BSAC recommendations on the energy transition of the Baltic Sea fisheries sector

In response to the Commission's request for input in relation to the Energy Transition of the fisheries sector, the BSAC established a Focus Group[1] that drafted specific recommendations for the Baltic Sea context. The BSAC Executive Committee subsequently adopted the recommendation in this document on the 27th September 2023.

The BSAC takes note of the recommendations and advice of other Advisory Councils[2] which already reflect many general issues.

This document presents first the background information considered, then the BSAC recommendations.

I. Background information

A. Regulatory context

In December 2019, the European Commission announced the EU Green Deal, putting climate and environmental action as one of its key priorities. A goal of reducing net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels was proposed. The EU also aimed to be climate-neutral by 2050.

With the rise of fuel prices because of the war in Ukraine, the EU responded by adopting the **REPowerEU**[3] strategy to reduce the EU's dependency on fossil fuels through energy savings, diversify supplies and quickly substitute fossil fuels with renewable and low-carbon alternatives.

The European Commission later published two communications on 23rd February 2023:

- A communication on the Energy Transition of the EU Fisheries and Aquaculture sector
- A Communication on the common fisheries policy today and tomorrow

In its **Communication on the energy transition**, the Commission underlined the need to accelerate the energy transition through a more coordinated EU approach, thereby also contributing to the wider objectives of the **European Green Deal** and its strategies, including the **Farm-to-Fork Strategy** and the **Sustainable Blue Economy**

[1] on 17th April 2023, 22nd June 2023, 4th September 2023

[2] The NSAC published an advice on the decarbonisation of the fishing fleet in October 2022. The NWWAC also published an advice in December 2022, referencing 2 previous ones from 2021: NWWAC advice on the impact of climate change on fisheries in the North Western Waters and NWWAC feedback on the public initiative "CO2 emissions of engines - methodology for their reduction". The PELAC held a workshop on the energy transition in the pelagic sector in April 2023. The MEDAC published an advice on energy transition in November 2022.

[3] Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee, and the Committee of the Regions, the REPowerEU Plan of 18 May 2022 (COM(2022) 230 final) EUR-Lex - 52022DC0230 - EN - EUR-Lex (europa.eu)

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Communication. Moreover, this energy transition is an integral part of the implementation of the **Common Fisheries Policy (CFP).** It will reduce the overall impact of fishing activities on marine ecosystems, pollution and climate change by lowering greenhouse-gas emission levels in the fisheries sector.

To accelerate the energy transition, the **Commission proposes 27 actions focusing on four main areas of action** and the international context[4].

In its **Communication on the common fisheries policy today and tomorrow**, the Commission encourages Advisory Councils, by 2024, **to make *concrete, practical and sustainable proposals for vessel modernisation to improve safety, energy efficiency and working conditions on board*.**

The BSAC took part in the launch of the Energy Transition Partnership on the 16th June 2023 and intends to initiate concrete progress to reduce carbon emissions at sea.

The BSAC welcomes the Commission's initiative, the timeliness of which was underscored by the temporary spike in fuel prices when the war in Ukraine broke out. The BSAC agrees with the objectives of the strategy as outlined in the call for evidence and especially with the **need of a strong multi-stakeholder engagement on the matter.**

B. General considerations

As a general consideration, it is fundamental to point out that any energy transition effort must be based on a solid and viable future for the business and companies at hand. The Baltic Sea ecosystem is experiencing a regime shift and several of the fish stocks are in a state of decline.

It should be noted that according to STECF, in the Baltic Sea, the fleet consisted of 92% of small-scale vessels accounting for 8% of weight landed in 2020[5].

The fisheries sector has to contribute to climate targets and reduce its emissions. The entire value chain from fishing activity to processing and sales also need to contribute to the achievement of these targets. Fisheries serves as a viable part of the blue economy and produces blue food. This adds to food security in Europe. When sustainably managed, European fish stocks offer the potential to reduce the dependency on imports. In fact, larger

[4] These four main areas are:
(a) improve the governance framework and coordination/cooperation between stakeholders;
(b) close the gaps in both available technology and knowledge through research and innovation;
(c) develop skills and a workforce that is prepared and ready for the energy transition; and
(d) improve the business environment, including in financing opportunities and awareness.

[5] Scientific, Technical and Economic Committee for Fisheries (STECF) - The 2022 Annual Economic Report on the EU Fishing Fleet (STECF 22-06), Prellezo, R., Sabatella, E., Virtanen, J. and Guillen, J. editors, Publications Office of the European Union, Luxembourg, 2022, doi:10.2760/120462, JRC130578.

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fish stocks would both reduce emissions (making fishing effort more efficient) and increase carbon sequestration.

C.Technical solutions

In general, there are two components: Reducing emissions through increased energy efficiency, and decarbonisation of energy sources on the vessel. Both components allow for progress towards the goal to reduce emissions, but the overall target leading to net zero emissions of vessels needs to be kept in mind.

Technical solutions supporting the decarbonisation of the sector are being constantly developed and improved. They include general improvements within the larger shipping industry of engine technologies, hull and propeller designs etc. used and the use of different energy sources (e.g. electrical, solar, wind, e-methanol, ammonia and hydrogen). More specifically for the fishing industry, a lot of work is also going into development of more energy efficient fishing gear.

The Communication on Energy Transition foresees a study on technologies available for each of the specific fleet segments including implementation and budget requirements.

D. Identified challenges in applying new technologies

A shift towards alternative energy sources present complex problems at sea and on land of both a technical and regulatory nature.

At sea, the main limitation is to adapt new technologies to the size of fishing vessels and to the different fishing techniques.

Alternative fuels can take up more space on board a fishing vessel. On top of this several of these fuels need special tanks with special insulation due to temperature requirements, security etc., taking up even more space. For smaller vessels addressing buoyancy issues will be a significant challenge. However, electrification may not increase space required onboard while presenting challenges in terms of weight (GT).

Therefore, the existing limitations on gross tonnage and power of EU vessels (the so-called capacity ceiling) are perceived to be a key issue to be examined in the context of the energy transition.

On land, the issues to overcome include logistics (ports lack charging stations, LNG storage, etc), maintenance and crew training.

Especially in the Baltic, the fishing industry will invest only in mature technologies because of its weak economic situation and the high risks existing for such major changes.

The BSAC takes note that in its Communication the Commission highlighted that in most Member States there is a gap of about 20% between the capacity ceilings and the actual active capacity of the fleet. Therefore, Member States could allocate this inactive capacity to fishing vessels that need it for energy transition purposes.

In practice, the Commission cannot disclose the information on the capacity gaps available in the Member States and it is unclear what is the situation in the Baltic Member States.

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The Commission explained that the capacity issues should be further discussed under the Energy Transition Partnerships.

E. Funding possibilities for the fishing sector

Various EU funds are available in order to help the fishing sector through the transition. **The BSAC** welcomes the announcement in the Communication on Energy Transition of a guide on funding opportunities available to fishers that is foreseen after the conclusion of an ongoing study.

Horizon Europe supports research and innovation through Mission Ocean objective 3: '*Making the blue economy sustainable, carbon neutral and circular', includes decarbonisation of the blue economy and provides funding opportunities in the future for higher 'technology readiness level'*[6].

The Innovation Fund[7] provides support for innovative low-carbon technologies with commercial demonstration to help bring new solutions to the market.

The EMFAF offers funding possibilities for development of low carbon and energy efficiency technology, investment in mature technology, replacement/modernisation of engines[8], increase in volume of vessels to install energy-efficient engines[9]. Apart from direct funding, EMFAF is available through the Member States' Operational Programmes.

In annex 1 is a list of funding possibilities in various Member States Operational Programmes around the Baltic.

While some limitations on EMFAF use for the fleet transition are not contested, the BSAC points at important discrepancies in the operational programmes of various Member States. Many Member States do not finance improvements in energy efficiency of a vessel by e.g., replacing an engine or using alternative propulsion methods which in many cases seems unavoidable, especially to make an old vessel, regardless of size, more energy efficient. BSAC notes that under the current regulation, fisheries only have access to funding if the targeted stocks are above MSY Btrigger. Solutions must be found for small-scale vessels and other Baltic "locked" vessels. that fish on stocks with low biomass, without any alternative. Environmental conditions in the Baltic have contributed to biomass depletion and we must avoid a situation where the coastal fleet in the Baltic is not eligible for investment from energy transition funds.

When it comes to private fundings, discussions are ongoing within the EU regarding which investments will be considered green (EU Taxonomy).

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[6] wp-12-missions_horizon-2021-2022_en.pdf (europa.eu)
[7] Innovation Fund (europa.eu)
[8] only for small scale fishing vessels under conditions preventing increase in power, and additionally for other vessels up to 24m under conditions that the new engine releases at least 20% less CO2 and preventing increase in power.
[9] only for vessels smaller than 24m, and under conditions preventing increase in fishing capacity of the vessel

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II. BSAC recommendations

The BSAC recognises the need to reduce dependency on fossil fuels and move to renewable and low-carbon energy sources as quickly as possible. However, it is fundamental to point out that any spending on greening an industry must be based on a solid and viable future for the business and company at hand. The Baltic Sea ecosystem is experiencing a regime shift and several of the fish stocks are in a state of decline, and to invest funds at this stage is a risky venture.

On the basis of the above considerations, the BSAC has adopted the following recommendations.

The BSAC recommends that:

- **Member States invest in the development of infrastructure in ports and develop green energy logistics to support the transition.**
- **Member States align their operational programmes to ensure that the energy transition of the Baltic fleets is supported by appropriate access to funding.**
- **The Commission coordinate work on access to funding opportunities foreseen in the Action Plan and the Communication on Energy Transition to ensure that such access will become coherent across Member States.**
- **Member States and the Commission create investment schemes for green technology and transition.**

The BSAC is of the opinion that the Commission's communication does not address enough the **problems of overcapacity and capacity ceilings,** which is one of the main challenges of energy transition. Overcapacity, albeit based on old vessels in need of modernisation, will likely increase since fishing opportunities will at best stay low or even be reduced to almost nothing at worst. Therefore, the BSAC recommends that:

- **The Commission looks more closely at the capacity rules and their impact on energy transition, especially the definition and calculation of capacity. The BSAC has identified the following issues**:

- For a vessel to start using a more energy efficient propulsion system may require vessels to increase space/weight on board which would increase the gross tonnage.
- Engine power measuring regime also needs to be made fit to new technologies.
- Calculation of the capacity ceiling does not always reflect the reality on the ground. This is the case for vessels which are counted as part of the capacity, although they are almost inactive only because of other financial incentives.
- Capacity calculation might be overestimated in relation to some fleets' capacity because of the limited distance these vessels can travel for fishing, the absence of access to alternative fishing grounds (Baltic Sea "locked" vessels), the lack of clarity on consideration of non-quota species, and reduced fishing opportunities of some fish stocks.

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- Further issues of calculation of capacity might arise when it comes to fishing vessels and fishers having diversified activities (resulting in vessels still in the fleet but less used for fishing purposes).
- For some fleet segments that are clearly not in balance with the available fishing opportunities, exit schemes for fishers who wish to leave their profession, could be a cost-efficient way to reduce emissions.

Consequently, the BSAC further recommends that:

- **Member States and the Commission setup voluntary exit schemes for specific fishing fleet segments as an efficient way to reduce carbon emissions.**
- **Member States and the Commission help fishers diversify their activities and attract a new generation of fishers where there is a sustainable future.**

The BSAC recommends that:

- **The Commission and Member States, together with their research institutes, launch pilot projects.**

This is a matter of priority, to further study the degree of maturity of new technologies and to what extend they can be applied to different fleet segments. Safety onboard must be ensured when testing the alternatives to current fuel. Moreover, antifouling practices and underwater noise created by propellers should be considered when developing these projects. Pilot projects must approach the issue of energy transition in a comprehensive manner and study new, adaptive technologies not only in relation to existing vessels but also in relation to future vessel needs.

Pilot projects also avoid problems with capacity ceilings, allowing the fishing industry the opportunity to evaluate first-hand which new technologies work best for them.

Considering that a significant share of the Baltic fishing fleet are small-scale vessels (with both passive and active gears), there are good opportunities to work with diverse small scale fleet segments and to gather experience in sheltered coastal areas. It would make sense to focus efforts on these parts of the fleet without excluding any segment of the fleet. Larger vessels are more likely to use energy-efficient solutions developed by the shipping industry or other activities involving larger vessels. Such solutions should also be promoted in the Baltic.

Undertaking pilot projects is an important step towards demonstrating the viability of zero emission technologies in terms of technical feasibility and economic sustainability, while generating learnings that can be used to further improve the technologies.

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The energy transition of the fishing fleet should be considered together with its production of low carbon proteins allowing for sustainable food diets. Therefore, the BSAC recommends that:

- **Member States and the Commission promote seafood as part of sustainable, climate-friendly food consumption, following the concept of "Planetary Health Diet"[10].**

The BSAC recommends that:

- **Member States and the Commission consider the entire life cycle of fisheries products and value-chain actors that also have to make efforts to reduce their energy consumption.**
  In order to achieve this, the processing sector may need to be able to access financial support for low-carbon marine proteins. Indeed, the production of fishmeal and fish oil is an important, and energy intensive processing industry around the Baltic Sea. While processing plants are already involved in the energy renovation process, they are faced with a lack of financial support to go further.

- **Member States and the Commission involve all stakeholders (policymakers, engine manufacturers, fisheries representatives, NGOs etc.) in order to ensure the legitimacy and the acceptability of the energy transition measures**.
  The objectives in terms of energy transition must be realistic, taking into account the level of knowledge and scientific research, the cost of transition and the funding available. SWOT analyses, as well as environment impact assessments of the different technological solutions should be carried out.

- **The Commission's *Study on technologies available for each specific fleet segment*, foreseen in the Energy Transition Communication, considers issues of vessel size, gear, power, costs, and usability.**
  When it comes to studies from the Commission, it will be necessary to increase the available communicative effort towards both (1) Technology transfer from shipping and other drivers of technological progress, and (2) Successful communication on best practise examples in fisheries elsewhere in the world to speed up the implementation of good solutions also for upcoming problems. The fisheries organisations are not able to organise this with their available human resources.

The BSAC stands ready to further work on the topic with the support of experts.

The BSAC will engage in the Energy Transition Partnerships and closely follow the discussions.

[10] Willett, W., Rockström, J., Loken, B., Springmann, M., Lang, T., Vermeulen, S., … Murray, C. J. L. (2019). Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. Elsevier BV. https://doi.org/10.1016/s0140-6736(18)31788-4

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ANNEX 1: List of funding possibilities in various Member States Operational Programmes around the Baltic

Question addressed to the Member States: *In the context of the energy transition, is your **EMFAF operational programme** allowing for funding possibilities for vessels and/or engine renewal? What about funding of other aspects allowing for fisheries to be accompanied in the energy transition? Under which conditions are they available?*

Answers received:

Denmark

The Danish EMFAF programme has two relevant support measures for energy transition: 1) support for development and testing of measures for green transition and 2) support for investments in coastal fisheries, including energy saving measures.

1) Support for development and **testing of measures for green transition can include technologies to reduce greenhouse gas emissions and to reduce environmental impact**, i.e. aid transitions to less impactful gears.
   a. This can include energy optimization consulting, battery-technology for propulsion or for on-board equipment, hybrid technology, energy efficiency through ship and fishing gear design optimization, on-board facilities to utilize electrical grid while in port, etc.
   b. The support targets fishers and relevant collaborators, such as universities and engineering companies.
   c. **Does not include support for the investments of fishers, but solely development and testing**. It is envisaged that the measure can help bring solutions closer to market and broad implementation.

2) Support for investments in **coastal fisheries can include energy efficiency improvements of vessels**, e.g. **through retrofit of hydraulics, cooling equipment, compressors, fishing** gears (i.e. with less impact or reduced fuel needs) etc.
   a. Engine improvements or replacements are excluded.
   b. The goal is to reduce fuel usage and CO2-emissions.
   c. The support is restricted **to small coastal fishers**, i.e. vessels under 17 meters.

Concurrently, there are also other ongoing national projects and research under other auspices than EMFAF.

Estonia

After consultations with relevant partners and taking into account the limitations in the Article 18 of EMFAF Regulation, the **engine replacement in Estonia will be made available only to the SSCF vessels**. **We have foreseen a possibility to support also investments on board that reduce the energy consumption**. It is possible that **on larger vessels modernisation or replacement of certain equipment will decrease energy consumption to certain extent**. Most likely, this measure will not be used much

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by SSCF vessels that are mostly open boats with outboard engines and which do not have much equipment on board.
In general, it seems that EU fleet policy is stagnated and does not take into account current challenges and therefore the meaningful use of EMFAF funds for the energy transition of fishing fleet in our view is not possible.
So far **applicable solutions for low or zero carbon emissions of fishing vessels are missing and therefore as the first step the main emphasis should be put on R&D** in order to establish a basis for solutions that are in future commercially available.
We would also like to mention that even if in EU level there is a 20% difference between the fishing capacity ceilings and the actual fishing capacity it does not indicate the situation at the Member State level. Since the fishing capacity ceiling of the fleet is based on the Member State, this so-called "free space" must also be viewed at the level of the Member States. **For example, in the Estonian register there is some unused Gross tonnage (GT), but there is not free engine power (kW). We should bear in mind that fishing capacity is not transferable beetween Member States.**

Finland

The EMFAF regulation has strict rules concerning the construction, acquisition or importation of fishing vessels in addition to the replacement or modernisation of main or ancillary engines of vessels (articles 13, 17, 18 and 19 of regulation (2021/1139)).
The Finnish EMFAF operation programme does allow for funding of engine renewal within the scope of the EMFAF regulatory framework and it has only been utilised by some small-scale fisheries (SSFC) vessels to improve energy efficiency.
The Finnish EMFAF budget is small compared to other member states and the overall **capability of EU fishing enterprises to carry out large investments concerning the energy transition is very low especially in SSCFs. Without some kind of public support and adjustments to both the EMFAF regulation and CFP fleet policy rules, the energy transition will be very slow**. Funding of the energy transition is a concern, as fishing enterprises have severe challenges in accessing capital. Financial instruments under the EMFAF could play significant role in financing the energy transition. However, current EMFAF rules deny the use of financial instruments in fishing vessel related investments.
The Finnish operational programme does provide funding in other aspects that support the energy transition of the sector. These are projects and programmes that for example support the cooperation between fishers and scientists, improving fishing technologies such as fishing gears (e.g. reducing fuel needs with infra-red laser fish counters for fyke nets), and enhancing the digitalisation of the whole fisheries and aquaculture supply chain.

Germany

As you will be aware, the **EMFAF regulation does not allow state aid support for the construction, acquisition or importation of fishing vessels** (see Article 13 letter (c)). The only exception is the support for the first acquisition of a fishing vessel by young fishermen under the conditions of Article 17 of the regulation. However, also this support

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may only be granted provided the fishing vessel belongs to a **fleet segment in balance** (see para.6 letter (a) of the provision). Currently**, this is not the case for any German fleet segment in the Baltic Sea.**
Similarly, the **replacement or modernisation of a main or ancillary engine of a fishing vessel is only permissible provided the vessel in question belongs to a segment in balance** (see Article 18 para.2 letter (a)). Hence, also this support option is currently not available for German vessels in the Baltic Sea.
In general, **other support options for investments on board, for example to increase energy efficiency (see Article 19), are open also to the Baltic fishing fleet.** However, in recent years no such state aid measures have been implemented with regards to fishing operations in the Baltic Sea. The current situation has not been and continues not to be conducive to such kind of investments (in particular the poor state of stocks of economically relevant species). The latter may be illustrated by the support provided for permanent cessation to the German Baltic Sea fishing fleet (Article 20). In 2021-2022, 16,7 % of the Baltic Sea fleet registered in Mecklenburg-Vorpommern were supported to permanently cease their fishing operations; in Schleswig Holstein, the figure amounted to 25 % of the fleet capacity.

Latvia

Support for energy transition, including engine renewal, as well as R&D in this area is included in Latvian EMFAF programme.
We have foreseen a possibility to support investments on board that reduces energy consumption, including engine replacement, for small scale fisheries and also for vessels with a length of 12-24 meters. Support will be available under the conditions contained in the EMFAF regulation. **Unfortunately, due to the restrictions of the regulation that do not encourage the making of relevant investments, it is likely that this type of investment will not be made to an appropriate extent, if at all.** There are also **problems with the availability of practical solutions for the use of renewable energy on vessels, even more so for use on aging vessels**. Our concerns are based on past experience, when there were no motivating conditions in the regulation for investments on board either.
Although support for R&D is planned it should be taken into account that the developed solutions, if they will be economically effective, will not have an immediate effect.
The EU fleet policy is stagnant and does not take into account the current priorities and challenges, and therefore there are **strong concerns that the set goals at EU level could be achieved with the EMFAF**.

Lithuania

The Lithuanian EMFAF programme allows for engine renewal under the specific objective "*Increasing energy efficiency and reducing CO2 emissions through the replacement or modernisation of engines of fishing vessels"* of the I priority of the EMFAF "*Fostering sustainable fisheries and the restoration and conservation of aquatic biological resources*". A total of 190.800 EUR of the EMFAF and national funding has been allocated to implement that objective.

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Given the conditions set in Article 18 of the EMFAF Regulation (EU) 2021/1139 **the measure is aimed at the small-scale coastal fishing vessel because Lithuanian large-scale vessels operating in the open Baltic Sea exceed 24 metres in length**.
In the context of energy transition, **the support related to decarbonization, other than engine renewal, is also possible** under the specific objective '*Strengthening economically, socially and environmentally sustainable fishing activities*' which would allow for support for any operation except those under Articles 17 and 19 of the EMFAF regulation. **No specific action within this objective has been launched** and no conditions beyond the EMFAF regulation are outlined yet. It is supposed to be aimed at improvement of the added value or quality of the fish caught.

Poland

Poland is currently unable to answer questions on national EMFAF operational programme. The legislative procedure is still underway and until appropriate regulations are published and will enter into force, any answer will be premature.
We currently do not have a specific date for the end of the entire legislative procedure, and only after it is completed will we be able to answer your questions.

Sweden

The Swedish EMFAF-programme provides several measures for supporting the energy transition, relating to each of the four areas of action proposed by the Commission. The Swedish programme provides support for improved coordination and cooperation by networking and interactions between fisheries and scientists. A strong priority for innovations will close the gaps in suitable fishing methods and technologies, developed specifically for the fisheries needs. The fishermen are also supported for learning and skills for new techniques and digitalization. And last, but not least, the Swedish programme supports both investments on vessels and projects for reduced environmental impact and restoration of sustainable stocks, with possible benefits for increased fuel efficiency.
However, Sweden does not provide financial support for vessels and/or engine renewals. This results from several national considerations during programming. The EMFAF-budget is small, and Sweden is about average in member states budgets, which would imply that these concerns are valid also for several other member states. Investments in engine replacements are costly, and with too low level of support for investments the risk for deadweight issues are too high. According to the EMFAF specific conditions for vessel size under 24 meters for engine replacements there is also a risk for disrupting the competition between different fisheries within the national fleet. And lastly, there may also be uncertainties relating to the control of certain eligibility criteria for reduced emissions and engine capacity.
All in all, stakeholder involvement and cooperation for promoting technological improvements through research and innovations are imminent needs. Investments should be supported following a technological maturity in fisheries.

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