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Workshops

Navigating the energy transition: strategic goals for a resilient and sustainable Small-Scale Coastal Fisheries & Large-Scale Fisheries

Brussels - December 11th 2024

Organized by the Energy Transition Partnership set under DG MARE (EC)

Source: Reports and ppts of ETP Support Group

ETP Support Group Coordinators

Sector	Coordinator	Organisation	Location
Fishing Shipbuilding Industry	**Vincent Guerre**	Shipyards' & Maritime Equipment Association of Europe (SEA Europe)	Belgium
Large-Scale Fisheries (LSF)	**Jules Danto**	The European Association of Fish Producers Organisations (EAPO)	Belgium
NGOs	**Alexandra Philippe**	European Bureau for Conservation and Development	Belgium
Offshore Aquaculture	**Giulio Brizzi**	Chlamys srl	Italy
Ports	**Carlos Botana Lagarón**	Autoridad Portuaria de Vigo	Spain
Processing industry	**Katarina Sipic**	AIPCE - CEP (European Fish Processors Association – European Federation of National Organisations of Importers and Exporters of Fish)	Belgium
Research Organisations and Academia	**Gorka Gabiña**	AZTI Research Centre	Spain
Small-Scale Coastal Fisheries (SSCF)	**Marta Cavallé**	Low Impact Fishers of Europe (LIFE)	Spain
Distant Water Fleet	**Mati Sarevet**	Reyktal Ltd	Estonia
Inland Aquaculture	**Eva Kovacs**	Eurofish International Organisation	Denmark

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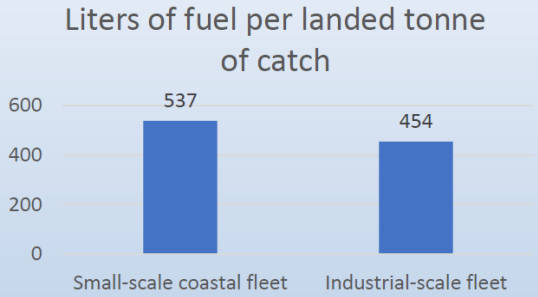
1. Socio-economics of the SSCF

Fleet :

- *40 083 vessels (**76%** of the EU fleet in terms of number of vessels)*
- *Mean vessel age is increasing from 26.2 years in 2013, to 32.2 in 2022 in Mediterranean Black Sea supraregion.*

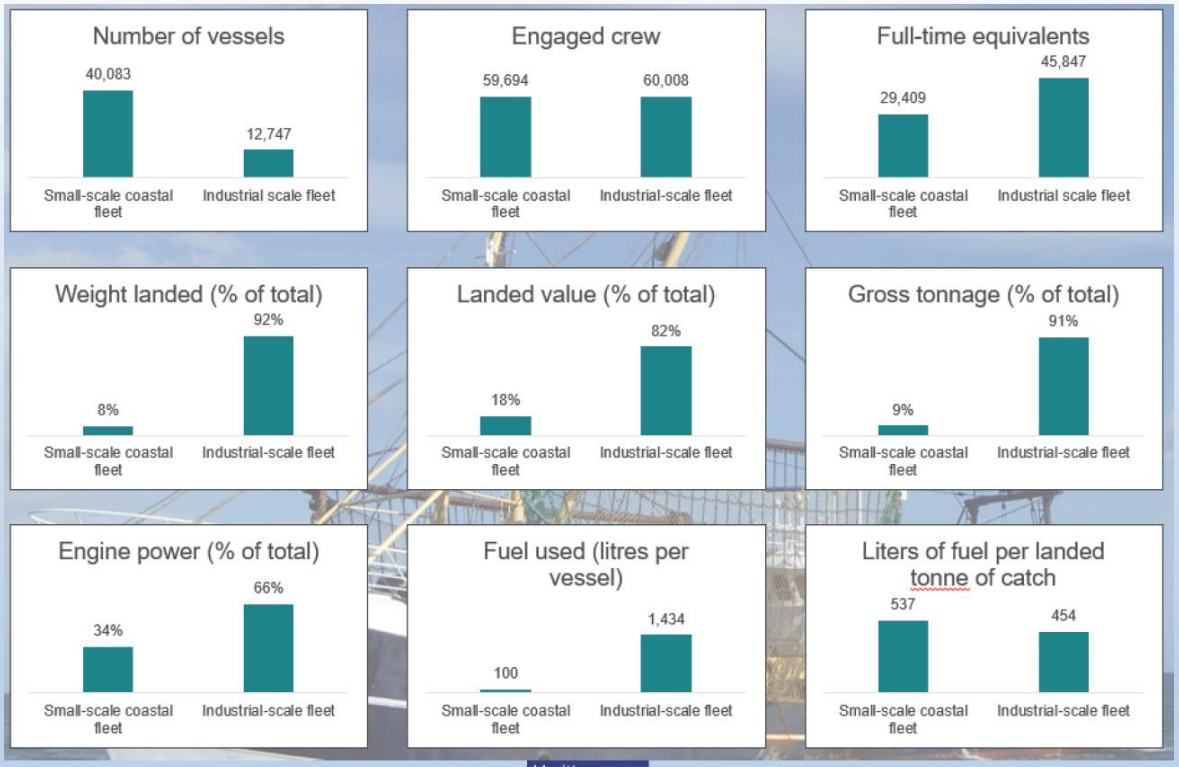
Employment:

- *Number of employees 59 694 in 2022.*
- *Represents **53%** of the total EU engaged crew and 43% (29 409) of all FTEs in 2022.*



Maritime Affairs And Fisheries

1. Socio-economics overview



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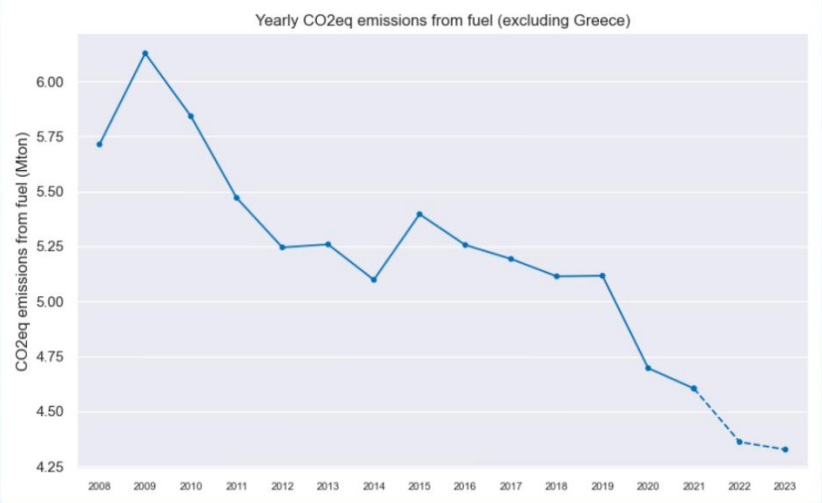
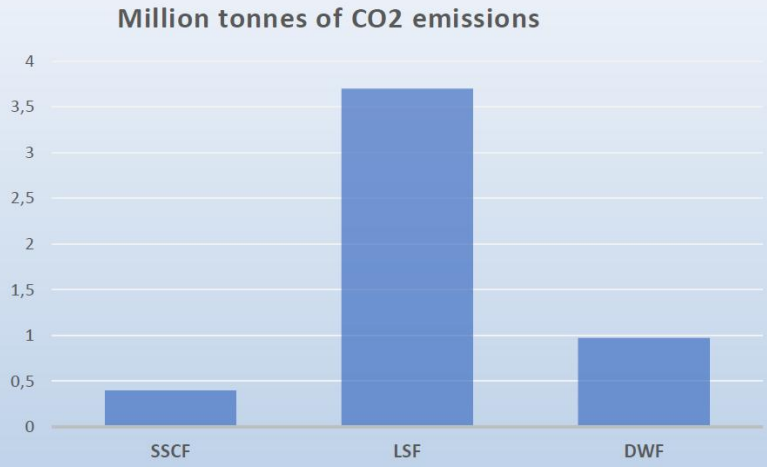
2. Fleet emission - Share of CO2e





Maritime Affairs And Fisheries

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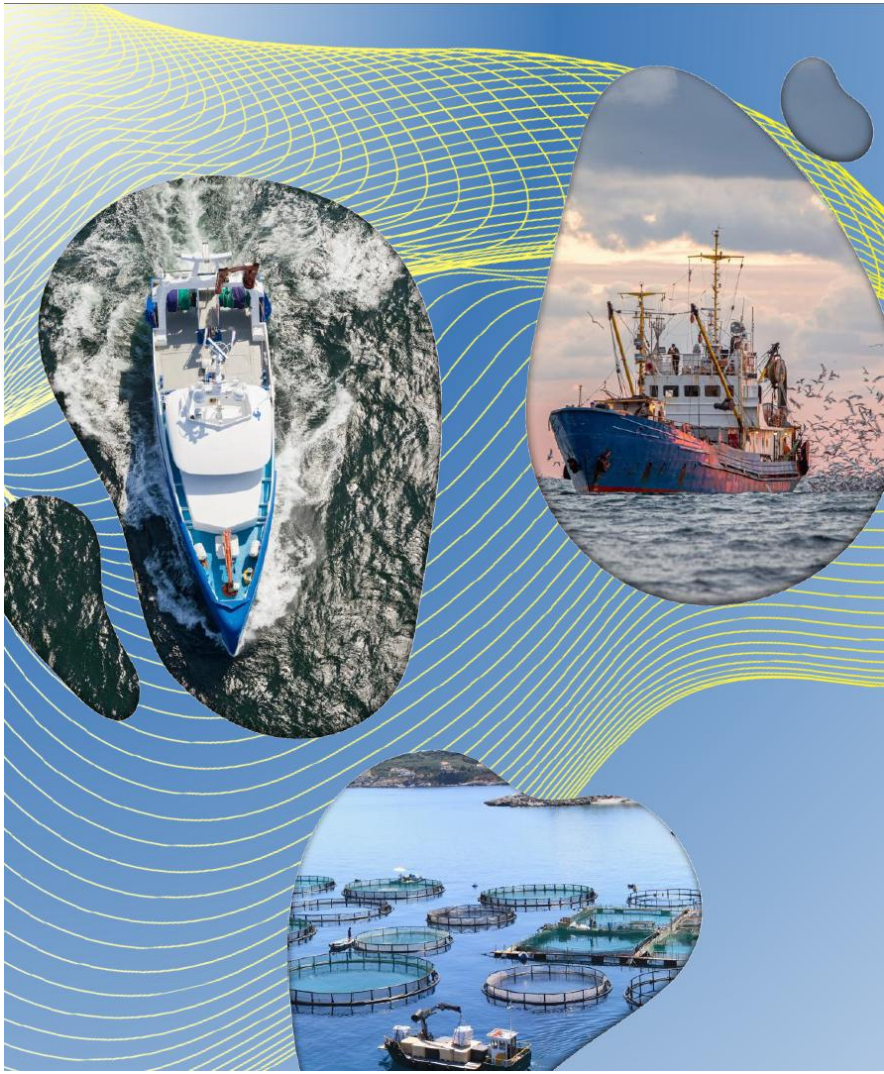
Study *"Techno-economic analysis for the energy transition of the EU fisheries and aquaculture sector"* funded by the Energy Transition Partnership and CINEA analyzed **45 innovative solutions** to enhance energy efficiency and reduce CO2 emissions in SSCF and in LSF. These innovations were assessed for their advantages, limitations, costs, and feasibility. Categories included alternative propulsion systems, vessel operation, fishing gear, training initiatives and facilitating measures



Innovative solutions for energy transition in SSCF

- ✓ **ALBA:** A Zero Emission Fishing Training Vessel (**Fabrice GHOZLAN,** MAURIC)
- ✓ Fleet retrofits for low-cost emission reduction, **REFEST** project (**Vasilij Djackov**, Klaipeda University)
- ✓ Electric-engine refitting of SSC fishing vessels, **3EFISHING** research (**Fausto Tinti**, University of Bologna)

Innovative solutions for energy transition in LSF

- ✓ Empowering the energy transition, **SEAGLOW** project solution (**Michael Rafn**, Northern Denmark EU-Office)
- ✓ Greening fishing boats in the Med, **POWER4MED's** proposal for LSF (**Giulia Antidormi**, Sustainable Development Goal for the Mediterranean)

ALBA: A Zero Emission Fishing Training Vessel (Fabrice GHOZLAN, MAURIC)

MAURIC is a ship design company based in France and Belgium and ALBA is a zero-emission fishing training vessel developed for a maritime high school in Corsica (€4 million budget under the France AgriMer 2021 call for projects)

Although ALBA is not a commercial fishing vessel, it showcases the feasibility of hydrogen technology in maritime applications. MAURIC continues to explore other sustainable solutions like hybrid systems, wind assistance, and methanol to support the maritime industry's energy transition efforts.

Electric-engine refitting of SSC fishing vessels, 3EFISHING research (Fausto Tinti, University of Bologna)

The project, part of the Italy-Croatia INTERREG programme and co-funded by the EU, aims to reduce greenhouse gas emissions and improve economic sustainability. Titled "**3E-Innovation**", the project focuses on the **Adriatic Sea** and started in March 2024. It targets SSCF vessels under 12 meters and involves academic institutions, territorial agencies, and the Croatian Ministry of Agriculture. The main goals are to develop and optimize E-engine technologies to refit two vessels used for fishing and farming, test retrofitted vessels, and create investment plans and financial guidelines for fishermen.

Greening fishing boats in the Mediterranean - POWER4MED's proposal for LSF (Giulia Antidormi, Sustainable Development Goal for the Mediterranean)

The **Power4Med project**, funded by the EMFAF, explores the integration of advanced energy solutions in the fisheries sector. Liquefied natural gas (**LNG**) presents a promising pathway for decarbonisation in large-scale fishing operations, given the vessels' average engine power of **216 kilowatts**, a specification comparable to that of LNG-powered heavy-duty trucks. Europe's expanding network of LNG refuelling stations further enhances the feasibility of equipping fishing ports with necessary LNG bunkering infrastructure. Additionally, **compressed natural gas (CNG)** is identified as a viable energy alternative for smaller coastal fishing vessels.

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CHALLENGES IDENTIFIED

SSCF

- **Demographic and social issues: Aging workforce** and ensuring **survival of local fisheries**
- **Economic barriers: Financing** of the projects and **market development**
- **Capacity ceilings**: Existing limits on gross tonnage are hampering the transition to new types of propulsion systems. These **capacity ceilings** need to be addressed **to allow for innovation**
- **Infrastructure availability**: The **need for infrastructure** such as bunkering facilities for new fuels and plugging stations for electricity is critical. Without these, the transition will remain **theoretical**
- **Cost and profitability**: Bridging the **cost gap** between new propulsion systems and conventional fuels is necessary to ensure profitability
- **Forward planning and strategic priorities:** The market is **unbalanced**

LSF

- **Regulatory and policy issues:** Lack of a **supportive regulatory framework**
- **Financial and investment barriers: Lack of investment** in future capacities despite current profitability. **High initial costs** for new technologies and retrofitting existing vessels. Lack of **public funding, subsidies, and low-interest loans.**The influence of **taxonomy** on investment decisions.
- **Technological challenges: Current technologies are not yet fit for purpose**, with a need for advancements in green energy solutions like LNG, hydrogen, and biofuels.
- **Human resources and skills gaps:** Difficulty in attracting and retaining **skilled workers**, particularly **younger generations**.
- **Environmental and market considerations:** Ensuring **sustainable fish stocks** and **resilient fishing practices.**

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SHORT-TERM GOALS (by 2030)

SSCF

- Conduct **technology appraisal and testing**
- Develop **sustainable shore power infrastructure**
- Emphasize **innovative projects and extensive research and development**
- Secure **funding,** encourage **collaboration**, and improve **startup support**
- Monitor and audit

LSF

- Collaborate with the **maritime industry** to adopt technological innovations, (e.g. prioritise the most relevant fuels and propulsion systems based on tangible assessments)
- Ensure **Member States support** R&D efforts
- Raise **awareness among fishers** about the developmental phase of solutions, through tailored initiatives and pilot projects
- **Improve energy efficiency** in existing fleets by implementing solutions such as antifouling treatments, propeller replacement, and fishing pattern optimization
- Provide **flexible funding** and **incentives** for alternative technologies
- Implement **regulatory adjustments** to enable a sustainable profitable sector, its energy transition and sufficient funding, particularly for the acquisition and design of new vessels

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MEDIUM-TERM GOALS (by 2040)

SSCF

- Transition to **electrification of vessels**
- Implement **smart technologies** and **establish advisory points** for fishers
- Provide **training and education** on energy-efficient practices and renewable energy technologies
- Promote **policy changes and lobby for energy transition support**
- Strengthen **collaboration** between fishers, shipbuilders, and energy suppliers

LSF

- Transition to **practical, scalable solutions** for everyday use
- **Ensure affordability and feasibility** of new technologies through rigorous testing
- Focus on **fleet renewal**
- Invest in **research and development** for **green technologies**

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LONG-TERM GOALS (by 2050)

SSCF

- Achieve **carbon-neutral fisheries with at least 50% of the fleet renewed**
- Eliminate **dependency on fossil fuels and subsidies**
- Create **synergies with offshore wind farms and energy islands** for recharging at sea
- Promote **knowledge exchange, best practices**, and **innovative technologies**
- Ensure generational renewal based on **sustainable fisheries and energy transition**
- Achieve **financial solvency** for the sector, **reducing reliance on external funding**

LSF

- Achieve a **fully decarbonised fleet** with **emission-free vessels**
- Address the **distinct needs** of **pelagic and demersal fisheries**
- Ensure **sustainable fishing practices** and **monitor fish stocks**
- Focus on **continuous adaptation**, **innovation**, and **policy support** to meet sustainability goals

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UPCOMING EVENTS

Second round of workshops

- 7 April 2025, in Brussels

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