H4PERION

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

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.

Hydrogen
FOR
Performance
Enhancement and
Reliable
ICE
Operatio**N**

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

Co-funded by the European Union

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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**.

H4PERION proposes a technological pivot from decades-long burning of fossil hydrocarbons in marine engines, towards energy conversion based on low- and zero-carbon fuels.

H2ICEs: Hydrogen-fuelled internal combustion engines (ICEs) should be seen as **part of the solution**, particularly when it comes to decarbonising large, ocean-going vessels in the mid-term.

Impact Pathway No. 1

Ultra-efficient zero-carbon power conversion for long-distance shipping

Impact Pathway No. 2

Safe hydrogen fuel handling in ports and on board, including framework for controlling risks and accident scenario mitigation strategies

Impact Pathway No. 3

Contributing towards the establishment of a regulatory framework for low- and zero-carbon fuels

Follow the journey

For any information:
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Partner network

16 partners · 7 EU countries · the whole value chain

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