

Appropriate Assessment for Unexploded Ordnance Clearance Activities. October 2022.

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**MARINE SCOTLAND - LICENSING OPERATIONS TEAM'S
ASSESSMENT OF THE PROJECT'S IMPLICATIONS FOR
DESIGNATED SPECIAL AREAS OF CONSERVATION IN VIEW OF THE
SITES' CONSERVATION OBJECTIVES.**

APPLICATION FOR A EUROPEAN PROTECTED SPECIES LICENCE UNDER THE CONSERVATION (NATURAL HABITATS, &C.) REGULATIONS 1994 AND THE CONSERVATION OF OFFSHORE MARINE HABITATS AND SPECIES REGULATIONS 2017 AND A MARINE LICENCE UNDER THE MARINE AND COASTAL ACCESS ACT 2009 FOR UNEXPLODED ORDNANCE REMOVAL AND DETONATION, USE OF EXPLOSIVE SUBSTANCES AND REMOVAL OF DEBRIS

SITE DETAILS: SEAGREEN ALPHA OFFSHORE WIND FARM AND SEAGREEN BRAVO OFFSHORE WIND FARM, FIRTH OF FORTH

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SECTION 1: BACKGROUND

1 Appropriate assessment conclusion

- 1.1 This appropriate assessment (“AA”) concludes that there will be no adverse effect on the site integrity of the Firth of Tay & Eden Estuary Special Area of Conservation (“SAC”) from the Seagreen Wind Energy Limited (hereafter referred to as “Seagreen”) proposal either in isolation or in combination with other plans or projects, providing that the condition(s) set out in Section 4 is/are complied with.
- 1.2 Marine Scotland – Licensing Operations Team (“MS-LOT”) considers that the most up to date and best scientific advice available has been used in reaching the conclusion that the Seagreen proposal will not adversely affect the integrity of the Firth of Tay & Eden Estuary SAC and is satisfied that no reasonable scientific doubt remains.

2 Introduction

- 2.1 This is a record of the AA undertaken by MS-LOT in regards to the Seagreen proposal for the removal and detonation of unexploded ordnance (“UXO”) with the use of explosive substances and the removal of debris associated with the Seagreen Alpha Offshore Wind Farm and Seagreen Bravo Offshore Wind Farm as required under Regulation 48 of the Conservation (Natural Habitats, &c.) Regulations 1994 and Regulation 28 of the Conservation of Offshore Marine Habitats and Species Regulations 2017 (“the Habitats Regulations”). MS-LOT, as the 'competent authority' under the Habitats Regulations, has to be satisfied that the project will not adversely affect the integrity of any European site (special areas of conservation and special protection areas), either alone or in combination with other plans or projects, before it can grant consent for the project.
- 2.2 NatureScot, operating name of Scottish Natural Heritage, has been consulted.

3 Details of proposed project

- 3.1 Seagreen was awarded consents by the Scottish Ministers in October 2014 for the construction of 150 wind turbine generators (“WTGs”) known as the Seagreen Alpha and the Seagreen Bravo Offshore Wind Farms located in the Firth of Forth. Construction of the Seagreen Alpha and Bravo Offshore Wind Farms commenced in 2021 involving the installation of 114 of the consented

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WTGs and associated array cables and installation of Offshore Substation Platforms (“OSP”).

- 3.2 Seagreen carried out a geophysical survey, between March and September 2021, to identify UXO and boulders within the area of the Seagreen Alpha and Seagreen Bravo Offshore Wind Farm. Thereafter a UXO clearance campaign was undertaken in October 2021. As a result of the investigative survey and subsequent UXO clearance Seagreen determined that 122 WTG sites comprising 114 preferred locations and 8 spare locations were clear of UXOs.
- 3.3 As part of the WTG jacket installation phase of their construction programme, Seagreen are undertaking a further geophysical survey under their existing European Protected Species (“EPS”) licence (00009273). This survey aims to establish the presence of UXOs at an additional 20 spare WTG locations within the wind farm array area which will be used in the event of suction caisson foundation refusals at other WTG sites. This survey has not yet been completed and therefore the final results are not known. Seagreen has therefore, applied for an EPS and marine licence based on a worst case assumption that the clearance of up to five UXOs which will each require to be detonated. Based on the outcome of the aforementioned UXO clearance campaign, Seagreen has stated that the most powerful UXO which may be present and therefore require detonation would be 930 kilograms (“kg”) Net Explosive Quantity (“NEQ”) however it is unlikely that individual UXOs will exceed 300kg NEQ and most are likely to be smaller. Detonation of the UXO generates a loud underwater sound which poses a risk to marine wildlife in the vicinity.
- 3.4 Seagreen proposes to clear any identified UXO (either by relocation or disposal), remove any associated debris associated with the UXO disposal activities and remove any other debris that may otherwise pose a risk to WTG suction caisson installation. The area of seabed at each location to be investigated comprises of a bow-tie shaped area, extending up to 380 metres from the WTG location and covering an area of approximately 0.26 kilometres squared representative of the area to be cleared for suction caisson installation and inter-array cable pull in.
- 3.5 Seagreen has indicated a preferred approach to the clearance of any potential UXO starts with relocation and leave in situ. If this is not appropriate, low-order disposal (deflagration) will be the adopted method and the worst case scenario would thereafter be high-order disposal. Seagreen has therefore confirmed that the proposal has been assessed on the worst case scenario that high-order disposal is required where the alternative methods have been deemed unsuitable.

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- 3.6 Seagreen propose to undertake these works between November 2022 and the end of March 2023, following analysis of the current geophysical survey results and subsequent inspections of identified targets to confirm any UXOs requiring clearance. UXO clearance is expected to occur over an estimated maximum of 5 days (1 UXO per day) with debris removal taking place throughout this period also.

4 Consultation

- 4.1 NatureScot was consulted on the marine licence application and the EPS licence application on 18 August 2022 and provided separate representation to both applications on 20 September 2022.

5 Main points raised during consultation

- 5.1 NatureScot advised that there is potential for the works to have a likely significant effect on the harbour seal qualifying interest of the Firth of Tay and Eden Estuary SAC and therefore advised that an AA was required.
- 5.2 NatureScot advised that with regard to the Isle of May SAC and Berwickshire and North Northumberland Coast SAC, whilst the grey seals qualifying interest is known to cover some considerable distances when they forage, they tend to stay within 20km of the breeding colony during the breeding season. Given the Seagreen Alpha Offshore Wind Farm and Seagreen Bravo Offshore Wind Farm array area is located beyond the 20km threshold, NatureScot concluded that there is no requirement to consider the sites further.
- 5.3 NatureScot advised that with regard to the bottlenose dolphin qualifying interest of the Moray Firth SAC, their coastal nature means that they are unlikely to be found in the deeper offshore waters of the Seagreen Alpha Offshore Wind Farm and Seagreen Bravo Offshore Wind Farm array area and as such there is no requirement to consider this site further.
- 5.4 In addition, NatureScot concluded that given the duration and localised scale of Seagreen's proposal there would be no likely significant effect on any qualifying interests of Special Protection Areas.

SECTION 2: INFORMATION ON EUROPEAN SITES

6 Background information and qualifying interests for the relevant European site

6.1 This section provides links to the NatureScot SiteLink website (“SiteLink”) where the background information on the site being considered in this assessment is available. The qualifying interests for the site are listed as are the conservation objectives.

Table 1 Name of European site affected and relevant link to SiteLink

Firth of Tay and Eden Estuary SAC SiteLink (nature.scot)

Table 2 Qualifying interests

Estuaries Harbour Seal (<i>Phoca vitulina</i>) Intertidal mudflats and sandflats Subtidal sandbanks
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Table 3 Conservation objectives

(i) To avoid deterioration of the qualifying habitats (listed above) 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 qualifying habitats that the following are maintained in the long term:

- Extent of the habitat on site
- Distribution of the habitat within site
- Structure and function of the habitat
- Processes supporting the habitat
- Distribution of typical species of the habitat
- Viability of typical species as components of the habitat
- No significant disturbance of typical species of the habitat

(ii) To avoid deterioration of the habitats of the qualifying species (listed above) or significant disturbance to the qualifying species, 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 qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species



SECTION 3: ASSESSMENT IN RELATION TO REGULATION 48 OF THE CONSERVATION (NATURAL HABITATS, &C.) REGULATIONS 1994 AND REGULATION 28 OF THE CONSERVATION OF OFFSHORE MARINE HABITATS AND SPECIES REGULATIONS 2017

7 Requirement for appropriate assessment

7.1 *Is the project directly connected with or necessary to the conservation management of the site(s)?*

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

7.2 *Is the project likely to have a significant effect on the qualifying interest(s)?*

In its response dated 20 September 2022 NatureScot advised that the Seagreen proposal is likely to have a significant effect on the harbour seal qualifying interest of the Firth of Tay and Eden Estuary SAC as a result of underwater noise impacts.

MS-LOT agrees with NatureScot's advice and has undertaken an AA for the Firth of Tay and Eden Estuary SAC in relation to harbour seals.

8 Appropriate assessment of the implications for the site in view of the site's conservation objectives.

8.1 MS-LOT has considered the applications and supporting documentation, and the advice provided by NatureScot and has used it to support this assessment.

8.2 NatureScot has based its advice on both the information contained within the *European Protected Species Risk Assessment and Marine Mammal Mitigation Plan (Document reference: LF000009-CST-OF-LIC-REP-0012 Rev 01)*, its experience from the previous UXO clearance 2021 campaign at Seagreen and its own assessment.

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- 8.3 NatureScot advised that whilst there is a potential for a likely significant effect on harbour seal as a result of underwater noise impacts, telemetry and seals-at-sea usage data from the Sea Mammal Research Unit suggests that the windfarm site is not of particular importance to harbour seals from the Firth of Tay & Eden Estuary SAC. Furthermore, the short duration and localised scale of the proposal, together with the mitigation measures for European protected species detailed in the risk assessments, mean that the risk of auditory injury will be minimised such that there will be no adverse effect on site integrity for harbour seal as a qualifying interest of the Firth of Tay & Eden Estuary SAC.
- 8.4 In their previous response to the October 2021 UXO clearance campaign, NatureScot advised that any UXOs found above 300kg NEQ would require to be discussed on a case-by-case basis prior to their disposal. Given the similarities between the nature of Seagreen's proposal and the October 2021 UXO clearance campaign MS-LOT consider this advice to remain relevant for the purpose of this AA.
- 8.5 MS-LOT concurs with the view of NatureScot and concludes that there will be no adverse effect on site integrity of the aforementioned designated site from the Seagreen proposal in isolation provided the conditions in section 4 are adhered to.

9 In combination assessment

- 9.1 MS-LOT has carried out an in combination assessment to ascertain whether the Seagreen proposal will have a cumulative effect with other plans or projects which, in combination, would have the potential to affect the qualifying interests of the Firth of Tay and Eden Estuary SAC.
- 9.2 The following projects currently have an active marine licence, section 36 consent, European protected species licence and associated AA which identified a likely significant effect on the qualifying interests of the Firth of Tay and Eden Estuary SAC.
- 9.3 Copenhagen Offshore Partners - Outer Moray Firth

Copenhagen Offshore Partners are planning to undertake a geophysical survey campaign from September 2022 to March 2023 and have been granted a European protected species licence in respect of disturbance to harbour porpoise, bottlenose dolphin, minke whale, white sided dolphin and white-beaked dolphin. The survey will be carried out within the Outer Moray

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Firth 80km southeast of Aberdeen and will involve the use of sub-bottom profilers, ultra-high resolution sparkers, multi-beam echo sounders, ultra-short baseline systems and side scan sonar.

9.4 Fife Coast and Countryside Trust - Sand Extraction - West Sands, St Andrews

Fife Coast and Countryside Trust are proposing to harvest sand from West Sands beach in St Andrews to bund blowouts and to create small new dunes. Fife Coast and Countryside Trust proposed to extract 2,600 tonnes of sand from an area of 0.126km² at a depth between 150mm and 200mm from a donor site located below mean high water springs (“MHWS”). The sand would then be deposited within sand dunes above MHWS, a maximum of about 500m from the donor site. These works have been carried out over many years before and are part of continuing dune restoration efforts. The current proposal will be carried out between September and March for a duration of three years until 2 January 2023.

9.5 Inch Cape Offshore Transmission Infrastructure

Construction of offshore transmission infrastructure associated with the Inch Cape Offshore Wind Farm, 15-22km east of the Angus coastline. The development will consist of up to two offshore substation platforms. In addition up to two export cables will connect the development to the landfall at Cockenzie in East Lothian. The project has been consented however construction activities are yet to commence.

Further information regarding the project can be found [here](#).

9.6 Inch Cape Offshore Wind Farm (revised design)

Construction and operation of a wind farm 15-22km east of the Angus coastline. The development will consist of a maximum of 72 wind turbines. The project has been consented however construction activities are yet to commence. The developer has submitted a screening request for proposed variations to the s.36 consent which is currently under consideration by MS-LOT.

Further information regarding the project can be found [here](#).

9.7 Neart na Gaoithe Offshore Wind Farm

Construction and operation of a wind farm located 15.5km east of Fife Ness in the Firth of Forth. Consent has been granted for up to 54 wind turbines with

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piled jacket foundations. The operational lifespan of the project is expected to be 50 years. The project is currently under construction.

Further information regarding this project can be found [here](#).

9.8 Scottish Hydro Electric Power Distribution ("SHEPD") - Geophysical Surveys - Forth and Tay and Moray Regions

SHEPD are proposing to undertake geophysical surveys in the Moray Firth Marine Region and the Forth and Tay Marine Region along a number of cable routes. The proposal includes the use of Ultra-Short Baseline ("USBL") and Sub-Bottom Profiler ("SBP"). The proposal is due to commence once the licence is issued and is expected to be completed by 31 March 2023. Vessel presence and survey activities on all cables across the Moray Firth Marine Region and the Forth and Tay Marine Region are expected to take 7.22 days in total, with an additional 12 hours allowed for equipment calibrations for each survey mobilisation.

9.9 Seagreen Alpha Offshore Wind Farm

Seagreen Alpha Wind Energy Limited development is approximately 27km off the Angus coastline. The project is currently under construction.

Further information regarding the development can be found [here](#).

It was collectively assessed as part of the Forth and Tay Windfarm Developments which also includes Neart na Gaoithe, Inch Cape and Seagreen Bravo.

9.10 Seagreen Bravo Offshore Wind Farm

Seagreen Bravo Wind Energy Limited development is approximately 38km off the Angus coastline. The project is currently under construction.

Further information regarding the development can be found [here](#).

It was collectively assessed as part of the Forth and Tay Windfarm Developments which also includes Neart na Gaoithe, Inch Cape and Seagreen Alpha.

9.11 Seagreen Transmission Infrastructure

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Seagreen Alpha Wind Energy Limited development is approximately 27km off the Angus coastline and Seagreen Bravo Wind Energy Limited development is approximately 38km off the Angus coastline. The project is currently under construction.

Further information regarding the transmission infrastructure for the developments can be found [here](#).

It was collectively assessed as part of the Forth and Tay Windfarm Developments which also includes Neart na Gaoithe and Inch Cape.

9.12 Seagreen Wind Energy Limited - Geophysical Surveys - Seagreen 1A Cable Route

Seagreen proposes to install a further export cable to enable the subsequent build out of the Seagreen Alpha and Bravo Offshore Wind Farms. This export cable is to be known as Seagreen 1A and will make landfall at Cockenzie in the Firth of Forth. Seagreen propose to undertake geophysical surveys of the planned Seagreen 1A cable route. This will include the use of multi-beam echo sounder, side-scan sonar, sub-bottom profiler, magnetometer, sparker boomer and ultra-short base line. The total survey area covers approximately 548 square kilometres.

9.13 Sea Mammal Research Unit, University of St. Andrews - Geophysical Survey - Firth of Tay and Eden Estuary

The Sea Mammal Research Unit at University of St Andrews are planning to undertake a geophysical survey campaign for the purpose of locating installation of a seawater delivery system into the Scottish Oceans Institute. They are in the process of applying for a European protected species licence in respect of the survey works which will be carried out within 2km of the southern boundary of the Firth of Tay and Eden Estuary SAC and will involve the use of a parametric sub bottom profiler which will emit sound in the hearing range of grey seals, harbour seals and bottlenose dolphins. The survey works are anticipated to occur during June – July.

9.14 **Assessment of in combination effects on the Firth of Tay and Eden Estuary designated site**

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- 9.15 Inch Cape Offshore Wind Farm and associated transmission infrastructure is yet to begin construction activities and therefore it is unlikely that there will be any in combination effects with the Seagreen proposal.
- 9.16 There is the potential for in combinations effects with the remaining projects however, due to the short duration of the Seagreen proposal, any temporal overlap between the projects will be small. Furthermore, providing all the projects are undertaken in line with the conditions in their respective AAs, MS-LOT concludes that there will be no adverse impact on the site integrity of the Firth of Tay and Eden Estuary SAC from in combination effects.

10 MS-LOT Conclusion

- 10.1 MS-LOT concludes that providing the conditions listed in Section 4 are adhered to, there will be no adverse effect on the site integrity of Firth of Tay and Eden Estuary SAC from the Seagreen proposal either in isolation or in combination with other projects.

SECTION 4: CONDITIONS

11 Requirement for conditions

- 11.1 The following conditions are required to ensure the project will not adversely affect the site integrity of the Firth of Tay and Eden Estuary SAC:
 - 11.1.1 The Licensee must ensure that all licensed activities are carried out in strict accordance with the *European Protected Species Risk Assessment and Marine Mammal Mitigation Plan (Document reference: LF000009-CST-OF-LIC-REP-0012 Rev 01)* dated 22 July 2022 (“the Risk Assessments”) but subject to the following modifications or amendments made within this licence.
 - 11.1.2 The Licensee must ensure that where any UXO encountered exceeds 300kg, this is left in situ and no clearance is undertaken, until an appropriate protocol for disposal has been agreed, in writing, with the Licensing Authority in consultation with NatureScot and any other advisors as required.