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 **JX Nippon Mining & Metals**

 **PAN PACIFIC COPPER**

BHP

NEWS RELEASE

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BHP, Pan Pacific Copper and Norsepower partner to harness the power of wind-assisted propulsion

BHP has partnered with Pan Pacific Copper (PPC) – a member of JX Nippon Mining & Metals group, and Norsepower – the leading global provider of auxiliary wind propulsion systems, to reduce greenhouse gas (GHG) emissions from maritime transportation between BHP's mines in Chile and PPC's smelters in Japan. The parties are conducting a technical assessment and plan a retrofit installation of wind-assisted propulsion system onboard the M/V Koryu, a combination carrier operated by Nippon Marine – a member of SENKO group (shares held by SENKO 60%, JX Nippon Mining & Metals 40%).

BHP and PPC have multi-year agreements for delivery of copper concentrates from Chile to Japan as well as sulphuric acid from Japan to Chile, making the cargo capacity utilization of M/V Koryu (a 53,762 deadweight tonne combination carrier) one of the highest in the industry.

Norsepower's Rotor Sails installation – a "push-button wind propulsion" system and estimated to be around ten times more efficient than a conventional sail that requires no reefing or crew attention when in operation – is scheduled for completion by the third quarter of 2023, which is expected to make M/V Koryu the cleanest vessel in its category when measured for GHG emissions intensity.

Norsepower's Rotor Sails are modernized versions of Flettner rotors, and the technology is based on the *Magnus effect* that harnesses wind to maximize ship fuel efficiency. When wind conditions are favorable, Rotor Sails allow the main engines to be throttled back, saving fuel and reducing emissions, while also reducing power needed to maintain speed and voyage time.



Norsepower's Rotor Sail, with a tilting foundation, will replace one of the deck cranes in a first-of-its-kind installation onboard MV Koryu

BHP Chief Commercial Officer, Vandita Pant, said: “Identifying and implementing innovative and sustainable solutions through our strong commodity and supply chain partnerships remain essential in supporting BHP’s decarbonisation ambitions. We look forward to working with PPC on the wind-assisted propulsion system to enable further GHG emissions reduction in our supply chain and add to the already strong partnership between BHP and PPC.”

JX Nippon Mining & Metals Deputy Chief Executive Officer / PPC President, Kazuhiro Hori said “PPC and BHP has been sharing the mission to accelerate the activities for decarbonization in line with our respective climate targets and goals. The Koryu project is a good example of our collaboration and valuable step that proves eagerness by both companies to establish ecosystem partnerships to take on the climate challenge. We are looking forward to further developing the partnership with BHP in various areas.”

Norsepower CSO, Jukka Kuuskoski, said: “Our vision is to set the standard in bringing sailing back to shipping, and empower the maritime industry towards reaching the goal of zero carbon emissions. As fuel prices increase and a carbon levy is initiated, investing in technologies which have proven emissions reductions and fuel savings is essential for long term commercial success. Working with BHP, PPC and Nippon Marine demonstrates the increased commitment to greener operations, particularly within the bulk carrier market. We look forward to completing the installation and seeing the results.”

This latest partnership with PPC and Norsepower follows BHP’s collaboration agreements in the maritime decarbonisation segment that includes the first marine biofuel trial involving an ocean-going vessel bunkered in Singapore, taking delivery of the first of five LNG-fuelled Newcastlemax bulk carriers and joining a consortium to

assess the development of an iron ore Green Corridor between Australia and East Asia. BHP is also a founding member of the Global Maritime Decarbonisation Centre in Singapore.

JX Nippon Mining & Metals group has declared the target of net-zero CO2 emissions by fiscal 2050 and is further accelerating its action to reduce CO2 emissions of Scope 3 including raw material production and logistics throughout the entire supply chain. Also, on 3rd August, JX Nippon Mining & Metals released “Sustainable Copper Vision”. Joining this partnership is a part of the activities of “Reduce Copper’s Carbon Foot Print (CFP)” that is one of the “Four Initiatives” committed to take.

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About BHP

BHP is a leading global resources company with approximately 80,000 employees and contractors, primarily in Australia and the Americas. BHP's products are sold worldwide, and it is among the world's top producers of major commodities, including iron ore, copper, nickel, and metallurgical coal.

Read more about our approach to climate change: www.bhp.com/climate

About PPC

Pan Pacific Copper, a joint venture of JX Nippon Mining & Metals (67.8%) and Mitsui Kinzoku (32.2%), is a supplier of nonferrous materials covering areas of operations from raw materials procurement to smelting/processing outsourcing and product marketing of nonferrous metals including copper as the main material.

PPC follows the approach to climate change by JX Nippon Mining & Metals: www.nmm.jx-group.co.jp/english/sustainabilityreport/

About Norsepower

Norsepower Oy Ltd is a Finnish clean technology and engineering company pioneering modern auxiliary wind propulsion for the global maritime industry. Norsepower's Rotor Sail Solution is a proven, low-maintenance, easy to use, and reliable fuel saving technology, supporting the decarbonisation of the shipping industry.

Since its establishment in 2012, Norsepower has generated more than €20 million of funding and has now installed Rotor Sails onboard seven vessels, including the latest installation on the *MV Berlin*. Each installation has made significant reductions to fuel costs and emissions, confirmed by independent verifiers such as ABB, NAPA and Lloyd's Register. Other shipowners, charterers, and shipyards have been convinced of Rotor Sail technology's benefits and are taking steps to study the technical and economic feasibility of wind propulsion on their fleet based on these positive results.

For more information on the Norsepower Rotor Sail Solution, please visit www.norsepower.com.

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