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S11D: first equipment tests begin

The largest mining project in Vale's history, S11D is starting up in the second half and it will produce 90 million metric tons of iron ore per year

The first tests at S11D – the largest mining project in Vale's history, in southeast Pará – are now under way. At the end of January, the long-distance conveyor belt, which stretches for 9.5 km, was powered up. This belt is part of one of the project's main technology solutions, a "truckless" system, which also involves excavators and crushers, replacing off-highway trucks and cutting diesel consumption by 70% and greenhouse gas emissions by 50%. A 23-km stretch of the railway branch line that will link S11D to the Carajás Railway is now in the alignment phase. Construction trains are already operating along it, carrying rails and ties to assemble the other stretches of track. The branch line will be 101 km long, and work should be completed in August. The Carajás Railway will transport S11D's ore to Ponta da Madeira Maritime Terminal in São Luís, Maranhão, where it will be loaded onto ships and exported to Vale's main customers across the world.

Part of the commissioning stage, the long-distance conveyor belt's tests make it possible to evaluate whether the equipment is operating as planned. "This was the first test on a large item of equipment at S11D and we are very satisfied with the results. We have entered a new stage in the project's history," says Quirino Nunes, the senior plant construction leader. The belt has been run without any load and, starting now, the equipment's performance will be assessed in terms of parameters such as start-up time, temperature, electric current and speed. Once the process' safety has been evaluated for all these variables, the equipment will be authorized for load commissioning.

In the plant's iron ore stockyards, the equipment is now in the final assembly phase. The ore will be moved around by 14 large machines. In November, the electromechanical assembly work on a bridge reclaimer and double-boom stacker was finalized, and these machines are now ready to be commissioned. In turn, the earthmoving work at the mine has been completed and the truckless system machines are being assembled. A total of four truckless systems will be constructed at the mine.

Project

In all, 80% of the work at the mine and plant has now been completed at the Carajás S11D Iron project, in Canaã dos Carajás, Pará. In a challenging time for the global iron ore market, this project will help Brazil maintain its competitiveness in mining. Its products will complement Carajás' output, supplying low-cost, high-grade iron ore with low levels of contaminants.

The truckless technology and conveyor belts have also enabled the processing plant to be built in an area of pastureland outside the forest. The plant was designed to operate using the ore's natural moisture, meaning there will be no tailings (mining waste) or tailings ponds. This will also permit a 93% reduction in water consumption when compared with a comparable conventional operation – enough to supply a city of 400,000 inhabitants.

More information



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