 12,692 | 14,256 | 12.3% |

| Manganese | 484 | 584 | 20.6% |
|----------------|-------|-------|-------|
| Coal(c) | 2,350 | 2,467 | 5.0% |
| Nickel | 63 | 61 | -3.6% |
| Copper | 73 | 70 | -4.4% |
| Potash | 118 | 129 | 8.9% |
| Phosphate rock | 1,826 | 2,017 | 10.4% |

(a) Including Samarco s attributable production.

(b) Including Samarco s and Hispanobras attributable production.

(c) Including El Hatillo s production.

(1) Iron ore production accumulated from June 1, 1942 to June 1, 2012, totaled 5,007,783,000 metric tons.

(2) Mt = million metric tons, t = metric tons

1

BULK MATERIALS

• Iron ore

| | | | | | | % change | % change | % change |
|----------------------|--------|--------|--------|---------|-------------|-----------|-----------|-----------|
| 000 metric tons | 2Q11 | 1Q12 | 2Q12 | 1H11 | 1H12 | 2Q12/1Q12 | 2Q12/2Q11 | 1H12/1H11 |
| | | (0.004 | 00 540 | | 1 = 0 = 2 < | | 0.4.5 | 0.00 |
| IRON ORE | 80,257 | 69,994 | 80,542 | 151,797 | 150,536 | 15.1% | 0.4% | -0.8% |
| Northern System | 26,019 | 21,711 | 27,362 | 48,670 | 49,073 | 26.0% | 5.2% | 0.8% |
| Carajás | 26,019 | 21,711 | 27,362 | 48,670 | 49,073 | 26.0% | 5.2% | 0.8% |
| Southeastern System | 30,528 | 26,759 | 28,296 | 59,222 | 55,054 | 5.7% | -7.3% | -7.0% |
| Itabira | 10,499 | 8,154 | 9,184 | 19,581 | 17,338 | 12.6% | -12.5% | -11.5% |
| Mariana | 9,861 | 9,340 | 9,080 | 19,234 | 18,420 | -2.8% | -7.9% | -4.2% |
| Minas Centrais | 10,168 | 9,265 | 10,032 | 20,407 | 19,297 | 8.3% | -1.3% | -5.4% |
| Southern System | 19,496 | 17,667 | 20,743 | 36,275 | 38,409 | 17.4% | 6.4% | 5.9% |
| Minas Itabirito | 7,691 | 7,345 | 7,993 | 14,868 | 15,338 | 8.8% | 3.9% | 3.2% |
| Vargem Grande | 5,784 | 4,800 | 5,950 | 10,242 | 10,750 | 24.0% | 2.9% | 5.0% |
| Paraopeba | 6,021 | 5,521 | 6,800 | 11,165 | 12,321 | 23.2% | 12.9% | 10.4% |
| Midwestern System | 1,417 | 1,302 | 1,366 | 2,331 | 2,668 | 4.9% | -3.6% | 14.5% |
| Corumbá | 1,028 | 975 | 915 | 1,637 | 1,890 | -6.2% | -11.0% | 15.5% |
| Urucum | 389 | 327 | 451 | 694 | 778 | 38.1% | 16.0% | 12.1% |
| Samarco ¹ | 2,798 | 2,556 | 2,775 | 5,300 | 5,331 | 8.6% | -0.8% | 0.6% |

(1) Vale s attributable production capacity of 50%.

In 2Q12 iron ore production was 80.5 Mt, reaching a new record for a second quarter.

Output increased 15.1% on a quarterly basis, with across-the-board gains in all systems, Northern, Southeastern, Southern and Midwestern, as well as Samarco. The end of the rainy season helped the recovery.

Production at the Carajás mining site reached 27.4 Mt in 2Q12, which was the best performance for a second quarter, 26.0% higher than the previous quarter and 5.2% above 2Q11. The increase reflected better weather conditions in 2Q12. The level of rainfall in the Northern System was 50% less in 2Q12 than in 2Q11.

The Southeastern System, which encompasses the Itabira, Mariana and Minas Centrais mining sites, produced 28.3 Mt, 5.7% higher than 1Q12 and 7.3% lower than 2Q11, due to the impoverishment of Itabira and Minas Centrais (Gongo Soco mine) resources.

The Southern System Minas Itabirito, Vargem Grande and Paraopeba produced 20.7 Mt, the best performance for a second quarter since 2Q08 reflecting operational improvements in crushing at Vargem Grande and screening at Minas Itabirito. The output was 17.4% and 6.4% higher than 1Q12 and 2Q11, respectively. Minas Itabirito produced 8.0 Mt in 2Q12, also a new record for a second quarter.

The Midwestern System, Urucum and Corumbá mining sites, produced 1.4 Mt in 2Q12. Production rose 4.9% on a quarter-over-quarter basis and decreased 3.6% on a year-over-year basis. Corumbá s output was 6.2% lower than 1Q12 due to scheduled maintenance stoppage. Urucum s production rose by 38.1%, when compared to 1Q12, reflecting the ramp-up process of a new processing plant, which started in February.

2

• Pellets

| 000 metric tons | 2Q11 | 1Q12 | 2Q12 | 1H11 | 1H12 | % change 2Q12/1Q12 | % change 2Q12/2Q11 | % change 1H12/1H11 |
|------------------|--------|--------|--------|--------|--------|-----------------------|-----------------------|-----------------------|
| PELLETS | 13,140 | 12,692 | 14,256 | 25,656 | 26,949 | 12.3% | 8.5% | 5.0% |
| Tubarão I and II | 1,440 | 1,062 | 1,530 | 2,776 | 2,592 | 44.1% | 6.3% | -6.6% |
| Fábrica | 992 | 907 | 956 | 1,939 | 1,863 | 5.4% | -3.6% | -3.9% |
| São Luís | 1,349 | 962 | 1,373 | 2,686 | 2,334 | 42.7% | 1.7% | -13.1% |
| Vargem Grande | 1,321 | 823 | 1,383 | 2,597 | 2,206 | 68.2% | 4.7% | -15.0% |
| Oman | 336 | 1,415 | 1,593 | 336 | 3,008 | 12.6% | 374.8% | 796.5% |
| Nibrasco | 2,291 | 2,257 | 1,977 | 4,699 | 4,234 | -12.4% | -13.7% | -9.9% |
| Kobrasco | 1,001 | 1,139 | 1,258 | 2,224 | 2,397 | 10.5% | 25.6% | 7.8% |
| Hispanobras(1) | 544 | 540 | 565 | 1,086 | 1,105 | 4.7% | 4.0% | 1.8% |
| Itabrasco | 1,135 | 1,019 | 1,020 | 2,155 | 2,039 | 0.1% | -10.1% | -5.4% |
| Samarco(2) | 2,731 | 2,570 | 2,599 | 5,159 | 5,169 | 1.2% | -4.8% | 0.2% |

(1) Vale s attributable production capacity of 50.89%.

(2) Vale s attributable production capacity of 50%.

Pellet production reached 14.3 Mt in 2Q12, an increase of 12.3% compared to the previous quarter and 8.5% higher than 2Q11, being a new historical record. The ramp-up of the Oman plants was the main reason for the good year-over-year performance.

Oman operations delivered 1.6 Mt of direct reduction pellets in 2Q12, 12.6% higher than previous quarter.

In 2Q12, the output of the Tubarão I & II plants reached 1.5 Mt, an increase of 44.1% over 1Q12, reflecting the resumption of operation after a maintenance stoppage in 1Q12.

The production of Fábrica was 5.4% higher than 1Q12, but 3.6% lower than 2Q11, still reflecting shortage in pellet feed availability.

Vargem Grande production had an increase of 68.2% on a quarter-over-quarter basis and 4.7% on a yearly basis, recovering from the operational problems faced in mills #1 and #2 in 1Q12.

The output of São Luís was 1.4 Mt in 2Q12, an increase of 42.7% compared to the previous quarter and 1.7% higher than the same quarter of last year, showing recovery in demand.

In 2Q12, Nibrasco had a decrease of 12.4% over 1Q12 and 13.7% over 2Q11, due to the maintenance stoppage in the quarter.

Kobrasco production was 10.5% and 25.6% above 1Q12 and 2Q11, respectively, reflecting a greater supply of pellet feed in 2Q12 and the recovery from last year s maintenance stoppage.

The attributable production of the three pellet plants of the 50%-owned Samarco JV was in line with the previous quarter, but 4.8% lower than 2Q11 due to a maintenance stoppage.

3

• Manganese ore and ferroalloys

| 000 metric tons | 2Q11 | 1Q12 | 2Q12 | 1H11 | 1H12 | % change 2Q12/1Q12 | % change 2Q12/2Q11 | % change 1H12/1H11 |
|-----------------|------|------|------|-------|-------|-----------------------|-----------------------|-----------------------|
| MANGANESE ORE | 619 | 484 | 584 | 1,117 | 1,068 | 20.6% | -5.6% | -4.4% |
| Azul | 486 | 379 | 463 | 902 | 843 | 22.2% | -4.6% | -6.6% |
| Urucum | 82 | 67 | 81 | 134 | 148 | 22.1% | -0.7% | 10.2% |
| Other mines | 51 | 38 | 39 | 81 | 78 | 3.0% | -23.3% | -3.8% |
| | | | | | | | | |
| FERROALLOYS | 114 | 106 | 109 | 227 | 215 | 2.7% | -4.2% | -5.3% |
| Brazil | 52 | 50 | 46 | 104 | 96 | -6.7% | -11.6% | -7.8% |
| Dunkerque | 37 | 30 | 35 | 74 | 64 | 17.1% | -4.9% | -12.4% |
| Mo I Rana | 25 | 27 | 28 | 50 | 55 | 4.3% | 12.2% | 10.1% |

In 2Q12, manganese ore production increased 20.6% on a quarterly basis, reaching 584,000 t versus 484,000 t in 1Q12.

Output of the Carajás manganese mine Azul was the main contributor to the improved output, producing 463,000 t in 2Q12, due to the end of the rainy season in Brazil. The 4.6% reduction in output compared to 2Q11 was related to low physical availability of the plant in 2Q12.

Urucum also had a stronger performance, 22.1% higher than 1Q12, reaching 81,000 t in 2Q12, reflecting operational improvements in the equipments in the underground mine.

Production of manganese ore at Morro da Mina, part of the other mines , improved only 3% quarter-over-quarter due to the worsening of the stripping ratio. Waste removal is being intensified during 2012 in order to return production to normal levels.

Ferroalloy 2Q12 production was slightly higher than 1Q12, but below 2Q11, due to lower Brazilian output related to the stoppage for maintenance during the quarter. Production in 2Q12 was comprised of 59,800 t of ferrosilicon manganese alloys (FeSiMn), 43,400 t of high-carbon manganese alloys (FeMnHc) and 5,900 t of medium-carbon manganese alloys (FeMnHc).

Production from operations at Dunkerque in France recovered illustrating improved demand for FeMnHC compared to 1Q12. Furthermore, production from the Norwegian operations of Mo I Rana continued to rise because of better operational efficiency, increasing 4.3% against 1Q12 and 12.2% year-over-year.

We signed this month an agreement to sell the Dunkerque and Mo I Rana operations as part of the optimization of our asset portfolio.

• Coal

| 000 metric tons | 2Q11 | 1Q12 | 2Q12 | 1H11 | 1H12 | % change 2Q12/1Q12 | % change 2Q12/2Q11 | % change 1H12/1H11 |
|------------------|------|-------|-------|-------|-------|-----------------------|-----------------------|-----------------------|
| METALLURGICAL | | | | | | | | |
| COAL | 518 | 1,127 | 1,277 | 1,007 | 2,403 | 13.3% | 146.3% | 138.8% |
| Moatize | 0 | 501 | 728 | 0 | 1,229 | 45.2% | n.m. | n.m. |
| Carborough Downs | 368 | 325 | 82 | 599 | 407 | -74.8% | -77.8% | -32.1% |
| Integra Coal | 30 | 124 | 266 | 216 | 390 | 115.0% | 793.5% | 80.9% |
| Others | | | | | | | | |