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Vale innovates by using battery storage to reduce electric energy consumption and costs at ore terminal

The system installed in partnership with MicroPower Comerc is an important step in the company's strategy for replacement of fossil fuels

Vale is installing at Ilha Guaíba terminal (TIG), in Rio de Janeiro, one of the country's largest battery energy storage systems to supply electrical demand. The BESS (Battery Energy Storage Systems) system, which is being developed in partnership with Siemens and MicroPower Comerc (MPC), will reduce the electric energy cost of the port by almost 20% by substituting the electrical grid supply during peak demand periods when the tariff is more expensive. The equipment has a storage capacity of 10 megawatt-hours, which is enough energy to power 45,000 homes for one hour.

The use of this type of technology is an important step in Vale's decarbonization strategy. Battery Storage is one of the technologies that will be applied to replace diesel energy with renewable electric power in transportation vehicles, such as locomotives and off-highway trucks. It is part of the company's Power Shift program. One of the projects of the Power Shift program is the construction of a 100% electric (battery-powered) locomotive, which will undergo a pilot test this semester at our operations in Tubarão's unit, Espírito Santo state.

The company has recently announced an investment of at least US\$2 billion to reduce direct and indirect absolute emissions by 33% until 2030. This is in accordance with the Paris Agreement, in addition to the company's intention to become carbon-neutral by 2050.

"As Vale continues to decarbonize its operations, the use of batteries will become an increasingly important part of the electrification of our fleet," explained Vale's Energy director, Ricardo Mendes. "This project allows us to test new technology in the field and accelerate Vale's energy transformation, which aims to achieve self-sufficiency by increasing electric power generation mainly through solar and wind sources in addition to our hydroelectric power generation," he added.



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Composed of lithium-ion batteries manufactured by Tesla, the equipment will be charged whenever the demand for energy from TIG is low so that it can substitute the supply from the utility company when the demand is high. This type of application is known as Peak Shaving, which can reduce the final cost of energy consumed at the port by almost 20%. With this cost reduction, BESS will bring gains to Micropower, savings to Vale, and free capacity for the local electrical grid. MPC will also be responsible for the operation of the equipment.

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