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REISFER

PREVIEW:

# Sea-going staff's views on decarbonisation of island ferry traffic in the Central Baltic



15 April 2026 | REISFER Island Ferry Summit | Minna-Liina Ojala

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# REISFER Publications

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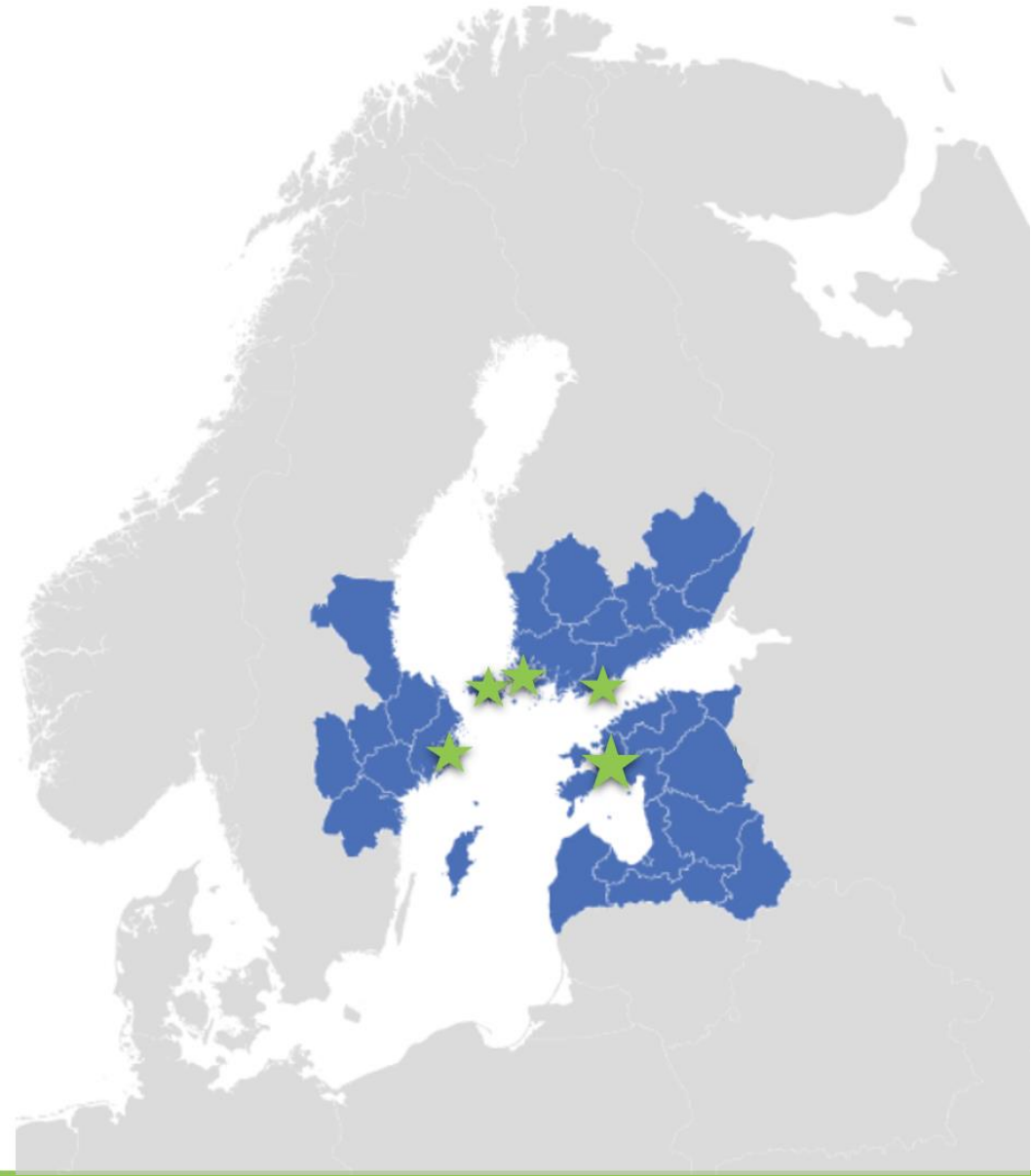
<https://centralbaltic.eu/project/reisfer>

# Study area and cooperation



## Interviewers:

- Mainland Finland: Minna-Liina Ojala, UTU
- Åland Islands: Lauri Ojala, UTU
- Estonia: Kadi Kasepold, TalTech
- Stockholm County: Petra Stelling, VTI



# Background





- Decarbonisation does not happen automatically or in isolation
  - Sea-going staff play a key role in implementing the emission-reduction strategies
  - They possess valuable first-hand knowledge of
    - the real-life operational environment
    - how emission-reduction measures work in practice

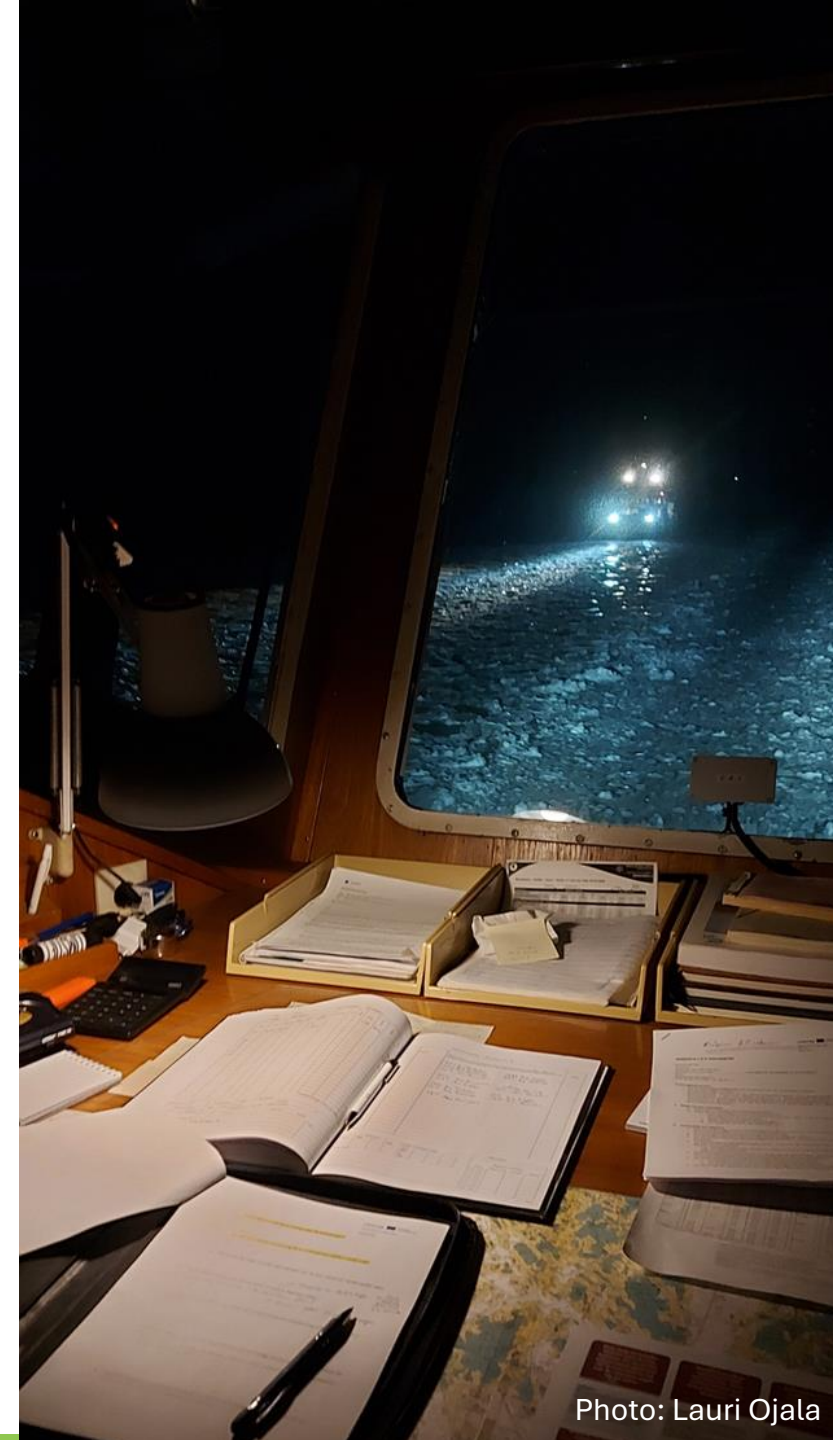
- Focus of this study:

## **Sea-going staff's views on decarbonisation of island ferry traffic in the Central Baltic**

- Key themes
  - Environmental awareness and attitudes
  - Main emission-reduction strategies
  - Training
  - Safety and support

# Material and methods

- 26 semi-structured interviews
    - Captains, mates and chief engineers
    - In-depth material, qualitative insights
  - Operators
    -  FinFerries, Suomenlinnan Liikenne
    -  AxFerries
    -  Kihnu Veeteed, Sunlines
    -  Blidösundsbolaget
  - Different types of roles, ferries, routes and discussions
- **Results cannot be generalised to represent each region or all employees in one company**





## Kihnu Veeteed:

### M/S Ormsö (2015) and M/S Kihnu Virve (2015)

- Double-ended fuel-powered RoPax ferries
  - max 30 cars, 200 passengers
- Rohuküla – Sviby
- Kihnu – Munalaid – Manilaid



Photo: Kihnu Veeteed





## Sunlines: M/S Wrangö (2013)

- Single-ended fuel-powered RoPax ferry
  - max 2 cars, 90 passengers
- Kelnase (Prangli island) – Leppneeme





## SLL: M/S Suomenlinna II (2004)

- Double-ended, diesel-electric RoPax ferry
  - max 2 cars, 395 passengers
- Helsinki Market Square – Suomenlinna





## Finferries: M/S Altera (2022) and M/S Elektra (2017)

- Fully electric double-ended RoPax road ferries with a diesel backup
  - max ~ 90 cars, ~ 370 passengers
- Parainen – Nauvo (Turku archipelago)





## Finferries: M/S Stella (2012)

- Converted into a hybrid in 2026
- Double-ended RoPax road ferry
  - max ~65 cars, 250 passengers
- Korppoo – Houtskari (Turku archipelago)

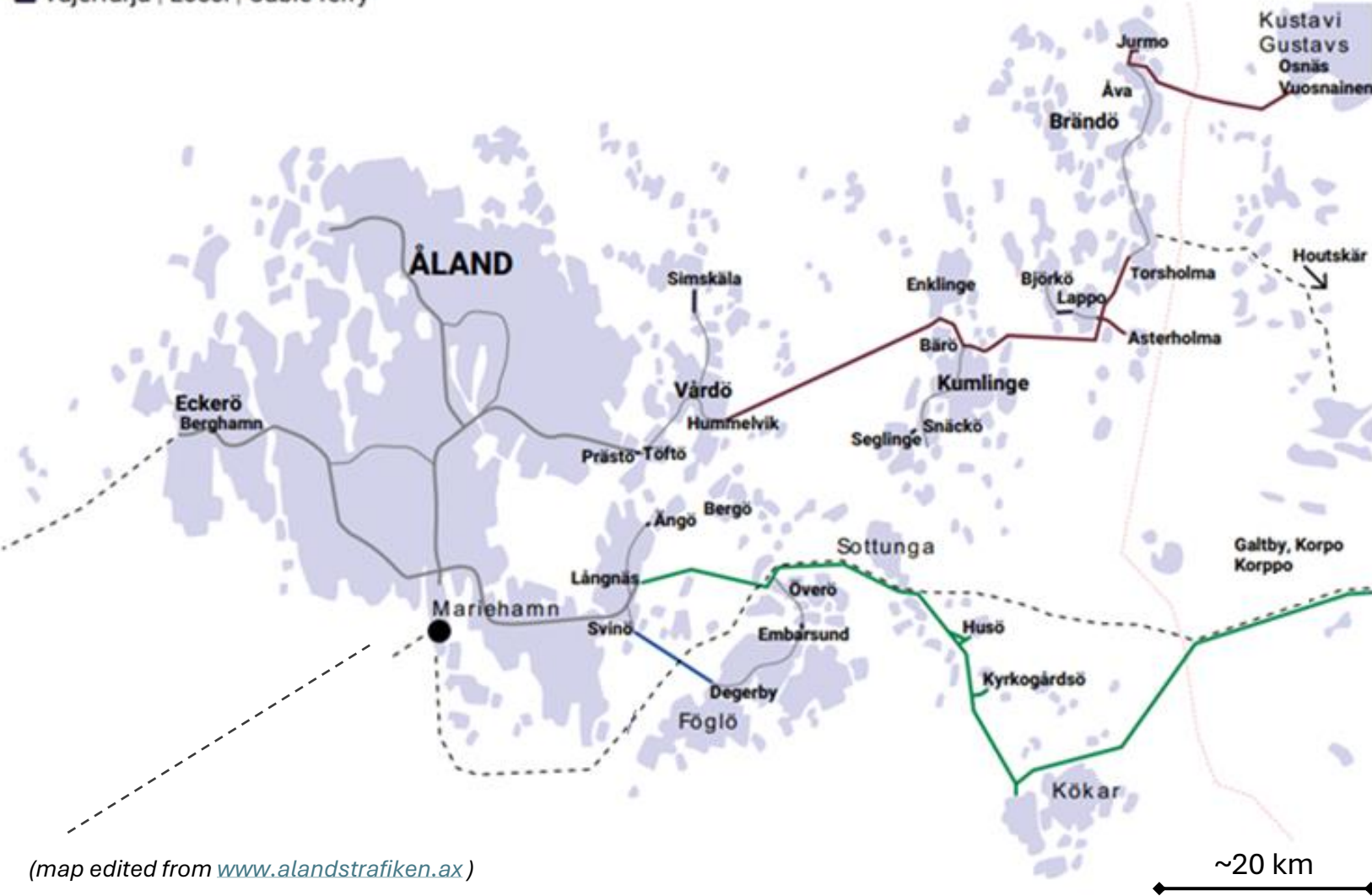




# Åland islands routes and ferries

■ Norra linjen | Pohjoinen linja | Northern line  
■ Södra linjen | Eteläinen linja | Southern line  
■ Vajerfärja | Lossi | Cable ferry

■ Föglölinjen | Föglön linja | Föglö line  
■ Landsväg | Maantie | Road



## AxFerries-operated ferries in this study

- Diesel-powered RoPax ferries
  - max 22–65 cars, 157–250 passengers
- M/S Viggen (1998)
  - Galtby – Långnäs, ~ 5.5 hours
- M/S Skarven (2009)
  - Svinö – Degerby, ~ 30 min
- M/S Alfågeln (1990)
  - Hummelvik – Torsholma, ~ 2.5 hours
- M/S Knipan (1985)
  - Åva – Osnäs, ~ 1 hour

(map edited from [www.alandstrafiken.ax](http://www.alandstrafiken.ax))



M/S Viggen (1998)



M/S Skarven (2009)



M/S Alfågeln (1990)



M/S Knipan (1985)





# Stockholm County

- Interviews concerned esp. the following ferries operated by Blidösbolaget:
  - M/S Silverö (1970): fully electric since 2025
  - M/S Yxlan (2018): hybrid
  - M/S Namdö (2009): fuel-powered
  - M/S Sandhamn (2000): fuel-powered
  - M/S Saxaren (1999): fuel-powered
  - M/S Solöga (1978): fuel-powered
  - M/S Waxholm I (1983): fuel-powered
- Single-ended passenger ferries (150–340 PAX)
- Mainly fuel-powered with HVO and diesel
- Commonly several different legs per line

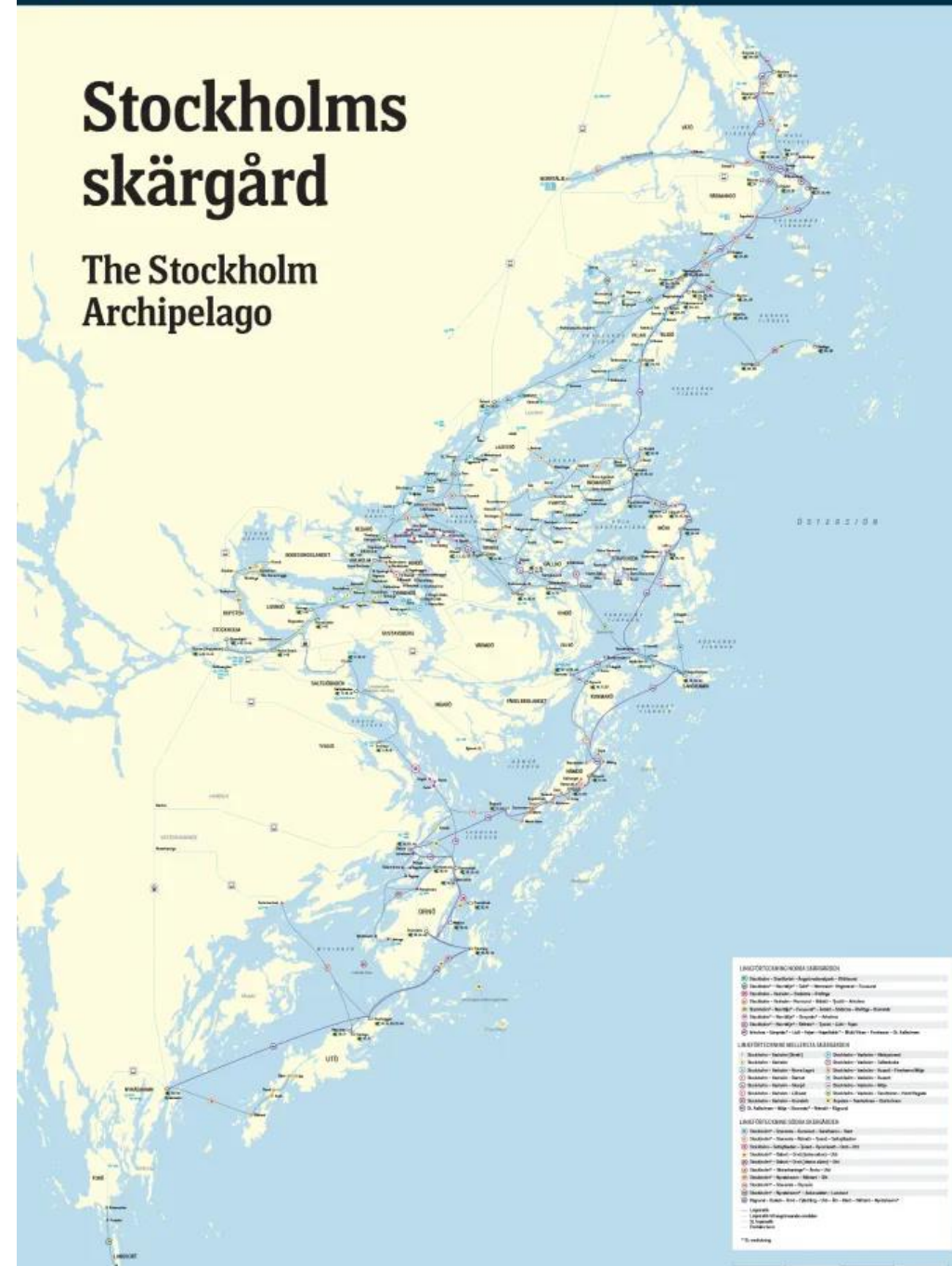




Photo: ML Ojala



Photo: Blidösundsbolaget



Photo: P Stelling

# Environmental awareness & attitudes

- *Regional generalisations or comparisons not possible with this data set*
- Some demonstrated more environmental awareness or concern than others
- Climate change
  - A few not particularly concerned; many slightly concerned; and some very concerned
  - Views on current mitigation measures reflect a similar distribution
  - For some, environmental considerations are an integral part of their life
- Local environment
  - Nature is strongly present in daily work
  - Appreciation and observation of the environment
  - Eutrophication, littering and personal observations were also discussed
- All interviewees expressed positive attitudes towards emission reduction

# Eco-driving

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- **Order of priority:** 1) Safety 2) Timetable 3) Eco-driving

- **Incentives for eco-driving**

- Professional development & intuition
- Availability of information
- Environmental motivation
- Boredom & play
- **EE:** Financial reward

- **Constraints for eco-driving**

- Weather and ice, onboarding or waiting for passengers, traffic, exceptional situations
- Manouvering at piers
  - Single-ended ferries
  - Pier configurations at certain locations
- Fatigue or a need for a break
- Lack of skills, knowledge or motivation

	Eco-driving practices	"Eco-driving app" for captains	
		Installed	In active use
<b>EE</b>	✓	✓	✓
<b>FI</b>	<b>FF</b>	✓	unavailable at the time of interviews
	<b>SLL</b>	✓	not yet
<b>AX</b>	✓	✓	not yet
<b>SE</b>	✓	✓	✓

- **Notes from interviewees**

- Eco-driving should be an integral part of the work culture
- Savings from eco-driving should benefit employees
- Some interviewees expressed interest in learning more about the energy management system and related data
- Hybrid propulsion to reduce emissions during maneuvering
- Reckless driving habits affect engineers' work

# Voyage optimisation

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- Number of passengers
  - Potential for voyage optimisation in all regions
- Slow steaming
  - Relaxing schedules from a couple to 30+ minutes depending on the route
  - Would allow eco-driving, drop fuel consumption and create more buffer
- Reducing trip frequency
  - Lot of potential perceived especially in low seasons and evenings
  - Most efficient method to reduce emissions
- Constraints
  - Customer satisfaction
  - Contractual service levels
  - "Old customs"

# Transition to electric ferries

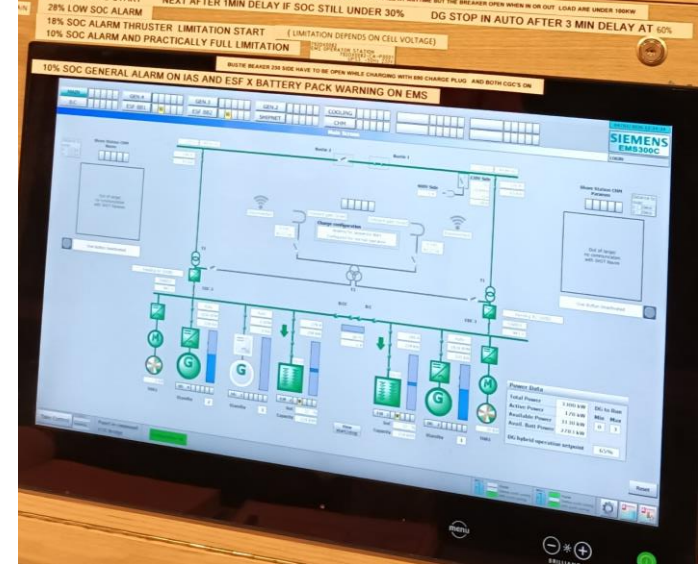
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### ”From a tank to a Rolls Royce”

- Improved work environment: less noise and vibration, no fumes or oil
- No fundamental changes to captain’s work
- More technology but its maintenance outsourced
- Onboarding training and support
- Interviewees comfortable with digital tools

### Future perspectives

- Electrification as the future for island ferries
- The sector as a whole not yet ready
- Dependence on shore infrastructure
- Different **hybrid solutions** instead of full electrification
- Those with experience on electric ferries more confident
- Energy self-sufficiency !



# Training and support

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- Views reflect different learning styles
  - Eco-driving
    - Training preferences range from classroom-based instruction to simulators and training onboard
    - Yet, continuous practice-based learning was emphasized
  - Onboarding training and new installations
    - Standard instructions vs. learning from different instructors
    - Perceptions of training quality varied, even within the same company
  - Some interviewees expressed strong interest in additional training
- Peer discussions and in-person meetings widely appreciated
- Interviewees from all regions provided suggestions to improve training, safety, and/or management support



# Conclusion

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- Views from different regions resemble each other in their variation
- The crew works in the crosscurrents of multiple forces
  - Authorities
  - Employer
  - End-users/passengers
  - Marine weather
- Interviewees
  - demonstrated strong professionalism and practical understanding of the operational environment
  - hold valuable information on how to further reduce emissions and improve their work
- Several studies show that engaging employees in decision-making and prioritizing well-being leads to better performance for both employees and the organization (e.g., Yuen et al. 2018; Eurofund 2020; Theotokas et al. 2024; Glaveli et al. 2025)



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# Thank you!

The report with more results will be published on the [REISFER website](#) and [LinkedIn page](#) by May 2026.

Linkedin:



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