<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>13:30-13:35</td>
<td>Welcome and Introduction by the Chair</td>
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<tr>
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<td>Vincent Favrel</td>
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<tr>
<td>13:35-14:05</td>
<td>Presentations of EU funded projects:</td>
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<tr>
<td></td>
<td>• Fastwater, Christian Norden, BALance Technology Consulting</td>
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<td>• Aspiring Wingsails, Elena Maneiro Franco, Bound4Blue</td>
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<td>• SEAGLOW, Hanne Bregendahl Pihl, EEN Denmark</td>
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<tr>
<td>14:05 – 14:40</td>
<td>Panel Discussion - Sharing experiences on promising solutions and challenges in decarbonising waterborne transport and infrastructure</td>
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<td>Panel Moderator:</td>
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<td>Sven Langedijk</td>
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<td>Panelists:</td>
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<td>• Jens Ole Hansen, Vest &amp; Òresund</td>
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<td>• Peter Castberg Knudsen, POWERCON AS</td>
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<td>• Vikrant Venkataraman, AVL LIST GMBH</td>
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<td>14:40 – 14:45</td>
<td>Wrap-up and Closing Remarks by the Chair</td>
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Introduction

Vincent Favrel
Head of Unit,
Sustainable Blue Economy,
CINEA
About CINEA

The Programmes

- European Maritime Fisheries and Aquaculture Fund
- Connecting Europe Facility 2 (Transport and Energy)
- Renewable Energy Financing Mechanism
- Just Transition Mechanism (Public Sector Loan Facility pillar)
- Horizon Europe (Climate, Energy and Mobility)
- Life Programme
- Innovation Fund
About CINEA

Climate, Environment and Maritime
Speakers

Christian Norden
BALance Technology Consulting
Fastwater project

Elena Maneiro Franco
Bound4Blue
Aspiring Wingsails

Hanne Bregendahl Pihl
EEN Denmark
SEAGLOW
FASTWATER

Christian Norden
BALance Technology Consulting
June 2020 – May 2024
The project has received funding from the European’s Horizon 2020 research and innovation programme (Contract No.:860251)
fastwater.eu
So far...

- An MD97 high speed engine, already commercialized
- A methanol injector
- A medium speed dual fuel engine, already commercialized
- A high speed dual fuel engine, nearly ready
- A pilot boat in operation, with a dedicated bunker station
The world's first tug running on Methanol

- Officially launched on May 14th
- Methanol tank and drain tank
- Bunker station
- Fuel preparation room
- Engine conversion by ABC + DOC installation
- Fire protection system (NOVEC)
- Nitrogen generator + piping
- DW piping to the engines + leak detection
- Venting system
- Automation and monitoring system
- Electrical installation
- First aid components: emergency shower, eye wash
- Emission test campaign ongoing
Pilot boat: Lesson learned

• Over 350h of operation so far
  • Engine +100h (test bench)
• Bunkering station: needed extra preheating for ignition improver
• Inline blending not ideal but avoids transporting a “new” chemical!
Contact

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www.fastwater.eu
Aspiring Wingsails

Elena Maneiro Franco
Bound4Blue
ES
A SPANISH CLIMATE TECH COMPANY
USING WIND POWER AS A COMPLEMENTARY PROPULSION SYSTEM FOR VESSELS

• **Our vision**
  
  To power the maritime industry with wind.

• **Our mission and value proposition**

  To deliver automated wind-assisted propulsion systems (eSAIL®) as a turn-key solution for those shipowners and operators looking to decrease their fuel-related costs and pollutant emissions.
**bound4blue’s value proposition: the eSAIL®**

**The eSAIL®**

**WIND ASSISTED PROPULSION revisited**

- Up to 30% reduction of fuel consumption (main OPEX)
- Up to 30% multipollutant & GHG emissions reduction
- Enables regulatory compliance at the lowest costs
- Best value-for-money wind propulsion system
- Easy to install and operate (turn-key technology)
- Attractive return-on-investment (payback of 3-4 yr)
- More than 80% of existing fleet could use eSAILs®

*Worldwide +67,000 vessels* (cargo+fishing) could use eSAILs®

A global potential market of more than 187,000 units to be installed.

Current value of + EUR 74,000 million between 2021 – 2030.
NINE INSTALLATIONS CO-FUNDED BY THE EUROPEAN UNION

- General Cargo (La Fura dels Baus)
- Fishing Vessel (OR.PA.GU.)
- Ro-Ro & Ferry (Louis Dreyfus Armateurs, LDA)
- Bulker (Marubeni)
- EIC Accelerator (June 2021 cut-off)
  €10.3M EIC funding (grant and equity) + additional private matching funds
- Chemical tanker (Odfjell)
- Juice Carrier (Louis Dreyfus Company, LDA)
- Oil and chemical tanker (Eastern Pacific Shipping, EPC)
- Oil/chemical tanker (Marflet)
- Juice Carrier (Louis Dreyfus Company, LDA)

EASME/EMFF/2017
EMFF-BlueEconomy-2018

bound4blue

Co-funded by the European Union

ENERGY 2020

EMFF-BlueEconomy-2018

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Installation No. 1: “Aspiring wingsails” EMFF project

SHIPOWNER: OR.PA.GU. (Galicia, Spain)
VESSEL: Baleuio Segundo
37 m LOA longliner
eSAIL: Model 1 – 12 m x 2.85 m
INSTALLATION: May 2021 – Panama
First Sea Trials Campaign
APPROVAL: Spanish Flag & Bureau Veritas

A brave Galician shipowner passionate about innovation...

New updated version in 2024 with the support of:

Promoter and Coordinator

Partner
CONTACT

Elena Maneiro Franco
Head of EU (and other) funding strategy
Business Development
emf@bound4blue.com

The contents are the sole responsibility of bound4blue and do not necessarily reflect the opinion of the European Union.
SEAGLOW

Hanne Bregendahl Pihl
EEN Denmark
SEAGLOW - Sustainable Energy Applications for Green and Low-impact Operation of small-scale fishing boats in the Baltic and North Sea basins (SEAGLOW)

Objectives:
1) Analyse the needs and contexts of fishing communities along with their value and supply chains to define evidence-based plans for small-scale fisheries decarbonisation
2) Adapt appropriate, robust technologies to reduce fossil fuel consumption in small-scale fisheries
3) Deploy and test technological solutions in real, operational, maritime conditions to obtain representative and realistic data
4) Assess and validate the environmental, social, and economic sustainability of the project’s solutions and business models.
5) Co-design sustainable business and financing models and deliver hands-on business support services to facilitate their adoption and replication
6) Engage in solid multi-actor collaboration and cluster with relevant initiatives to drive the widespread replication of the SEAGLOW solutions
A Demonstrator Project with 4 Vessels

- **Demonstrator I (Denmark)**: Hybrid driveline with Li-Ion batteries and electric motor for low-speed trolling and manoeuvring. Methanol fuelled main engine for cruising and battery charging. E-coating and sensor technologies for improved environmental performance and reduced emissions.

- **Demonstrator II (Sweden)**: Plug-in hybrid driveline, with electric motor for positioning and manoeuvring on lobster fishing areas, biodiesel fuelled main engine for cruising. E-coating and sensor technologies for improved environmental performance and reduced emissions.

- **Demonstrator III (Estonia)**: 11.5 m fishing vessel, used for box trap fishing. Conversion from diesel to plug-in hybrid electric with charging in harbour. E-coating and sensor technologies for improved environmental performance and reduced emissions.

- **Norwegian test vessel for cross-regional demonstrators**: 10.65 m speed sjark vessel used for cod and pollock fishing. E-coating and sensor technologies for improved environmental performance and reduced emissions.

- **Cross-regional demonstrator IV**: E-coating combined nanoparticles and a polymer matrix – Polyramik® coating to reduce fuel consumption, reduce leaching of microplastics into the ocean and reduce application costs for fishing vessels. Used on all regional demonstrators.

- **Cross-regional demonstrator V**: Low-cost fishing operational patterns and fuel consumption monitoring system (SIMUL) to register vessel position, speed, rotational speed and fuel consumption in real time, providing accurate operational figures on fuel consumption.
4 Vessels - All of less than 12 metres, but with different age, shape and usage

To be used as testvessel for interested fishermen and showcased in multiple ports in Sweden throughout the project.
Demonstrator 5: Ecoating

Technologies to be used:
- Ecoating - toxin-free marine hard coating from COC.

Trial vessel:
- Ester T247 (Danish vessel)
- Valentina (Swedish vessel)
- PMA - 605 (Estonian vessel)
- R-1-S8 Anne Katharina (Norwegian Vessel)

Outputs:
By working in conjunction with demonstrator V and sensor technologies, the following outputs are to be gained as part of the project:
- How will the coating impact fuel consumption due to reduced biofouling?
- How will the coating impact the level of biofouling on the vessel over the project period?
- How can the periodic cleaning of the coating be best organised and executed (implementation, cost, impact)?
- What effects does the use of different coating colours have on the biofouling (dark and light)?
- What are the effects of water temperatures, routes and standing times on biofouling / coating?

Expected impact:
- The expected impact of the COC hard coating is a reduction of 10% of fuel emissions for comparable performance.
- Using the sensor technologies, SEAGLOW will measure the individual effects and analyse and validate dependencies on the different influencing factors. Based on this, the effects on other boats and ships can be predicted or calculated.
Demonstrator 6: SIMUL Technologies

Technologies to be used:
1. Inductive tachometer: Measures engine speed and sends signal to the PC box.
2. GPS: satellite time, vessel position, speed, and course.
3. On-board visualisation: shows data in real time: engine rotational speed, vessel speed, and calculation of fuel consumption.
4. Connection to vessel batteries: Powered with 12-24 V, low electric consumption to be installable in the artisanal and small-scale fishing vessels. 220 V powered version is also developed.
5. PC Box: Receives all the data from the acquisition devices and calculates the fuel consumption in real time.
6. Internet connection: Any modifications can be carried out remotely.
7. Data coupling and uploading to the server via internet.

Outputs:
- Vessel operational profile
- Estimation of the fuel dependence of the fishing activity
- Useful information to the skipper/owner to assess a more efficient use of energy on board.

Expected impact:
- A 4% reduction in fuel consumption, on average on all three demonstrator vessels from use of the sensors alone, in line with previous experience in Spain.
- High-quality data on fuel consumption from all combinations of technologies piloted.
Potential Synergies:

Looking for interested parties to join our Advisory Board – Please contact me on hbp@ndeu.dk

Regional policy conference to be developed showcasing potential solutions both from SEAGLOW, but also from other relevant projects.
Panel session

Sven Langedijk
Head of Unit European Commission DG MARE:
Economic Analysis, Markets and Impact Assessment
Moderator

Jens Ole Hansen
COO Molslinjen Vest & Øresund Molslinjen A/S

Vikrant Venkataraman
Development Engineer AVL List GmbH

Peter Castberg Knudsen
Partner & CCO PowerCon A/S

Speaker

Speaker

Speaker
Q&A
Thank you!

cinea.ec.europa

@CINEA_EU

CINEA - European Climate, Infrastructure and Environment Executive Agency

CINEATube

Tender Portal CINEA
Funding opportunities