Carbon neutral and circular economy based maritime cluster

Merikartta

Pia Tulimaa 7.12.2022
Pia Tulimaa

• Senior Lecturer, Turku University of Applied Sciences
  • Teaching: Naval architecture
  • Researching: The environmental maturity of the Finnish maritime cluster

• Work background:
  • Cruise ship owner
  • Mega yacht yard
  • Engineering offices

• Naval Architect, M.Sc. (Tech)
Research groups and a strong network

Engine and Powertrain

The research group focuses on research into the machinery and power lines of land and sea transport vehicles. The main priorities of the group are:

- Internal combustion engines,
- hybrid and electric power lines,
- liquid and gaseous fuels and their emissions.

The group’s tools include an engine and power line laboratory, multi-fuel boiler and frost research equipment, and simulation tools suitable for research and training environments.

Circular Business Models

The research group advances circular business together with companies and develops the teaching of circular economy in national and international networks. At the forefront in the future is to find new solutions for moving from owning products to producing services and a sharing economy.

The expertise of the research group springs up from the synthesis of e.g. business development, sustainable development, environmental technology, service design, communications and pedagogic competence.

- Sandvik
- Valmet
- Valmet Automotive
- 3Dtech
- IdealPLM
- PEMA

Ongoing projects

- REDUCES – Rethinking Sustainable Development in European Regions by Using Circular Economy Business Models
- Circular Economy Catalyst: From Innovation to Business Ecosystems (CICAT2025)
- BIO-PLASTICS EUROPE – Developing and Implementing Sustainability-Based Solutions for Bio-Based Plastic Production and Use to Preserve Land and Sea Environmental Quality in Europe
- CoRescate – Towards Circular Economy
- Municipal business advisors supporting climate acts
What is Merikartta?

- Merikartta is an evolving circular economy ecosystem
  - The network expanding
  - Not a project, rather a system change that allows the maritime cluster to become quicker carbon neutral and a circular economy

- The discussion has started already in 2017
- The companies, TUAS and Sitra started to build up the bases 2018-2020
- The building of the ecosystem started 10/2020
  - Funding from Ministry of Economic Affairs and Employment

- New Phase 07/2022
Ways of working

- Merikartta-team
- Merikartta Board
- Howspace (online-working space)
  - Access for all cluster members
- Theme groups
  - Access for everyone
- Pysy kartalla –webinars
  - Access for everyone
Merikartta Board

- Elina Andersson, Meriteollisuus ry
- Johannes Hyrynen, VTT
- Pentti Kujala, Aalto yliopisto
- Ilkka Rytkölä, Meyer Turku
- Elisa Mikkolainen, Baltic Sea Action Group
- Annaleena Mäkilä, Suomen Satamaliitto
- Jussi Mälkiä, Meriaura Group
- Nani Pajunen, Sitra
- Patrik Rautaheimo, Elomatic
- Pekka Savolainen, SSAB Europe
- Sari Tasa, Työ- ja elinkeinoministeriö
- Tiina Tuurnala, Suomen Varustamot
- Kari Sillanpää, Turku Science Park
Howspace

- Space for theme groups
  - Sharing ideas
  - Sharing challenges
  - Sharing current or finalized projects
  - Building up the network

- 146 users
- Over 12600 visits
- Over 100 companies involved in the usage
Theme groups 1/2

• Healthy Ocean (25 persons, 7 companies)

• Carbon neutral fuel and energy (37 persons, 13 companies)

• Modularity and sustainable materials (23 persons, 13 companies)

• Sustainable seafaring operations and circular economy based maritime cluster (52 persons, 15 companies)
Theme groups 2/2

Participants
- Companies
- Organizations
- Researchers

Activities
- Co-operations
- Piloting
- Projects
- Funded projects

Progress
- Material saving products
- More carbon neutral methods
- Recycled materials
- Processes from circular economy
Stay on map - webinars

• Different themes
  • Sharing knowledge and experiences in the network
  • Companies giving their presentations
• Free access to everyone
In addition

- Website [https://merikartta.turkuamk.fi/](https://merikartta.turkuamk.fi/)
  - Blog about the progress of Merikartta

- Several students were involved in the Ecosystem
  - Bachelor Thesis
  - Visualization work
New Phase 07/2022 →

• Meetings as per need
• News and information for the network per e-mail
• Website will be kept up to date
• Discussions and building up the network
  • We are open for co-operation!
• Contact persons are available
  • The research group continues with the subject
• Meeting with Board 12/2022
  • Discussion of impact of Merikartta
Feel free to contact us

We are open to co-operate
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