

## MORAY FIRTH RENEWABLES ADVISORY GROUP (MFRAG) MEETING AGENDA

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| <b>Meeting</b>       | MFRAG Marine Mammals Subgroup   |   |
| <b>Date</b>          | 26 May 2021. 09:30 – 12:30  |   |
| <b>Location</b>      | Teams Call  |   |
| <b>Attendees</b>     | Marine Scotland Science (MSS)   | Jared Wilson (JW) [Chair], Ross Culloch (RC), Sue O'Brien (SB), Kate Brookes (KB) |
|                      | Marine Scotland - Policy  | Janelle Braithwaite (JB)  |
|                      | Marine Scotland Licensing and Operations Team (MS-LOT)                                  | Gayle Holland (GH)  |
|                      | NatureScot (NS)   | Erica Knott (EK), Chris Eastham (CE), Caroline Carter (CC)                        |
|                      | Joint Nature Conservation Committee (JNCC)  | Karen Hall (KH)   |
|                      | University of Aberdeen  | Paul Thompson (PT), Isla Graham (IG), Barbara Cheney (BC)                         |
|                      | Whale and Dolphin Conservation (WDC)  | Sarah Dolman (SD), Fiona Read (FR)  |
|                      | BOWL  | Joseph Deimel (JD)  |
|                      | Moray East  | Catarina Rei (CR), Ruaridh Danaher (RD)   |
|                      | Moray West  | Nuria Abad Oliva (NAO)  |
|                      | Joint Nature Conservation Committee (JNCC)  | Sarah Canning (SC)  |
| <b>Action Number</b> | <b>Action</b>   | <b>Completion Date</b>  |
| <b>1</b>             | JD to investigate sharing of over-trawl methodology with MFRAG.                         | August 2021   |
| <b>2</b>             | GH to discuss internally with MS-LOT what the survey priorities are for the BOWL site.  | June 2021   |
| <b>3</b>             | MFRAG Secretariat to set up meeting for August to discuss post-construction monitoring. | June 2021   |
| <b>4</b>             | NatureScot/MSS to develop monitoring proposals for discussion at the August meeting.    | August 2021   |

### 1. Introductions & Meeting Objectives

Introductions made.

A request was made to discuss over-trawl surveys under AOB.

## 2. Review of Actions from Previous Meeting (30 October 2020)

1. Group to decide who to prepare guidance (e.g. MFRAG or members of MFRAG e.g. MSS and NatureScot).

Action to be carried over.

2. PT to provide MFRAG – MM with update on analysis of UXO monitoring data being undertaken by NPL and Loughborough University

Action ongoing – PT had asked Steven Robinson (NPL) to present at the last MFRAG meeting but that was not possible. PT will try to give an update on UXO at the next meeting.

3. JD to develop reporting template for quarterly update reports and complete for next quarter.

Action complete.

4. Moray West to arrange meeting with Moray East, MSS, NatureScot, Cefas, SMRUC, Paul Thompson and MSLOT (GH) week commencing 23rd November to further discuss monitoring data and CF for Moray West.

Action complete – meeting was held W/C 23rd November 2020.

5. MFRAG group to provide comments on scope of the Moray East PSIR by 13th November 2020.  
13th November 2020

Action complete.

6. Moray West to arrange meeting with PT, BOWL, ME, MSS, MS-Policy and NatureScot in early 2021 to discuss longer term project and strategic monitoring requirements including links to ScotMER evidence maps (based on feedback / discussions from ScotMER symposium). Also include discussion with Carol Sparling (SMRU)

Action completed in February 2021.

7. PT to share details of proposal for NERC Sustainable Management of Marine Resources funding round.

Action ongoing - PT noted that this action will be complete in a few weeks. Outcomes of NERC round to be circulated to group.

8. JW to follow up with Moray East and Moray West to understand level of interest in HERNOW proposal.

Action completed 20th November 2020.

9. Deadline for letters of support to PT and UoA for wind farm case studies for REF 21 by start December 2020.

Action complete.

### 3 Moray West Project

#### 3.1 Moray West project update

NA presented project update slides – the presentation accompanies these minutes. Major points included:

- S36 consent variation has been submitted.
- Site investigations estimated to commence June/July 2021. The EPS application required for the proposed geophysical surveys was re-submitted to MS-LOT on 6 May 2021.
- Aerial surveys are ongoing – 3 completed.
- Marine mammal monitoring commenced at the end of April 2021.
- Proposal for pre-construction commercial fisheries monitoring is currently being prepared.
- Project design is being refined – site layout, and inter-array and export cable design.
- Piling strategy is being drafted; a range of Conversion factors are being used (1%, 4% and 10%), and there will be three potential pile driving profiles accounting for low/medium/high piling refusal risk.
- Commencement of offshore construction planned for early 2023.
- Consent Plan submission period: from Q3 2021 to Q2 2022

#### 3.2 Moray West monitoring update

NA gave a monitoring update

Key objective of pre-construction marine mammal monitoring is to gather baseline data on presence and habitat used of the Moray West site by priority species. The primary drivers for monitoring are:

- Harbour porpoise distribution and noise exposure resulting from Moray West construction activities.
- Updating information on minke whale fine scale seasonal and spatial distributions to inform piling.
- Long-term cumulative impacts on Moray Firth bottlenose dolphin and harbour seal populations.

Contribution to long-term data collection through deployment of broad band receiver and c-pods.

Also analysing digital imagery collected during aerial surveys.

PT noted that the 4 moored c-pods have been installed at pre-selected monitoring sites, broad band receiver is on hold.

Moray West will also analyse digital imagery of marine mammals sighted during the on-going aerial digital surveys.

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| <b>4 BOWL Project</b>   |
| <b>4.1 BOWL project update</b>  |
| <p>BOWL project update (JD)<br/> O&amp;M work is ongoing, including maintenance.<br/> Preparations ongoing for OfTW transfer.</p>   |
| <b>4.2 BOWL monitoring update</b>   |
| <p>Over-trawl:<br/> JD explained over-trawl surveys scheduled to start in late June – trawl corridors will criss-cross the wind farm site (between all pairs of turbines), and a small number of over-trawls will take place over the export cable. Scottish Fishermens’ Federation (SFF) will be carrying out the surveys. They will take approx. 4 weeks to carry out surveys and BOWL will need to investigate the site afterwards. It is expected that survey work will be able to recommence following these post-survey investigations.<br/> PT – may be things we can learn from the over-trawl surveys.<br/> JW – can data be gathered during trawls.<br/> PT – for MSS to advise on what data can be collected. Can caught fish be captured? Can SFF methodology be shared with group – there would be interest from other groups. Suggested via MS-LOT.<br/> EK – asked if over-trawl survey methodology can be shared with MFRAG.<br/> SC – not sure if any fish are collected during over-trawl. Over-trawl methods from a couple of years ago did not catch fish, this may have changed. SFF may be willing to present their methodology to the group.<br/> EK queried implications of any gear snagging during over-trawls; what would happen? Implications for future levels of fishing.<br/> JD explained that any concerns arising would be discussed with fisheries representatives. Difficult to predict future levels of fishing.<br/> GH – could marine mammal monitoring planned for June be delayed until August (after over-trawls scheduled to be completed)?<br/> PT – accepts that June wouldn’t be possible for the monitoring, and that access to the site in August isn’t guaranteed, as there may be delays to over-trawl implementation. Also, there may be intense fishing activity immediately following over-trawl surveys; this would put equipment at risk. Therefore the proposed monitoring at BOWL has been removed from the programme.<br/> KB – the monitoring by UoA would also have been used by MSS to study potential ADD effects on salmon.<br/> GH – would like to raise with MS-LOT what the survey priorities are for the BOWL site.<br/> PT – does over-trawl pose a risk to marine mammal monitoring equipment positioned near to the site?<br/> JD – over-trawl surveys will be designed with a buffer zone i.e. will start from within the site boundary, to avoid previously-installed monitoring equipment.</p> |

CR/RD provided an update on over-trawl at Moray East. They are seeking to conduct two separate over-trawl trials. Currently in discussions with Scottish Fishermen’s Federation regarding surveys over the export cable, these are planned to happen in the next couple of months at approximately 15 locations. For the inter-array cables, as only 150m of cable required rock protection, over-trawls will be much less onerous.

BOWL post-construction marine mammal monitoring proposals:

JD stated that current BOWL proposal is to make financial contributions to the long-term Moray Firth monitoring programme, from 2022 onwards.

Full group – discussion of potential monitoring options. Agreement that it would be helpful for NatureScot and MSS to develop some proposals.

JW suggested it would be beneficial to have an additional meeting between developers and regulators/interested parties to agree post-construction monitoring.

Other monitoring at BOWL:

JD – the year 2 post-construction benthic surveys are planned for June 2021.

Sandeel and cod surveys were completed in October 2020, and the reports are currently being QC-ed.

The second year of post-construction aerial bird surveys are planned to start in May 2021.

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| <b>Actions</b> | <ol style="list-style-type: none"> <li>1. JD to investigate sharing of over-trawl methodology with MFRAG.</li> <li>2. GH will discuss internally with MS-LOT what the survey priorities are for the BOWL site.</li> <li>3. MFRAG Secretariat to set up meeting for August to discuss post-construction monitoring.</li> <li>4. NatureScot/MSS to develop monitoring proposals for discussion at the August meeting.</li> </ol> |
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**5 Moray East Project**

**5.1 Moray East project update**

Moray East project update

RD presented construction update slides. Major points included:

- Since the previous MFRAG-MM meeting the IAC installation campaigns broadly completed. Approx. 150m of cable remains unburied – discussions on mechanical protection ongoing.
- Briefing note was provided to the CFWG updating the group on construction progress, specifically in light of the squid fishing season which results in fishing activity within the site during construction.
- For the export cable all mechanical protection is in place.
- Final commissioning is planned for 2022.
- Piling strategy implementation report; installation has taken 60-90 mins per pin pile, in comparison to the predicted 390 mins.
- Blow Counts were also lower than expected – 2,352 on average v predicted of 16,650.

- <Max hammer energy used was 2,071 kJ, with the minimum being 628 kJ.
- Mitigation included ADDs & soft start piling.
- The ADD's were deployed and activated on 131 occasions.
- Deviations to protocol as agreed with MS-LOT – on 7 occasions ADDs activated for more than ten minutes.
- Regarding the soft start, the starting hammer energy was mostly undertaken within the parameters agreed within the PS. On 4 occasions the energy was higher than agreed.
- Max. hammer energy – on two occasions the maximum hammer energy during soft start was higher than that agreed within the PS (> 500 kJ).
- Deviations to protocol as agreed with MS-LOT - on four instances there was an agreed amended soft start procedure with a quicker soft start (less than 20 mins).
- No marine mammals were recorded during times of active mitigation (pre-watch) or piling activity.

## 5.2 Moray East monitoring update

Moray East post-construction monitoring:

RD - no discussions as yet internally or externally on the scope of post-construction marine mammal monitoring, but potentially to be based around population monitoring.

## 6 Lessons learnt from monitoring so far – Paul Thompson, University of Aberdeen

MMMP looked to more than focused studies – also considered monitoring of regional SAC populations.

Ongoing consideration of what University of Aberdeen research team could offer. Discussions with developer engineering teams as to what is achievable.

We may need to re-assess the concept of post-construction monitoring, so that we're thinking about cumulative impacts of wind farm construction. If we wait for post-construction monitoring till all sites in the Moray Firth cluster are built, it could be halfway through the Beatrice operational phase.

Opportunities:

Are there long-term cumulative impacts on key receptor populations (bottlenose dolphin and harbour seal)?

How does the presence of existing OWFs affect:

- a) Prey populations
- b) At-sea distribution (and therefore noise exposure) of harbour porpoise/harbour seal - do OWFs provide new habitat?
- c) Responses of porpoises and seals to piling
- d) Energetic consequences of disturbance

PT – keen to help deliver monitoring now, and work in an advisory capacity going forward.

Monitoring plans need to be confirmed now.

How can the Moray Firth work be integrated into broader strategic programmes?

## **7 Briefing on OWEC PrePARED Project proposals – Sue O’Brien, MSS**

The main aim of the project is to collect data on fish, marine mammals and seabirds concurrently, to evaluate how changes to prey in response to offshore wind farm development affects predators (mammals and birds). Originally there were two separate proposals submitted to OWEC: marine mammals + prey in the Moray Firth and seabirds + prey in the Forth and Tay (both associated to the HERNOW / ReCREATES proposals). Advice from OWEC was to merge these which was done (as the PrePARED proposal).

Birds – kittiwake, guillemot, razorbill and puffin (Forth and Tay focussed) and marine mammals – a focus on harbour porpoise but also seals and dolphin spp. (Moray Firth focussed).

Proposals include fish acoustic surveys / trawls / baited camera traps / tagging of some gadoid fish. Looking at how OWF development influences biomass, communities etc.

PT - in Moray Firth, work would be a collaboration between universities of Aberdeen and Exeter, and MSS plus SMRU Consulting and Aarhus Uni (for DEPONS model work). Would investigate whether marine mammal responses to pile driving at Moray West change because of good quality habitat in adjacent wind farms. Moray Firth findings would be incorporated into DEPONS.

For Moray West piling, monitoring will repeat what has been done at BOWL and Moray East. Fine-tune monitoring in 2022. Additional work on harbour seal monitoring, as distribution/behaviour may be influenced by Moray East and BOWL.

Other partners include UKCEH, BioSS, NatureScot and Natural England. . Goal is to reduce uncertainty in impact assessment, to feed into spatial planning, to understand potential benefits of OWF deployment, including environmental net gain.

Project Advisory Group will include Crown Estate / CES, BEIS, MS-LOT, developers and others.

It is expected that OWEC will provide a decision on funding of the PrePARED project in August 2021.

## **8 Objectives for post-construction monitoring**

JW – what are the most helpful issues that post-construction monitoring could address, how would this link to OWEC work?

PT – OWEC project includes all the fieldwork for the ‘prey’ work but none of the fieldwork for the ‘Marine Mammal’ work. Provides added value to the type of monitoring carried out so far at Moray East and Beatrice. Emerging questions – how to characterise shifting baselines in distribution and results of this. Also – differences between jacket designs. Harbour porpoise are main players for on-site work, and results from this species transferable to other areas.

CR – Ocean Winds were approached by Heriot Watt in March 2021 regarding the CHASANS project to monitor benthic community development. Could this be a useful component of ecosystem-level monitoring?

PT – the current PrePARED proposal took out some of the lower-scale trophic monitoring, fine scale current effects etc. CR interested in discussing.

JW – if OWEC project were to be funded, opportunities for other research groups to come in and look at lower trophic levels.

CR – strategic monitoring more useful than specific. A need to look at in regard to Moray East and BOWL, whether monitoring is contributing to OWEC? So that it is not replicating work done



elsewhere. Would long-term monitoring for bottlenose dolphin and harbour porpoise be useful? Potentially ongoing monitoring, plus something else.

PT – not just a case of contributing to OWEC. Potential for parallel developer group looking to cover ongoing monitoring, plus noise responses. ‘Industry consortium’. Is there agreement we can do monitoring for post-construction while construction work is ongoing?

CR – would it be focussed on O&M activities? Noise outputs of jack-up vessels etc? Scheduled activities etc? If we want to understand this, how do we distinguish between these and construction work nearby?

PT – everything is driven by year-to-year variability, and presence of OWFs may attract fish, which may result in increased fishing activity. How do these factors interact?

EK – wider issues at play than population levels. Will still need to have ongoing Site Condition Monitoring – harbour porpoise / bottlenose dolphin / harbour seal, and also minke whale for Moray West. Other factors – different vessels during O&M.

Will need to have monitoring principles agreed, and review every few years.

CC – it’s difficult to say what post-construction monitoring should be. Having adjacent projects at different construction phases is a complicating factor. What can we monitor that would be most useful for locations where several wind farms will be constructed? Need to leave room for manoeuvre.

PT – need to be in a position where able to respond to new questions.

CR - hopefully technology may develop to help monitoring.

PT – there will be some advances. Also need to look at how monitoring can be carried out with less carbon emissions. Boat time is a major vulnerability.

CR - how best to deliver meaningful monitoring? What would priorities be?

RC – cumulative impacts a big issue; numerous projects looking at this. Discrete issues being looked at in Moray Firth are useful (piling, UXO) – work done so far can be pulled into cumulative impact work. This work can be built on.

JW – some monitoring may be strategic, and not just project specific? Further meetings required – potentially MSS and NS to discuss, potentially involve UoA. To be followed by a MFRAG-MM call in August to develop a plan. [agreement from group]

## **9 Update on other strategic work**

PT – Jacky decommissioning work; will look at BOWL over-trawl corridor locations to determine whether monitoring programme needs to be redesigned. Likely to happen in August.

## **10 AOB**

GH – following Moray East seal entrapment incident, MS-LOT have written to developers to see if there have been other occurrences. No concerns reported back so far, looking at potential mitigation for new construction projects.

JW – how long were J tubes (seal entrapment was in a J-tube) in place before cable installation?

CR – in place for several months (between 4-6 months for the J-tubes where seals were encountered).



PT - why are there not concerns from other developers?

GH - there has been limited build-out of other projects / no discoveries of seals so far.

SC - heard of an entrapment incident on an oil-and-gas floating production storage and offloading vessel (FPSO).

RC - seals entering constrained areas; would seals of certain sizes be at risk?

CR – bellmouth opening of J-tubes is approx. 30cm on WTGs, and 60cm on OSPs. The entrapment incidents were in 30cm J-tubes.

PT – Aude Benhemma-Le Gall publication on harbour porpoise occurrence and feeding was accepted yesterday; will circulate to the group.

PT – longer-term strategic monitoring. ScotWind – will they be asking MFRAG how monitoring relates to new sites.

GH – how best to incorporate new Moray Firth developers? Once ScotWind leases are awarded, will be in a better position to have these discussions.

#### **10 Next meeting and close**

JW - Post-construction monitoring focussed meeting in August – Moray East will organise.