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Minna-Liina Ojala, Lauri Ojala, Kadi Kasepõld & Petra Stelling:

D.1.2.3 Sea-going staff's views on decarbonisation of island ferry traffic in the Central Baltic region

Key findings

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Purpose of the report

How does the seagoing staff view decarbonisation of island ferry transport in the Central Baltic region?

- Decarbonisation does not happen automatically or in isolation
  - Sea-going staff plays 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 are implemented in practice

- Key themes of the study
  - Work environment, management support, and safety
  - Environmental awareness and attitudes
  - Eco-driving and voyage optimisation
  - Electrification of ferries
  - Future perspectives

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Material and methods

- 26 semi-structured interviews in February – March 2026
  - Captains, mates, and chief engineers

- Operators and interviews
  - Finland: Finferries, Suomenlinnan Liikenne
  - Åland: AxFerries
  - Estonia: Kihnu Veeteed, Sunlines
  - Sweden: Blidösundsbolaget

→ Results cannot be generalised to represent each region or all employees in the interviewed companies


Photo: Lauri Ojala

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Study area

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Environmental awareness

Crews across all regions support decarbonisation, but their reasoning varies: some frame it as climate responsibility, others as fuel efficiency, cost control, or operational optimisation.

- Estonia
  - More pragmatic framing
  - focus on fuel savings, cost efficiency, and operational barriers.
- Mainland Finland
  - Relatively high awareness
  - Broader views on lifecycle emissions and energy sources
  - dissatisfaction with slow mitigation
- Åland
  - Good awareness of regulations
  - Strong engagement in fuel optimisation
- Sweden
  - Strong recognition of emission reduction needs
  - Somewhat pessimistic about the impact of smaller countries

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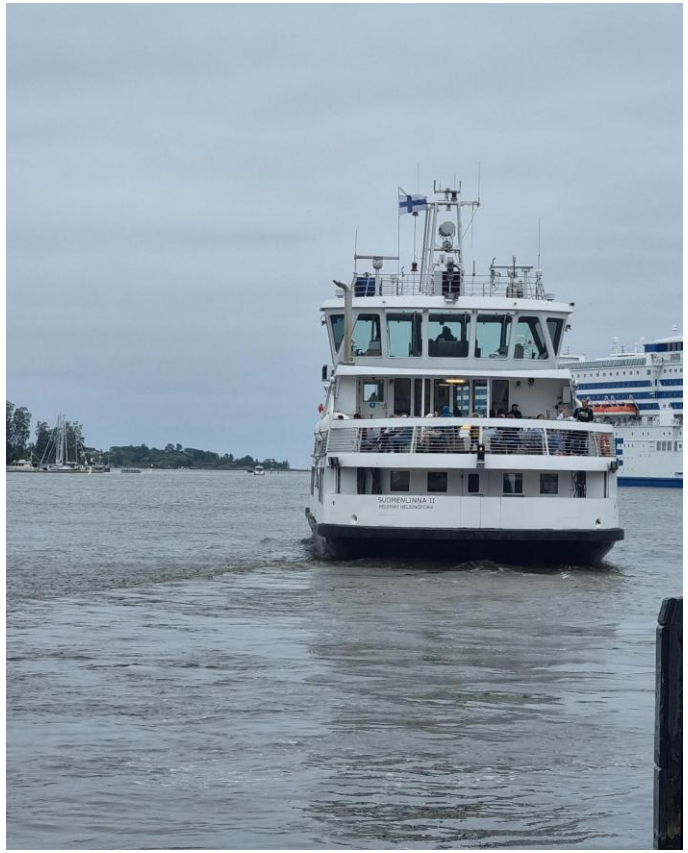
Eco-driving and voyage optimisation

Crews across all regions are highly engaged in energy-efficient operation, but eco-driving is more systematised is some regions than others.



- Where fuel or energy monitoring displays were actively used, especially in Estonia and Sweden, crews saw them as useful tools for improving driving practices and comparing performance.
- Regions such as Sweden and mainland Finland had more formalised eco-driving training, while Åland and Estonia relied more on experience-based knowledge.
- Estonia's financial reward system for reduced fuel-use was appreciated, but interviewees in Finland and Sweden were cautious about direct bonuses as these could encourage risk-taking.
- Routes in all regions were already stated to be relatively optimised, but slower crossings, relaxed schedules, and reduced departure times during low-demand seasons were identified as potential measures

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Electrification of ferries

Interviewees saw electrification as a clear improvement over diesel propulsion, especially for energy efficiency, working conditions, and local environmental risks.

- Crew with hands on experience emphasized reduced noise, vibration, fumes and oil handling that improves comfort on the bridge, in engine room, and in passenger areas.
- Key concern was stated not the vessel itself, but shore-side power supply, grid capacity, charging reliability, and access to specialised maintenance.
- Fully electric ferries were seen as suitable for many routes, but longer, remote, high-demand, or complex archipelago route may require hybrid solutions instead.
- Crews without direct experience were interested in operating electric ferries but tended to raise concerns about winter performance and power sufficiency.

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Work environment, management support, and safety

Crews describe the work environment as stable, familiar, and professionally well-managed, with technological and organisational changes generally not experienced as disruptive.

- Across all regions, interviewees expressed confidence in handling vessels under varying operational conditions, both in terms of technological and regional developments.
- Management support was mostly perceived to be sufficient, but communication could improve through enhanced information exchange, more face-to-face contact, or coordinated communication between crews.
- While Sweden showed strong communication culture, open dialogue with management, and structured onboarding practices, other regions stated strong crew cohesion, but fragmented information flow from the operator side.

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Future perspectives

Sea-going staff is open to future technological change but emphasize that decarbonisation must remain realistic for demanding archipelago operations.

- Crews expect continuous technological improvements and see the change future of ferry transport inevitable.
- Digital competence will become increasingly important as the future of ferries is expected to involve more automation, data interpretation, monitoring systems.
- Interviewees rejected fully unmanned ferries, arguing that human presence remains necessary for ethical judgement, situational awareness, and passenger safety.

Conclusion

- Sea-going staff generally view decarbonisation positively, but environmental commitment is often intertwined with practical, economic, and operational reasoning
- Eco-driving is strongly embedded in crews' professional motivation, but its' effectiveness depends on monitoring systems, training, realistic incentives, and operational flexibility.
- Sea-going staff see electrification as desirable and workable, but its success depends less on crew acceptance than on route suitability.
- Crews support technological progress, especially electrification and hybridisation, but insist that future solutions must fit route characteristics, infrastructure capacity, safety requirements, and the continued need for human expertise.

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Contact details

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