

THE FUTURE OF FUEL FOR FISHING

POLICY BRIEF NO. 16 - JULY 2022

OVERVIEW

- Current high fuel prices are exerting significant financial pressure on members of the UK fishing industry, which could also have consequences for coastal communities and other industries.
- To address this in the short term, the industry has suggested financial support or - in the case of small-scale fleets - preferential access to fishing areas to stay afloat.
- Opportunities exist or could be realised in the near future to increase the fuel efficiency of vessels.
- The industry recognises the need to decarbonise, to increase its resilience and to reduce its contribution to climate change.
- Decarbonisation may involve adoption of alternative fuels or electrification. However, there are significant barriers to such transitions, which will require coordinated efforts and investment to overcome.

BACKGROUND

The cost of fuel has risen significantly in the past year (1). The fishing industry in particular has felt the impact of this, with fuel prices compounding other stresses currently being placed on fishers' livelihoods.

On 27 April 2022, the APPG on Fisheries brought together a variety of speakers to share their insights. This brief summarises discussion on how the fishing industry can be supported to cope with high fuel prices in the short term, and what actions can be taken in the longer term to reduce the industry's dependence on fossil fuels.

This briefing summarises the output from the APPG on Fisheries open Parliamentary webinar, 27 April 2022. The meeting brought together a diverse array of stakeholders from across the UK to discuss the future of fuel in fishing. This document is a synthesis of the discussions that took place both at the event and online (via #FishingFuel).

CHALLENGES AND IMPACTS OF RISING FUEL PRICES

Fuel comprises a large proportion of expenditure for many fishing fleets, particularly those using mobile gear such as trawls (2). Fuel cost increases not only raise overall expenditure, but may also pressure fishers to cut back on other costs such as crew numbers and vessel repair and maintenance, which poses a safety risk. High market prices for fish are currently providing a partial buffer against these increased costs, although it is unclear for how long this will be the case (3). Recent economic modelling by Seafish found that in a worst-case fuel price scenario (90p per litre), two-thirds of UK fishing fleets may not be able to cover their operating costs (2).

Although inshore vessels using static gears could be assumed to be less affected by fuel price shocks, there is a risk that larger vessels using mobile gears may be driven to fish closer to shore to save on costs (4). Combined with existing spatial competition from offshore wind developments, aquaculture, and marine protected area designations, there are fears that inshore vessels will be further displaced from fishing grounds and economically marginalised. Although the UK's under-10 metre inshore fleet contributes only 5% of total landings, it provides two-thirds of jobs in the fishing industry (4). As primary producers, fishers also help to drive economic activity in the processing, transport, and retail sectors. Consequently, any contraction of fishing fleets - in particular the under-10 metre fleet - could have severe economic and social impacts that would be felt across the industry and beyond (4, 5).

SUPPORTING THE INDUSTRY IN THE SHORT-TERM

While industry voices have called for financial support, the UK Government has stated that it will not provide additional fuel subsidies to the industry due to the risk of breaching international agreements (6). As an alternative, it has been suggested by industry figures that certain marine areas be prioritised for fishing, involving the exclusion of other industries (3, 4). Protection of fishing grounds - and therefore fisher livelihoods - could also be supported by the establishment of regional fisheries management plans focused on geographic areas rather than on specific commercial stocks. However, while national fisheries authorities are required to establish management plans for stocks under the draft Joint Fisheries Statement, management plans based on areas are optional only (4, 8).



INCREASING FUEL EFFICIENCY

The industry has shown in the past that it can, to an extent, adapt to fuel price shocks. For example, since 2008, rates of fuel use per tonne of fish landed have decreased (2). Several opportunities for reducing consumption of fuel by vessels have been identified (9):

- Designing new vessels to be more streamlined, which will also require changes to regulations which currently place limits on vessel length (5).
- Introducing hybrid engines, which can result in a 40% improvement in fuel efficiency. However, this measure is only feasible for potters, who are able to utilise these engines for short journeys between pots.
- Changing to propellers capable of a 10% improvement in fuel efficiency.
- Switching from mobile to static gears (10).
- Modifying practices and behaviour to maximise efficiency of fuel use, for example via emerging technologies such as “precision fishing” which can reduce how long fishers need to spend at sea (5, 11).
- Redesigning mobile gears, for example by making them lighter. The Sumwing beam trawl is one such gear and has demonstrated significant fuel savings in trials (12). Regulations may need to be modified to enable innovations of this nature (5).

ENABLING THE INDUSTRY TO TRANSITION TO ALTERNATIVE ENERGY SOURCES

The industry recognises that it must transition to alternative energy sources, noting that the Fisheries Act 2020 includes an objective to reduce carbon emissions (3, 7). This could involve switching to alternative oils such as Heavy Vegetable Oil (5) or ones derived from waste products (13), as well as hydrogen (14). However more research, development, and piloting is needed to demonstrate that these alternatives can be practically and economically viable for fishing vessels (14). Meanwhile, the Falmouth oyster fishery is an exemplar of fishing using sail power (5, 15). A third pathway is electrification. Recent research has found support for electrification of the UK’s small-scale fleet among skippers (9), and pioneers are starting to emerge, for example Two Brothers Fishing in Brixham (16). However, significant barriers remain for the transition of both small-scale and large-scale fleets.



Performance and Safety

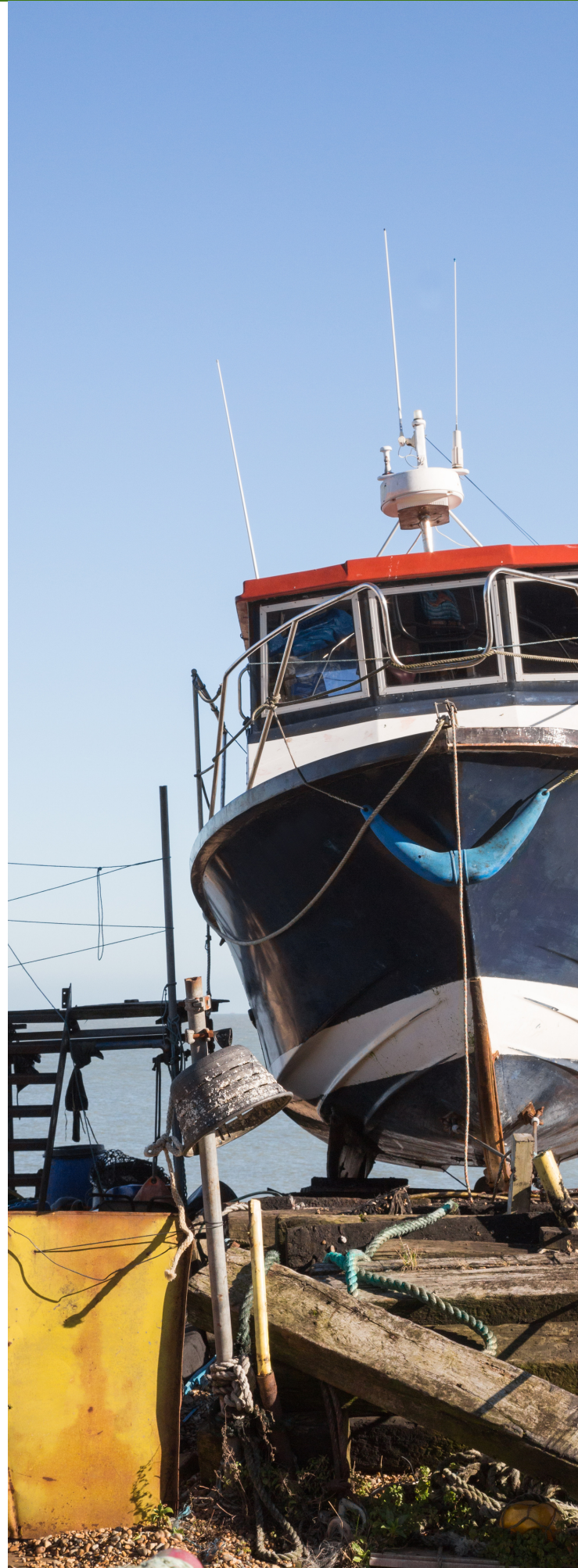
With batteries being 20 times less energy-dense than diesel, more space would be needed on boats to accommodate an electric system, which would reduce storage space for fish (12). There is also some concern that electric engines would not be as reliable as diesel ones; some fishers report that they do not switch off their engines when at sea because of the risks of being without power (9).

Infrastructure Needs

Electrification will depend on improvements in battery capacity, while all alternative fuels require the necessary port infrastructure to be in place. However, ports currently lack charging capacity, and will require space for this. For example, Bridlington Harbour's existing infrastructure currently could not support a 10% increase in demand for electricity (12). One solution to this issue would be to deploy buoys designed to enable vessels to recharge without returning to port, although a version for smaller vessels is yet to be developed (12). There may also be a synergy in terms of increasing charging capacity for electric cars in car parks beside ports which can also serve hybrid or electric vessels (9). Changes to engine design and infrastructure will require new specialist skill sets among engineers (14).

Up-Front Costs

The up-front costs of retrofitting vessels to increase fuel efficiency, or commissioning new hybrid or electric ones, represent an insurmountable financial barrier for many already-struggling fishers in the absence of financial support. Current government funding available to the industry may not be tailored to provide such support and may need repurposing (12). Data needs to be made available to demonstrate the significant cost savings of hybrid or electric systems, which could incentivise fishers and where necessary help them to obtain loans. Fishers could also be incentivised to decarbonise through vessels using alternative systems being given preferential access to certain fishing grounds.





CONCLUSIONS

Current fuel price rises pose a new threat to the UK fishing industry. Should expenditure begin to outstrip incomes across fleets, government action will likely be needed to ensure that they are able to stay afloat. In the longer term, the industry must significantly reduce its fossil fuel consumption.

Substantial barriers to this remain to be overcome, including battery performance, lack of onshore infrastructure, and up-front costs. However, researchers, technologists, and fishers are optimistic that this can be achieved, and that fossil fuels could even be eliminated in the case of some fishing activities. Incremental changes, including behaviour change and innovations in existing vessels, gears, and practices can contribute to this. At the same time, research and development for alternative fuel sources and electrification is underway.

The Fisheries Act 2020 enshrined an obligation for fisheries to reduce their carbon emissions. Even without this regulatory pressure, the industry is eager to reduce its dependence on fossil fuels, and is actively exploring how this can be done.

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