Project one-pager DFDS

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1. Project description

The Hydrogen EU-ROPAX project is about creating a zero-emission transport corridor between Copenhagen and Oslo with a new 200-meter passenger and freight ferry that run 100% on green hydrogen and 23 MW PEM fuel cells. The ship will consume about 22 tons of hydrogen each day and is expected to be operational from early 2027. We are in the process of applying for EU Innovation Fund support, large-scale projects.
The ship will have higher CAPEX cost than traditional powered ships, but the biggest issue is the high cost of the green hydrogen. That is the core reason we are chasing compressed hydrogen for this project. We expect to get the green hydrogen from additional electrolysis capacity that can be added to the Green Fuels for Denmark project (1.3GW electrolysis, CCS, methanol and e-Jetfuel production).

Existing project partners:
Ørsted (DK), ABB (FI and NO), Hexagon Purus (NO), Lloyds Register (UK), Ballard Power Systems Europe (DK), Knud E Hansen (DK), Danish Ship Finance (DK) and DFDS (DK)

Please select which part of the value chain for hydrogen your project focuses on (select one or more, where applicable):

Production	Transmission	Industrial application	Mobility	Energy	Housing application	Other
☐	☐	☐	☒	☒	☐	☐

2. Partnerships and spillover effects

The ship will become a huge green hydrogen consumer and can help to bring scale to local production of green hydrogen.
We are looking for partnerships that can help us to be able to refuel the ship efficiently. To minimize tank storage capacity on the ship, we would need to refuel the ship every single or second day in port with passengers onboard. The process should be highly automated and only place a minimum burden on the crew. The transfer capacity should be about 10 tons/hour.
The preferred partners would also be motivated to further develop the maritime hydrogen bunker infrastructure to be scaled to other strategic locations, enabling shipowners to deploy the new generation of zero emission ships.
For this specific ship, the key refuelling locations are Copenhagen (DK) and Oslo (NO).
Ships sometimes changes route, if this ship were to change route, then refuelling in Amsterdam (NL) would be relevant.
Green hydrogen is also highly relevant for a new generation of RoRo vessels (which are not part of this specific project). Key refuelling locations would then be at sea (while sailing slow) and e.g. Brevik (NO), Gothenburg (SE), Ghent (BE), Rotterdam (NL), Trieste (IT), Sete (FR), Calais (FR) and Dunkerque (FR)