

CERTIFICATE OF APPROVAL IN PRINCIPLE

WAPS and Solar Panels Newcastlemax Bulk Carrier AiP-Certificate no. 202300311

This is to declare that the Approval in Principle (AiP) of the following Project:

Project:	205k DWT Bulk Carrier																	
Applicant:	Aurelia Operetteweg 4 1323 VA Almere-Stad The Netherlands																	
Designer:	Aurelia The Netherlands																	
Description:	Bulk Carrier, WAPS-H-Ventofoils, Solar , Battery Powered, Green Plus, Unrestricted Navigation																	
Characteristics:	<table><tr><td>Length Overall</td><td>299 m</td></tr><tr><td>Breadth</td><td>50.0 m</td></tr><tr><td>Scantling Draft</td><td>17.9 m</td></tr><tr><td>Max. Service Speed</td><td>14.5 knots</td></tr><tr><td>Gross Tonnage</td><td>102000 GT</td></tr><tr><td>Deadweight</td><td>203000 t</td></tr><tr><td>Propulsion Power</td><td>14330 kW</td></tr><tr><td>Battery Capacity</td><td>6600 kWh</td></tr></table>		Length Overall	299 m	Breadth	50.0 m	Scantling Draft	17.9 m	Max. Service Speed	14.5 knots	Gross Tonnage	102000 GT	Deadweight	203000 t	Propulsion Power	14330 kW	Battery Capacity	6600 kWh
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has been carried out in compliance with the process described in the "RINA Guide for Approval in Principle of Novel Technologies" (GUI/19/ENG- Edition 2014), on the basis of the below listed technical criteria.

- ❖ RINA Rules for the Classification of Ships
 - Part F, Chapter 13 Section 46 (Wind Assisted Propulsion System – WAPS)
 - Part F, Chapter 7, Section 1 (Green Plus)
 - Part C, Chapter 2, Appendix 2 (Battery Powered Ships)
 - Part E, Chapter 4, (Bulk Carriers)

Issued in **HAMBURG** on June 10, 2023.



RINA Services S.p.A.
Patrizio Di Francesco

This certificate consists of this page and one Annex.



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Annex 1 [Page 1/1]

The following submitted documentation, were reviewed for the Approval in Principle Certificate:

Documents/Drawings

- ❖ Aurelia Tender Proposal vessel Rio Tinto
- ❖ 22C03 RIO Tinto – GA Plan
- ❖ 22C07 - Rio Tinto - Electrical Load Analysis - Rev.00i01 - Electric Load Balance
- ❖ 22046D01 Rio Tinto Single Line Diagram Rev00i00 (2) – Power Distribution
- ❖ 22C07 - Fuel Consumption Analysis v.02 – Endurance Study
- ❖ 22C07 - Rio Tinto - Batteries selection REV00i02 – Battery System Information

It is intended that the general conditions and requirements listed and detailed in RINA Document:

- ❖ “ WAPS and Solar Panels Newcastlemax Bulk Carrier” RINA Approval in Principle Report

have to be fulfilled in the detailed design phase, with the possible addition of further measures introduced by the Administration (Flag Authority).

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