



# Recommendation on the decarbonisation of finfish farming facilities

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## **Background**

Climate change and its consequences pose a grave threat to global civilisation and the environment, with likely profound socioeconomic and geopolitical impacts. To address these challenges, the European Green Deal aims to transform the European Union into a modern, resource-efficient and competitive economy. Achieving this objective requires achieving zero net greenhouse gas emissions and decoupling economic growth from resource use while leaving no person or place behind.

Following the adoption of the EU strategy on adaptation to climate change<sup>1</sup> by the European Commission in 2021, the European Parliament and the Council of the European Union adopted the European Climate Law,<sup>2</sup> establishing a framework for the gradual and irreversible reduction of anthropogenic greenhouse gas emissions and the enhancement of removal by sinks. This regulation brings into legislation the objectives of reducing net greenhouse gas emissions by at least 55% of the 1990 levels by 2030 and achieving a climate-neutral EU by 2050.

However, climate change is not the only human-caused threat to the natural environment. The main underlying reason for the degradation of ecosystems is human overpopulation. The global population has quintupled in the last 100 years, recently surpassing 8 billion, and is not expected to level off before 2100, by which time it is projected to reach 11 billion. This makes the availability of farmable land, accessibility to fresh water, pollution, water eutrophication, and loss of natural habitats key issues to be tackled alongside climate change. All these impacts are clearly interlinked, thus requiring a holistic approach that also considers sociopolitical scenarios.

Agriculture (including not only crops but also livestock production and aquaculture), forestry and other land uses are responsible for 22% of greenhouse gas emissions worldwide. European finfish aquaculture is responsible for a small share of these emissions. Nevertheless, it must also commit to significantly reducing its climatic impact by 2030 to become climate-neutral by 2050.

Offering advice on climate change is included in the work programme of the Aquaculture Advisory Council (AAC). In 2022, the AAC produced a report on climate change adaptation and mitigation,<sup>3</sup> and in 2023, it provided recommendations for the decarbonisation of energy in aquaculture vessels.<sup>4</sup> This third set of recommendations concerns the decarbonisation of

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<sup>1</sup> EU Adaptation Strategy: [https://climate.ec.europa.eu/eu-action/adaptation-climate-change/eu-adaptation-strategy\\_en](https://climate.ec.europa.eu/eu-action/adaptation-climate-change/eu-adaptation-strategy_en)

<sup>2</sup> [https://climate.ec.europa.eu/eu-action/european-green-deal/european-climate-law\\_en#:~:text=The%20Climate%20Law%20includes%3A,of%20emission%20reductions%20and%20removals](https://climate.ec.europa.eu/eu-action/european-green-deal/european-climate-law_en#:~:text=The%20Climate%20Law%20includes%3A,of%20emission%20reductions%20and%20removals)

<sup>3</sup> *European Aquaculture: Climate Change Adaptation and Mitigation:* [https://aac-europe.org/images/jdownloads/Reports/AAC\\_Climate\\_Change\\_Report\\_26-10-22\\_final\\_v2.pdf](https://aac-europe.org/images/jdownloads/Reports/AAC_Climate_Change_Report_26-10-22_final_v2.pdf)

<sup>4</sup> *Recommendations on the Decarbonisation of Energy in Aquaculture Vessels:* [https://aac-europe.org/images/AAC\\_Recommendation\\_Decarbonisation\\_of\\_Aquaculture\\_2023\\_03.pdf](https://aac-europe.org/images/AAC_Recommendation_Decarbonisation_of_Aquaculture_2023_03.pdf)



finfish farming facilities, excluding aquaculture vessels, for which have already been provided. It does not address the impact of feed for farmed fish, which should be addressed in a separate set of recommendations due to its specific characteristics, or the carbon footprint of the distribution of farmed fish to consumers.

The AAC emphasizes the need for a common EU Life Cycle Assessment (LCA) tool for quantifying carbon emissions at the farm level that will allow for benchmarking and facilitate the measurement of improvements. The tool should be based on the Product Environmental Footprint (PEF) method.

## **Justification**

Finfish are highly nutritious because of their high protein, omega-3 fatty acid, mineral and vitamin contents. Due to their proven health benefits, their consumption is highly recommended by doctors and food authorities. Moreover, they are central to gastronomic and cultural heritage throughout Europe.

In 2021, household expenditure on fishery and aquaculture products in the EU-27 grew by 7% compared to 2020. According to Euromonitor estimates, out-of-home consumption also increased.<sup>5</sup>

EU fish farming has been expected to compensate for declining capture fishery and the EU's increasing international fishery and aquaculture product trade deficit but has hardly grown since 2000. Efforts have been made to develop a legal framework that will foster growth in the EU's aquaculture sector. The main documents produced are the European Commission's *Strategic Guidelines for Sustainable and Competitive EU Aquaculture* for the period 2021–2030,<sup>6</sup> the European Parliament's *Resolution on Striving for a Sustainable and Competitive EU Aquaculture: The Way Forward (2021/2189(INI))*,<sup>7</sup> and the *Council Conclusions on the EU's New Aquaculture Strategic Guidelines*.<sup>8</sup>

Aquaculture in the EU is highly diverse in terms of species farmed and methods of production. More than 50% of the EU's production consists of freshwater and seawater finfish species. Finfish aquaculture is conducted in installations that consist of sea pens, ponds, raceways and tanks (including recirculating aquaculture systems and flow through open systems).

The finfish aquaculture sector in the EU is mainly composed of micro and small enterprises, although medium-sized enterprises also exist. This should be considered when developing policies aimed at the decarbonisation of their farming facilities and the need to engage in such efforts while remaining economically competitive. Furthermore, changes in the legal

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<sup>5</sup> EUMOFA. *The EU Fish Market 2022 Edition*: [https://eumofa.eu/documents/20178/521182/EFM2022\\_EN.pdf/5dbc9b7d-b87c-a897-5a3f-723b369fab08?t=1669739251587](https://eumofa.eu/documents/20178/521182/EFM2022_EN.pdf/5dbc9b7d-b87c-a897-5a3f-723b369fab08?t=1669739251587)

<sup>6</sup> [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_21\\_1554](https://ec.europa.eu/commission/presscorner/detail/en/ip_21_1554)

<sup>7</sup> [https://www.europarl.europa.eu/doceo/document/TA-9-2022-0334\\_EN.html](https://www.europarl.europa.eu/doceo/document/TA-9-2022-0334_EN.html)

<sup>8</sup> <https://data.consilium.europa.eu/doc/document/ST-11496-2022-INIT/en/pdf>

framework should offer operators and investors predictability and ensure return on investment.

This set of AAC recommendations to the European Commission and Member States should be accompanied by efforts of the finfish aquaculture sector to improve efficiency in its use of energy in production facilities and to transition to renewable and low-carbon sources of electricity, mainly through electricity suppliers or, if sustainable, on-site. This could be done along with the integration of innovative smart technologies and control systems to optimise energy use efficiency, taking advantage of the technological edge of European technology suppliers to the aquaculture sector.

Authorities at the European, national and regional levels should take into account that the capacity for changes required for the decarbonisation of the finfish farming sector is directly linked to its economic conditions, which have deteriorated due to the Covid-19 crisis, the Russian invasion of parts of Ukraine and inflation. Furthermore, decarbonisation is not the only change that the sector is currently requested to undertake. The required cumulative efforts to adjust to changes in the legal framework under the Green Deal complicate the existence of micro and small primary producers, especially when considering environmental and nature restoration matters.

Consumers can play an important role in driving market forces towards low-carbon food production. Therefore, efforts to ensure that consumers are informed of the full carbon footprints of different food choices are essential.

## **Recommendations**

The AAC recommends that the European Commission and Member States take the following actions for the decarbonisation of finfish aquaculture facilities:

- a) Establish EU-wide mechanisms to reduce the cost of electricity from renewable and low-carbon sources, as well as its price volatility.
- b) Fund research and technology to meet the specific energy transition requirements of finfish aquaculture farms, including efficiency improvements and new systems.
- c) Assess and communicate to aquaculture stakeholders how decarbonisation efforts in finfish farming can be linked to other general European objectives, such as food security, increased organic aquaculture production and nature restoration.
- d) The European Commission (DG MARE) should use the Aquaculture Assistance Mechanism to identify and share positive experiences of energy efficiency investments and the use of renewable and low-carbon energy in finfish aquaculture across Member States, including benchmarking indicators and performance monitoring to facilitate and encourage progress.
- e) Request Member States to take decarbonisation into consideration in the spatial planning of finfish farms, especially the distance between the sites provided to offshore marine farms and the harbours at which they operate.



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- f) Encourage and enable consumers to make responsible choices by purchasing finfish aquaculture products with smaller carbon footprints.
- g) Member States should provide aquaculture farmers with maximum financial support through the European Maritime, Fisheries and Aquaculture Fund (EMFAF) to promote the decarbonisation of finfish facilities through both the purchase of equipment with a carbon-neutral balance and the decarbonisation of currently operating systems.
- h) The AAC urges the Commission to identify environmental indicators and voluntary targets for environmental performance including a reference method to determine the carbon footprint and the environmental impact of aquaculture production, as stipulated in the strategic guidelines for a more sustainable and competitive EU aquaculture for the period 2021- 2027.



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