synergetics

Innovation Action **SYNERGETICS**

SYNERGETICS | Synergies for Green Transformation of Inland and Coastal Shipping

6. Treffen der BinSmart – Begleitforschungsgruppe | November 29, 2023

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General information

Project number	101096809
Project title	Synergies for Green Transformation of Inland and Coastal Shipping
Project acronym	SYNERGETICS
Call	HORIZON-CL5-2022-D5-01
Topic	HORIZON-CL5-2022-D5-01-04
Type of action	HORIZON-IA
Project starting date	January 1st, 2023
Project duration	42 months
Total eligible costs	EUR 5 321 955.05
Maximum grant amount	EUR 4 184 312.03
Total eligible costs of APs	EUR 1 840 965.63

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Structure

- The SYNERGETICS consortium gathers 16 partners and two associated partners from eight countries which were selected with a purpose to take full advantage of concepts of Synergies.
- The project Coordinator is DST – Development Centre for Ship Technology and Transport Systems from Germany.

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Synergies

- Synergy between the ongoing pilot and research projects and SYNERGETICS;
- Synergy between the innovation centres and research institutes;
- Synergy between the shipping industry, and the regulatory bodies and policy-makers;
- Synergy between the shipping industry and other (transport) industrial sectors;
- Synergy between the shipping industry and energy providers;
- Synergy between the shipping industries of Rhine/Seine and the Danube/Elbe regions.

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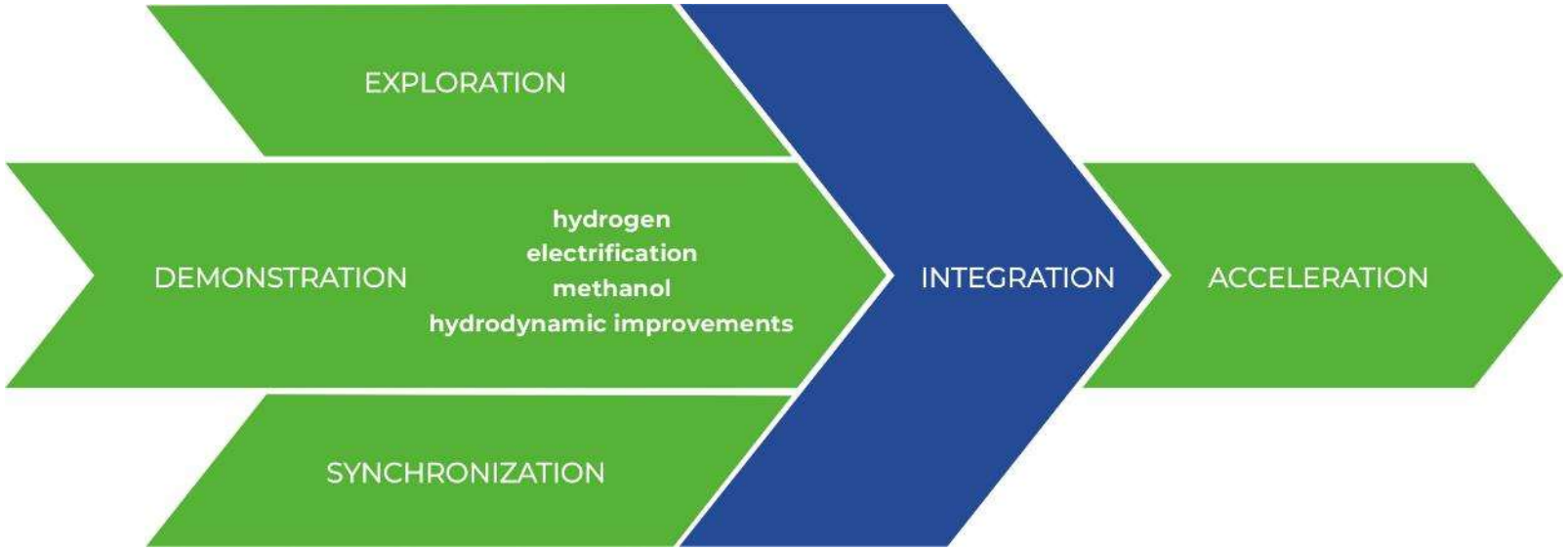
Synergies



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Full-scale Demonstrators

Image: CMB.TECH

H2-ICE

Image: Mercurius Shipping

CH3OH-ICE

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Full-scale Demonstrators

Image: CFT

Electrification of the main propulsion plant

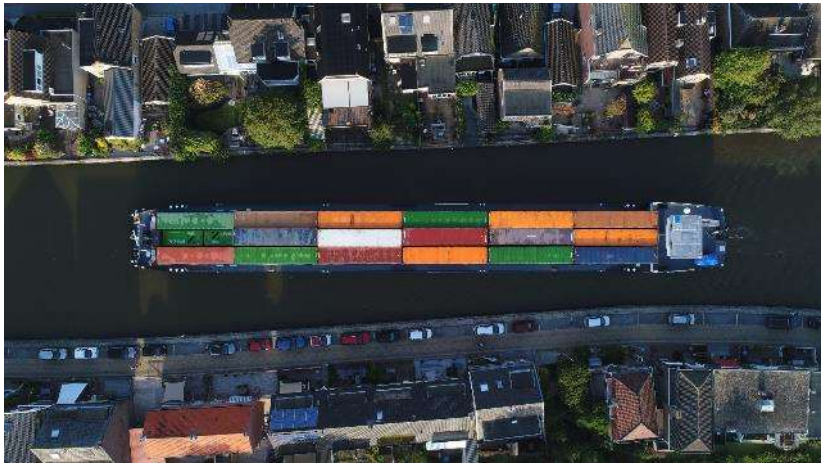

Image: Zero Emission Services

Battery-electric

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Model-scale Demonstrators

Image: DST / Benjamin Friedhoff

Aft-ship replacement

Image: via donau / Johannes Zinner

Use of digital tools and virtual assets in finding the optimal greening solution

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System Demonstrators

Image: ScandiNAOS

Comparison of a dual fuel methanol engine with a compression ignited methanol engine

Image: Future Proof Shipping

Development of power and energy management system for fuel cells and hydrogen powered ships

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SYNERGETICS Tools

Catalogue
of Greening Retrofit Solutions

Decision Support Tool
for Vessel Owners

Updated Transition Pathways
& Landscape of Synergies

Handbook for Implementation
of Greening Retrofit Solutions

Scenarios for Policy Makers

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Synchronization

- The database of greening pilots (“The Pilot database”).
- The Pilot database comprises 115 inland vessels and 50 coastal pilots.
- Pilots performed in period 2008–2026.
- Identification of trends in greening of ships:
  - Types of inland vessels (fleet families) used in pilot projects
  - Retrofit vs. newbuild
  - Innovative greening technologies (electrification, alternative fuels, energy-efficiency)
  - Evolution over time, etc.
- Analysis of the observed trends.

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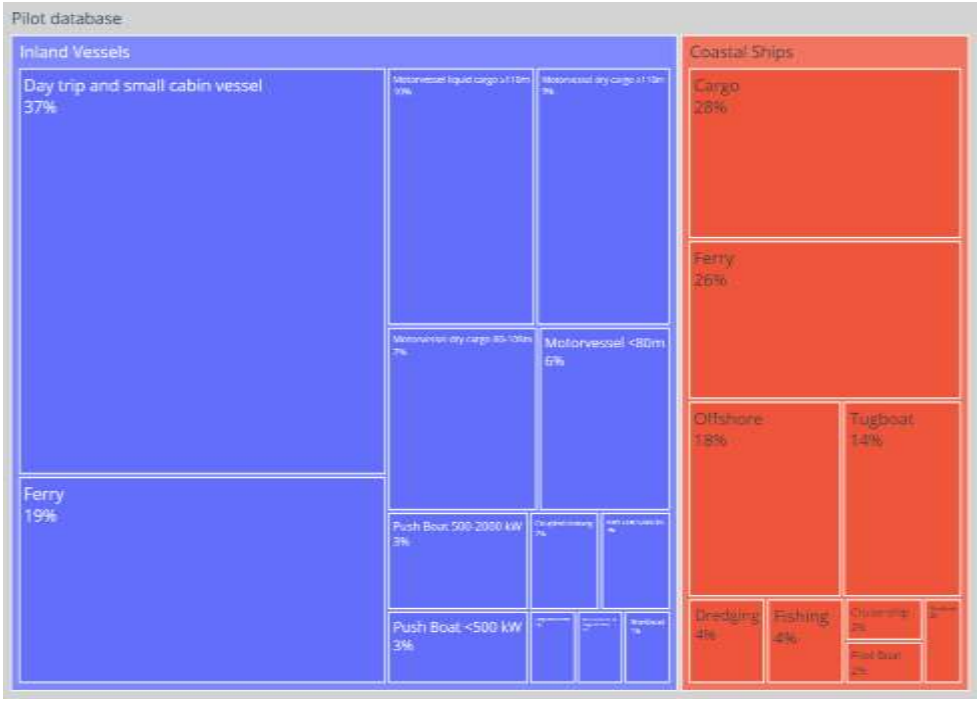
Synchronization



Types of inland vessels and coastal ships in the Pilot database

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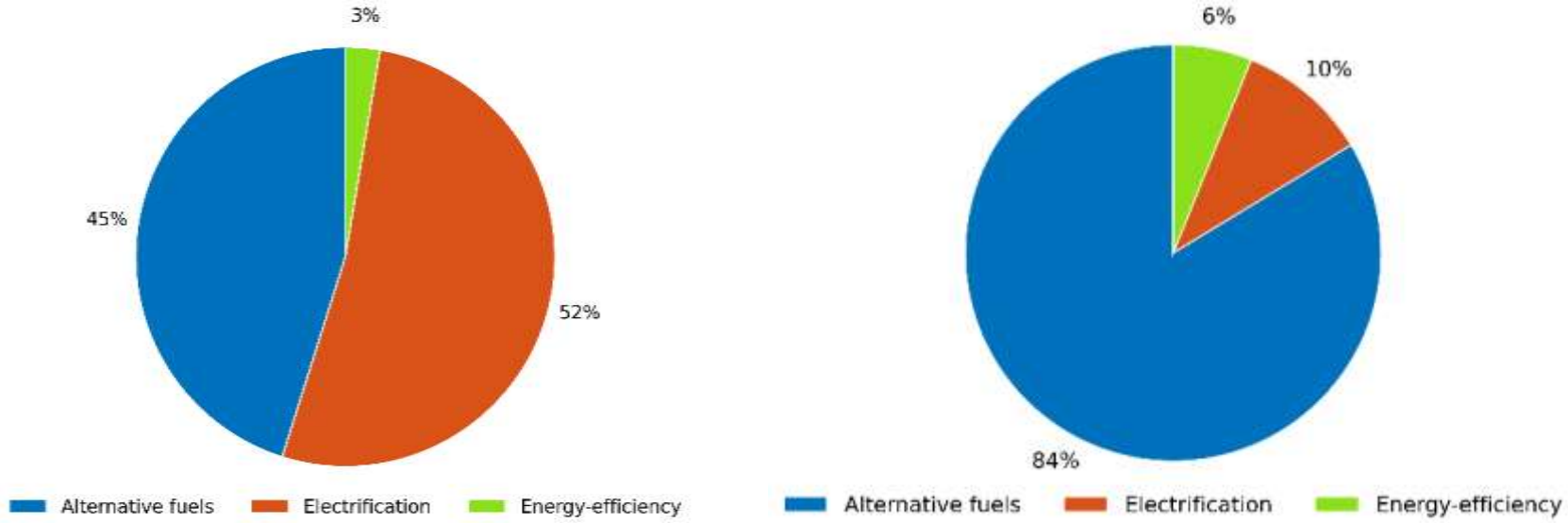

Innovative technologies used in greening pilots on inland vessels (L) and coastal ships (R)

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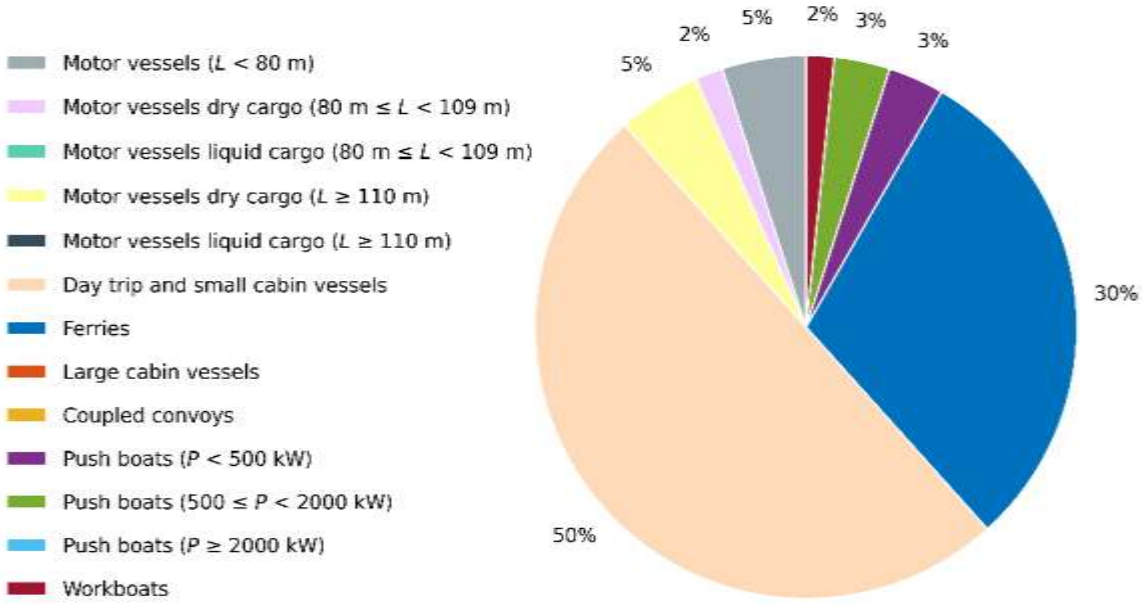

Electrification pilots on inland vessels; breakdown by ship type

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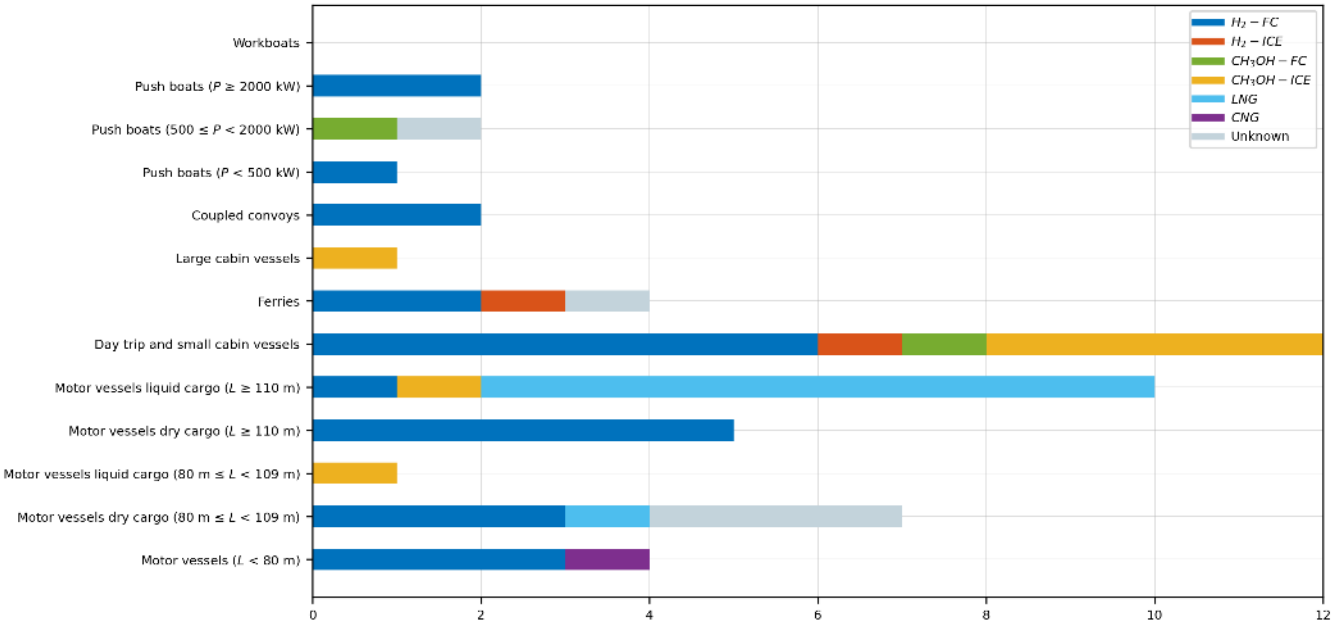

Alternative fuels pilots on inland vessels

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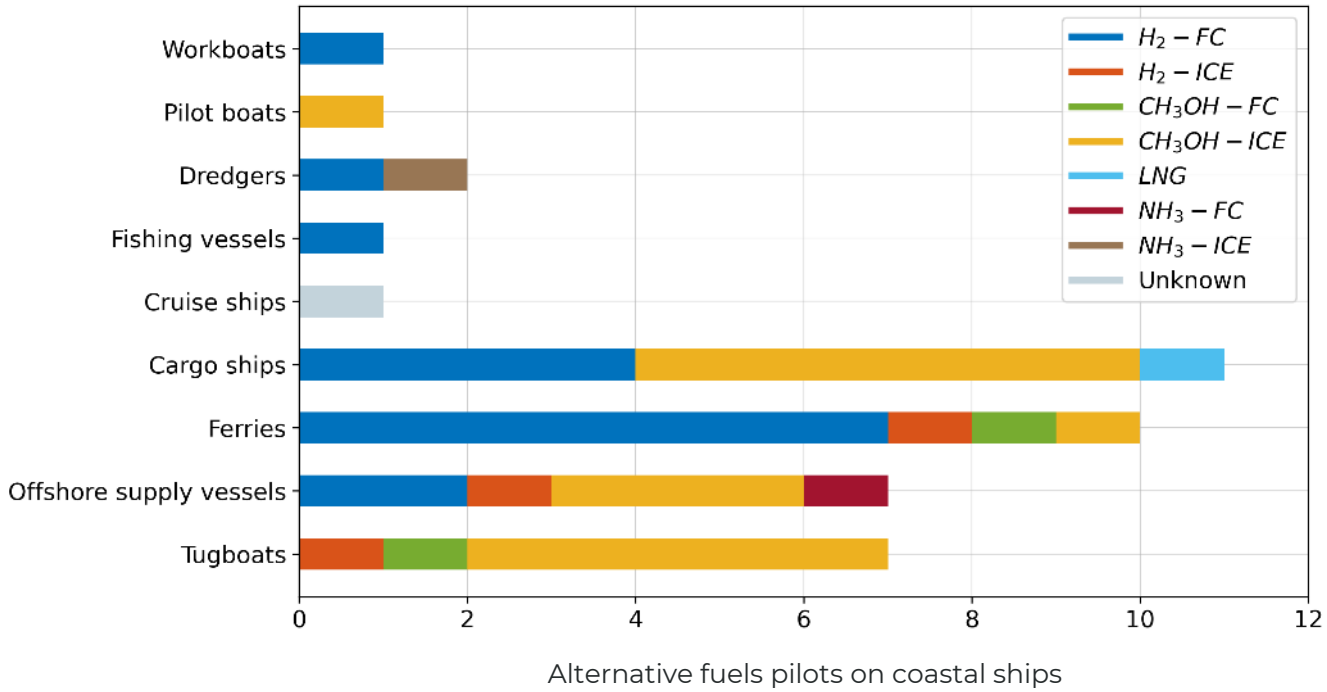

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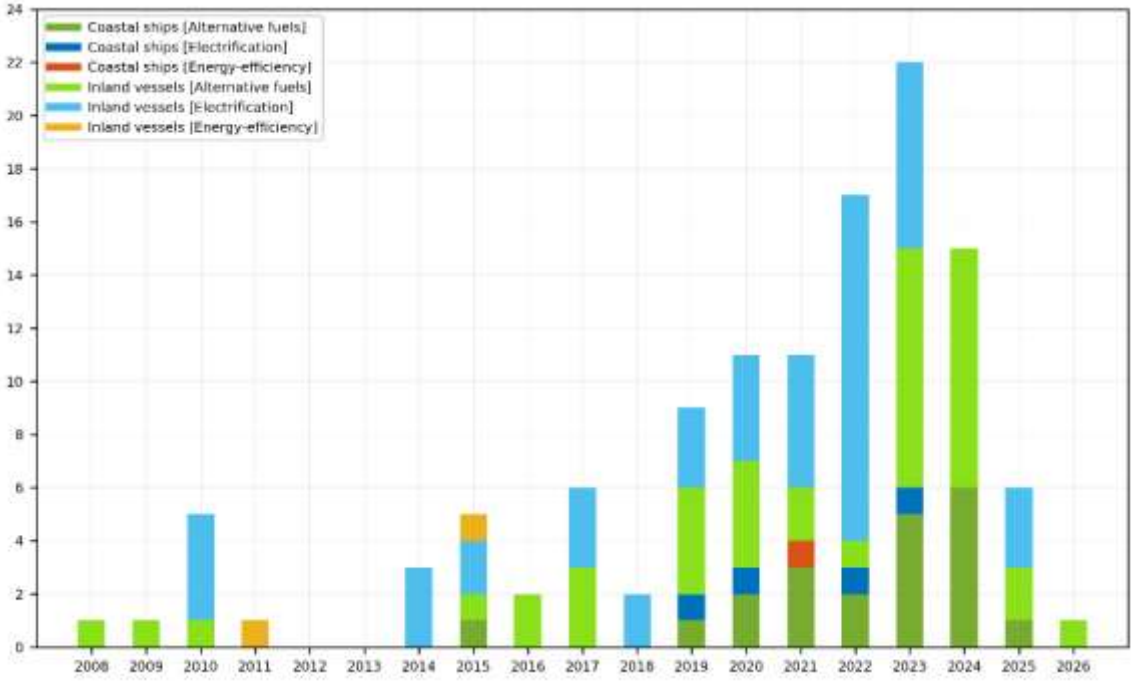

Evolution of greening pilots in inland and coastal shipping

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