



**NAUTILUS**

## D4.5 – Energy/emission system simulation report for the chosen cruise ships

<b>Project Acronym:</b>	Nautilus
<b>Project Title:</b>	Nautical Integrated Hybrid Energy System for Long-haul Cruise Ships
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<b>Programme:</b>	Horizon 2020 Framework Programme
<b>Topic:</b>	LC-MG-1-8-2019 Retrofit Solutions and Next Generation Propulsion for Waterborne Transport
<b>Instrument:</b>	Research & Innovation Action (RIA)



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## Deliverable D4.5 – Energy/emission system simulation report for the chosen cruise ships

**Short summary:** Based on the genset and ship integration design an energy/emission model of the SOFC- battery hybrid genset, compatible to the power load use cases for the genset foreseen, has been developed (especially the adjustable power balance between SOFC and battery). Three load cases have been considered: i) hotel load only, ii) hotel load + manoeuvring (coastal sailing), and iii) full ship power load.

Improvement of the ship energy simulation tools used by shipyards (i.e. energy simulation tools developed in previous EC funded Joules Project), by integration of an emission evaluation feature have been conducted. Together with this new emission evaluation feature, these energy simulation tools covers all electrical and thermal systems and sub-systems: power plant, heat recovery, propulsion, HVAC / air conditioning, lights, waste and water treatment, etc, These subsystems are connected together in a full ship model, taking into account the weather and the real cruise conditions. Therefore, they allowed the optimum dimensioning of all components with respect to energy optimization and assess the energy/emission performance consumption of the vessel in all parts of its duty (typical cruise profiles).

**Due date:** 12/31/2024

**WP, leader:** WP4, MW

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### Dissemination Level

<b>PU</b> Public	<input type="checkbox"/>
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### Document history

Version	Date	Name	Chapters edited	Reason for change
V1.0	12/31/2024		All	Original Version

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