

MORAY FIRTH RENEWABLES ADVISORY GROUP (MFRAG) MEETING MINUTES

Meeting	MFRAG Marine Mammal Sub- Group	
Date	26 July 2018	
Location	Marine Scotland, 375 Victoria Road, Aberdeen	
Attendees	Marine Scotland Science (MSS)	Redacted
	Marine Scotland Licensing and Operations Team (MS-LOT)	Redacted
	Scottish Natural Heritage (SNH)	Redacted
	Whale and Dolphin Conservation (WDC)	Redacted
	BOWL	Redacted
	University of Aberdeen (UoA)	Redacted
	Moray East	Redacted
	Royal Haskoning	Redacted
	Joint Nature Conservation Committee (JNCC)	Redacted
Apologies	Redacted	
Actions	<ol style="list-style-type: none"> MS-LOT to update MFRAG web page with latest meeting minutes. PT to confirm timescales for publishing documents outlined in Agenda Item 4. SNH to provide updated BND population estimates. Moray East to provide updated monitoring proposal paper to the MFRAG-MM during w/c 20th of August). MFRAG-MM to review and provided comments on Moray East updated cMMMP. PT to provide proposal to MS-LOT for funding/approach to sandeel strategic monitoring. Next MFRAG-MM meeting to be confirmed by secretariat. 	

1. Introductions
<p>Introductions.</p> <p>ID noted that the Scottish Government is implementing a new security policy for visitors to Marine Scotland offices. The policy includes the requirement to provide a list of meeting attendees in advance of meetings. For non-UK citizens an additional approval would be required: attendee details would need to be provided to Marine Scotland a minimum of three weeks prior to meetings taking place so that the names are approved by Marine Scotland at Victoria Quay. The current assumption is that records would be kept for three years and therefore a new approval would not be required during that period.</p>

2. Review of MoM actions from last meeting

Actions from the last meeting (21/02/2018).

- 1) Approval of meeting minutes from last meeting – complete.
- 2) Update of MFRAG documents on Marine Scotland webpage - approved minutes from February meeting to be uploaded. There is currently a resourcing constraint at MS-LOT but once meeting minutes are approved and sent to Red these should be uploaded within 2 weeks.
- 3) Confirmation of next meeting - complete.

At the last MFRAG-MM meeting, Marine Scotland mentioned that strategic meetings were being scheduled. MS-LOT is holding an ornithology symposium on 2 October at Victoria Quay. There are also plans to hold a marine mammals symposium during early 2019. MS-LOT also hosted an event at All Energy.

Southern North Sea Offshore Wind (developers) Forum (SNSOWF) meeting on 31st of October is proposed to be used to discuss strategic work with wider industry (i.e., non SNSOWF representatives are invited).

The next EU conference on wind farms and wildlife (September 2019) will be held at Stirling University.

Actions	1. MS-LOT to update MFRAG web page with latest meeting minutes.
----------------	--

3. BOWL Project update

BOWL project update provided by Red

- Jacket installation complete, installation of offshore transformer modules (OTMs) complete, installation of the export cable complete.
- Inter-array cable installation and turbine installation ongoing. Completion of inter-array cabling due in October 2018.
- OTM 1 and OTM 2 commissioning works ongoing.
- Onshore works ongoing, due for completion in October 2018.
- O&M base (Wick) works ongoing, due for completion in Q4 2018. Pontoon piling and quay wall sheet piling complete. pontoons installed and services being installed (due for completion in September 2018).
- Construction programme updates are regularly communicated via the BOWL twitter page.

Marine Coordination (MC) activities include monitoring AIS data for BOWL vessels and non-BOWL vessels within the wind farm site. Vessels working for BOWL notify the MC of their planned movements and any conflicts with other vessels are identified/resolved through the MC.

MSS would be interested to know if AIS data would be available that could be used to determine how other marine users react to turbines and whether it reflects assumptions of the Navigational Risk Assessment (NRA).

4. BOWL Construction MMMP results

Marine mammal monitoring results during the BOWL construction provided by R :

BOWL monitoring report presents full results and is available in 'Strategic Marine Mammal Monitoring Programme Annual Report 2018' (shared with the MFRAG-MM members prior to the meeting).

Results summarised as follows:

WP1:

- Survey of Loch Fleet harbour seal population during 2017/2018 pupping season. Pup numbers in 2018 were higher than 2017, indicating no impact from construction on reproductive outputs. This contradicts the highly conservative assumptions made within the Environmental Statements (BOWL and Moray East).
- Seal tracking showed that no seals travelled close enough to BOWL site to record a response to piling noise. Seal tracks mapped against SELCum impact range showed that seals were not coming into a range where they would be at risk of PTS.

WP2:

- Bottlenose dolphins (BND) recorded during all seasons, abundance suggests that inter-annual and inter-seasonal changes dominate patterns in BND distribution/abundance. PAM data from the south Moray Firth has been difficult to interpret due to the high level of background variation. PAM data indicated that numbers of dolphins using the SAC remained high during piling and occurrence of dolphins at sites on the southern coast remained within the bounds of baseline variability. 2011 and 2017 were years where significant 'noisy' activities (seismic or piling activity) were undertaken in the Moray Firth, but no indication of impacts recorded.

WP3:

- Analysis of CPOD data indicated some reactions to piling, but it is difficult to differentiate between reaction to piling noise and reactions to other sources of noise prior to piling (e.g. vessels or ADDs). Analysis of data showed that CPOD nearfield detections could be hampered by high amplitude sounds (vessels and piling). Responses to piling appeared to reduce over the construction period.
- Results from monitoring could indicate responses at a shorter range than previously considered (<7.5 km), which suggests that JNCC guidance on a 25 km threshold for the Sothern North Sea SAC may be very conservative. JNCC confirmed they have not reviewed the results at this time.
- Results indicate vessel noise during construction is important, some initial responses recorded by porpoise were before ADD or piling began, indicating a response to increased vessel activity.
- Monitoring responses specifically to ADDs was difficult as there was limited ability to compare piles where ADDs were used against piles where ADDs were not used, results suggest that responses to ADDs could be short lived (6-12hrs).

WP4:

- Noise monitoring was undertaken at a number of locations during piling.

Ongoing fieldwork:

- Harbour seal and BND population surveys;
- BND PAM; and
- Low intensity monitoring of PAM in construction and control sites also ongoing.

Analysis and publication priorities:

- Porpoise dose response curve (aiming to submit 2018).
- Case study for the mitigation approach (aiming to publish 2019).
- Final Report with cMMMP results (aiming to publish 2019)

Preliminary results from this meetings presentation could be uploaded to MS-LOT webpage (MFRAG area) and used for reference. SNH would be interested to see dose response curve and alternative mitigation options (preferably together) published and SNH would prefer results formally published in papers that can be referenced in guidance, however could use MFRAG meeting minutes in short-term. PT to confirm timescales for publishing documents (or producing poster for MASTS conference).

Actions

2. PT to confirm timescales for publishing documents outlined in Agenda Item 4.

5. Moray East Project Update

Moray East currently focusing the production of offshore consent plans and defining monitoring requirements, including marine mammals construction monitoring programme. Onshore consent has now been cleared with onshore construction starting in August 2018. Offshore construction due to start in March 2019 (with HDD works at landfall) and piling to due to start during July 2019.

Construction EPS Risk Assessment and OSP Piling Strategy (PS) currently out for review. Wind farm Piling Strategy currently being updated to reflect latest foundation design (3 pile) and reduction in simultaneously active piling vessels. No material changes to the PS and therefore MS-LOT to decide whether there is a need for consultation.

6. Moray East Construction MMMP - Proposed monitoring scope

PT provided an overview of the proposed Moray East cMMMP scope.

It was noted that the broad scope of the construction monitoring was developed in 2013. However Moray East and the UoA would like to define the detailed monitoring scope taking into account the results of BOWL’s construction monitoring (key findings are outlined in Agenda Item 4).

Feedback from consultation is that baseline population monitoring should continue, and that monitoring of presence using CPODs should also continue. Piling noise should still be monitored but there should be increased focus on answering uncertainties around ‘other noisy activities’ associated with other construction

activities too (e.g. vessel movements). There is limited justification for continued seal tracking due to evidence showing limited interaction with areas where piling noise may have an effect.

Interaction/response to ADDs still largely unknown. Gathering data during construction that can detect responses is difficult as dependant on natural breaks in piling activity.

It had been suggested that there is a need to update the published BND population estimate as this is now 10 years old. However R noted that estimates from SAC monitoring can be used for this and these are presented in the Moray Firth Site Condition Monitoring Reports. SNH are continuing to provide some support for monitoring in the Moray Firth and Forth and Tay, with data from the UoA and University of St Andrews being used to provide updated estimates in future.

Results of BOWL's monitoring have identified uncertainties which could be investigated, such as:

- Factors affecting broader scale seasonal and inter-annual variation in occurrence;
- Relative importance of piling activity and ADD use;
- Extent to which responses to vessels should be considered in assessments of overall construction impacts;
- Extent to which responses to vessels may reduce the need for ADD use prior to soft-start piling;
- Mechanisms underlying porpoise responses to piling –direct response to noise or indirect response via changes in prey behaviour?
- Longer-term effects of the wind farm on the distribution and occurrence of marine mammals and their prey.

Proposed areas of work for Moray East construction monitoring:

- 1) Photo ID surveys for baseline/population monitoring- Group decided this work should continue in current form.
- 2) Extended noise measurement to be updated to include more baseline recording within the wind farm area. Group decided this should continue but consideration should be given to investigating effects of vessel activities. HDD noise is unlikely to be important so would not suggest it forms part of Moray East monitoring, however, potential opportunity if there is MSS/SNCBs desire to investigate as part of strategic work. BEIS looking for ideas on strategic monitoring so may be worth discussing further in order to utilise the opportunity.
- 3) Long term response monitoring would need continued deployment of CPOD/PAM to look at potential responses in relation to piling and vessels. A high density CPOD array similar to the one used for BOWL would be beneficial but newer Pam technologies are being investigated to provide finer scale data on movements.
- 4) Extend PAM studies to better understand responses of porpoises to construction vessels vs ADD vs piling
- 5) Extend south coast PAM array to assess whether BND do move closer to shore during piling, although studies around the Forth and Tay developments may provide better opportunities to explore far field responses of BND.

Moray East currently have information on the wind farm layout and the construction timescales but would not be able to provide detailed information on piling schedule. Therefore there is a limited ability to provide monitoring methodology to this level of detail. Updated monitoring programme proposal would need to be based on principal rather than detail.

Moray East to provide updated cMMMP paper for review but due to timescales would not propose an MFRAG-MM meeting to discuss. Sign-off would be undertaken via email. Moray East to provide updated proposed monitoring approach to the group week commencing 20th of August.

Actions	<ol style="list-style-type: none"> 3. SNH to provide updated BND population estimates. 4. Moray East to provide updated monitoring proposal paper to the MFRAG-MM during w/c 20th of August. 5. MFRAG-MM to review and provide comments on Moray East updated cMMMP.
----------------	---

6. Strategic Research and AOB

SpORRAn is now being renamed ScotMER (Scottish Marine Energy Research). Strategic research – CRF funding is available for four projects. Three projects are related to seabirds, SNH undertaking one marine mammals focused project looking at ways to update marine mammal assessment methods.

SNH undertaking a strategic review of cost vs benefits of noise abatement systems being used in Europe. This is being done with help from SMRU and is due for delivery late 2018/early 2019.

SNH also looking at iPCOD sensitivity to different construction parameters/piling schedules.

Possibility to undertake strategic research into impacts of piling on sandeel during Moray East construction. MS-LOT/MSS would be interested to receive a proposal from Re.

Moray East have provided a Letter of Intent to fund part of strategic Atlantic Salmon research looking at Smolt movements. Multiple funders required to provide full monitoring scope, however, if full funding not reached, tracking smolts in the marine environment will be the first work package undertaken.

AOB- **Redacted** will be new MSS Renewables Lead going forward. There is a FTRAG- O meeting scheduled for the 4th of October.

Actions	<ol style="list-style-type: none"> 6. R to provide proposal to MS-LOT for funding/approach to sandeel strategic monitoring. 7. Next MFRAG MM meeting to be confirmed by secretariat.
----------------	--

List of Abbreviations	
ADD	Acoustic Deterrent Device
AIS	Automatic Identification System
BND	Bottlenose Dolphins
BOWL	Beatrice Offshore Windfarm Limited
cMMMP	Construction Marine Mammal Monitoring Programme
CRF	Contract Research Fund (Scottish Government)
FTRAG	Forth and Tay Regional Advisory Group
HDD	Horizontal Directional Drilling
iPCOD	Interim Population Consequences of Disturbance Model
JNCC	Joint Nature Conservation Committee
MASTS	Marine Alliance for Science and Technology Scotland
MC	Marine Coordination
Moray East	Moray Offshore Windfarm (East) Limited
MFRAG	Moray Firth Regional Advisory Group
MFRAG-MM	Moray Firth Regional Advisory Group – Marine Mammals Subgroup
MS-LOT	Marine Scotland Licensing Operations Team
MSS	Marine Scotland Science
NRA	Navigational Risk Assessment
OSP	Offshore Substation Platform
OTM	Offshore Transformer Modules
O&M	Operations and Maintenance
PAM	Passive Acoustic Monitoring
PS	Piling Strategy
SAC	Special Area of Conservation
ScotMER	Scottish Marine Energy Research (previously SpORRAN)
SELcum	Cumulative Sound Exposure Level
SMRU	Sea Mammal Research Unit
SNH	Scottish Natural Heritage
SNSOWF	Southern North Sea Offshore Wind Forum

SpORRAn	Scottish Offshore Renewables Research Framework (now ScotMER)
UoA	University of Aberdeen
WDC	Whale and Dolphin Conservation