

## Queiros J (Joao)

---

**From:** Chris Eastham <Chris.Eastham@snh.gov.uk>  
**Sent:** 02 June 2014 21:53  
**To:** Richard.Kerr@argyll-bute.gov.uk; MS Marine Licensing; Ford A (Alexander)  
**Cc:** Morven Laurie; Furlong, Rachel (RFurlong@ScottishPower.com); Carruthers, Barry (bcarruthers@scottishpower.com); Parker, Gary (Gary.Parker@ScottishPower.com)  
**Subject:** SNH response to Sound of Islay tidal Array  
**Attachments:** 2014 05 16 - Sound of Islay tidal project - SNH response to s36 with deemed planning\_2.pdf

Hi Richard & Ali,

Please find attached our response to the proposed Sound of Islay tidal array, including both the on and offshore aspects.

Regards

Chris

Scotland welcomes the world in the **Year of Homecoming Scotland 2014!**

The year-long programme of events will celebrate the very best of Scotland's food and drink, active and natural resources as well as our creativity, culture and ancestral heritage.

[homecomingscotland.com](http://homecomingscotland.com)

---

This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the system manager or the sender.

Please note that for business purposes, outgoing and incoming emails from and to SNH may be monitored.

Tha am post-dealain seo agus fiosrachadh sam bith na chois dìomhair agus airson an neach no buidheann ainmichte a-mhàin. Mas e gun d' fhuair sibh am post-dealain seo le mearachd, cuiribh fios dhan manaidsear-siostaim no neach-sgrìobhaidh.

Thoiribh an aire airson adhbharan gnothaich, 's dòcha gun tèid sùil a chumail air puist-dealain a' tighinn

a-steach agus a' dol a-mach bho SNH.

This email was scanned by the Government Secure Intranet anti-virus service supplied by Vodafone in partnership with Symantec. (CCTM Certificate Number 2009/09/0052.) In case of problems, please call your organisations IT Helpdesk.  
Communications via the GSi may be automatically logged, monitored and/or recorded for legal purposes.

\*\*\*\*\*

This email has been received from an external party and

has been swept for the presence of computer viruses.

\*\*\*\*\*



## Scottish Natural Heritage Dualchas Nàdair na h-Alba

All of nature for all of Scotland  
Nàdar air fad airson Alba air fad

Alexander Ford  
Marine Scotland  
Marine Laboratory  
P. O. Box 101  
375 Victoria Road  
Aberdeen  
AB11 9DB

Your Ref: 002/TIDE/SPR – 2

Our Ref: CNS/REN/TIDAL/Sound  
of Islay Tidal Array/CLC130772

Date: 2<sup>nd</sup> June 2014

By email only:  
[ms.marinelicensing@scotland.gsi.gov.uk](mailto:ms.marinelicensing@scotland.gsi.gov.uk)

Dear Mr Ford,

### **PROPOSAL: SOUND OF ISLAY DEMONSTRATION TIDAL ARRAY – SCOTTISH POWER RENEWABLES**

#### **SECTION 36 OF THE ELECTRICITY ACT 1989 MARINE (SCOTLAND) ACT 2010, PART 4: MARINE LICENCE TOWN AND COUNTRY PLANNING ACT (SCOTLAND) 1997 (AS AMENDED)**

Thank you for your consultation of the 26 May 2014 requesting our advice on this proposed tidal turbine array located in the Sound of Islay.

We provided advice to the original section 36 application on the 20 September 2010, with the development receiving consent in 2011. However, due to a number of changes to the proposed development both on and offshore, the applicant has applied for a new section 36 consent and Marine Licence with deemed planning permission. Our advice in this letter relates to those changes and the revised assessment presented in the Environmental Report (ER).

#### **SUMMARY OF KEY NATURAL HERITAGE INTERESTS AND IMPACTS**

Our advice below is divided into offshore, relating to the section 36 and Marine Licence application, and onshore, relating to the application for deemed planning permission.

##### ***Offshore***

This proposal raises issues that could affect internationally important natural heritage interests. Construction works and turbine array operation are likely to have a significant effect on the harbour seals of the South-east Islay Skerries SAC. Consequently, Marine Scotland is required to carry out an appropriate assessment in view of the site's conservation objectives for its qualifying interest. To help you do this, we advise that in our view on the basis of the appraisal carried out to date, if the proposal is undertaken strictly in accordance with the following conditions, then the proposal will not adversely affect the integrity of the site:

- An Environmental Monitoring and Mitigation Plan is approved in advance of any construction activity by Marine Scotland, and includes methods for monitoring seal



INVESTOR IN PEOPLE

Printed on 100%  
recycled paper

Scottish Natural Heritage, Russell House, King Street, Ayr KA8 0BF  
Tel: 01292 270760 Fax 01292 286491 [www.snh.org.uk](http://www.snh.org.uk)

behaviour around the array, the detection of potential collisions, and to potentially inform an adaptive management approach.

- A Vessel Management Plan is approved in advance of any construction activity by Marine Scotland, and includes mitigation measures to minimise disturbance and prevent corkscrew injuries to seals.

This project may also affect regional populations of black guillemot and shag. A collision risk assessment and cumulative impact assessment would help to quantify the level of risk. We also advise that post construction monitoring is required to understand bird behaviour around the tidal array and detect any collisions.

### ***Onshore***

The proposal has the potential to cause significant disturbance to protected species, namely golden eagle. In order to minimise any potential impacts we advise that a Construction Method Statement is agreed with the planning authority. SNH can advise further on this.

We also provide advice in relation to landscape, European Protected Species and seal haulouts.

### ***Detailed advice***

To help provide you with detailed advice we have split our advice into the following appendices:

**Appendices A and B** contain detailed advice on our appraisal of the proposal in relation to HRA for SACs (Appendix A) and Special Protection Areas (SPAs) (Appendix B).

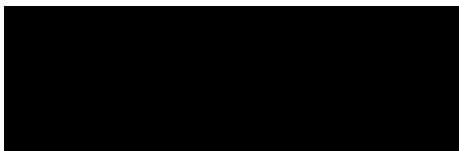
**Appendix C** contains further offshore advice on natural heritage interests.

**Appendix D** contains further onshore advice on natural heritage interests.

**Appendix E** provides our detailed advice on conditions.

We hope these comments are helpful. If further information or advice is required please contact Chris Eastham for offshore aspects - [chris.eastham@snh.gov.uk](mailto:chris.eastham@snh.gov.uk) or 07770 225154 – or Morven Laurie at the Bowmore Office for onshore aspects - [morven.laurie@snh.gov.uk](mailto:morven.laurie@snh.gov.uk) or 01496 810711.

Yours faithfully



Ron Macdonald  
Director of Policy & Advice

cc Richard Kerr - Argyll & Bute Council  
Department of the Environment for Northern Ireland

## APPENDIX A

### PROPOSAL: SOUND OF ISLAY DEMONSTRATION TIDAL ARRAY – SCOTTISH POWER RENEWABLES

#### HABITATS REGULATIONS APPRAISAL – SPECIAL AREAS OF CONSERVATION (SAC)

- I. Where a plan or project could affect a Natura site, the Habitats Regulations require the competent authority (Marine Scotland and Argyll & Bute Council) – the authority with the power to undertake or grant consent, permission or other authorisation for the plan or project in question - to consider the provisions of regulation 48. This means that the competent authority has a duty to:
  - determine whether the proposal is directly connected with or necessary to site management for conservation; and, if not;
  - determine whether the proposal is likely to have a significant effect on the site either individually or in combination with other plans or projects; and, if so, then;
  - make an appropriate assessment of the implications (of the proposal) for the site in view of that site's conservation objectives.
- II. This process is now commonly referred to as **Habitats Regulations Appraisal (HRA)**. HRA applies to any plan or project which has the potential to affect the qualifying interests of a Natura site, even when those interests may be at some distance from that site.
- III. The competent authority decides whether an appropriate assessment is necessary and carries it out if so with advice from SNH. It is the applicant who is usually required to provide the information to inform the assessment. Appropriate assessment focuses exclusively on the qualifying interests of the Natura site affected and their conservation objectives. A plan or project can only be consented if it can be ascertained that it will not adversely affect the integrity of a Natura site (subject to regulation 49 considerations).

#### **Appraisal of impacts of the Sound of Islay demonstration tidal array in relation to relevant SACs**

1. Following submission of the Environmental Report (ER), together with the original Environmental Statement (ES), we conclude no likely significant effect for qualifying features of relevant SACs with the exception of the following SAC which requires further consideration:

#### **South-east Islay Skerries SAC – harbour seals**

<p><b><u>Step 1:</u></b> Is the proposal directly connected with or necessary for the conservation management of the SAC?</p>
-------------------------------------------------------------------------------------------------------------------------------

2. The proposal is not directly connected with or necessary for the conservation management of South-east Islay Skerries SAC.

<p><b><u>Step 2:</u></b> Is the proposal likely to have a significant effect on the qualifying features of the SAC either alone or in combination with other plans or projects?</p>
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

The conservation objectives of the sites are:

**(i)** to avoid deterioration of their habitat or **(ii)** significant disturbance to them, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and

To ensure for the harbour seals that the following are maintained in the long term:

**(iii)** Population of harbour seals as a viable component of the site.

**(iv)** Distribution of harbour seals within the site.

**(v)** Distribution and extent of habitats supporting harbour seals.

**(vi)** Structure, function and supporting processes of habitats supporting harbour seals.

**repeat of (ii)** No significant disturbance of harbour seals.

3. The South-east Islay Skerries SAC is approximately 16km from the proposed development, which is well within the foraging range of harbour seals (approximately 60km). SMRU harbour seal tracking data from 2011 and 2012 showed that none of the tagged seals from the South-east Islay Skerries SAC travelled into the sound. However, seals that were tagged within the sound did associate with the SAC. Therefore, we conclude that there is connectivity between the proposed development site and the SAC.
4. In assessing whether the operation is likely to have a significant effect on the qualifying interest, we have considered the following:
  - whether the project area overlaps with the harbour seal foraging range during the breeding season,
  - whether harbour seals were observed in the project area during the site characterisation surveys,
  - whether Sea Mammal Research Unit (SMRU) aerial surveys and seal telemetry data indicate use of the project area by harbour seals,
  - whether harbour seals are sensitive to any of the potential impacts identified, and
  - whether or not there is potential for any of the conservation objectives to be undermined.
5. Using the information provided in the ER, our knowledge of harbour seal ecology and SACs together with available data from SMRU telemetry data, we offer the following advice:
6. **We advise that, in our view, the project is likely to have a significant effect on harbour seals of the South-east Islay Skerries SAC, and that further appraisal is required.**

**Step 3:** Can it be ascertained that the proposal will not adversely affect the integrity of the SAC either alone or in combination with other plans or projects?

### South-east Islay Skerries SAC

#### Harbour seals

7. The status of the harbour seal population in the SAC is favourable maintained. The estimated population in 2009 was 666.
8. The relevant management unit for harbour seals is Western Scotland, and the 2012 population estimate is 10,611<sup>1</sup>. The harbour seal potential biological removal (PBR) for the Western Scotland is 446<sup>2</sup>. Harbour seals are in a bad declining status across UK waters. However, the Western Scotland management unit population is considered stable. In 2014, licenses have been granted to shoot 152 harbour seals to protect fisheries and salmon farms.

#### Potential impacts from this development

##### **Collision risk with operating turbines**

9. The comparison between the previous and the current proposal is in table 2.1 of the ER. Key points for seals are the increase in rotor diameter from 23m to 26m, and the rotational speed is slightly slower at 8.5 rpm rather than 10.2 rpm used previously, although tip speed remains 12 m/s.
10. As in the previous proposal the applicant has used the adapted collision risk model (CRM) to assess collision risk for harbour seals. The CRM was developed to assess the collision risk of birds with onshore wind farms, and has been adapted by Marine Scotland for use in the marine environment.
11. There is an error in the CRM results presented in the ER, which use a 99% rather than a 98% avoidance rate (Beth Mackey / Rachel Furlong pers comm 2014). Table 1 below shows the updated predicted collisions using a 98% avoidance rate, and the difference between the previous proposal (i.e. a 23m rotor diameter) and the current proposal (i.e. a 26m rotor diameter).

Table 1. Results of the collision risk modelling (predicted number of individuals that will collide with the array per year) using a 98% avoidance rate.

Device	Harbour seal	
	Sightings rates	SMRU densities
26m diameter rotor 8.5 rpm	2.2 (average sighting rates over two years)	0.55
23m diameter rotor	0.58 per year (year 1 sighting rates)	Not assessed

<sup>1</sup> CSG: Management units for marine mammals in UK waters (2012) SNH Obj. Ref A918665,

<sup>2</sup> <http://scotland.gov.uk/Topics/marine/Licensing/SealLicensing/PBR>

12. Using the sightings rate, the predicted collisions for harbour seal has increased from 0.58 to 2.2 per year. Even if all of the harbour seals observed originated from the SAC, a predicted collision rate of 2.2 seals per year is unlikely to undermine the conservation objectives.
13. There remains a large amount of uncertainty regarding the animals' behaviour in the water column and how they might react to the presence of a tidal array. Therefore we advise that a comprehensive environmental monitoring and mitigation plan is established to verify and improve the parameters used in the collision risk modelling, improve our understanding of the fine scale movement of harbour seals around the tidal array, and to potentially inform an adaptive management approach.

***Collisions with vessels - corkscrew injuries***

14. The original consent proposed the use of DP vessels for installation and maintenance works, and it is possible that these may still be used for instance by the tug used in the clump anchor methodology. Therefore, we maintain our advice regarding the use of ducted or cowled propellers in relation to seals and corkscrew mortality.
15. We advise the need for appropriate mitigation should vessels with ducted or cowled propellers be used. Research is in progress to improve our understanding of corkscrew injuries and mitigation measures to avoid potential injury. We advise that the applicant liaises with MS and SNH for further information on mitigation measures, and a vessel management plan to prevent the risk of injury is developed and agreed with MS.

***Disturbance from increased vessel activity and onshore works***

16. Potential disturbance caused by increased vessel activity during installation, maintenance and decommissioning will be temporary and localised. It is unlikely that the increase in vessel activity will cause significant disturbance.
17. The ER mentions seal haulouts to the north of the cable landfall on Islay. There is a potential for seals to be disturbed at these haulouts due to onshore construction works. However, even if these seals were connected to the SAC, onshore works are likely to be limited in duration. It is unlikely that the proposed development will cause significant disturbance to seals.

***Cumulative and in-combination impacts***

18. Even with the revised predicted collisions shown in table 1 above, it is unlikely that there will be a significant cumulative and / or in-combination impact on the SAC harbour seal population. Table 7.7 in the ER considers the other plans and projects within the West Scotland management unit included in the cumulative impact assessment. Due to the large geographical spread of these projects within the management unit, we agree that it is unlikely that all of the potential impacts from the projects identified will be on the South-east Islay Skerries SAC harbour seal population.

**Provided there are conditions relating to the development of an environmental monitoring and mitigation plan and a vessel management plan, approved in advance of any construction activity by Marine Scotland, we conclude that the proposal will have no adverse effect on site integrity.**



## **APPENDIX B**

### **PROPOSAL: SOUND OF ISLAY DEMONSTRATION TIDAL ARRAY – SCOTTISH POWER RENEWABLES**

#### **HABITATS REGULATIONS APPRAISAL – SPECIAL PROTECTION AREAS (SPA)**

See Appendix A for information on the HRA process and the role of the competent authority.

#### **Appraisal of impacts of Sound of Islay Demonstration Tidal Array in relation to relevant SPAs**

Following submission of the ER, together with the original ES, we conclude no likely significant effect for the following qualifying features and their SPAs:

##### **Northern gannet**

Ailsa Craig SPA  
St Kilda SPA

##### **Manx shearwater**

Rum SPA  
St Kilda SPA

##### **Common guillemot**

North Colonsay and Western Cliffs SPA  
Rathlin Island SPA  
Canna and Sanday SPA  
Ailsa Craig SPA  
Rum SPA

##### **Razorbill**

Rathlin Island SPA

##### **Atlantic puffin**

Rathlin Island SPA  
Canna and Sanday SPA  
Mingulay and Berneray SPA

##### **Northern fulmar**

St Kilda SPA  
Shiant Isles SPA  
Rathlin Island SPA  
North Rona and Sula Sgeir SPA  
Handa SPA  
Mingulay and Berneray SPA  
Flannan Isles SPA  
Cape Wrath SPA

##### **Herring gull**

Rathlin Island SPA

##### **Lesser black-backed gull**

Rathlin Island SPA  
Ailsa Craig SPA  
Lough Neagh and Lough Beg SPA

**Black-legged kittiwake**  
North Colonsay and Western Cliffs SPA  
Rathlin Island SPA

**Appraisal in relation to the SPA qualifying features**

**Step 1:** Is the proposal directly connected with or necessary for the conservation management of the SPA?

The proposal is not directly connected with or necessary for the conservation management of the SPAs.

**Step 2:** Is the proposal likely to have a significant effect on the qualifying features of the SPA either alone or in combination with other plans or projects?

The conservation objectives of the site are:

**(i)** to avoid deterioration of their habitat or **(ii)** significant disturbance to them, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for the species; and  
To ensure that the following are maintained in the long term:  
**(iii)** Population of the species as a viable component of the site.  
**(iv)** Distribution of the species within site.  
**(v)** Distribution and extent of habitats supporting the species.  
**(vi)** Structure, function and supporting processes of habitats supporting the species.  
**repeat of (ii)** No significant disturbance of the species.

In assessing whether the proposal is likely to have a significant effect on the qualifying interest, we have considered the following:

- whether the project area overlaps with the species foraging range during the breeding season,
- whether the project lies within an identified migratory path,
- seabird distribution and abundance during the non-breeding season,
- whether a species was observed in the project area during the site characterisation surveys,
- whether a species is sensitive to any of the potential impacts identified, and
- whether or not there is potential for any of the conservation objectives to be undermined.

Using the information provided in the ER and original ES together with our knowledge of seabird ecology, we offer the following advice:

**We advise that, in our view, the proposal will have no likely significant effect on the qualifying features of the relevant SPAs (see list above).**

The appraisal we carried out considered the following factors:

- The generally low numbers of seabirds using the proposed development area;
- The absence of impact pathways, and the low sensitivity of certain seabird species to potential impacts;
- The temporary and localised nature of any potential disturbance;
- Most seabird species have large foraging ranges and any potential displacement is unlikely to affect foraging ability and reproductive success;
- Although no collision risk modelling for diving birds was undertaken for this proposal, the numbers of diving bird species which forage at and beyond the proposed turbine rotor depth are relatively low. However, numbers of black guillemot (not an SPA qualifying feature) and shag (outwith the breeding foraging range for any SPA where shag is a qualifying feature) are higher and we provide further comments on collision risk modelling for these species in Appendix C;
- Although no cumulative/in-combination impact assessment was undertaken for the updated project, it is considered unlikely the proposal would have any significant cumulative or in-combination impacts. This is due to the low number and / or small scale of other tidal energy projects in the area, and other marine projects that may have in-combination impacts with the proposal.

## APPENDIX C

### PROPOSAL: SOUND OF ISLAY DEMONSTRATION TIDAL ARRAY – SCOTTISH POWER RENEWABLES

#### FURTHER OFFSHORE ADVICE ON NATURE CONSERVATION INTERESTS CONSIDERED IN THE ENVIRONMENTAL REPORT (ER)

We provide advice on the following issues:

- ci. Designated Sites
  - cii. Protected species
  - ciii. Benthic ecology
  - civ. Ornithology
- 

#### ci. **Designated sites**

##### ***Natura sites***

Please see [Appendix A](#) and [Appendix B](#) respectively for our HRA advice for SACs and SPAs.

#### cii. **Protected species**

##### **Cetaceans and basking sharks**

The ER presents no additional impact assessment for cetaceans and basking sharks, other than to reaffirm the assessment undertaken in the original ES. Due to the low occurrence of cetaceans and basking recorded during the surveys, no collision risk assessment was carried out.

The ER does mention that ‘full consideration will be given to the potential disturbance of European Protected Species (EPS) in the EPS licence application’, and that ‘given the low level of observed and expected occurrence there is not anticipated to be a detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range’.

Due to the potential for disturbance, displacement and collision risk for cetaceans (EPS) and basking sharks during the installation and maintenance of the tidal array, caused by increased vessel activity and associated noise, and operational turbines, **we advise that both EPS and basking shark licences will be required, since some disturbance may occur over an extended period of time.**

**We also advise the development of an Environmental Monitoring and Mitigation Plan (EMMP) and a Vessel Management Plan, approved in advance of any construction activity by Marine Scotland.**

##### **Seals**

Appendix 7.1 of the ER is the second year marine mammal survey report written by SMRU. Their conclusions in relation to seals are as follows:

- *Harbour seals are the most frequently sighted marine mammal species in the Sound of Islay. They were seen in all months of the year with monthly sightings rates ranging between 0.1 seals per hour to 2.5 seals per hour. There were more records of seals hauled out than in the water, with most of the haul outs on the west side of the Sound, south of the development area, but north of the proposed cable landfall locations.*
- *Grey seals were also present, but recorded much less frequently. Most sightings of grey seals were in the water and they were only rarely recorded hauling out in the Sound.*
- *Seals hauled out regularly along the stretch of coast to the north of the cable landfall site.*
- *Seal telemetry studies revealed a degree of movement between haul out sites in the Sound and elsewhere with some individual seals showing relatively high usage of the Sound, probably using it to forage.*

### **Collision risk with operational turbines**

The comparison between the previous and the current proposal is given in table 2.1 of the ER. Key points for seals are the increase in rotor diameter from 23m to 26m, and the rotational speed is slightly slower at 8.5 rpm rather than 10.2 rpm used previously, although this still relates to a tip speed of 12 m/s.

As in the previous proposal the applicant has used the adapted collision risk model (CRM) to assess collision risk for harbour and grey seals. The CRM was developed to assess the collision risk of birds with onshore wind farms, and has been adapted by Marine Scotland for use in the marine environment.

There is an error in the CRM results presented in the ER, which use a 99% rather than a 98% avoidance rate (Beth Mackey / Rachel Furlong pers comm 2014). Table 2 shows the updated predicted collisions using a 98% avoidance rate, and the difference between the previous proposal (i.e. a 23m rotor diameter) and the current proposal (i.e. a 26m rotor diameter).

Table 2. Results of the collision risk modelling (predicted number of individuals that will collide with the array per year) using a 98% avoidance rate.

Device	Harbour seal		Grey seal	
	Sightings rates	SMRU densities	Sightings rates	SMRU densities
26m diameter rotor 8.5 rpm	2.2 (average sighting rates over two years)	0.55	1.4	1.8
23m diameter rotor	0.58 per year (year 1 sighting rates)	Not assessed	Not assessed	Not assessed

The management unit for harbour seals is Western Scotland, and the 2012 population estimate is 10,611 (taken from survey years 2007-2009)<sup>3</sup>. The harbour seal potential biological removal (PBR) for the Western Scotland is 446<sup>4</sup>. Harbour seals are in a bad declining status across UK waters. However, in the Western Scotland management unit the

<sup>3</sup> CSG: Management units for marine mammals in UK waters (2012) SNH Obj. Ref A918665,

<sup>4</sup> <http://scotland.gov.uk/Topics/marine/Licensing/SealLicensing/PBR>

population is considered stable. In 2014, licenses have been granted to shoot 152 harbour seals to protect fisheries and salmon farms.

Using the sightings rate, the predicted collisions for harbour seal has increased from 0.58 to 2.2 per year. This equates to 0.7% of the PBR, taking into consideration the number of licenses granted to shoot seals. Although this percentage is slightly higher than that presented in the ER, it is considered unlikely that this level of predicted collisions will have a significant adverse impact on the harbour seal population of the West Scotland management unit.

The West Scotland management unit PBR for grey seals is 386, with 123 licenses granted in 2014 to shoot grey seals. Using the SMRU densities and a predicted collision of 1.8 per year, this equates to 0.7% of the PBR. It is considered unlikely that this level of predicted collisions will have a significant adverse impact on the grey seal population of the West Scotland management unit.

Although it is considered unlikely that the level of predicted collisions will have an adverse impact on either the harbour or grey seal population, there remains a large amount of uncertainty regarding the animals' behaviour in the water column and how they might react to the presence of a tidal array. Therefore, we advise a comprehensive monitoring programme is established to verify and improve the parameters used in the collision risk modelling, and to improve our understanding of the fine scale movement of marine mammals around tidal arrays.

#### ***Collision risk with vessels***

The original consent proposed the use of DP vessels for installation and maintenance works, and it is possible that these may still be used. Therefore, our comments and concerns regarding the use of ducted or cowled propellers in relation to seals and corkscrew mortality still stands. Furthermore, these concerns would still be relevant should the tug used in the clump anchor methodology also have ducted propellers.

We advise the need for appropriate mitigation should vessels with ducted or cowled propellers be used. Research is currently being undertaken to improve our understanding of corkscrew injuries and what mitigation measures may be employed to avoid potential injury. We advise that the applicant liaises with MS and SNH for further information on mitigation measures, and a vessel management plan to prevent the risk of injury is developed and agreed with MS/SNH.

#### **ciii. Benthic ecology**

Revisions to the project include the slight change in location of the turbine structures, which are still within the lease area, and the use of 20 x clump anchors for the moored barge. For the change in turbine location, we concur with the assessment in that the seabed conditions in the lease area have already been assessed and the slight change in location does not alter our previous advice of no significant adverse impacts. For the clump anchors, the ER estimates additional seabed coverage of 8m<sup>2</sup> for each anchor position, therefore approximately 160m<sup>2</sup> in total. This is a large area, especially when combined within the area covered by the turbine bases. However, considering there are no Priority Marine Features recorded within the lease area, which is characterised by circalittoral sediment communities (SS.SMX.CMx(CTub.Adig) and CR.HCR.FaT,Ctub.Adig), we advise that the proposed development is unlikely to have any adverse impacts on the benthic ecology.

#### **civ. Ornithology**

## Survey methods and results

The current application includes the results from one additional year of survey work. Overall, the surveys undertaken constitute an adequate baseline estimate of the bird use of the project area, including some degree of inter-annual variation. Watches attempted to cover a range of tidal variation and were spread fairly evenly throughout the year. Vantage point coverage effort approached 30 hours per month. This is a suitable method for the site with the distance across the Sound of Islay being a maximum of 1km at the locations of the vantage points. The data are presented as total numbers and densities of birds. Density is based on a calculation of the 'high detectability' from the vantage points. No more sophisticated analysis such as Distance Analysis has been undertaken, but this would appear to be adequate for this particular survey.

There has been no power analysis of the data collected so far to indicate what degree of change in populations could be detected in post consent surveys. Such a power analysis would be useful to determine whether post consent monitoring surveys are useful for detecting any change.

## Impacts on receptors

There has been no collision risk modelling for bird species for this project. Birds which regularly forage down to and beyond the depth at which the devices will be deployed are present in locally important numbers within the Sound of Islay. In particular black guillemot and shag are present in significant numbers. Common guillemot, razorbill, Atlantic puffin and red-throated diver all occur in relatively small numbers. While these may not be connected with designated sites, the potential for mortality of black guillemot should be considered. An estimated 40 pairs of black guillemot are present within the Sound of Islay. In the absence of any collision risk modelling for these devices we may assume a worst case in that all birds are killed. At this rate (and with a regional population of some 3046 individuals (ap Rheinallt *et al.* 2007<sup>5</sup>), and 38000 individuals nationally (Mitchell *et al.* 2004<sup>6</sup>)) this would mean approximately 0.2% of the national population would be killed. If full replacement happened annually over the 25 year span of the project, 5% of the national population would be killed. The combination of 100% of local population mortality (with attendant loss of productivity), plus the required 100% replacement annually is extremely unlikely. A better quantitative estimate of collision risk for black guillemot would be welcome, and is likely to require collision risk modelling (CRM).

The density and numbers of shag are higher but of less significance locally and nationally. CRM would be required to estimate the predicted mortality. However, we consider that the risk of a regional impact is small, but encourage post construction monitoring to be designed to try and assess this.

Other species, with potential sensitivity to tidal devices, such as red-throated diver, great northern diver and great cormorant, occur in lower numbers such that significant impacts are unlikely.

Cumulative impacts to all relevant developments should be assessed – but for this development are unlikely to make a difference to consent either alone or in combination with current consented projects.

## Conclusion

---

<sup>5</sup> ap Rheinallt, T., Craik, J.C.A., Daw, P.C., Furness, R.W., Petty, S.J. & Wood, D. (2007). Birds of Argyll. Published by the Argyll Bird Club, Lochgilphead, Argyll.

<sup>6</sup> P. Ian Mitchell, Stephen Newton, Norman Ratcliffe & Tim E. Dunn (eds.). (2004). Seabird populations of Britain and Ireland. T & AD Poyser, an imprint of A&C Black,

There are potentially significant impacts to local / regional ornithological interests (i.e. black guillemot and shag). However, these are considered unlikely to be significant at the national level.

CRM would be helpful, especially for cumulative assessments of impacts.

The quality of survey is of a reasonable standard to give a baseline characterisation for the development. However, no power analysis has been undertaken to inform the level of impact that may be detectable.

The application does not include a post construction monitoring plan which is required. In particular, a monitoring plan aimed at collision assessment is advised.



## **APPENDIX D**

### **PROPOSAL: SOUND OF ISLAY DEMONSTRATION TIDAL ARRAY – SCOTTISH POWER RENEWABLES**

#### **DETAILED ONSHORE ADVICE ON NATURAL HERITAGE INTERESTS CONSIDERED IN THE ENVIRONMENTAL REPORT (ER)**

This appendix focuses on the siting of an onshore substation and cable landfall point as part of the Sound of Islay Demonstration Tidal Array.

#### **Summary**

The proposal has the potential to cause significant disturbance to protected species, namely golden eagle. In order to minimise any potential impacts we would advise that a Construction Method Statement is agreed with the planning authority, SNH and any other relevant party. Further advice is also provided in relation to landscape, European Protected Species (EPS) and seal haulouts.

#### **Background**

We have had pre-application discussions with the developer in relation to the golden eagle interest at this site which has resulted in survey work and analysis being commissioned by the applicant. Discussion has also covered landscape considerations at this site. Our previous recommendations have largely been incorporated into the current proposal.

#### **Appraisal of the impacts of the proposal and advice**

We provide advice on the following issues:

1. Ornithology
2. Landscape
3. EPS
4. Seal haulouts

1. Ornithology

#### ***Golden eagle***

Golden eagle are protected by the Wildlife and Countryside Act (1981), as amended by the Nature Conservation (Scotland) Act 2004. There is a breeding golden eagle territory within the likely disturbance distance at which adverse impacts on breeding golden eagles may be reasonably expected. It is noted that large parts of the site are not visible from the nest, but will be visible to roosting and flying birds, so we cannot exclude adverse impacts from the sub-station and grid connection development. It seems likely that the breeding pair of eagles are habituated to a level of traffic flow along the proposed substation access track at all times of year. This is due to the existing level of use of the current access track by farm workers, walkers and also through maintenance works to the existing cabling.

Likely impacts can be divided into those arising during construction and decommissioning activities and those relevant to operational activities.

#### **Construction & decommissioning**

Clearly levels of disturbance are likely to be considerably greater throughout the period of construction. Given this, it seems likely that some increased level of disturbance will be

experienced by the breeding pair of eagles, which could be significant (and adverse) as set out in the Environmental Report (ER). Mitigation will be required to minimise likely disturbance to the breeding pair. We would advise that mitigation should include the following measures:

A Construction Method Statement should be agreed with SNH prior to any works being undertaken. In addition to the mitigation proposed in the ER consideration should be given to the following points:

- Timing of works – early and late work during the day should be avoided to limit disturbance to roosting birds
- Use of an Ecological Clerk of Works during the construction and decommissioning phases who should have the authority to direct works, make amendments where necessary and respond to any monitoring of the breeding pair of eagles as appropriate
- Discussion on lighting arrangements (both during construction and operation) and development of appropriate lighting to minimise disturbance to eagles and also to passage sea birds (see also lighting comments in relation to landscape and visual impact)
- Assessment of noise levels during construction and operation

#### Commissioning and Operation

The levels of traffic and disturbance generated by the operation of the development at this location are unlikely to cause significant disturbance to golden eagle. Monitoring arrangements and mitigation to limit any potential disturbance during the commissioning and operational phase are outlined in the ER. These measures should mitigate any residual adverse impacts.

#### ***Other ornithological interests***

From the survey work undertaken and assessed in the ER onshore works are unlikely to have a significant impact on shoreline wader species.

A known white-tailed eagle roost is beyond the distance at which disturbance would be likely. The mitigation designed for golden eagle will also help to limit disturbance to this species.

## 2. Landscape

The coastline on which the substation is to be sited is visually highly sensitive, and also highly sensitive in terms of its landscape and seascape character. It lies opposite to the Jura National Scenic Area (NSA) and is visible from high points and the A845 within the NSA. It is also a highly visible stretch of coastline as seen from the Port Askaig – Kennacraig Ferry, as it negotiates the Sound of Islay.

Overall, the coast is rugged and peppered with many caves, cliff edges and natural arches; it is considerably remote in character, lying adjacent to a Core Area of Wild Land (CAWL) on Jura and within an Area of Panoramic Quality, designated by Argyll & Bute Council. The undeveloped coast is characterised by no domestic buildings beyond Rubha Bharaic, and only a bothy at An Cladach until the lighthouse at McArthurs Head.

The landscape proposal submitted by the applicant has been carefully considered and aims to best mitigate the impacts of the substation - a building (5.9m high to ridge x 24m x 11.5m) with associated electrical infrastructure within a 2.7m high compound. This is a relatively large complex, exceeding domestic-scale structures in the locality and introducing built structures along an undeveloped coastline. The proposal is well-considered for such a

sensitive site, with appropriate methods proposed for visually breaking up the bulk and scale of the complex.

We are satisfied with the landscape report and assessment submitted by the applicant. We would advise that the following points are given further consideration:

- Lighting – there is a lack of information in the landscape proposal regarding lighting requirements at the substation. The lighting arrangements could significantly alter the assessment of the impact of the development on the landscape.
- The inclusion of a ZTV to highlight the likely range of visual influence within 5km of the development would be in keeping with best practice guidance.
- Consideration should be given to the finish of the *Expamet* fencing, to guard against any reflection/ shining at varying distances from the compound.

### 3. European Protected Species

Otters are classed as [European protected species](#) and are fully protected under the [Conservation \(Natural Habitats, &c.\) Regulations 1994 \(as amended\)](#). The otter surveys carried out in 2011 and 2012 in relation to the substation development and cable landfall site confirm that otters are present at the site although no couches or holts were detected. We advise that the applicant carries out a detailed pre-construction survey.

Provided the survey does not highlight an increase in site usage by otters and the development is carried out strictly in accordance with the species protection measures outlined in the ER, the proposal is unlikely to require a species licence under protected species legislation. However, if the development is not carried out in accordance with the species protection plan, the applicant may risk committing an offence.

If further evidence of otter activity is highlighted in the pre-construction period, particularly in relation to the discovery of holts or couches, further advice from SNH should be sought. At this point the species protection plan should be updated and the requirement for a licence re-assessed. SNH would welcome the opportunity to discuss the species protection plan and construction methodology with the applicant once pre-construction surveys have been undertaken.

### 4. Seal haulouts

The proposed cable landfall is about 1.5 km south of the turbine lease area (at Traigh Bhan). Appendix 7.1 of the ER states that there are typically up to 23 harbour seals hauled out at a distance of 70-100m north of this location.

The haul out is not proposed by Marine Scotland as a designated haul out. Connectivity with the South Islay Skerries SAC cannot be completely disregarded as tagged seals within the sound have visited the SAC (see further comments in Appendix A).

There is potential for disturbance to harbour seals during the onshore construction works. This activity is, however, likely to be limited in duration and operation of the substation following construction is unlikely to cause significant disturbance to seals.

## APPENDIX E

### PROPOSAL: SOUND OF ISLAY DEMONSTRATION TIDAL ARRAY – SCOTTISH POWER RENEWABLES

#### RECOMMENDED CONDITIONS

In addition to the recommended conditions below, we also consider, as part of any Section 36 consent, an appendix is attached to the decision letter with a description of the proposal with all aspects that are consented.

We also request that all environmental survey and monitoring information is made publicly available. We would welcome the opportunity to advise further on the detail of these conditions.

<b><u>Condition</u></b>	<b><u>Reason</u></b>
<p><b>Environmental Monitoring and Mitigation Plan (EMMP)</b></p> <p>An EMMP will be produced to investigate the environmental impacts of this development. Marine Scotland, in consultation with relevant consultees will agree the environmental interests to be monitored and appropriate monitoring methodologies. The monitoring programme will cover construction and operational periods of development. The EMMP will also provide details of the mitigation measures and the potential for an adaptive management approach.</p> <p>The EMMP should be approved at least three months in advance of any construction.</p> <p>The EMMP will be regularly reviewed, the review cycle to be decided by Marine Scotland in consultation with relevant consultees.</p> <p>The agreed monitoring will be implemented and the data collected will be reported on and made publicly available.</p>	<p>Monitoring objectives including validation of the original ES and ER predictions; mitigation and monitoring methods and reporting timescales.</p> <p>Timings of agreement of a final EMMP and subsequent review of requirements should be set up within a suitable timeframe.</p>
<p><b>Environmental Manager / Environmental Clerk of Works</b></p> <p>Within a timeframe agreed with Marine Scotland, the developer shall employ an Environmental Manager. The Environmental Manager's role, responsibilities and work programme shall be submitted to Marine Scotland and relevant consultees for approval. The Environmental Manager will have responsibility for ensuring implementation of the Construction Method</p>	<p>Employment of this post will ensure compliance with all aspect of the consents / licence conditions.</p> <p>The duration and operating hours of this post to be agreed in advance of the commencement of any development between MS LOT, the developers and statutory consultees.</p>

<p>Statement, Vessel Management Plan and the EMMP, including any required mitigation measures or monitoring. In addition, the Environmental Manager will have responsibility to reporting any breaches and compliance issues directly to the project manager and if still in breach directly to MS Compliance officers.</p>	
<p><b>Construction: Method Statements (offshore)</b></p> <p>Construction method statements (or equivalent) for the tidal array and the export cable including landfall shall be submitted prior to the commencement of work and within a timescale to be agreed with Marine Scotland.</p> <p>The statements shall be submitted to Marine Scotland for approval in consultation with relevant consultees. The statements will include details of commencement dates, duration and phasing for key elements of construction and, importantly, environmental management during construction.</p> <p>The construction method statement will detail how each and all contractors and sub-contractors will be made aware of environmental sensitivities, what requirements they are expected to adhere to and how chains of command will work.</p>	<p>This is required to fully inform the deployment of the devices, etc. The purpose of the construction method statements should also be clear, and the inter-relationship with the Environmental Mitigation and Monitoring Plan.</p>
<p><b>Construction: Method Statement (onshore)</b></p> <p>A construction method statement for the onshore works including the substation and cabling works shall be submitted prior to the commencement of work and within a timescale to be agreed with the planning authority.</p> <p>The statement shall be submitted to the planning authority for approval in consultation with the relevant consultees. The statement will provide detailed mitigation measures, timing of works, appointment of an ecological clerk of works/environmental manager, a noise and lighting assessment.</p> <p>The construction method statement will detail how each and all contractors and sub-contractors will be made aware of environmental sensitivities, what requirements they are expected to adhere to</p>	<p>This is required to fully inform the construction of the substation, access tracks and cabling works, and to minimise disturbance to breeding golden eagles.</p>

<p>and how chains of command will work.</p>	
<p><b>Construction: Vessel Management Plan</b>  Within a timeframe agreed with Marine Scotland, the developer shall draft and submit a plan for vessel management during construction. It shall present details on the type and overall number of vessels required during construction, including a specification for each individual vessel to be deployed. It shall set out how vessel management will be co-ordinated, specifying the location of working port(s), the routes of passage and how often vessels will be required to passage between port(s) and site.</p>	<p>To minimise disturbance to marine mammals and basking sharks as well as consideration of mitigation measures for cork screw injuries to seals.</p>
<p><b>Operations &amp; Maintenance (O&amp;M): O&amp;M Plan</b>  Within a timeframe agreed with Marine Scotland, the developer shall draft and submit their plan for operations &amp; maintenance (O&amp;M). The plan will be approved by Marine Scotland in consultation with relevant consultees. It will take account of environmental sensitivities which may influence the timing of O&amp;M activities. It will set out O&amp;M vessel requirements and vessel management.</p> <p>The O&amp;M Plan will detail how each and all contractors and sub contractors will be made aware of environmental sensitivities, what requirements they are expected to adhere to and how chains of command will work during O&amp;M activity.</p> <p>The approved O&amp;M Plan will be implemented, and it will be reviewed regularly. The reporting cycle will be agreed by Marine Scotland in consultation with relevant consultees.</p>	<p>To fully understand the requirements for operation and maintenance to fully inform any mitigation and monitoring requirements for natural heritage interests.</p>
<p><b>Decommissioning</b>  A decommissioning plan will be required for the entire scheme. As part of any consent, Marine Scotland shall consider and recommend a timeframe for the production, consultation and implementation of a decommissioning plan. We recommend that this is an iterative process and that an initial decommissioning strategy is produced by the developer.</p>	