Technical measures and innovative fishing gears

Key points and recommendations

- Innovation has a key role to play in the successful implementation of the Common Fisheries Policy (CFP), in particular the landing obligation. If new gears or fishing methods are to be adopted as 'innovative', ClientEarth believes that the scientific evidence contained in the assessments to be undertaken under Article 24 of the European Commission's Technical Conservation Measures Framework (TCMF) Proposal must be robust and clearly demonstrate that the gear has lower negative impacts on marine ecosystems than conventional gears. This is likely to involve comparison of different forms of environmental harm. This evidence must be independently evaluated by STECF before permission to use or extend the use of the gear can be given.

- The TCMF Proposal explicitly includes pulse trawl as an innovative fishing gear that would be subject to the assessment process, in contrast to the ban on this method of fishing, with a small derogation, contained in the existing technical measures framework. However, concerns remain about the knowledge gaps surrounding the impacts of this gear on the marine environment.

- If the use, or extension of use, of pulse trawl gear is to be permitted it must meet the evidentiary requirements set out in Article 24 of the TCMF Proposal, as with any other 'innovative' fishing gear. This means all existing pulse trawl licences must be subject to re-evaluation under this article. The same requirement must apply to all other existing pilot projects.

- There are outstanding concerns about the lack of control and enforcement procedures for pulse trawling. These must be addressed and clear procedures put in place, in particular before the use of this gear can be permitted on a wider scale.

- Even where a fishing gear has satisfied the Article 24 requirements, its use cannot be permitted in a Natura 2000 site unless it is shown not to adversely affect the integrity of

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the site, in line with Article 6(3) of the Habitats Directive. Both existing and future pulse trawling should not be permitted in such sites until this can be demonstrated.

Background

In March 2016 the European Commission proposed a new framework for a regulation on the conservation of fishery resources and the protection of marine ecosystems through technical measures (hereinafter referred to as the TCMF Proposal). Technical measures are rules for where, when and how fishing may take place and are fundamental for regulating the impact of fishing on stocks and the wider marine ecosystem. The new framework will have an essential role to play in European fisheries management, particularly in the implementation of the Common Fisheries Policy (CFP) and the achievement of its objectives.

One important element of the TCMF Proposal is that it includes common objectives and quantitative targets, and also provides scope for the development of regional measures to meet these common objectives and targets. These are essential to ensure that baseline measures and any subsequent regional proposals deliver what the framework sets out to achieve. The development of such regional proposals provided for within the TCMF Proposal is in line with the increased regionalisation envisaged in the 2013 reformed CFP, and the proposal also makes clear that these measures must be at least as effective at achieving the objectives they are designed to fulfil, or better.

Within the regionalisation chapter of the proposal, Chapter III, there is provision for the use of "innovative fishing gears". Article 24 of the TCMF Proposal states:

1. **When Member States submit joint recommendations in accordance with Article 19 to allow for the use or extend the use of innovative fishing gears including the pulse trawl as described in Part E of Annex V within a specific sea basin, they shall provide an assessment of the likely impacts of using such gears on the targeted species and on sensitive species and habitats.**

2. **Those assessments shall be evaluated by the STECF.**

3. **The use of innovative fishing gears shall not be permitted where those assessments indicate that their use will lead to negative impacts on sensitive habitats and non-target species.**

This briefing will explore the implications of the existing provisions in the TCMF Proposal, including of the removal of the existing prohibition on electrical pulse trawling. It will make recommendations regarding the processes and evidence needed if the use (or extension of use) of innovative gear is to be permitted, in this case through the adoption of a delegated act based on the joint recommendation.

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5 n.2.  
6 TCMF Proposal Article 19.  
7 n.1.  
8 TCMF Proposal Article 18(3).
1 Innovative fishing gear

Article 2 of the CFP Basic Regulation\(^9\) sets out a number of objectives, one of which is to ‘gradually eliminate discards, on a case-by-case basis, taking into account the best available scientific advice, by avoiding and reducing, as far as possible, unwanted catches, and by gradually ensuring that catches are landed’.\(^10\) The landing obligation, a key element of the reformed CFP, is seen as a key driver for improving selectivity to reduce unwanted catches. Innovation in fishing gears and methods therefore has an important role to play.

However, whilst innovation has the potential to be positive and contribute to the achievement of CFP objectives, there may be negative outcomes if such initiatives are not well designed or well controlled. Article 24 of the TCMF Proposal unfortunately does not specify what is meant by the term ‘innovative’ and, as a result, it is not clear what is or would be viewed as an innovative fishing gear. We would argue that to be innovative, along with reducing unwanted catches, fishing gear must as a whole be more environmentally sustainable, with a lower impact on marine ecosystems than existing conventional gears. This threshold would not only be in line with the CFP objective of fishing at sustainable levels (the MSY objective) but it would also be in line with implementation of the ecosystem-based approach to fisheries management.\(^11\) If we are to use the threshold of increased environmental sustainability, this raises concerns about pulse trawling, the ‘innovative’ gear that is specifically mentioned in Article 24 of the proposal. As discussed below, there is limited evidence to show that pulse trawling causes less harm to the marine environment than conventional beam trawling.

The lack of definition of ‘innovative fishing gears’ means uncertainty for Member States planning to submit joint recommendations to allow for the use, or extend the use, of certain gears that could potentially qualify as innovative, as well as other stakeholders following the process. The explicit inclusion of pulse trawling as an example of such a gear is likely to add to this uncertainty, for the reasons outlined below. To address this, ClientEarth recommends that Article 24 of the TCMF Proposal is amended during the co-decision process so that its wording clarifies that for a gear to be innovative it must have a lower impact on marine ecosystems than existing conventional gears.

1.1 What is pulse trawling?

‘Electric pulse trawl’ is defined in Article 6 of the TCMF Proposal as ‘a fishing technique which uses an electric field to catch fish. The pulse trawl gear consists of a number of electrodes, attached to the gear in the towing direction, that emit short electric pulses’. This is different to conventional beam trawling because, rather than dragging heavy chains across the sea bed, pulse trawling instead uses electrical pulses to cause muscle spasms in the fish, with the aim of moving the target species up into the net. The majority of EU vessels using this technique at present are in flatfish fisheries for sole and plaice, with the remainder in brown shrimp fisheries.

The existing technical measures framework\(^12\) placed a ban on the use of electric current in fishing gears. However, it contains a derogation (Article 31a) to allow the use of electrical pulse current by 5 per cent of a Member State’s beam trawl fleets - pulse trawling - in a certain,
specified area. The Netherlands was the main Member State to take up this option, using the derogation to distribute licences to its vessels and then later increasing these licences under provisions related to scientific research.\(^\text{13}\) However, the legal basis for the most substantial percentage of The Netherlands’ licences has been Article 14 of the Basic Regulation. Under this article, the number of licences increased by around fifty per cent, with the resulting number of licences representing a proportion of the Netherlands beam trawl fleet that is substantially more than the 5 per cent provided for in the current technical measures derogation.\(^\text{14}\)

Article 14 of the CFP Basic Regulation itself appears to support innovation and the development of innovative gears, though it does not specifically use the term. It states that Member States ‘may conduct pilot projects, based on the best available scientific advice and taking into account the opinions of the relevant Advisory Councils, with the aim of fully exploring all practicable methods for the avoidance, minimisation and elimination of unwanted catches in a fishery’. Though this article does not refer explicitly to innovation, it would seem logical that the development of innovative gears would result. What is unclear is the relationship between Article 14 of the CFP Basic Regulation and Article 24 of the TCMF proposal. Below we argue that, if an ‘innovative’ gear is to be permitted for wider use, i.e. as a commercial gear type as opposed to under a pilot project and/or for research purposes, it must still be subject to the Article 24 joint recommendation procedure, with the assessments and evaluations that that entails.

### 1.2 Pulse trawling as an innovative fishing gear?

Pulse trawling has, it seems, been seen as innovative for some time. It is portrayed as a potentially more "environmentally friendly" and economically viable method of fishing than traditional beam trawling. Whereas beam trawling is widely recognised as causing extensive damage to marine ecosystems,\(^\text{15}\) the lighter pulse trawling gear is argued to do less physical damage to the seabed, as well as reducing fuel costs and therefore potentially carbon emissions.\(^\text{16}\) However, as the following section shows, questions remain about the strength of evidence supporting the view that pulse trawling has lesser environmental impact.

#### Recommendations

To be classed as 'innovative' under Article 24 of the TCMF proposal, new fishing gears or methods must have a lower impact on marine ecosystems than existing conventional gears. Even where pilot projects for innovative gears are being conducted under Article 14 of the CFP Basic Regulation, the gears must still be subject to the Article 24 joint recommendation procedure, with the assessments and evaluations that that entails, if their use as a commercial gear, rather than as part of a pilot project, is to be permitted.

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\(^{13}\) Regulation 850/98 Article 43.

\(^{14}\) In March 2015 the figure was 23.4% (see Dutch Ministry response to North Sea Advisory Council questions at http://www.nsrac.org/wp-content/uploads/2015/01/Paper-4.2-Ams-to-Legal-frame.pdf), though we understand there has subsequently been a significant increase.


2 Scientific evidence to support the use of innovative fishing gears

When Member States submit joint recommendations regarding the use or extension of innovative fishing gears (including pulse trawl) within a specified sea basin, Article 24(1) of the TCMF Proposal requires that these must be accompanied by an assessment of the likely impacts of using such gears on targeted species and on sensitive species and habitats.

However, we believe there should be additional conditions placed on Member States (or other stakeholders) before innovative gears are widely adopted. If new gears or fishing methods are to be adopted as ‘innovative’, the scientific evidence contained in the assessments must be robust and clearly demonstrate that the gear causes less harm to marine ecosystems than conventional methods. This is likely to involve a comparison of different forms of environmental harm, for instance if a new ‘innovative’ gear reduces physical impacts but introduces new biogeochemical impacts. Additionally, the scientific evidence should relate not only to impacts on marine ecosystems from a single use of the gear, but it should also consider cumulative impacts. In the absence of evidence about such impacts, use or extension of use of the gear should not be permitted. Therefore, the need for an assessment of the likely impacts on marine ecosystems as a whole, including both singular and cumulative impacts, should be reflected in Article 24(1).

Article 19(5) of the TCMF Proposal requires that, '[w]here Member States submit joint recommendations for the establishment of technical measures... they shall provide scientific evidence to support the adoption of those measures'. Article 24(1) is not currently worded strongly enough to reflect this, and should be amended to be clearer on this point, clarifying that the assessment of likely impacts must be based on scientific evidence. Where no such evidence exists, no assessment can be made and permission to use the gear should not be granted.

Article 24(3) states that '[t]he use of innovative fishing gears shall not be permitted where those assessments indicate that their use will lead to negative impacts on sensitive habitats and non-target species'. This raises a few concerns. Firstly, it is essential that the scientific assessment informing the decision whether to permit the gear is independent, something which is not currently reflected in Article 24. Even if the Member State provides the necessary evidence in its assessment, it is important that this is then evaluated independently. Article 24(2) envisages this, requiring that ‘those assessments shall be evaluated by STECF’.

Secondly, this STECF evaluation must then be taken into account in the final decision about whether the innovative fishing gear should be permitted or not. However, the current wording of Article 24(3) is ambiguous on this front: ‘The use of innovative fishing gears shall not be permitted where the STECF evaluations conclude that their use will lead to the negative impacts specified, based on the Member State assessments. Its current wording suggests that the use of the gears will not be permitted where ‘negative impacts’ are demonstrated in the Member State assessments alone, rather than through independent evaluation. If the wording of this sub-article is to be retained, something we argue against below, the wording on this important point should be amended so this distinction is clear.
It should be noted that with regard to the effects that are to be considered, Articles 24(1) and 24(3) of the TCMF Proposal currently display a lack of consistency. Article 24(1) refers to impacts on "targeted species and sensitive species and habitats" whereas Article 24(3) refers to "sensitive habitats and non-target species". Two points are relevant here. The first is if 'sensitive species' is seen as interchangeable with 'non-target species', as this seems to suggest, then the same terms should be used throughout for reasons of clarity (though it is not clear that this is the case). Secondly, any negative impacts on marine ecosystems should be a reason to refuse permission if these are equal to or exceed the negative impacts of the conventional gears, with the aim being for innovative gears to have lower such impacts. Article 24(1) also refers to an assessment of the likely impacts on targeted species. This appears to be a recognition of the fact that whilst there will inevitably be an impact on those individuals of the targeted species caught in the net, there may still be undesirable negative impacts on those that come into contact with the gear but are not caught. On this basis, subject to the suggested change below, this sub-article should be amended to read 'negative impacts on the targeted species not caught by the gear, sensitive habitats and/or non-target species'. Such changes are more in line with the ecosystem-based approach to fisheries management by aiming to ensure that the impacts on the marine environment as a whole are assessed before the use of these innovative gears is permitted.

Perhaps most importantly, the current wording of Article 24(3) arguably has the wrong burden of proof. To require an indication that the gear will lead to negative impacts requires a positive action to demonstrate that such impacts exist before permission to use the gear is denied. If negative impacts are not demonstrated (for example, through a poor or limited assessment), this could make it more likely the permission will be granted. This is clearly not in line with the precautionary approach, a key CFP requirement. Although innovation is important, new gears or methods should not be permitted unless and until such negative impacts can be discounted, at the very minimum in such a way that it can be shown that the gear causes less harm to marine ecosystems than conventional methods. As such, it would be more appropriate, and in line with legal requirements, to amend this article so it reads 'the use of innovative fishing gears shall only be permitted where the STECF evaluation concludes that their use will have lower negative impacts on marine ecosystems than existing conventional gears, including on targeted species not caught by the gear, sensitive habitats and/or non-target species.'

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17 Article 2(2) CFP Basic Regulation.
Technical Measures and innovative fishing gears
November 2016

3 Case study on pulse trawling

3.1 Evidence regarding the impacts of pulse trawling

Though a number of scientific studies have been carried out regarding the impacts of pulse trawling on the marine environment, there are still large knowledge gaps in this area. For instance, while a number of tank-based experiments have been completed on the impact of electric current on the vertebrae of cod, a non-target species, but have produced varying, and overall non-conclusive results. 18 There is also limited evidence in other areas, for instance on the effects of the pulse trawl on reproduction and species with electro-receptor organs. An area where research has been particularly lacking relates to the impact of electric pulses on the wider marine ecosystem, particularly the functioning of benthic communities, which are central to the functioning of the ecosystem. In fact, the insufficient knowledge on the impacts of the pulse gear was recognised in a draft assessment for the Marine Stewardship Council (MSC) of the Netherlands sole and plaice pulse fishery, 19 which resulted in the fishery withdrawing from the MSC assessment and certification process. 20 Whilst research projects are beginning, 21 there remain distinct knowledge gaps regarding the immediate, delayed and long-term impacts of pulse trawl gear on marine species and ecosystems, whether through single or cumulative use.

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18 n.9 Annex 3 D.1 and D.3, noting that cod developed spinal injuries and haemorrhages in tank experiments and that "further research is needed into the morphological and physiological basis of the differences in vulnerability across the species".
19 'Assessment clarifies sustainability challenges for pulse trawl fishery': [https://www.msc.org/newsroom/news/assessment-clarifies-sustainability-challenges-for-pulse-trawl-fisheries](https://www.msc.org/newsroom/news/assessment-clarifies-sustainability-challenges-for-pulse-trawl-fisheries) which states "the draft assessment concludes that there is currently insufficient knowledge of the impacts of electric pulses on seabed ecosystems to state with certainty that pulse fishing does not have any significant impacts".
20 Status shown at [https://fisheries.msc.org/en/fisheries/cvo-pulse-sole-plaice/18@view](https://fisheries.msc.org/en/fisheries/cvo-pulse-sole-plaice/18@view).
In the face of this uncertainty there were, and remain, concerns about pulse trawling licences being granted on such a large scale in the Netherlands. This makes the inclusion of pulse trawling in Article 24 of the TCMF Proposal all the more questionable. Should the article be adopted unchanged, the pulse trawl would change from being a banned gear subject to a limited derogation to being a gear that is much more widely permitted (although still within the parameters set out in Annex V Part E; see below). However, if this happens, it will still be necessary for the evidential requirements outlined in section 2 to be met before pulse is permitted under Article 24 of the TCMF Proposal. Given the current lack of knowledge on the likely impacts on both targeted and non-targeted species, as well as the impacts on sensitive species and habitats as outlined above, it is difficult to see how the evidential requirements can be satisfied and therefore how the use of pulse gear can be permitted under the Article 24 process. This is particularly so given that studies to fill the knowledge gaps surrounding the pulse gear’s impacts are only recently underway. This means that the uncertainty as to these impacts may still exist when the TCMF regulation is introduced, possibly beyond.

3.2 Limitations on pulse trawling

The concerns regarding the use of pulse trawling without adequate scientific evidence on ecosystem impacts lead to concerns about possible requests to extend its use. In the existing technical measures framework there are a number of clear limitations on the use of pulse trawl. However, these limitations have been reduced in the Annex V Part E of the new TCMF Proposal. The clearest omission is the limitation on the use of pulse to 5% of a Member State’s beam trawl fleet, but there are also no references to the maximum electric power and voltage, for instance. The lack of control with regards to pulse trawling is an ongoing issue, with ICES recognising the "lack of progress in identifying critical pulse characteristics and subsequent testing which would allow conclusions to be drawn on whether the current proposed limits are sufficient or not". STECF had earlier concluded that "the critical barrier for lifting the derogation is control and enforcement and that the current provisions on the characteristics of the pulse trawl are not sufficient and not appropriate to prevent unregulated and harmful pulse trawl practices/technologies to be used". Whilst this report pre-dated the reformed CFP, it remains the case that control and enforcement procedures, though developed in the Netherlands, have not been implemented. This must be addressed, particularly in light of the removal of the prohibition on using such gear. There appears to be recognition by the European Commission that control is a big issue in relation to pulse trawling and therefore it is likely that the Commission will adopt an implementing act related to control and enforcement, as provided for in Article 27 of the TCMF Proposal. This article states that the Commission may adopt implementing acts establishing "detailed rules on the specifications of the fishing gear described in Part E of Annex V relating to restrictions on gear construction and the control and monitoring measures to be adopted by the flag Member State".

Article 19(2) of the TCMF Proposal also allows for the Commission to amend or supplement the measures in Annex V through the adoption of a delegated act. Coupled with Article 27, this provides the opportunity to introduce the same or stronger limitations on pulse trawling as are already in place under the current technical measures framework and, given its largely unknown...
impacts, this would be a positive step. However, a question remains whether legally it would be possible to extend the area of pulse trawling beyond the specified area of the North Sea through joint recommendations and the regionalised process. Whether legally permissible or not, we would have concerns about this expansion in light of the evidence gaps and the need to ensure equivalence in exploitation patterns and protection for sensitive species and habitats. As above, any expansion or extension of the use of this gear must be avoided until an independent assessment demonstrates that it does not have a higher negative impact on marine ecosystems than conventional beam trawling.

3.3 When should a joint recommendation be submitted?

Article 24 of the TCMF Proposal makes clear that joint recommendations can submitted by the Member States to allow for the use or extend the use of innovative fishing gears. However, there may be circumstances where an innovative fishing gear is already in use through a pilot project, which necessarily means it is at an experimental phase. Such projects include those conducted under Article 14 of the CFP Basic Regulation, or under scientific research provisions (both of which form the basis for pulse trawl licences). Innovative gears being used under these existing pilot projects must still be required to meet the Article 24 requirements in the same way as new innovative gears if their use (or extension of use) is to be permitted. Particularly given the ongoing concerns about the possible impacts of pulse, this means that the existing pulse trawl licences must be subject to re-evaluation in line with Article 24 if they are to have a permanently 'non-prohibited' status. This would appropriately link the data collected during pilot projects and the consideration for the adoption of innovative gears that may be permitted under Article 24 of the TCMF Proposal. Pilot projects should be seen as the experimental phase, providing evidence to input into the Article 24 process (which may or may not then permit the use of the gear in a delegated act).

Recommendations

Existing pilot projects for innovative fishing gears must still be required to meet the Article 24 requirements in the same way as new ones if their use (or extension of use) is to be permitted.

The lack of control and enforcement procedures for pulse trawling must be addressed, in particular before it can be permitted on a wider scale.

4 Innovative gears in Natura 2000 sites

When it comes to the use of 'innovative fishing gears' within Natura 2000 sites designated under the Habitats and Birds Directives, a much stronger test must be met, even where an assessment under Article 24 has been conducted and general use of the gear has been permitted. Article 6(3) of the Habitats Directive requires an appropriate assessment where the plan or project is likely to have a significant adverse effect on the site. The plan or project can only then go ahead if the appropriate assessment determines that it will not adversely affect the integrity of the site concerned.

26 see n.1.
In the adopted TCMF regulation, it must be made clear that the test set out in Article 6(3) of the Habitats Directive applies notwithstanding the assessment provision(s) in Article 24. With regards to pulse trawl gear, the remaining knowledge gaps regarding its impacts on the marine environment mean that the Habitats Directive’s test - that a plan or project cannot be permitted unless it is shown not to adversely affect the integrity of the site - cannot be met. Therefore, both existing and future pulse projects must not be permitted in these sites unless and until this can be demonstrated.

**Recommendation**

The use of innovative gears must only be permitted in Natura 2000 where the test set out in Article 6(3) of the Habitats Directive is met.

### 5 Conclusion

It is clear that innovation will play a key role in reducing unwanted catches as required by the reformed CFP. However, this drive for innovation should not come at the cost of the marine environment. The new technical measures framework agreed by the Council of Ministers and European Parliament must require robust scientific evidence to support the joint recommendations of Member States to use or extend the use of innovative gears. The new framework should also require that permission can only be granted where independent scientific evaluation concludes that innovative gears will cause less harm to marine ecosystems than conventional methods. Evidence must be provided regarding both the singular and cumulative impacts on the marine environment of using the gear.

In this briefing we have used pulse trawling as a case study for evaluating provisions in the TCMF Proposal relating to innovative fishing gear. There remains limited evidence regarding the environmental impacts of this gear, which means its existing widespread use is premature. This makes the removal of many of the limitations on this gear in the TCMF Proposal even more concerning. Should this provision be adopted, the need for strong supporting scientific evidence will still apply and it is difficult to see how pulse trawling will meet this need. As a result, restrictions on the use of this method must continue until such evidence exists. As innovation should be supported, in line with the conditions outlined above, Member States must endeavour to fill any gaps in scientific evidence for all candidate 'innovative gears' to allow for appropriate evaluation and fully informed decisions. The Commission also has a role to play, as it must be vigilant and only adopt delegated acts where robust evidence supporting the use of this gear exists.
ClientEarth is a non-profit environmental law organisation based in London, Brussels and Warsaw. We are activist lawyers working at the interface of law, science and policy. Using the power of the law, we develop legal strategies and tools to address major environmental issues.

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