Marine Resources – ensuring long term sustainability: remote electronic monitoring (REM) consultation

Scottish Government response report

August 2023

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Riaghaltas na h-Alba

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1. Overview

The Scottish Government's consultation on the use of Remote Electronic Monitoring (REM) for certain types of fishing vessels (or 'fleet segments') operating in Scottish waters ran from 15 March to 7 June 2022. The consultation sought views on the following:

- The general principles of REM and stakeholder views on those principles as they will apply across fleet segments - not just to those fleet segments consulted on at this stage.
- Formal consultation on mandatory REM requirements in the:
    1. Pelagic sector. The consultation outlined that this requirement is being implemented following the consultation, but views were sought on aspects of the policy.
    2. Scallop dredge sector. The consultation outlined that this requirement is being implemented following the consultation, but views were sought on aspects of the policy.
- Initial views regarding REM in the demersal sector, defined as mobile vessels with an overall length of 12 metres and over – specifically, large whitefish and mixed fishery vessels fishing in Scottish waters. The aim was not to formally consult on the implementation of REM for this sector, but to seek initial views from stakeholders on a range of options.

An external consultancy firm, Diffley Partnership, were appointed by the Scottish Government to undertake a detailed analysis of the consultation responses. A total of 48 valid responses were received to the consultation, with a mixture of respondents between individuals and organisations, and between environmental/conservation groups and fisheries organisations.

A report detailing this analysis has been published and can be found at http://www.gov.scot/ISBN/9781805256595. Following the analysis, the Scottish Government has considered the feedback received from stakeholders as part of the next stage of the policy development process. In addition, work has been undertaken within the Scottish Government, using the consultation feedback, to help further develop the REM system specifications, data pathway, operational plans and draft legislation. This work has involved experts from within the Scottish Government, particularly those with a compliance and science interest. Discussions have also taken place with other fisheries administrations in the UK regarding implementation of REM. Other Coastal State administrations have been notified of the development of our Scottish plans and their impact on non-Scottish vessels fishing in Scottish waters as the legislation will be applied on a 'level playing field' basis in relation to all relevant vessels fishing in Scottish waters, regardless of nationality.

This document sets out the Scottish Government response to each of the questions asked within the consultation, along with next steps. On a general level, in relation to the key aspects consulted on, we can confirm the following:

1) That legislation relating to the mandatory introduction of REM to all scallop dredge and pelagic vessels (including freezer vessels) fishing in Scottish waters and to all Scottish scallop dredge and pelagic vessels fishing outwith Scottish waters, will be introduced to the Scottish Parliament in 2023.
2) That further work will be undertaken to scope options for the wider use of REM in other fleet segments (specifically vessels in the demersal fleet with an overall length of 12 metres or more) but that this will be considered in conjunction with the development of the Scottish Government's Future Catching Policy (which has been subject to a separate but related consultation).
3) That we will seek to apply general principles to our use of REM in order to deliver a consistent approach to the use of REM in different fleet segments where possible. This particularly applies to the principle of a level playing field for relevant fishing activity in Scottish waters, with rules applying consistently to both Scottish and non-Scottish vessels within a relevant fleet segment when operating in Scottish waters.

For next steps, our immediate focus will be on the drafting of legislation for the Scottish Parliament to consider. This will deliver a requirement for mandatory REM for scallop dredge vessels which, will come into force following the successful completion of the parliamentary process. The final entry into force date of this REM requirement for scallop dredge vessels will be confirmed once the legislation is laid before the Scottish Parliament. This legislation will also deliver mandatory REM for pelagic vessels. Unlike scallop REM, which has been used on board some fishing vessels in Scotland since 2017, pelagic REM is a relatively new concept which has not been used on any significant scale by pelagic vessels previously. With this in mind, the pelagic legislative requirement will not take effect immediately, but will instead have a 24 month commencement period to enable an appropriate amount of time for vessels to source and install the required technology. Significant work will be needed in partnership with both the domestic and international fishing industries impacted as they prepare for the implementation of REM. This will include the production of guidance.

Scottish Government Response to Consultation Analysis

2. General

2.1 Q1: Do you agree that Scottish vessels required to use REM in the Scottish zone should also have REM operational when operating outside of the Scottish zone?

The consultation emphasised that REM would be operated on a level playing field basis, with the same legal requirements being applied to all vessels within a defined fleet segment when fishing in Scottish waters. However, the consultation also sought views on whether Scottish vessels required to use REM in the Scottish zone should also have REM operational when operating outside of the Scottish zone. Several potential benefits of this were highlighted in the consultation, including the potential to add to the richness of the data set, assisting with compliance, and delivering improved confidence and accountability for the Scottish fleet. The consultation highlighted that this proposal would mean additional monitoring technology would be required for Scottish vessels, over and above that required for other vessels outwith the Scottish zone.

In the consultation responses, there was a majority of support (57%) for Scottish vessels to be required to use REM both in and outside of the Scottish zone. For those who agreed with the proposal, they highlighted the potential improvements for sustainability and accountability, along with the potential for Scotland to demonstrate leadership and promote best practice to others – with the potential for other countries to follow Scotland's lead. Several responses also highlighted the potential for Scottish vessels to be non-compliant with legislation when outwith the Scottish zone, for example, by discarding outwith Scottish waters, if the REM requirement was not applied throughout the whole fishing trip.

There were also some concerns raised, with a number of responses highlighting that the proposal would go against the spirit of a level playing field, meaning that when fishing in non-Scottish waters, Scottish vessels would have to use technology and monitoring over and above that required for non-Scottish vessels. There were concerns that using REM was unnecessary given the widespread use of Automatic Identification Systems (AIS) and Vessel Monitoring System (VMS) technology as standard (although it should be noted that AIS and VMS are not the same as REM).

The Scottish Government has reviewed the responses to the consultation and, on balance, believes that the potential benefits to be had from Scottish vessels using REM both in and outwith Scottish waters outweigh any perceived negative impacts. The Scottish Government remains committed to ensuring that technology and legislation will be applied equally across all relevant fishing vessels within a relevant fleet segment when fishing in the Scottish zone on a level playing field basis. However, we also believe that there are significant benefits to be had from Scottish vessels keeping REM technology operational when outwith the Scottish zone. We also anticipate that other fisheries administrations would seek to make good use of REM technology on board their flag vessels, and that more widespread use of REM is likely to follow from the Scottish introduction of REM requirements. In that way, we want to show leadership and also help demonstrate to consumers and retailers

that Scottish fishing vessels operate in a legal and responsible way no matter where they fish.

We will therefore draft legislation which will require Scottish vessels meeting the REM criteria to have REM technology operational when fishing both in and outwith the Scottish zone, for the duration of the fishing trip.

2.2 Q2: Do you foresee any barriers to vessels meeting the costs associated with the REM systems themselves? This includes upfront and ongoing costs.

The consultation sought views on potential barriers to meeting the envisaged costs, setting out a range of options including whether costs should be met by industry (i.e. the owner(s) of fishing vessels), or paid for through some other means. The consultation outlined the costs split between pelagic, demersal and scallop vessels; then breaking costs down to the upfront cost of hardware (system and installation), the cost of data transfer including system software / licences and the ongoing maintenance of hardware and replacement kit. It should be noted that the figures used were estimates only and depend on the system configuration and also the supplier. The consultation recognised funding challenges could vary between fleet segments, and that grant funding might be appropriate in some circumstances for Scottish vessels. Other fisheries administrations are of course responsible for their own vessels and potential funding streams.

Several responses to the consultation identified barriers to vessels meeting the costs of REM, with fishing organisations particularly likely to not support vessel owners meeting the costs themselves. These responses highlighted existing and likely future challenges faced by the fishing industry. Of the minority of responses that did not foresee cost barriers, very few provided reasoning in their answers.

Most responses, not just from fishing organisations or individuals, suggested some funding assistance should be provided – typically from the Scottish Government - but tended to vary in the extent of funding which in their view should be met by the public purse; ranging from all costs for the duration of a system's lifecycle, to funding the initial (as opposed to ongoing, e.g., maintenance) costs.

Various responses acknowledged differing fleet segments would be impacted in different ways in relation to meeting the costs of REM, noting that these costs would be felt more acutely by smaller vessels. While the feedback does identify some potential barriers to vessel owners meeting the costs of REM themselves, the responses do acknowledge that these barriers are not met evenly across the different fleet segments.

Following review of the consultation responses and the feedback received, the Scottish Government believes that we should approach the issue of funding for REM on a fleet segment by fleet segment basis. This enables us to take account of the differences between Scottish fishing vessels and the relative affordability of meeting the costs associated with REM. This approach is reflected below.

2.2.1 For pelagic vessels

Based on the current profitability of the Scottish pelagic fishing fleet it is our view that the pelagic fleet is sufficiently well resourced to fund any REM changes without the need for public funding, due to the maximum purchase and installation costs being estimated to be less than 1% of the average vessel's annual net profit.

On this basis, owners of pelagic vessels will be responsible for all costs associated with sourcing, purchasing, installing and maintaining REM systems which meet the requirements set out in the system specification. Vessel owners will also be required to pay any costs, fees or charges associated with arranging and maintaining Scottish Ministers' access to data storage systems, for example, relating to data transfer and system software licences.

2.2.2 For scallop dredge vessels

Scottish Government officials have been working with the Scottish scallop dredge sector to deliver a voluntary programme deploying funded[1] REM systems on the active fleet. This work was initially adversely impacted by the Covid-19 pandemic but the vast majority of the active fleet now carry REM systems, with early adopters in the programme also benefitting from maintenance and licence fees for the first year after installation.

By the time draft legislation is laid in the Scottish Parliament - which will have the effect of requiring REM systems to be operational onboard all scallop dredge vessels fishing in the Scottish zone and onboard all Scottish scallop dredge vessels fishing outwith the Scottish zone - the active Scottish fleet will have had sufficient opportunity to take advantage of a fully funded REM installation.

Thereafter, vessel owners will be responsible for ongoing and maintenance costs (including costs associated with ensuring Scottish Ministers' access to data storage systems, for example, relating to data transfer and system software licences). When the funded REM systems reach their end of life, fishers will have had time to prepare for financing replacement devices.

REM technology continues to develop at pace, with an emerging market for devices produced specifically for smaller vessels. Working with our industry, we will keep abreast of such market developments.

2.2.3 For demersal vessels

We are not yet in a position of rolling out an REM requirement to this fleet segment. As the policy develops, we will undertake a cost/benefit analysis to determine how

[1] By way of grant funding received under the European Maritime and Fisheries Fund

the costs of REM systems should be met for this fleet segment. This will be subject to a Business and Regulatory Impact Assessment (BRIA).

2.3 Q3: Are you aware of any issues we need to take account of when we apply REM across all pelagic fishing fleets fishing in Scottish waters on a level playing field basis?

The consultation sought views on the application of REM to pelagic vessels on a level playing field basis within the Scottish zone. It set out the Scottish Government's intention to introduce a legal requirement for all pelagic vessels licenced to fish within the Scottish zone to have a fully operational REM system on board when fishing in the Scottish zone. The consultation highlighted that there are a range of non-Scottish vessels which fish for pelagic species in Scottish waters and asked for consultees to highlight any specific issues they anticipated with the legislation being applied on a level playing field basis in the Scottish zone.

Some responses highlighted issues that need to be taken into account when applying REM, examples of which are listed below. In addition, some consultees responded 'don't know' to the question, which is perhaps reflective of the stage that REM had reached in the development process at the time of the consultation and the complexity around the technical detail.

Issues highlighted included:

- consistency of monitoring across all nations, and ensuring that all REM is adequately monitored regardless of nationality
- the need for data sharing arrangements between administrations
- the need for verification that REM had been installed properly on Scottish and non-Scottish vessels
- the requirements for sufficient and timely assistance in the case of REM system breakdown and for a consistent and fair approach in the case of system failure
- the challenge of ensuring that technology is applied consistently and that it takes account of differences between pelagic vessels.

The responses to the consultation have been used to help develop the REM system specification, data pathway, operational plans and draft legislation. There are examples internationally of where REM has been deployed successfully on a level playing field basis, and a range of tools can help ensure consistency in approach. The majority of the issues above will be dealt with through the development of robust operational plans by Scottish Government compliance and science experts, to ensure that monitoring is consistent in terms of quantity and quality.

We are engaging with other fisheries administrations and will develop data sharing agreements as required. We are also building a level of system checking into our legislative requirements, so that we can ensure that an REM system has been installed according to the system specification, and that it meets the legal requirements – with remedial action needed if the requirements are not met. This will be consistent across Scottish and non-Scottish vessels.

We recognise that not all pelagic vessels are the same, and we have designed the system specification to accommodate differences in individual vessel layouts and operations. For example, the system specification is designed to ensure that key fishing, catch sampling, pumping and, where appropriate, freezing and processing activities on a vessel will be captured by the digital cameras, however, the number and position of the digital cameras required to achieve this overall outcome may differ between different vessels, to account for differences in individual vessel design, whilst also ensuring that the data requirements are met.

In relation to system breakdowns, we have taken on board the feedback from the consultation and will ensure that an appropriate approach is applied through the legislation to account for instances where this may occur.

3. Pelagic

3.1 Q4: Do you agree with the definition of pelagic vessels provided and are there any unintended consequences from using this definition?

The consultation defined pelagic vessels as “refrigerated Sea Water/Chilled Sea Water (RSW/CSW) and freezer vessels, over 12 metres, fishing for small pelagic and blue whiting.” This definition set out to be as encompassing as possible for all vessels which could be defined as pelagic vessels, and is thought to be applicable to the entire Scottish pelagic fleet (22 vessels), as well as the estimated 155 non-Scottish vessels which fish in the Scottish zone.

Responses were evenly split between those agreeing or disagreeing with the definition given. Respondents who felt the definition was not clear enough suggested other species such as Norway Pout or sandeel could be included. Others indicated defining net mesh size would be sufficient to define pelagic vessels, regardless of targeted species.

We have taken this feedback on board in order to most effectively ensure that REM requirements are fairly applied to all vessels which could be termed “pelagic”. We have taken the consultation responses into account in preparing a suitable legislative definition for pelagic vessels, which will apply to vessels with a length of 12 metres or over.

3.2 Q5: How much lead-in time should pelagic industry be given to prepare for compliance with the mandatory REM requirement?

The consultation asked, based on the information provided within the consultation paper, what an appropriate lead-in time would be for the pelagic industry to prepare to comply with the REM requirement. Noting that this was a new concept on board pelagic vessels in Scottish waters, the consultation took into account the potential logistical complexities associated with sourcing, producing and installing these new technologies on board. The consultation proposed that 12 months could be an appropriate timeframe between the date the legislation imposing the REM requirement becomes law (but with the requirement not entering into legal effect immediately) and the date of the REM requirement then coming into legal effect.

The majority of responses indicated that 12 months sounded like an appropriate amount of time, with some caveats including ongoing consultation with industry, allowances for extensions etc. A smaller group of respondents felt that 12 months was not appropriate – some arguing that the lead in time should be less than 6 months; while others felt that the complexities illustrated would necessitate a longer lead in time of approximately 36 months. Wider feedback not focussing on specific lead in times stressed the importance of consulting with non-UK vessels, and not setting arbitrary deadlines.

Whilst the complexities associated with this roll out cannot be overstated, following further consultation internally with electronic monitoring specialists and operational experts, it is felt that an appropriate lead-in time should not be more than 24 months in total, considering the requirement will be applied to non-Scottish vessels (including international) fishing in the Scottish zone, as well as to Scottish vessels. We intend to use this timeframe in the legislation.

3.3 Q6: Do you agree with the scientific and compliance benefits of REM for the pelagic fleet as set out in this document? Are there other benefits which you can consider, including to industry, the environment, or local communities?

The consultation outlined a number of potential benefits in relation to both science and compliance related to the deployment of REM onboard pelagic vessels. It also asked for feedback on any wider benefits that consultees could identify. The potential scientific benefits outlined in the consultation included providing verification around fishing activity and certainty around landings data, alongside the potential to supplement pelagic data sets to increase the veracity of stock assessments and advice.

For compliance, the potential benefits centred around the potential to demonstrate compliance with duties and obligations under relevant fisheries legislation, for example, the landing obligation, and to increase confidence in the fishing activity taking place.

The majority of responses to this question (74%) answered that they agreed with the scientific and compliance benefits set out within the consultation. For those that agreed, many responses noted the potential for increased richness and availability of data, and the potential to provide confidence in the wider supply chain, for example for consumers. Some identified that the consultation could have gone further in highlighting the polling data that can be gathered through REM systems (via GPS) and the potential to increase spatial data for marine planning purposes.

A number of responses highlighted the importance of making full use of the data gathered, and that the scientific benefits would be dependent on appropriate use being made. Some responses highlighted the importance of making data more readily available, for example to the broader research community. It was also highlighted that REM offered the potential to gather data on bycatch of other marine species which could help with wider marine management (not just in a fisheries context).

In relation to the potential compliance benefits, respondents noted that to be effective, enforcement authorities would need the right analysis tools and resources in place and a number of responses sought reassurance on this point.

For those responses that disagreed with the benefits outlined in the consultation, some queried the advanced monitoring systems and self-sampling schemes already in place for pelagic vessels, meaning that REM could be an inferior addition. In particular, there were a number of responses which disagreed that there would be any scientific benefits to the deployment of REM.

Some consultees felt that the compliance benefits outweighed the scientific benefits, and that the scientific element had been overplayed within the consultation.

The responses to this question in the consultation show a clear split in opinion regarding the potential benefits of REM deployment. A common thread running through the responses was in relation to the use of data, and the fact that the benefits would only be realised through proper analysis and interrogation. As outlined in this report already, to support the delivery of REM legislation, Scottish Government officials are developing operational plans which will apply for both the compliance and science functions. These operational plans seek to ensure that the benefits from REM data can be maximised, with appropriate monitoring taking place in order to deliver confidence and increased data that is fundamental to the success of the REM programme.

We take onboard the responses which have highlighted the often sophisticated systems that pelagic vessels already have onboard, and agree that the current systems in place help support the wider management of pelagic fisheries. We do not agree, however, that these systems negate the need for REM. A crucial part of effective fisheries management is ensuring that vessels are fishing in line with the legislation that is in place. REM will help deliver confidence that this is the case, and in turn this supports our confidence in scientific data and will enable us to demonstrate sustainability within the industry.

On balance, the Scottish Government believes that the benefits outlined within the consultation are correct. As we develop our operational plans, and start to implement REM on pelagic vessels, we will build in appropriate review points to ensure we can evaluate progress and demonstrate that the anticipated benefits are being met.

3.4 Q7: Do you agree that the system as outlined in section 3.4.2 (System specification) should be able to meet the benefits described in Section 3.3?

Further to question 6, the consultation outlined a draft system specification which was intended to support the delivery of the science and compliance benefits outlined in the previous section. The consultation indicated that the specification was in draft format and was therefore subject to change.

The majority of responses to this question agreed that the system specification could deliver the benefits outlined. A number of responses echoed the concerns already raised in relation to question 6, that the benefits from the REM proposals were not as

outlined and therefore it followed that the system specification would not realise those benefits.

There were a number of issues raised in the responses to this question, including:

- potential challenges with standardising systems across different vessel types and different countries which could undermine the level playing field principle.
- Questions around whether the technology was available to monitor the activities outlined in the consultation, for example the ability of cameras to monitor and determine composition, length and weight of fish.
- There were questions around the accuracy of pump rates and the variability of pump rates during the fishing operation.
- The ability of monitoring authorities to manage the large data sets which would be generated through REM.

The responses to the consultation have been used to develop the REM system specification, data pathway, operational plans and draft legislation. On standardisation, the Scottish Government believes that the system specification offers sufficient capacity to accommodate different layouts and vessel types, whilst ensuring that the basic requirement is applied on a level playing field basis. By approaching the REM requirement in a way that requires individual vessels to procure and install their own systems which must meet the system requirements, this will ensure that the systems are standardised, without requiring uniformity at a vessel level.

The system specification is designed to provide multiple forms of data, which will then be cross-referenced for analysis purposes. There are no single points of failure – for example, average pump rates can be compared with visual camera footage, which in turn can be cross-referenced with landings data in order to determine compliance with legislation and accuracy in terms of catch and landings data. For pelagic vessels, scientific technology in relation to machine learning (and the ability to determine composition, length and weight of fish) is not yet advanced enough to enable automated data analysis of REM data. Instead, for pelagic vessels, camera footage will be utilised by both science and compliance analysts, with visual verification taking place on a manual basis.

The operational and data collection plans being developed by science, compliance and analytical experts within the Scottish Government are focused on ensuring that appropriate data analysis of REM data can be carried out in such a way and at such a scale that will allow the benefits of REM to be realised. We are also considering what data sharing arrangements need to be in place and how we can engage with other fisheries authorities and experts to scale up the use of REM data and integrate it into our broader data collection plans. Further detail in relation to data will be provided with the Data Protection Impact Assessment that will accompany the legislation.

3.5 Q8: Do you foresee any specific operational problems with the system specification set out within the document?

This question within the consultation was intended to provide an opportunity for consultees to highlight any operational problems they thought might be associated with the system specification.

A number of responses flagged specific technical considerations relating to implementation of the REM systems. These included:

- Concerns around what would happen if a system malfunctioned at sea and whether or not a vessel would be required to return to port if the REM system stopped working – with some responses suggesting they should and others suggesting they shouldn't.
- The need for systems to be tamperproof
- Questions around how the system specification would apply to freezer vessels and whether or not the factory operation of freezer vessels would be covered by the REM system.
- Data security and privacy concerns.

As per the responses to previous questions, the responses to the consultation have been used to develop the REM system specification, data pathway, operational plans and draft legislation.

On system malfunctions, as per Question 3, we have taken on board the feedback from the consultation and will ensure that an appropriate approach is applied through the legislation to account for instances where this may occur.

On the need for systems to be tamper proof, this requirement is being incorporated into the system specification which REM systems must comply with under the REM legislation. In addition, the REM legislation will provide that if any person tampers with an REM system, that person, along with the master, the owner and the charterer (if any) of the fishing boat each commit an offence.

In relation to freezer vessels, following further engagement with experts, including those in other fisheries administrations, we will ensure that adequate coverage of the factory operation onboard freezer vessels is provided for within the legislation.

Finally, on data security and privacy concerns, these have been considered as part of the Data Protection Impact Assessment (DPIA) process. In addition, we have consulted with the Information Commissioner's Office on the data protection elements of the pelagic-specific REM provisions. A DPIA and privacy notice will be produced to support the legislation, including in relation to the use of REM data for law enforcement purposes (LEP).

3.6 Q9: Do you believe that we should require net sensor data as part of the system specification at this point?

The consultation asked whether net sensor data would be desirable in any finalised REM specification. Net sensor data was flagged as having the potential to add another point of verification in relation to catch levels, which in turn could be compared to estimates of catch via camera footage and landings data.

A majority of respondents were in favour of requiring net sensor data as part of the system specification, although some of these responses focused on sensor data in general rather than just net sensors. Conservation organisations were more likely to support the addition – flagging the potential to monitor catch to deliver more scientific benefits of the data collected from the system. Others felt the addition of this technology should be considered separately from the general introduction of REM.

Respondents opposed to the addition of this requirement indicated concerns about whether the sensors would be able to deliver accurate data, and that the requirement would introduce additional costs to what was perceived to be an already expensive requirement.

Further internal discussions with operational experts within the Scottish Government have indicated that while the addition of net sensor data may be helpful, it would not be essential for the system to still deliver on the intended benefits. Given also that net sensor technology as applied here is still in its relative infancy, we do not intend that net sensors will be a required component at this stage of the REM roll-out. This will be reviewed going forwards.

It should be noted that the system specification for REM systems will include the use of winch sensors, which will indicate the shooting and hauling of fishing nets, and which are an established part of REM technology.

4. Scallops

4.1 Q10: Are you aware of any issues we need to take account of when we apply REM requirements consistently across all scallop dredge vessels in the Scottish zone, regardless of scallop species being targeted or number of dredges being deployed?

The consultation sought views on the application of REM to all scallop dredge vessels within the Scottish zone on a level playing field basis. It set out that the Scottish Government's intention to widen the application of established REM provisions[2] to ensure that all vessels carrying and/or deploying scallop dredge gear in the Scottish zone have a fully operational REM system installed on-board that meets specified standards. In doing so, the new REM requirements would be separated from the existing restrictions on the number of dredges which can be deployed when fishing for king scallops.

Since the consultation, the Scottish Government has been reviewing whether it is necessary to require REM on all vessels carrying and/or deploying scallop dredge gear in the Scottish zone. Following further internal discussion with operational experts, the legislation will require functioning REM systems to be installed onboard all scallop dredge vessels which deploy scallop dredges in the Scottish zone. The REM systems on board these vessels will be required to be operational during any fishing trip in the Scottish zone during which the vessel deploys scallop dredges.

[2] The Regulation of Scallop Fishing (Scotland) Order 2017 (legislation.gov.uk)

The legislation will also require functional REM systems to be installed onboard all Scottish scallop dredge vessels which deploy scallop dredge gear outwith the Scottish zone. The REM systems on board these Scottish vessels will be required to be operational during any fishing trip (whether in or outwith the Scottish zone) during which the vessel deploys scallop dredges.

A number of responses highlighted issues that should be taken into account when applying REM, including:

- Ensuring that REM monitoring and enforcement is consistent across fisheries administrations, with data sharing arrangements in place as necessary.
- A need for clarification on the procedure to be followed in the case of system failure.
- That the REM specification should specify an illumination requirement to ensure monitoring is possible at night.
- That fishers should have access to their own data to defend any allegations against them, including gear conflict or fishing in restricted areas.
- Concerns about privacy, particularly onboard smaller scallop dredge vessels and the practicalities of transmitting data at sea.
- A need for vessels that cannot fit any more dredges per side to be offered an incentive to install REM.
- That more cameras should be used to monitor catch composition and discards.

The responses to the consultation are being used to help refine the REM system specification, data pathway, operational plans and draft legislation.

As with pelagic REM, we are engaging with other fisheries administrations, including in relation to data sharing agreements. We are also building a level of system checking into our legislative requirements, so that we can ensure that an REM system has been installed according to the system specification, and that it meets the legislative requirements – with remedial action needed if the requirements are not met. This will be consistent across Scottish and non-Scottish vessels deploying scallop dredges in the Scottish zone and for Scottish vessels deploying scallop dredges outwith the Scottish zone. Furthermore, in relation to system breakdowns, we have taken on board the feedback from the consultation and will ensure that an appropriate approach is applied through the legislation to account for instances where this may occur.

We have been applying the feedback received alongside our experiences of monitoring some scallop dredge vessels that have been required to carry an REM system (including GPS, winch sensors and two digital cameras) in Scottish waters since 2017. The systems of choice have tended to include cameras with an infra-red (IR) mode, which allows the deck area to be seen when there is insufficient illumination. However, as we draft the legislation for the Scottish Parliament to consider, we will assess with experts whether an illumination requirement, and other suggestions, should be used to fine-tune the requirements of a REM system. We note suggestions that more cameras should be used to monitor catch composition and discards and our response is provided below, under Question 11.

REM systems already on the market can provide vessel owners with access to their data which they can choose to share. Experience shows that fishers have used their REM data to address gear conflict tensions and to inform developments in the marine environment, such as offshore renewable developments and aquaculture licencing. Analysts in the Scottish Government can also provide data to assist the owner(s) of the scallop vessel in question with regards to claims.

In relation to privacy concerns, we have consulted with the Information Commissioner's Office (ICO), as required under the retained General Data Protection Regulation, in relation to the data processing resulting from imposing the new REM requirements for scallop dredge vessels. The Scottish Government is satisfied that the measures and mitigations that we have in place for processing personal data on all sizes of scallop vessels are sufficient, including, where required, using a filter to mask some areas of the deck.

4.2 Q11: Do you agree that REM requirements on vessels carrying and/or deploying scallop dredge gear in the Scottish zone should be broadly aligned to existing REM requirements provided for in Regulation 6 of the 2017 Order?

Whilst many agreed that it would be useful to align with article 6 of the 2017 Order, the responses to this question in the consultation tended to be dominated by suggestions that the REM system requirements should include more cameras, in particular to monitor bycatch and discards but also for safety and crew welfare.

The Scottish Government recognises the potential of REM and shares some of the ambitions set on in the consultation responses. However, we also recognise that this ambition needs to be tempered with realistic expectations of what technology can currently deliver, what/how data can be analysed and different working environments onboard fishing vessels.

The consultation paper did set out that in the future it may be possible to use cameras on scallop dredge vessels to monitor catch composition and obtain the biological data (age and measurements of scallops) required for stock assessments by analysing video footage or images rather than sampling landings at markets and processors. It also recognised that preliminary studies suggests that the shape and orientation of scallops and the catch sorting and handling systems on board dredgers make this particularly problematic, compared to fin fish identification and measurement systems but that purpose-designed REM development work is ongoing.

Our Future Catching Policy is currently under development and requires further discussion with stakeholders regarding levels of bycatch in different sectors, and appropriate measures to tackle that bycatch. Introducing REM to support this may be helpful in the future, but our intention is to develop the two policy areas in conjunction rather than out of step.

Our REM policy is leading the way, ahead of the other UK fisheries administrations and the EU. Any catch composition and bycatch determination specifically for the scallop fleet via REM will require trial and error development (in challenging onboard

working environments for a diverse fleet) and this is why it is not being legislated for at present. As the technology develops, we will of course consider the viability of further data collection.

As noted above, the intention is now that the legislation will require vessels to have REM functional for the duration of any voyage where scallop dredges are deployed in the Scottish zone (and, for a Scottish registered vessel, for the duration of any voyage where it deploys scallop dredges, wherever it deploys these).

4.3 Q12: Do you consider that any other changes (in addition to the ability to record footage to a minimum of 5 Frames per Second) should be made to the REM system specification?

The consultation analysis report by Diffley Partnership notes that there was a level of overlap between Questions 11 and 12 where respondents began offering notes and suggestions alongside their dis/agreement with the proposal. The Scottish Government's response in relation to suggestions that the system should be expanded and more cameras should employed is provided above, under Question 11 where we talk about potential future aspirations for REM.

In other responses to this question, there was discussion about data transfer and efficiency, with some suggestion that trials would be required in some areas, and queries in relation to enforcement activity should there be mismatches between elog data and REM data, or if a REM system had a fault but those onboard were unaware.

In relation to data, REM systems on the market use satellite and/or mobile phone technology. For vessels using REM systems with mobile phone technology, the data upload is dependent on the 3g/4g network signal. Where there is no signal the REM device can store the data and transmit it at the next available opportunity when back in signal range. Enforcement officers have been monitoring some scallop dredge vessels for a number of years throughout Scottish waters (in accordance with the 2017 Order). Experience has shown that, whilst at times data upload in some particularly remote locations may take a longer than other locations, there are no general concerns about data transfer using mobile or satellite based systems.

Furthermore, systems on the market have the capacity to include a monitor in the wheelhouse that shows the live feed from the cameras onboard. Systems can also have the capability to run diagnostic checks allowing the functionality of cameras and sensors to be checked - in harbour or during a voyage. Our intention is to retain the existing requirement (currently set out in article 6(4)(e) of the 2017 Order) which provides that the REM system must have a means of enabling the master to view the recorded data in real time on board the fishing boat on which the system is installed.

We note the concern should the time of shooting depicted from an REM system not match that vessel's e-log data. However, the legal requirement is that vessels of 12 metres or more in length, that operate an elog, are required to complete a fishing activity report (FAR) every 24 hours[3]. During that 24 hour period there can be

[3] [3] Article 15.1 of Council Regulation (EC) No 1224/2009 of 20 November 2009 (retained EU law).

multiple fishing operations. There is no current requirement for scallop dredge vessels to report on a haul by haul basis.

5. Further rollout

5.1 Q13: What is your view in relation to the various options outlined for deployment of REM to parts of the demersal fleet as outlined in Section 5: REM for large demersal vessels?

In addition to questions around the mandatory introduction of REM to the scallop dredge and pelagic fleet segments, the consultation also sought views on various options for deployment of REM to other parts of the demersal fleet, namely large demersal vessels 12 metres or more in length. Several options were set out, including the use of reference fleets, and broader rollout on a fleet segment basis. The consultation also asked for feedback on alternative options which could be considered. This part of the consultation had a direct read across to the separate Scottish Government consultation on the development of Scotland's Future Catching Policy, which suggested that monitoring and enforcement options will need to be considered alongside development of that policy.

There were differing views from respondents in relation to the use of a reference fleet. Some thought this would be the preferable way forward, with advantages including the potential to provide useful data on bycatch and the potential to test REM ahead of any wider rollout. It was also felt by some that observers could be used in conjunction with reference fleets to provide data which might be richer than just through REM alone. Some responses suggested that lessons could be learned from other international examples, for example, Norway.

There were a number of responses which thought the use of reference fleets might be problematic. In particular, there were concerns that REM needed to be deployed on a level playing field basis so as to not unfairly disadvantage Scottish vessels, and that a reference fleet might make this difficult to achieve. Other responses thought that reference fleets might lead to an over-representation of vessels who were already compliant and therefore would lead to an inaccurate recording of fleet and fishing activity. It was suggested that this might be overcome if reference fleets were randomly selected.

Many responses felt a broader rollout of REM was preferable to the use of a reference fleet. It was noted that this might have longer lead in times and be more complex to deliver, but that the potential benefits would make it worthwhile. In particular, some responses pointed to the need to ensure widespread compliance with obligations under applicable legislation, such as the landing obligation and that a broad rollout of REM could assist with this.

A number of responses highlighted the potential to focus REM on high-risk parts of the fishing fleet. Others suggested it would be an effective way of increasing understanding and monitoring of fleets such as gillnets and longlines in order to improve management.

A number of other views were raised in the consultation responses, in particular around whether or not REM has a place in fisheries management particularly when there are issues around availability of quota and so-called ‘choke risks’ under the landing obligation.

The responses to this question in the consultation were varied, with no absolute and collective view on the wider deployment of REM in the future. This part of the consultation will be used to inform future policy development in step with policy development on the Future Catching Policy. The Scottish Government recognises the potential benefits that REM can deliver and there is a broad direction of travel towards increased monitoring and the greater use of innovative technology where significant compliance and scientific benefits can be realised.

As set out in the consultation on the Future Catching Policy (FCP), we want to consider monitoring and enforcement options alongside the development of the FCP and therefore intend to use the feedback received as part of this section of the REM consultation in that context.

6. Business and Regulatory Impact Assessment (BRIA)

6.1 Q14: Taking into account the Business and Regulatory Impact Assessment (BRIA) supplementing this consultation, do you have any comments or views which you would like to put forward?

The consultation was supplemented by a partial Business and Regulatory Impact Assessment (BRIA), providing an assessment of how the proposed REM requirement would impact businesses. Owing to the open nature of the question, views were varied.

Some respondents felt the issues identified in the BRIA warranted discussion separately to the consultation, such as in forums like the Fisheries Management and Conservation group (FMAC). Others noted the BRIA did not cost the analysis steps associated with REM data, expressing doubts that analysis of REM data by fisheries authorities would be comprehensive. A more general comment felt the government was not best placed to make assertations on competitiveness in relation to private businesses. Whether or not this may be the case, the Scottish Government has a statutory duty to explore the likely costs, benefits and risks of any proposed legislation.

These viewpoints will be taken on board in the development of the BRIA being prepared to accompany the planned legislation. In particular, the internal costs to the Scottish Government of using REM data for both compliance and science purposes will be further developed.

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