

Commodity  
**Iron Ore**

Technology  
**Mobile Crushing Plant**

Application  
**In-Pit Crushing and Conveying (IPCC)**

Study type  
**Customer Story**

Country  
**Brazil**

Customer  
**Vale**

## How in-pit crushing and conveying supports greener mining at Vale's S11D Eliezer Batista complex

As part of a more than USD 6.4 billion investment to develop the S11D Eliezer Batista iron ore complex, Vale installed a truckless mining system based on continuous in-pit crushing and conveying (IPCC) technology. The result is 67% lower energy consumption relative to comparable truck-and-shovel systems, reducing both CO<sub>2</sub>e emissions and the operating cost of mining.

The S11D complex increases annual production capacity at the huge Carajás complex by 90 million tonnes to between 400 million and 450 million tonnes. The site's truckless ore transportation system incorporates a network of equipment consisting of mobile excavators and crushers, connected by conveyors.

Ore is initially dumped by the excavators into mobile crushers that feed a system of mobile

and fixed conveyors within the mine. In total, 68 km of conveyor belt systems connect the mine to the beneficiation plant and stockpiles.

Continuous mobile IPCC systems are gaining traction within the mining industry. They offer several advantages over traditional truck-based processes. In addition to reducing the amount of waste, such as tyres, filters and lubricants, the system at S11D consumes 67% less energy than a truck-and-shovel system of comparable capacity. This results in lower CO<sub>2</sub>e emissions, by 73%, in line with decreased energy consumption, and reduced operating costs of at least 15%.\*

With diesel-powered haulage trucks being one of the largest sources of CO<sub>2</sub>e emissions, technologies that address these emissions offer an important pathway to reducing overall emissions in the mining sector. An electrically powered and continuously operating IPCC system supports this transition – especially when combined with clean electricity – while also improving the operating cost efficiency of transporting material from the pit to the beneficiation plant.

\*based on FLSmidth in-house calculations



**67%**  
Increase in  
energy efficiency



**73%**  
Reduction in  
CO<sub>2</sub>e



**15%**  
Reduction in  
cost of mining

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