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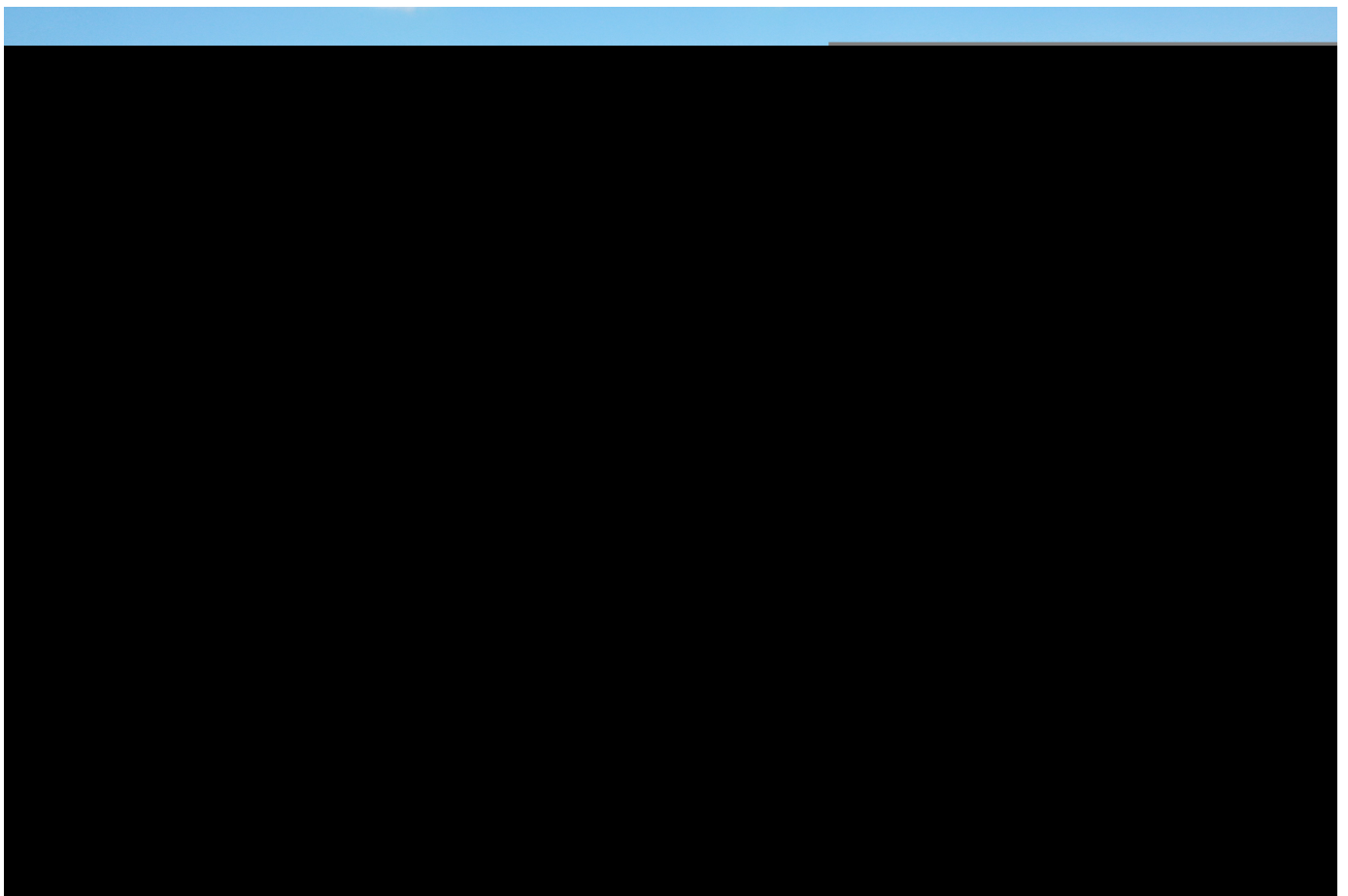


## Maranhão receives the world's first ore miner that produces air bubbles in the hull to reduce emissions

*Known as air lubrication, technology is one of the solutions being tested by Vale to achieve climate goals*

The Ponta da Madeira Maritime Terminal, in São Luís (MA), received yesterday (18/08) the first ore operator in the world to use the air lubrication, technology, which consists of air bubbles produced artificially in the ship's hull. The technology was installed at Sea Victoria, a Guaibamax with 325 thousand tons of capacity. Ten compressors installed beneath the ship's deck send air to 20 devices positioned underneath the ship, which produce a carpet of bubbles. The action reduces the friction between the hull and the water, reducing fuel consumption and, consequently, emissions, which will help Vale to further reduce greenhouse gas (GHG) emissions in navigation.

Vale's shipping team estimates that, if it works out, the technology could be replicated in the entire fleet dedicated to the company's service. "Expectations point to a fuel reduction of around 5 to 8% per ship. In a year, a single vessel would stop emitting up to 5,600 tons of CO2. The technology has the potential to be installed in the entire fleet dedicated to the company's services, with a 4.4% reduction in annual emissions from the maritime transport of iron ore at Vale", explains the technical manager of Vale's Shipping, Rodrigo Bermelho.



Guibamax Sea Victoria, equipped with air lubrication, docks at the Ponta da Madeira Maritime Terminal, in São Luís (MA).  
Credits: 9D Studio

The installation of the technology, supplied by the English manufacturer Silverstream, is a project developed by Vale's navigation area, with the cooperation of the Vale Technological Institute, and has a partnership with the Korean shipowner Pan Ocean for installation in one of its VLOCs (Very Large Ore Carrier). Shanghai Ship Design Research Institute (SDARI) was responsible for the ship design and integration with the bubbles. The Chinese shipyard New Times Shipbuilding prepared the vessel during its construction and the shipyard Yiu Lian Dockyards (Shekou) LTD, located in the Chinese city of Shenzhen, conducted the installation of the equipment. Installation lasted 35 days and the ship was ready on June 28th.

Access the [link](#) to watch the film about the technology

"Vale invests in research and technology so that we can operate more and more sustainably. We constantly strive for excellence in performance, efficiency, safety and sustainability. Whether with a prominent position in the national and world port scenario, with the generation of taxes or jobs," said the executive manager of operations at the Ponta da Madeira Maritime Terminal, Luís Allevato.

### **Ecoshipping**

The adoption of air lubrication is part of Ecoshipping, a program created by Vale to meet the challenge of reducing its carbon emissions, in line with what has been discussed within the scope of the International Maritime Organization (IMO). Last year, the company announced that it intends to neutralize its direct and indirect emissions (scopes 1 and 2) in 2050 and still reduce scope 3 emissions by 15% by 2035, related to its value chain, of which shipping emissions they are part of it, as the ships are not their own. The goals are in line with the ambition of the Paris Agreement.

Recently, Vale announced the world's first ore carrier equipped with rotating sails (rotor sails), also built in China and due to arrive in Brazil at the end of July. Like air lubrication, the spark plugs were installed on a Guibamax. There are five sails distributed along the vessel that allow an efficiency gain of up to 8% and a consequent reduction of up to 3.4 thousand tons of CO2 equivalent per ship per year. If the pilot proves to be efficient, it is estimated that at least 40% of the fleet is able to use the technology, which would impact a reduction of almost 1.5% in annual emissions from Vale's maritime transport of iron ore.

### **More information**



### **Media Relations Office**

[imprensa@vale.com](mailto:imprensa@vale.com)

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