

**PROFORMA FOR RECORDING MARINE SCOTLAND'S  
 CONSIDERATION OF A PROPOSAL AFFECTING A  
 POTENTIAL/DESIGNATED SAC OR SPA**

**SITE DETAILS TGL 1MW Fall of Warness**

**FILE REF: FKB/Z256**

**1a. Name of Natura site affected & current status**

1. Faray and Holm of Faray SAC	2. Sandy SAC
3. Calf of Eday SPA	4. Cape Wrath SPA
5. Copinsay SPA	6. East Caithness Cliffs SPA
7. Fair Isle SPA	8. Foula SPA
9. Hermaness Saxa Ford and Valla Field SPA	10. Hoy SPA
11. Marwick Head SPA	12. North Caithness Cliffs SPA
13. North Rona and Sule Sgeir SPA	14. Noss SPA
15. Rousay SPA	16. Sule Skerry and Sule Stack SPA
17. West Westray SPA	

**1b. Name of component SSSI if relevant**

All the above have SSSI's
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**1c. European qualifying interests & whether priority/non-priority:**

<b>1. Faray and Holm of Faray SAC</b> Grey seal	<b>2. Sandy SAC</b> Common seal
<b>3. Calf of Eday SPA</b> <b>Seabird assemblage</b> Cormorant Fulmar Greater black-backed gull Guillemot Kittiwake	<b>4. Cape Wrath SPA</b> <b>Seabird assemblage</b> Fulmar Guillemot Kittiwake Puffin Razorbill
<b>5. Copinsay SPA</b> <b>Seabird assemblage</b> Fulmar Greater black-backed gull Guillemot Kittiwake	<b>6. East Caithness Cliffs SPA</b> <b>European Importance</b> Guillemot Herring Gull Kittiwake Peregrine Razorbill Shag  <b>Seabird assemblage</b> Cormorant Fulmar Greater black-backed gull Puffin

<p><b>7. Fair Isle SPA</b>  <b>European Importance</b>  Arctic tern  Fair Isle wren</p> <p><b>Seabird Assemblage</b>  Arctic skua  Fulmar  Gannet  Great skua  Guillemot  Kittiwake  Puffin  Razorbill  Shag</p>	<p><b>8. Foula SPA</b>  <b>European Importance</b>  Arctic tern  Great Skua  Guillemot  Leach's Petrel  Puffin  Red-throated diver  Shag</p> <p><b>Seabird Assemblage</b>  Arctic skua  Fulmar  Kittiwake  Razorbill</p>
<p><b>9. Hermaness Saxa Ford and Valla Field SPA</b>  Gannet  Great skua  Puffin  Red-throated diver</p> <p><b>Seabird assemblage</b>  Fulmar  Guillemot  Kittiwake  Shag</p>	<p><b>10. Hoy SPA</b>  <b>European Importance</b>  Red throated divers  Peregrine  Great Skua</p> <p><b>Seabird assemblage</b>  Fulmar  Greater black-backed gull  Guillemot  Kittiwake  Puffin  Arctic Skua</p>
<p><b>11. Marwick Head SPA</b>  <b>European Importance</b>  Guillemot</p> <p><b>Seabird assemblage</b>  Kittiwake</p>	<p><b>12. North Caithness Cliffs SPA</b>  <b>European Importance</b>  Guillemot  Peregrine</p> <p><b>Seabird assemblage</b>  Fulmar  Kittiwake  Razorbill  Puffin</p>
<p><b>13. North Rona and Sule Sgeir SPA</b>  <b>European Importance</b>  Gannet  Guillemot  Leach's Petrel  Storm Petrel</p> <p><b>Seabird Assemblage</b>  Fulmar  Greater black-backed gull  Kittiwake  Puffin  Razorbill</p>	<p><b>14. Noss SPA</b>  <b>European Importance</b>  Gannet  Great skua  Guillemot</p> <p><b>Seabird Assemblage</b>  Fulmar  Kittiwake  Puffin</p>
<p><b>15. Rousay SPA</b>  <b>European Importance</b>  Arctic tern</p>	<p><b>16. Sule Skerry and Sule Stack SPA</b>  <b>European Importance</b>  Gannet  Leach's Petrel  Puffin  Storm Petrel</p>

<b>Seabird assemblage</b> Arctic skua Fulmar Kittiwake Guillemot	<b>Seabird assemblage</b> Guillemot Shag
<b>17. West Westray SPA</b> <b>European Importance</b> Arctic tern Guillemot  <b>Seabird assemblage</b> Arctic skua Fulmar Kittiwake Razorbill	

**1d. Conservation objectives for qualifying interests:**

	To avoid deterioration of the habitats of the qualifying species (detailed in section 1c) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and To ensure for the qualifying species that the following are maintained in the long term:
	<ul style="list-style-type: none"> <li>• Population of the species as a viable component of the site</li> </ul>
	<ul style="list-style-type: none"> <li>• Distribution of the species within site</li> </ul>
	<ul style="list-style-type: none"> <li>• Distribution and extent of habitats supporting the species</li> </ul>
	<ul style="list-style-type: none"> <li>• Structure, function and supporting processes of habitats supporting the species</li> </ul>
	<ul style="list-style-type: none"> <li>• No significant disturbance of the species</li> </ul>

**PROPOSAL DETAILS**

**2a. Proposal title & name of consultee (i.e. applicant or competent authority)**

Deployment of tidal turbine at Fall of Warness (foundations already in place)

**2b. Date of Consultation:** SNH response to Marine Licence consultation received 23<sup>rd</sup> May 2012


**2c. Type of Case:** Appropriate Assessment (AA) of the proposed deployment of tidal turbine at Fall of Warness, EMEC test facility, Orkney.

**2d. Details of proposed operation (inc. location, timing, methods):**

TGL successfully installed the tripod support structure for its turbine at EMEC's tidal test site at the Fall of Warness in Orkney in 2007. In September 2010 the 500kW turbine was installed. This step of the project is for the installation of a 1MW turbine to take the place of the 500kW turbine which has now been removed. This DEEP-Gen IV device is approximately 20.5m long with a maximum turbine diameter of 5m and a rotor diameter of approximately 18m. It is designed to operate at a maximum tip speed of 20m/s. The device will be installed at a depth of approx 42.5m on top of the tripod which is 16.2m in height above the seabed. This gives a clearance of 13-14m at LAT. It is a 3 bladed turbine with a generating capacity of up to 1MW.

It is proposed that the turbine will be operational for 2 years commencing in July 2012. During this period it is expected that the turbine will be retrieved/deployed between two and six times per year. During periods of DEEP-Gen IV retrieval DEEP-Gen III turbine (500kW) will be deployed to continue data collection and power generation. Installation and retrieval will be done using a small work boat at slack tide. The workboat will tow the floating turbine from the harbour to the foundation and will be onsite for 1-7 hours. An ROV will be used to attach the turbine to the foundation.

#### ASSESSMENT IN RELATION TO REGULATION 20 or 48

**3a. Is the operation directly connected with or necessary to conservation management of the site? YES/NO If YES give details:**

The operation is not connected with or necessary to conservation management of the site.

*If yes and it can be demonstrated that the tests in 3b have been applied to all the interest features in a fully assessed and agreed management plan then consent can be issued but rationale must be provided, including reference to management objectives. If no, or if site has several European qualifying interests and operation is not directly connected with or necessary to the management of **all** of these then proceed to 3b*

**3b. Is the operation likely to have a significant effect on the qualifying interest? Repeat for each interest on the site.**

During the consultation phase of the Marine licensing process, SNH concluded that the proposed deployment of the tidal energy device is likely to have a significant effect on the following qualifying interests of the above SPAs (using foraging and diving range information from BirdLife International and Thaxter et al 2012 together with EMEC wildlife Observation Data):

- Calf of Eday Special Protection Area (SPA) – Great cormorant, Common guillemot
- Cape Wrath SPA – Common guillemot
- Copinsay SPA – Common guillemot
- East Caithness Cliffs SPA – Common guillemot, Atlantic puffin
- Fair Isle SPA – Common guillemot, Northern gannet, Atlantic puffin
- Foula SPA – Atlantic puffin
- Hermaness Saxa Vord and Valla Field SPA – Northern gannet
- Hoy SPA – Common guillemot, Atlantic puffin
- Marwick Head SPA – Common guillemot
- North Caithness Cliffs SPA – Common guillemot, Atlantic puffin
- North Rona and Sule Sgeir SPA – Northern gannet
- Noss SPA – Northern gannet
- Rousay SPA – Common guillemot
- Sule Skerry and Sule Stack SPA – Northern gannet, Common guillemot, Atlantic puffin
- West Westray SPA - Common guillemot

The proposal is also likely to have a significant effect on the qualifying interests of:

- Faray and Holm of Faray SAC
- Sanday SAC

Potential impacts include disturbance associated with the physical presence or noise associated with vessel movements and device operation which may cause a disturbance to the qualifying interests detailed in section 1c, or collision risk with the turbine.

Other devices are already operational at the Fall of Warness: Hamerfest Strom, Atlantis, Scotrenewables, Voith, and Open Hydro and therefore cumulative impacts must be considered.

- i) indicate which feature of interest could be affected by the proposed operation and briefly in what way; if none proceed to v), otherwise continue;*
- ii) refer to other plans/projects with similar effects/other relevant evidence;*
- iii) consider scale, longevity, reversibility of effects;*
- iv) consider whether proposal contributes to cumulative or incremental impacts with other projects completed, underway or proposed;*
- v) give Yes/No conclusion for each interest.*

YES

**If no for all features, a consent or non-objection response can be given and recorded under 4 (although if there are other features of national interest only, the effect on these should be considered separately). If potential significant effects can easily be avoided, record modifications required under 3d.**

*If yes, or in cases of doubt, proceed to 3c.*

**3c. Appropriate Assessment of the implications for the site in view of the site's conservation objectives.**

- i) Describe for each European qualifying interest the potential impacts of the proposed operation detailing which aspects of the proposal could impact upon them.*
- ii) Evaluate the significance of the potential impacts, e.g. whether short/long term, reversible or irreversible, and in relation to the proportion/importance of the interest affected, and the overall effect on the site's conservation objectives. Record if additional survey information or specialist advice has been obtained.*

**SACs**

SNH advised that the conservation objectives which require further consideration for the SACs are:

- a) significant disturbance to seals  
b) population of the species as a viable component of the SAC.

Based on appraisals carried out SNH concluded that the proposal will not adversely affect any of the identified SAC sites. The appraisal was based on the following factors:

- The number of seals observed indicated by the EMEC wildlife observation data for seals collected between 2010 and 2011 within the Fall of Warness test site is low.
- The proposal is far enough away from SACs for there to be no direct impacts, or disturbance, to the seals while they are within the SACs (assuming appropriate vessel transit routes via a vessel management plan);
- The large extent of alternative foraging habitat available to seals, based on their known foraging ranges, should localised displacement occur due to disturbance,
- The limited area coverage of the proposal, particularly in a wide and relatively open sea area;
- The ongoing impact monitoring by TGL to detect collision with the operating turbine blades;
- Combined with the limited duration of operation at the EMEC tidal test facility, suggests that there would be no adverse impact on the qualifying features of the SAC.

SNH also concluded that the consideration of cumulative and in combination effects will not adversely affect the integrity of any SAC. This assessment considered the following factors:

- Consideration of all current deployments at the Fall of Warness site;
- previous assessments of other deployments at Fall of Warness;
- the wide distribution of alternative habitat potentially available;
- the limited area of the proposal;
- combined with the limited duration of operation at the EMEC tidal test facility, suggests that there would be no detectable impact on the qualifying features of these SACs.

Marine Scotland has previously carried out collision risk modelling on devices deployed at the Fall of Warness and found that risks are minimal.

The PBR (potential biological removal) is intended to ensure that the total numbers of seals for which licences may be issued in each Seal Management Area do not reach a level that may adversely impact on local seal populations. Each local PBR takes into account the status of the local seal populations for each species and reflects recent population trends. Common seal populations have declined markedly over the last 15 years and the PBR for the species is low, only 18 for Orkney. The Grey seal PBR is 959 for Orkney. Marine Scotland has issued 9 common seal licences and 260 grey seal licences this year to date. The deployment of this device on its own and in combination with other devices deployed at the Fall of Warness will not lead to the PBR figure being breached.

### **SPAs**

SHN advised that the conservation objectives which require further consideration for the SPAs are:

- a) significant disturbance to the qualifying species
- b) population of the species as a viable component of the site.

Based on appraisals carried out SNH concluded that the proposal will not adversely affect the integrity of any of the identified seabird SPAs. The appraisal was based on the following factors:

- The numbers of each of the specified seabird species (Northern gannet, Great cormorant, Common guillemot and Atlantic puffin) observed within the Fall of Warness test site as indicated by the EMEC wildlife observation data, is low,
  - The proposal is far enough away from all of the specified SPAs for there to be no direct impacts, or disturbance, to the seabirds while they are within the SPAs (assuming appropriate vessel transit routes via a VMP),
  - The large extent of alternative foraging habitat available to these seabird species, based on their known foraging ranges, should localised displacement occur due to disturbance,
    - The limited geographical coverage of the proposal, which is located in a wide and relatively open sea area,
    - Combined with the limited duration of operation at the EMEC tidal test facility, suggests that there would be no adverse impact on the qualifying features of any of these aforementioned SPAs.

SNH also concluded that the consideration of cumulative and in combination effects will not adversely affect the integrity of any SAC. This assessment considered the following factors:

- Consideration of all current deployments at the Fall of Warness site,
- Previous assessments of other deployments at Fall of Warness,
- The wide distribution of alternative habitat potentially available,
- The limited geographical area of the proposal,
- Combined with the limited duration of operation at the EMEC tidal test site, suggests that there would be no detectable impact on the qualifying features of these SPAs

### **Conclusion**

Marine Scotland agrees with the findings of the SNH appraisal that the development will not have an adverse effect on the integrity of any of the identified SPAs or SACs.

### 3d. Conditions required.

Indicate conditions/modifications required to ensure adverse effects are avoided, & reasons for these.

<b>Condition</b>	<b>Reason</b>
<p><u>Encounter monitoring:</u> The document titled "Monitoring Protocol for the use of Strain Gauges (TGPRO-130- 00112, Revision B, 16 February 2012)" to be reviewed in discussion with SNH and MSLOT at least one month prior to deployment of the DEEP-Gen IV tidal device.</p>	<p>To ensure that the findings of the impact analysis from the DEEP-Gen III device is appropriately incorporated to further validate impact assessment.</p>
<p><u>Vessel Management Plan:</u> Production of a Vessel Management Plan, with details of vessel transit routes and development of protocols supporting adherence with the Scottish Marine Wildlife Watching Code (SMWWC) during all activity which maintains appropriate distances from seal haul-outs and bird colonies. Including an exclusion zone of 500m to be maintained around identified harbour seal haul-out sites during the sensitive pupping period in June and July.</p>	<p>To minimise disturbance to marine mammals (including SACs and EPS), basking shark and birds (including SPAs)</p>
<p><u>Corkscrew injuries:</u> If a DP vessel is to be used the use of an observer to monitor the wake of the thrusters for signs of a blood/oil slick which could indicate a seal-thruster interaction. If such signs are seen, a follow up search of the nearby shoreline to look for evidence of injury/mortality should be undertaken.</p>	<p>In combination with adherence to SMWWC guidelines, to help minimise the risk of seal injury from vessel thrusters and, in the vent of an interaction, to further understanding.</p>
<p><u>Non-native marine species:</u> Use of appropriate biofouling management practices including the use of anti-fouling and/or foul-release systems and other operational management practices</p>	<p>To minimise the transfer of invasive non-native species.</p>



#### 4. RESPONSE

##### a) Marine Scotland's Comments

For Marine Scotland advice to other authorities:

Provided that the mitigation and monitoring measures outlined in the relevant sections of the supporting Monitoring Protocol for the use of strain gauges document and EMMP which will be provided by the developer and signed off by Marine Scotland and SNH are adhered to then the installation, operation and decommissioning of the TGL device will not adversely affect the integrity of any of the identified SACs or SPAs
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For Marine Scotland response to request for opinion on effects of permitted development:

Will not adversely affect integrity of the sites
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For Marine Scotland response to application:

Licence process will continue
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<b>Name of assessor</b>	Gayle Holland
<b>Date</b>	21 <sup>st</sup> June 2012