FUSE – Electrification of Short Sea Shipping

M. Laurilehto 29.10.2024 / 48th Interferry / Marrakech

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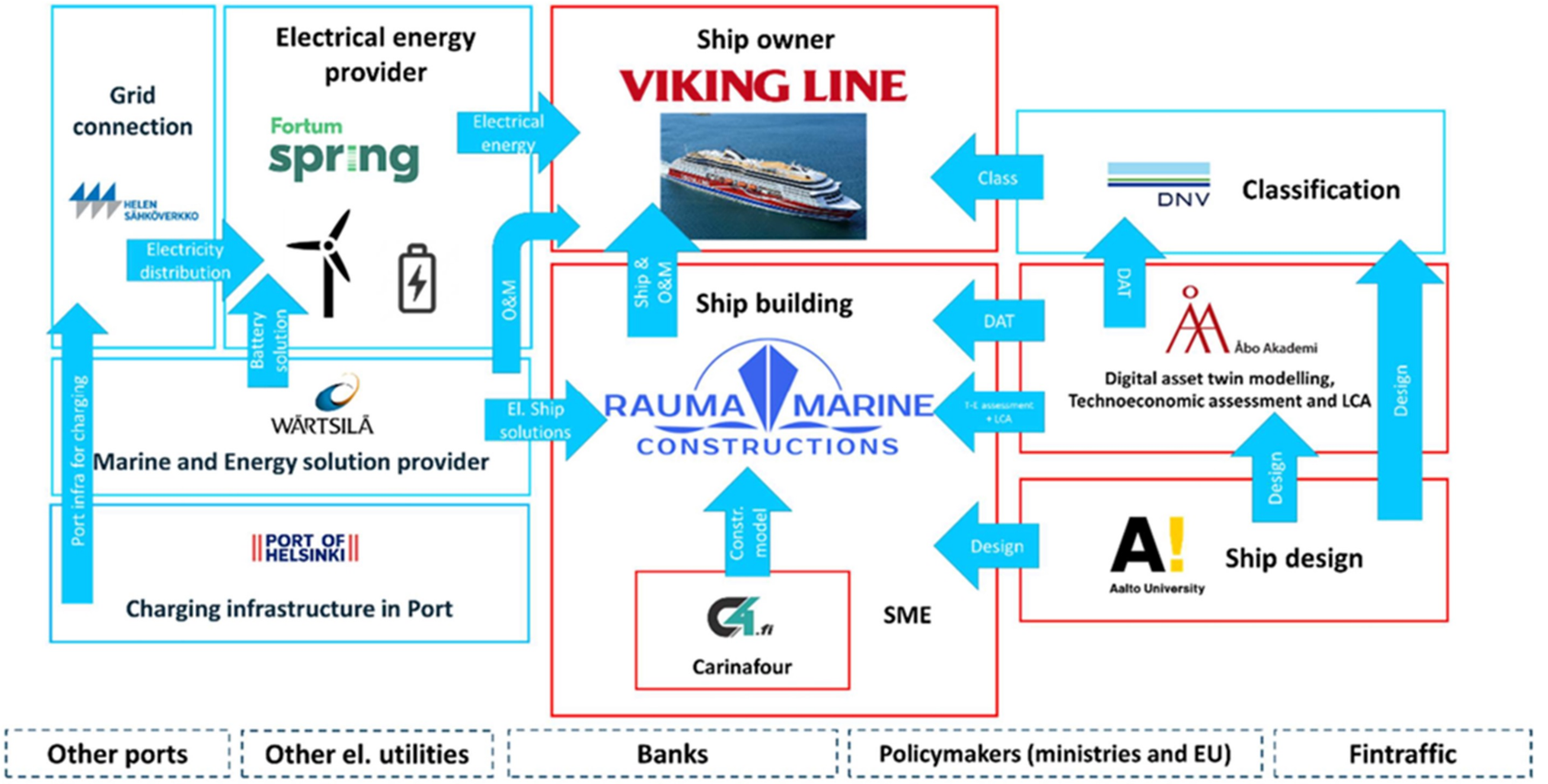
Battery-Electric RoPaxs are Competitive

A consortium led by Rauma Marine Constructions analysed the feasibility of large battery-electric RoPax and RoRo ships.



Potential Electric RoPax Corridors in Northern Europe (FUSE)

Analysis of competitiveness of battery-electric propulsion on RoPax routes in Northern Europe according to present speed on routes 20-260 nautic miles (incl 50% FEUM revenue).

- Green – electric cheaper than fossil fuels
- Yellow – electric cheaper than biofuels
- Orange – electric cheaper than synfuels
- Red – electric not competitive in this operation profile

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Battery-Electric RoPaxs are Competitive

The analysis shows battery-electric RoPax ferries are competitive on routes up to 260 nautical miles and possibly even longer routes with next generation batteries.

- High overall efficiency combined with lower energy cost
- Potential for additional revenues from zero emissions
- Fully electric ships are not heavier than conventional ones
- Technology is mature and scalable

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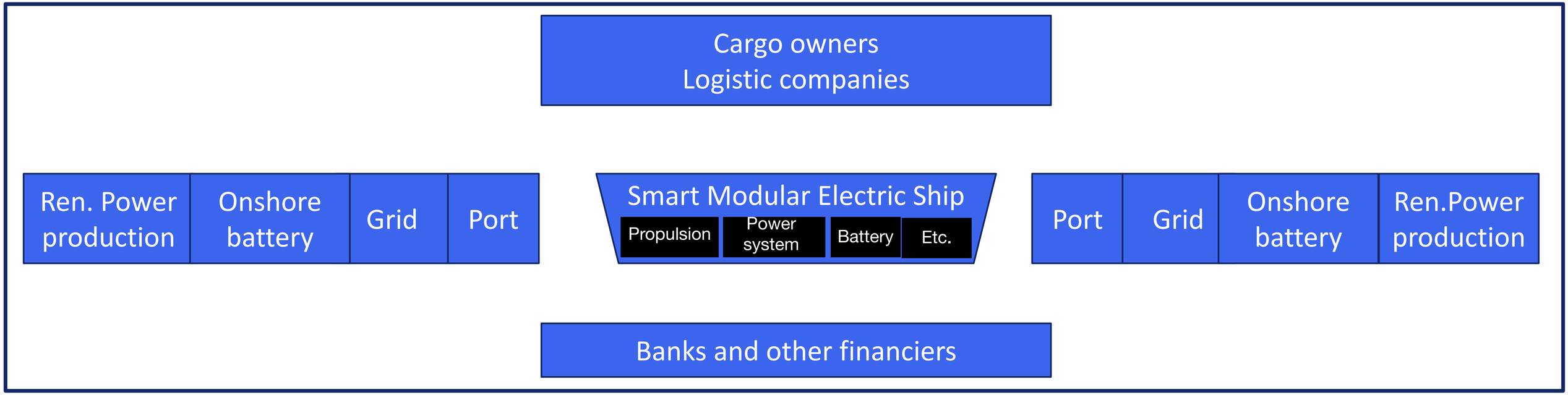
Battery-Electric RoPaxs are Competitive

Battery-electric ships are fundamentally different from conventional ships.

- New operation profile – charging every time in port.
- Investments include both ship and onshore for charging.
- New supplier network and business models both in construction and operation.
- New financing models possible and needed.
- Lower complexity enables modularity – enabling faster delivery and lower costs.

Electric Maritime Corridors

- Electrification of shipping should be done One Electric Maritime Corridor at a Time
- An electric maritime corridor consists of the ships, onshore investments, offtakers and financers.



Industrialisation of RoPax construction and operation

- Lower complexity enables modularity – enabling faster delivery and lower costs
- Possible to configure individually without resorting to unnecessary tailoring
- The industry has little experience of electric ships – this makes it possible to define a new ship design and construction process without the ballast of previous centuries

Let’s create the 21st century design and construction of large RoPax ferries together!

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Thank you !

Aurora Botnia, Wasaline

Vaasa – Umeå

World's northernmost large LNG ferry

Spirit of Tasmania, TT-Line

Geelong – Devonport

World's southernmost large LNG ferry

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