



## **Vale obtains environmental license for S11D**

Rio de Janeiro, June 27, 2012 – Vale S.A. (Vale) informs that it has obtained the preliminary environmental license (LP) to the iron ore project Carajás S11D (S11D), issued by the Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (IBAMA). The LP is part of the project's first phase of licensing and attests its environmental feasibility.

### **The dimensions of S11D**

S11D is the largest project in Vale's history and also in the iron ore industry, being our major lever for production capacity growth and for maintaining Vale's undisputed leadership in the global market in terms of volume, cost and quality. Located in the southern range of Carajás, in the state of Pará, Brazil, with an estimated capex of US\$ 8.039 billion for the development of mine and processing plant, the project has a nominal capacity of 90 million metric tons per year (Mtpy) of iron ore with an average ferrous content of 66.48% and low concentration of impurities. Operations are expected to start in the second half of 2016.

S11D will require investments in logistics infrastructure – in the Carajás railroad and the Ponta da Madeira maritime terminal – estimated at US\$ 11.4 billion, which will allow them, after the conclusion, to handle 230 Mtpy of iron ore.

For illustrative purposes, Carajás reached annual production of 90 Mt in 2007, 22 years after the beginning of operations.

### **Technology innovation and sustainability**

Consistent with the objective with long-term sustainable value creation, we developed technological solutions focused on environmental protection, with more efficient use of natural resources and reduction of pollutants emission.

With the use of the truckless mining concept, off-the-road trucks will be replaced by a structure composed of excavators and mobile crushers that will extract the iron ore and feed the conveyor belts that will transport it to the beneficiation plant.

The processing of iron ore using its natural moisture (dry process) is another technology that will mitigate the environmental impacts. This technique eliminates the generation of tailings with the maximum use of ore, since the finest feeds, which would be lost in the conventional process, are within the final product.

Once the S11D mine and plant are operating, there will be decreases of 93% and 77% of water and fuel consumption, respectively, allowing for a 50% cut in greenhouse gases emissions, when compared to conventional methods. The dry process will also reduce electricity consumption of 18,000 MW per year and eliminate the need of tailings dam, minimizing the interference in native environments.

## **Strategic rationale: significant shareholder value creation through the cycles**

Carajás offers the best iron ore growth platform in the world, combining substantial proven and probable reserves, 4.239 billion metric tons, and low operational cost resulting from the high quality mineral deposit and the efficient long haul logistics system<sup>1</sup>.

The S11D project will establish the basis for building new platforms of value creation through the future development of low investment cost brownfield projects, sustaining the leadership of Vale in the iron ore global market.

Carajás high quality iron ore has lower operating costs and higher value-in-use for the steel industry, because it implies higher productivity, lower fuel consumption and carbon emissions, which magnifies the sensitivity of global demand to the expansion of the metal production and contributes to sustainability throughout the supply chain. At the same time, with the progressive impoverishment of the iron ore quality throughout the world, the demand for high quality minerals tends to grow to meet increased blending needs, which make them less sensitive to the effects of economic recessions.

The increase in production of high quality iron ore is in line with Vale's growth and value creation strategy based on a world class asset platform, active portfolio management and discipline in capital allocation.

The next step in the environmental licensing process is the installation license (LI), which will enable the start of the plant construction.

<sup>1</sup> Carajás, including Serra Sul where S11D is located, has proven and probable reserves of 7.383 billion metric tons, being 17.165 billion metric tons the total proven and probable reserves of iron ore of Vale.

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