

## Start of operation of the first ore carrier vessel equipped with rotor sails, which aim to increase energy efficiency and reduce emissions

Rio de Janeiro, May 13<sup>th</sup>, 2021 – Vale S.A. (“Vale”) informs that the first Guaibamax vessel equipped with a rotor sails system at Vale's service will start operating in the coming days.

The vessel, with a cargo capacity of 325 thousand tons of iron ore and pellets, has five rotor sails installed, which will allow an efficiency gain of up to 8% and a consequent emission reduction of up to 3.4 thousand tons of CO<sub>2</sub> equivalent per vessel per year. In case the project proves to be efficient, it is estimated that at least 40% of the fleet at Vale's service will be able to use the technology.

The start of operation of vessels equipped with rotor sails is part of Vale's portfolio of initiatives in shipping, which also includes the Air Lubrication technology and the adoption of multi-fuel vessels. These actions contribute to achieving the commitment to reduce 15% of net Scope 3 emissions by 2035. Additionally, Vale seeks to reduce its absolute Scope 1 and 2 emissions by 33% by 2030 and achieve neutrality by 2050, in line with the Paris Agreement, leading the evolution process towards low carbon mining.

### Rotor sails technology

The rotor sails are cylindrical rotors, four meters in diameter and 24 meters high. In contact with the rotating sail, the air starts to move at different speeds along its surface, resulting in a pressure variation that in turn propels the vessel forward, in an effect similar to that of spinning football, tennis and golf balls, which curve in flight, a phenomenon known as “the Magnus effect”.

Luciano Siani Pires  
Executive Officer of Investor Relations

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Ever since the Covid-19 outbreak began, our highest priority is the health and safety of our employees. Our IR team adopted work-from-home, and as we continue to face these new circumstances, we strongly recommend you prioritize e-mail and online engagement.

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