H4PERION

Carbon neutral H2ICE running on Hydrogen for sustainable long-distance shipping

Hydrogen **FOR** **P**erformance **E**nhancement
and **R**eliable ICE **O**peratio**N**

For the first time in maritime history, a hydrogen engine (H2ICE) will power a large vessel: the **Aurora Botnia**, a 24,000 GT RoPax ferry sailing between Finland and Sweden.

Follow the journey

For any information:
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Expected impact

100%
CO_2 emission reduction

> 90%
NO_x emission reduction

> 90%
SO_x emission reduction

80%
methane slip reduction

> 55%
efficiency from fuel to shaft

> 17%
fuel savings

About the project

The overall aim of the **H4PERION** project is to develop and demonstrate the **safe, reliable and economic operation** of a H2ICE running on a gaseous hydrogen (H_2) and biomethane (CH_4) blend in an **open-sea environment**.

Ultra-clean

Zero CO_2 emissions
NO_x 90% emission reduction
SO_x 90% emission reduction

Economically viable

Retrofitability
Infrastructure Synergy
Proven by lifecycle performance assessment

Highly efficient

55% efficiency from fuel to shaft

17% fuel savings

Safe and reliable

Digital Twin and Predictive Maintenance
High-Pressure Storage Systems designed to mitigate risks
Maritime Hydrogen Training Toolbox for ship crews, port operators and maintenance personnel

Made in Europe

H4PERION consortium brings together 16 European partners, enhancing the quality of European marine equipment providers and shipyards.

Partner network

16 partners · 7 EU countries · the whole value chain

University of Vaasa · Wärtsilä · WEGEMT · National Technical University of Athens · TalTech · ABS · Deltamarin · University of Oulu · Åbo Akademi · MW · DLR · BALance Technology Consulting · Meyer Werft · wasaline

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