



Topeka

A zero-emission shipping company

2021 Global Forum on Mechanical Engineering
Steinar Madsen CEO, Topeka AS

Wilhelmsen group structure

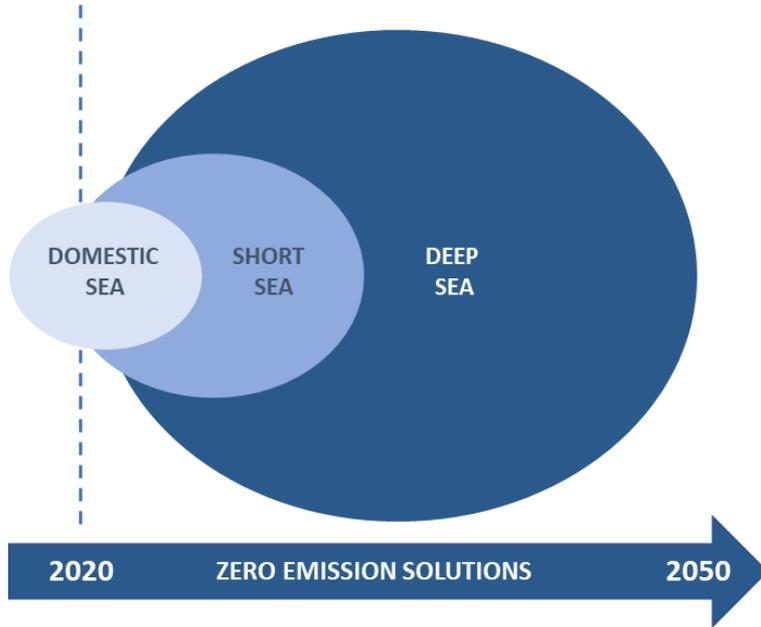


Wilh. Wilhelmsen Holding ASA

 MARITIME SERVICES	NEW ENERGY	STRATEGIC AND FINANCIAL INVESTMENTS
<p>Ships Service</p> <p>Ship Management</p> <p>Insurance Services</p>	 <p>NorSea</p>  <p>NorSea WIND</p>  <p>edda wind</p>  <p>Tpeka</p>  <p>massterly <small>an omgroup wilhelmsen joint venture</small></p>  <p>RAALABS</p>  <p>DOLITTLE</p>  <p>ivaldi</p>	 <p>Wallenius Wilhelmsen</p> <p>Treasure ASA</p>  <p>HYUNDAI GLOVIS</p>  <p>QUBE</p>  <p>WiiNor Governmental Services</p>

Background

Call for action → huge market



Energy transitions

Starts with smaller vessels – shorter distance

- From rowing to sail to coal to oil
- Ongoing energy transition from oil to LNG

LNG



2000



2004



2014



2020

Hydrogen/Ammonia/LOHC



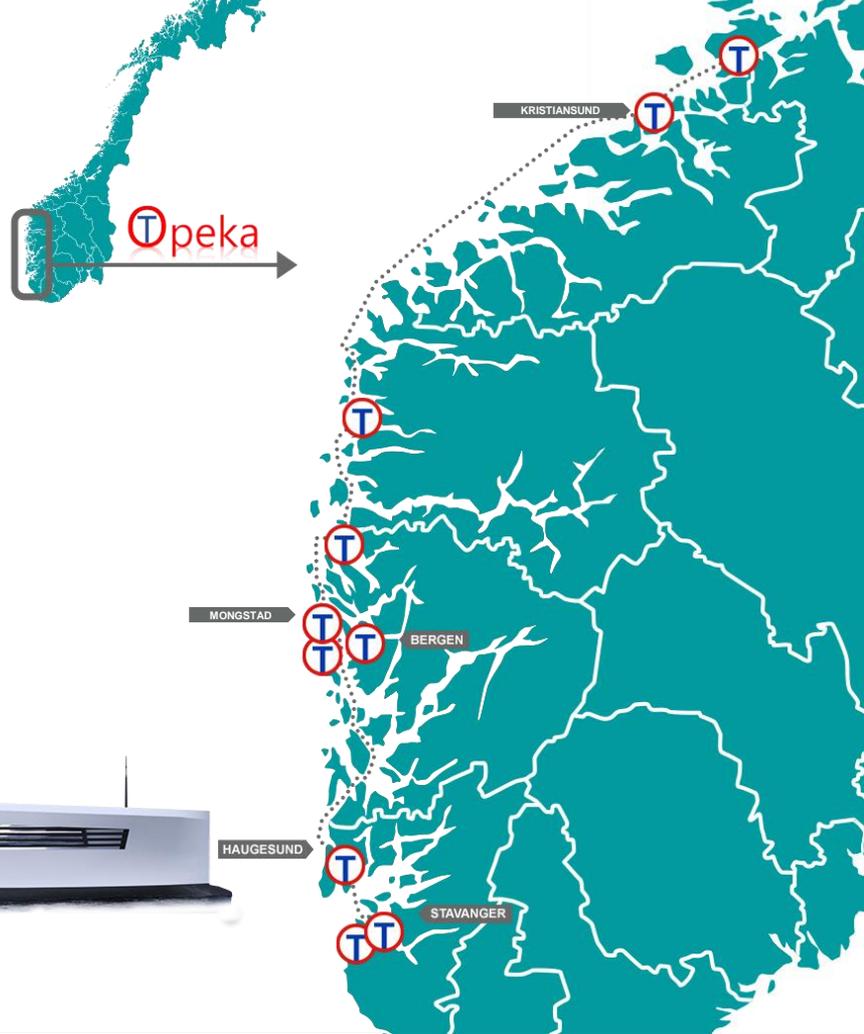
2021



2024?



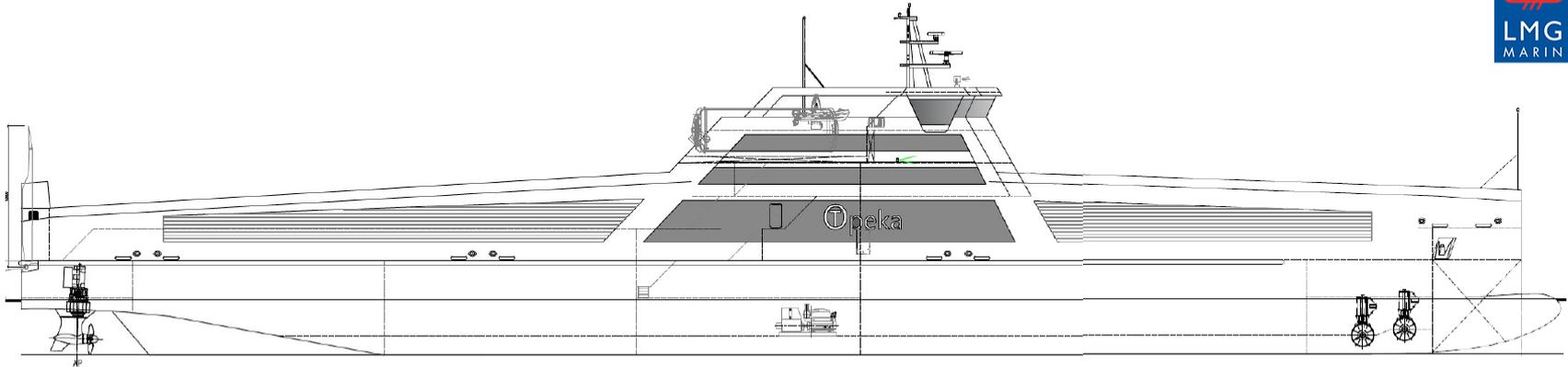
Topeka base-to-base vessel: The zero emission seaborn alternative



Topeka Nattruten

2,500 m² open deck RoRo vessel running on LH2

DESIGN:

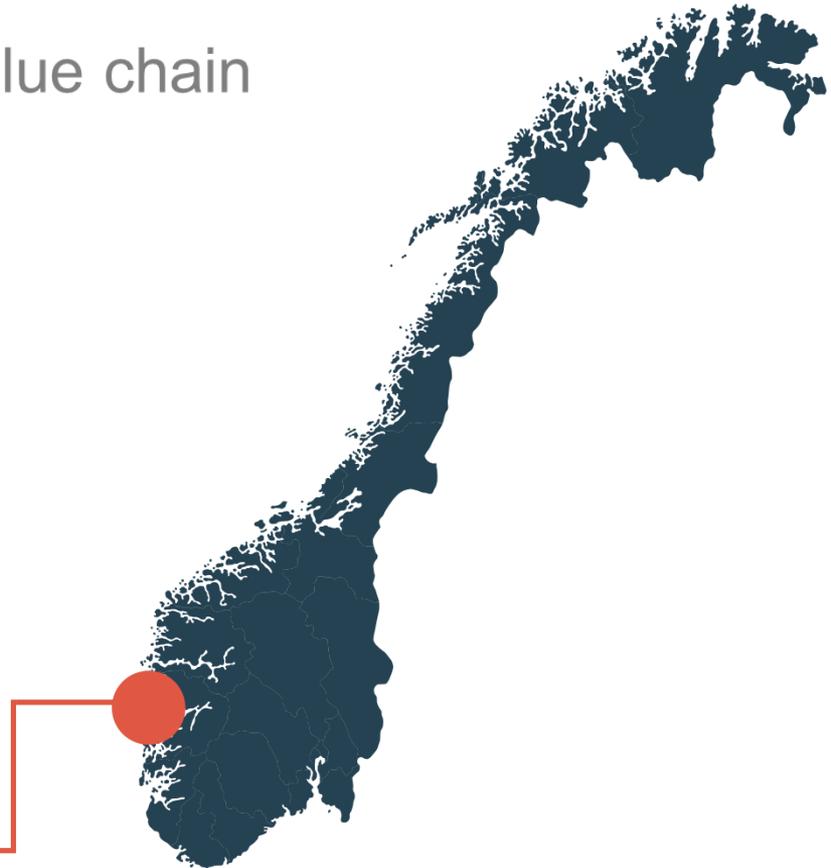


- MAIN DIMENSIONS: 125 M LONG, 24 M WIDE
- CARGO CAPACITY: 56 SEMI TRAILERS
- SPEED IN SERVICE: 12 KNOTS
- LH2 TANK CAPACITY: 65-100 CBM

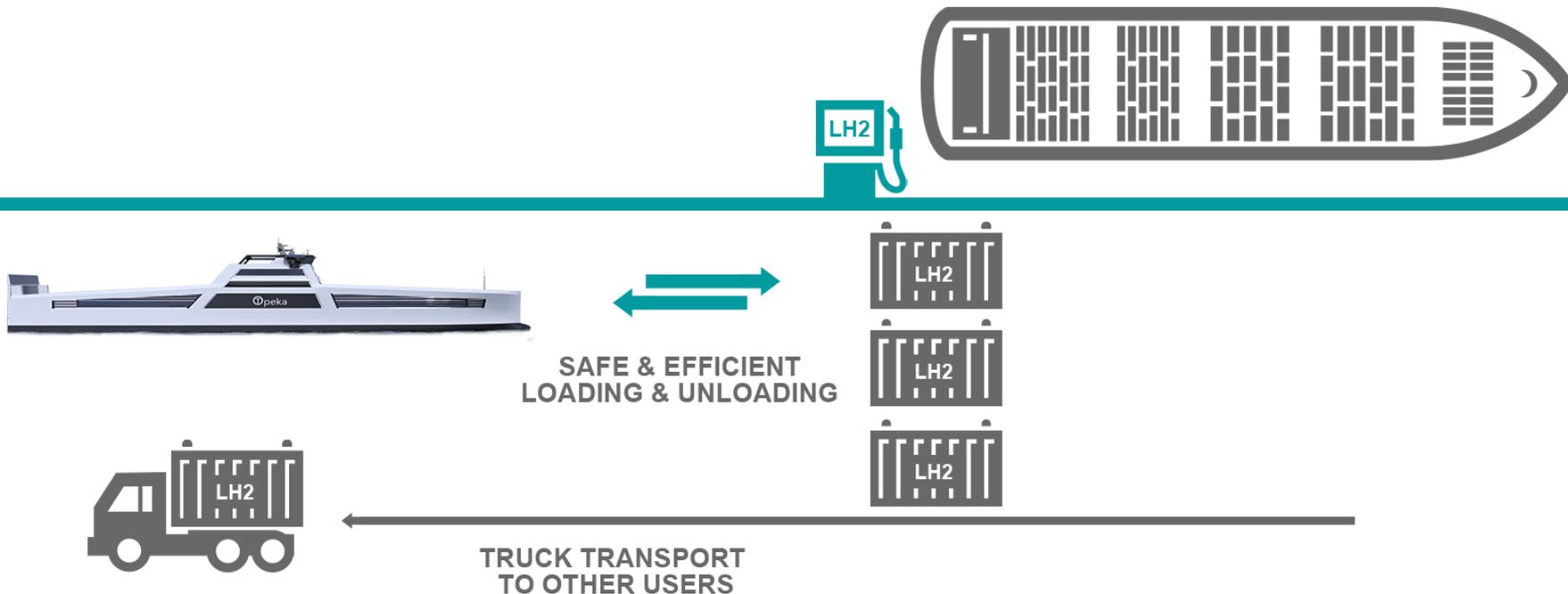
- POWER DEMAND: APP. 2 MW
- INSTALLED FUEL CELL CAPACITY: APP. 3MW
- DAILY LH2 CONSUMPTION: 1,2-1,4 T/D
- RANGE/ENDURANCE: APP. 400 NM

Aurora

A maritime liquid hydrogen value chain demonstrator



Distribute hydrogen to bunkering hubs between Stavanger and Kristiansund





DOCUMENTING LH2 AS MARINE FUEL



**FROM ROAD
TO SEA**



H2-DISTRIBUTION



EMISSION CUTS

Timeline

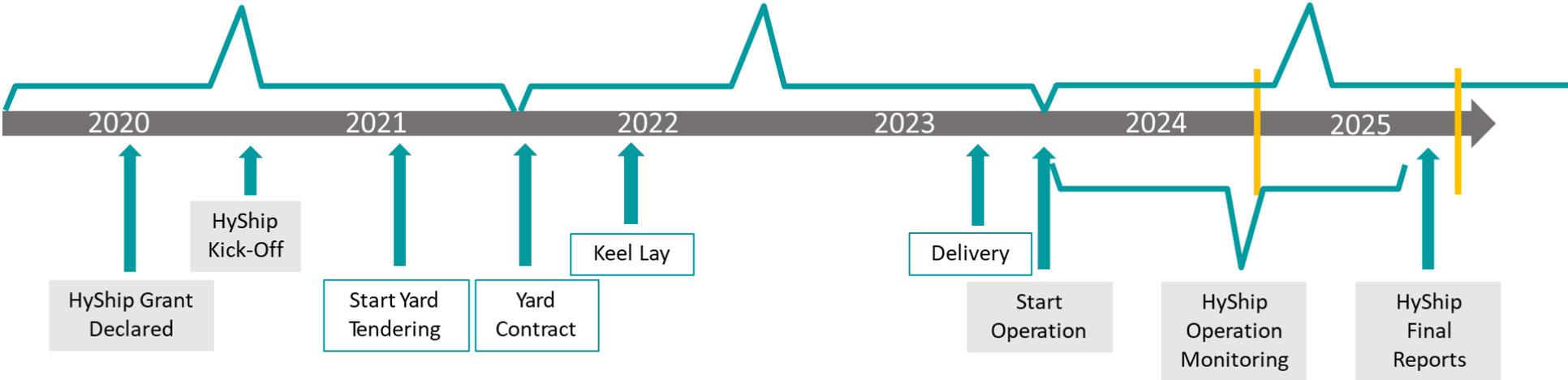
Establish market

- Build a strong business case
- Financing

Vessel Outline

Vessel design and construction
Operation and logistics perfection
Workflow/terminal operations
Logistic tenders and contracts

Commercial and
Technical Operation





topeka

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Thank you !