



Project Title	Seagreen Wind Energy Ltd / Seagreen 1A Ltd
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The Seagreen and Seagreen 1A Projects Decommissioning Programme

Section 105 of the Energy Act 2004

Seagreen Offshore Wind Farms Section 36 Consents - Condition 3

Seagreen Offshore Transmission Assets Marine Licence MS-00010078 - Condition 3.2.2.2

Seagreen 1A Marine Licence MS-00009923 – Condition 3.1.25

For the approval of the Scottish Ministers

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1. Executive Summary

Seagreen Wind Energy Limited ('SWEL'), a joint venture between SSE Renewables and Total, was awarded Section 36 Consent under the Electricity Act 1989 by Scottish Ministers in October 2014 for the Seagreen Alpha and Seagreen Bravo Offshore Wind Farms (OWFs). Marine Licences for Seagreen Alpha OWF and Seagreen Bravo OWF and the Offshore Transmission Asset (OTA) were also awarded by Scottish Ministers in October 2014 under the Marine (Scotland) Act 2010 and the Marine and Coastal Access Act 2009. Together the Seagreen Alpha and Seagreen Bravo OWFs and the OTA collectively comprise 'the Seagreen Project'. All consents have been subsequently varied to take account of changes to the project design.

On 8 December 2014, following consultation with the Scottish Ministers, the Secretary of State (SoS) issued two notices requiring SWEL 'to submit a Decommissioning Programme (DP), pursuant to section 105 (S105) of the Energy Act 2004 ('the Act'), prior to the commencement of construction of the Project'. (Seagreen note that since these notices were issued the responsibility for approval of decommissioning programmes has been fully devolved to the Scottish Ministers).

SWEL submitted a DP to the Scottish Ministers for the decommissioning of the Seagreen Project on 26 August 2020 pursuant to S105 of the Act, the Seagreen Alpha and Seagreen Bravo OWF Section 36 Consents Condition 3 and the OTA Marine Licence Condition 3.2.2.2.

On 24 March 2022, 18 months after the original submission of the Seagreen Project DP, Marine Scotland - Licensing Operations Team (MS-LOT) on behalf of the Scottish Ministers, notified SWEL that the DP was rejected pursuant to Section 106 (S106) of the Act. The reasons for rejection of the DP are set out in Annex A to the S106 and were primarily due to the decommissioning methodology proposed for inter array and export cables which was to leave these elements in-situ.

As part of the same communication, notice was served under S105 of the Act, requiring SWEL resubmit a DP for the decommissioning of the Seagreen Project to the Scottish Ministers no later than 24 September 2022. The S105 issued on 24 March 2022 required that SWEL consult the bodies specified in Schedule 2 on the draft DP and make the consultation draft of the DP publicly available for a minimum period of 30 days. In advance of the consultation period, SWEL was required to provide a copy of the consultation draft of the DP and details of the proposed consultation process to MS-LOT.

On 8 December 2021, Seagreen 1A Ltd ('Seagreen 1A') was granted a Marine Licence under the Marine (Scotland) Act 2010 and Marine and Coastal Access Act 2009 to construct and operate a single HVDC cable connecting the Seagreen Project to a new landfall at Cockenzie in East Lothian (the 'Seagreen 1A Project').

Seagreen 1A received a notice under Section 105(2) of the Energy Act 2004 from the Marine Scotland Licensing Operations Team (MS-LOT) on 21 June 2022. This notice, together with condition 3.1.25 of the Marine Licence, requires Seagreen 1A to submit, for approval by Scottish Ministers, a Decommissioning Programme (DP) setting out the measures to be taken in connection with the decommissioning of the assets specified in Schedule 1 to the notice. The S105 Notice makes provision for consultation with specified bodies on the draft DP.

All related onshore assets are consented under the Town and Country Planning (Scotland) Act 1997 and are therefore not considered in this DP.

A 'consultation draft' of the DP was circulated to interested parties (as listed in the S105 Notices) and made available on the Project's website. Comments received during a defined consultation period have been addressed in this final DP, submitted for approval.

The proposed measures set out in this DP, as summarised in Table 1-1 below, adhere to the existing Scottish, UK and international legislation, environmental requirements and guidance notes that are in force at the time of writing, and have regard to decommissioning good practice. Additionally, Seagreen has undertaken a detailed review of the S106 Notice Annex A and all reasons for rejection which have been considered in this revised DP.

In considering appropriate decommissioning provisions, SWEL and Seagreen 1A have sought to adhere to the key principles set out in the documents listed below, namely the Best Practicable Environmental Option (BPEO), the safety of surface and subsurface navigation, other uses of the sea and health and safety considerations:

- Decommissioning of offshore renewable energy installations under the Energy Act 2004: Guidance notes for industry (England and Wales) (BEIS, March 2019) – the 'BEIS Guidance'
- *Decommissioning of offshore renewable energy installations in Scottish Waters or in the Scottish part of the Renewable Energy Zone under the Energy Act 2004: Guidance notes for industry* (Scotland) (Scottish Government, July 2022) – the 'Scottish Government Guidance'

Table 1-1 - Proposed decommissioning measures

Project Component	Proposed Decommissioning Measures
Wind Turbines	Complete removal from site.
Wind Turbine Support Structures	Complete removal from site.
OSP Topsides	Complete removal from site.
OSP Support Structures	Entire jacket structure removed. Pin pile foundations to be cut at 1m below the surface of the seabed so that the remaining parts do not pose a danger for shipping or fishing vessels, even if sediments should become relocated, and cut sections removed from site.
Cables (marine export, inter-array and interconnector)	Complete removal from site <i>except</i> where there is a high risk to other assets (cable crossings) or to the marine environment, or health and safety concerns (in addition to extreme costs required for the removal). Where cable protection (loose rock) is to remain in-situ, the cable underneath will also remain in-situ.
Intertidal HDPE Ducts	Decommissioning in-situ. Removal of the ducts is likely to require significant excavation of the sea defences and intertidal areas resulting in disturbance that is not considered commensurate with the environmental benefits associated with removal. Additionally, the process for Seagreen 1A (Cockenzie landfall) would require construction of a cofferdam requiring a significant campaign which in light of the environmental benefits associated with removal would have unacceptable risks to personnel and the marine environment and extreme costs.
Cable/Scour Protection	Decommissioning measures will be dependent on the type, quantity and extent of cable and scour protection used. Where loose rock is used, this will be left in-situ since recovery entails significant impacts on the benthic environment, health and safety risks and extreme costs when balanced against the decommissioning guiding principles. The proposed decommissioning measures for cable and scour protection will be considered further in future updates of the DP once the type and quantity of any installed protection is known and will be subject to further environmental assessment.

Methods outlined are presented based on current available technology. It is expected that by the time of decommissioning, technological changes may result in different approaches to decommissioning activities and that any relevant changes will be reflected in future revisions of the DP.

The DP details the methods associated with the future end of life decommissioning of the assets. It has been prepared based on known site characteristics and consent conditions. The DP is informed and supported by the Environmental Statement (ES) prepared for the Seagreen Project (April 2012) (and further information provided via the ES Addendum dated May 2013) and the Environmental Impact Assessment Report (EIAR) prepared for the Seagreen 1A Project. In advance of decommissioning, the ES will be reviewed to assess the potential impacts that may arise and are not covered in the initial EIA process and subsequent reviews.

The Projects have an anticipated operational period of 25 years following final commissioning, and in the absence of any extension of life, decommissioning would be required at the end of the operational period. The required operational life of the Seagreen 1A Project is directly linked to that of the Seagreen Project and any proposals to re-power or life-extend the Seagreen Project assets.

A cost estimate for the DP has been estimated by means of a ground up decommissioning cost model based on the vessel, equipment and personnel requirements and the duration of the works. Financial security has been carefully considered to ensure that the liability will be met. The financial appendix has been provided to MS-LOT on a confidential basis separately for review.

This DP meets the requirements set out under Section 105(8) of the Energy Act 2004, and the S105 Notices. The submission of this DP to MS-LOT therefore satisfies Condition 3 of the S36 Consents, Condition 3.2.2.2 of the OTA Marine Licence and Condition 3.1.25 of the Seagreen 1A Marine Licence.

2. Introduction

2.1 Background

Seagreen Wind Energy Limited ('SWEL'), a joint venture between SSE Renewables and Total, was awarded Section 36 Consent (S36 Consent) under the Electricity Act 1989 by Scottish Ministers in October 2014 for Seagreen Alpha and Seagreen Bravo Offshore Wind Farms (OWFs). Marine Licences for Seagreen Alpha OWF and Seagreen Bravo OWF and the Offshore Transmission Asset (OTA) were also awarded by Scottish Ministers in October 2014 under the Marine (Scotland) Act 2010 and the Marine and Coastal Access Act 2009. Together the wind farms Seagreen Alpha and Seagreen Bravo and the OTA collectively comprise 'the Seagreen Project'.

In 2018, following application by SWEL, the S36 Consents, Alpha Marine Licence and Bravo Marine Licence were varied by Scottish Ministers. Subsequently, in 2019, the OTA Marine Licence was also varied by Scottish Ministers. In addition, a Marine Licence was granted in 2019, and subsequently varied in 2020, providing an alternative landfall cable installation method. The S36 Consents, Alpha Marine Licence, Bravo Marine Licence and OTA Marine Licence were further varied in 2022 following applications by SWEL.

In December 2021, a further Marine Licence was granted to Seagreen 1A Limited ('Seagreen 1A') for the installation of an additional export cable connecting the Seagreen Project to a new landfall and onshore grid connection at Cockenzie in East Lothian. These works are known as the 'Seagreen 1A Project'.

SWEL (company number 06873902) and Seagreen 1A (company number 12575047) both have their registered office at No.1 Forbury Place, 43 Forbury Road, Reading, RG1 3JH and are joint ventures between SSE Renewables Services (UK) Limited and TotalEnergies Renewables Seagreen Holdco Limited. For the purposes of this DP, SWEL and Seagreen 1A are collectively referred to as 'Seagreen'.

2.2 Licence Conditions and Section 105 and 106 Notices

On 8 December 2014, following consultation with the Scottish Ministers, the Secretary of State (SoS) issued two notices requiring SWEL 'to submit a Decommissioning Programme (DP), pursuant to Section 105 (S105) of the Energy Act 2004 ('the Act'), prior to the commencement of construction of the Project'. (Seagreen note that since these notices were issued the responsibility for approval of decommissioning programmes has been fully devolved to the Scottish Ministers).

SWEL submitted a DP to the Scottish Ministers for the decommissioning of the Seagreen Project on 26 August 2020 pursuant to S105 of the Act, the S36 Consents Condition 3 and the OTA Marine Licence Condition 3.2.2.2.

On 24 March 2022, MS-LOT on behalf of the Scottish Ministers notified SWEL that the DP was rejected pursuant to S106 of the Act. At the same time notice was served under S105(2) of the Act, requiring SWEL to resubmit a DP for the Seagreen Project which was to be provided to MS-LOT no later than 24 September 2022. A copy of the S105 Notice is included at Appendix B.

On 21 June 2022, a S105 notice was issued to Seagreen 1A requiring the submission (no later than 31 December 2022) and approval of a programme for decommissioning of the Seagreen 1A Project. A copy of the S105 Notice is included at Appendix B.

This DP has been produced in accordance with the most recent S105 Notices and, in relation to the Seagreen Project, the reasons for rejection set out in the S106 Notice. In addition, the DP is also intended to discharge Condition 3 of the S36 Consents, Condition 3.2.2.2 of the OTA Marine Licence and Condition 3.1.25 of the Seagreen 1A Marine Licence as set out in Table 2-1. For completeness, reference has also been made to the requirements of a decommissioning programme under the Energy Act 2004.

Table 2-1 - Relevant S105 Notice requirements, S36 and Marine Licence conditions and Energy Act 2004 requirements

Condition Reference	Condition Text	Relevant Section of this DP
Seagreen Project		
S36 Consents Condition 3	Where the Secretary of State has, following consultation with the Scottish Ministers, given notice requiring the Company to submit to the Secretary of State a Decommissioning Programme, pursuant to section 105(2) and (5) of the Energy Act 2004, then construction may not begin on the site of the Development until after the Company has submitted to the Secretary of State a Decommissioning Programme in compliance with that notice.	Rev03 of the DP was submitted in advance of the commencement of construction, as required by this condition
OTA Marine Licence (MS-00010078) Condition 3.2.2.2	Where the Secretary of State has, following consultation with the Licensing Authority, given notice requiring the Licensee to submit to the Secretary of State a DP, pursuant to section 105(2) and (5) of the Energy Act 2004, then construction may not begin on the Site of the Works until after the Licensee has submitted to the Secretary of State a DP in compliance with that notice.	The submission of this DP in accordance with the S105 notice issued for the project satisfies the condition
S105 Notice Paragraph 1	The Scottish Ministers, in exercise of their powers under section 105(2) of the Energy Act 2004 (“the Act”), hereby requires Seagreen Wind Energy Limited, on behalf of Seagreen Alpha Wind Energy Limited and Seagreen Bravo Wind Energy Limited (“Seagreen”), to submit to the Scottish Ministers a decommissioning programme for the Seagreen Alpha Offshore Wind Farm and the Seagreen Bravo Offshore Wind Farm located in the Firth of Forth (“the Seagreen Project”). The decommissioning programme relates to a renewable energy installation used for purposes connected with the production of energy from water or winds as defined in section 104(3) of the Act.	The submission of this DP will satisfy the requirement

Condition Reference	Condition Text	Relevant Section of this DP
S105 Notice Paragraph 2	The decommissioning programme must include an estimate of expenditure likely to be incurred in carrying out decommissioning, in accordance with the template provided in Schedule 1 of this notice. The decommissioning programme will need to satisfactorily address all of the reasons for refusal and advice from MS-LOT in Annex A of the S106 notice served on 24 March 2022	Section 8, Appendix D
S105 Notice Paragraph 3 Part 1	The Scottish Ministers, pursuant to section 105(7) of the Act, hereby further requires Seagreen to consult the bodies specified in Schedule 2, as well as any other consultees identified by Seagreen and any further persons subsequently identified by the Scottish Ministers, on the draft decommissioning programme and make the consultation draft of the decommissioning programme publicly available for a minimum period of 30 days	Section 7, Appendix E and Appendix F details the consultation process and the responses received
S105 Notice Paragraph 3 Part 2	In advance of the consultation period, Seagreen should provide a copy of the consultation draft of the decommissioning programme and details of the proposed consultation process to Marine Scotland - Licensing Operations Team ("MS-LOT")	A draft DP was submitted to MS-LOT on 9 September 2022. Comments have been addressed in the final DP
S105 Notice Paragraph 4	The decommissioning programme should be submitted to MS-LOT within one month of the completion of the consultation. This latest draft of the decommissioning programme should include details of the consultation process, including the comments from each consultee (including 'nil returns'). Information should be provided on how any consultation responses have been reflected in the submitted draft of the decommissioning programme. You should ensure that each consultee named in Schedule 2 of this notice acknowledges receipt of the consultation document	Section 7 details the consultation process and lists the organisations providing comments on the draft DP. The consultation closed on 2 December 2022. Appendix E demonstrates how each consultation response has been reflected in the final DP

Condition Reference	Condition Text	Relevant Section of this DP
S105 Notice Paragraph 5	Following conclusion of the consultation period, the decommissioning programme should demonstrate consideration of the representations made during the consultation(s) and should be submitted to MS-LOT within one month of the completion of the consultation. If this date is not met, the Scottish Ministers, in exercise of powers under section 107 of the Act, may prepare and approve their own decommissioning programme in relation to the Seagreen Project and charge all costs incurred to Seagreen or other relevant persons.	Appendix E demonstrates how each consultation response has been reflected in the DP
Seagreen 1A Project		
Export Cable Marine Licence (MS-00009923) Condition 3.1.25	No activity authorised under the licence may take place until a decommissioning programme, as defined in any section 105 notice served by the appropriate Minister, has been approved under section 106 of the Energy Act 2004 by the appropriate Minister	The submission of this DP in accordance with the S105 notice issued for the project satisfies the condition
S105 Notice Paragraph 1	The Scottish Ministers, in exercise of their powers under section 105(2) of the Energy Act 2004 (“the Act”), hereby requires Seagreen 1A Ltd to submit a decommissioning programme for the Seagreen 1A export cable corridor. The decommissioning programme relates to a proposal to construct a relevant object in waters regulated by Chapter 3 of the Energy Act	The submission of this DP in accordance with the S105 notice issued for the project satisfies the condition
S105 Notice Paragraph 2	The decommissioning programme must include an estimate of expenditure likely to be incurred in carrying out decommissioning, in accordance with the template provided in Schedule 1 of this notice	Section 8, Appendix D
S105 Notice Paragraph 3	The Scottish Ministers, pursuant to section 105(7) of the Energy Act, hereby further requires Seagreen 1A Ltd to consult the bodies specified in Schedule 2, as well as any other consultees identified by Seagreen 1A Limited and any further persons subsequently identified by the Scottish Ministers, on the draft decommissioning programme and make the consultation draft of the decommissioning programme publicly available for a minimum period of 30 days	Section 7, Appendix E and Appendix F detail the consultation process and the responses received

Condition Reference	Condition Text	Relevant Section of this DP
S105 Notice Paragraph 4	In advance of the consultation period, Seagreen 1A Ltd should provide a copy of the consultation draft of the decommissioning programme and details of the proposed consultation process to Marine Scotland - Licensing Operations Team (“MS-LOT”). Following the consultation, a copy of the latest draft of the decommissioning programme should be provided to MS-LOT no later than 31 December 2022, for review	A draft DP was submitted to MS-LOT on 9 September 2022. Comments have been addressed in the final DP
S105 Notice Paragraph 5	The decommissioning programme should be submitted to MS-LOT within one month of the completion of the consultation. This latest draft of the decommissioning programme should include details of the consultation process, including the comments from each consultee (including ‘nil returns’). Information should be provided on how any consultation responses have been reflected in the submitted draft of the decommissioning programme. You should ensure that each consultee named in Schedule 2 of this notice acknowledges receipt of the consultation document	Section 7 details the consultation process and lists the organisations providing comments on the draft DP. The consultation closed on 2 December 2022. Appendix E demonstrates how each consultation response has been reflected in the DP
Energy Act requirements		
Energy Act 2004 S105 (8)	A decommissioning programme—	
	(a) must set out measures to be taken for decommissioning the relevant object	Section 5 outlines measures to be taken for decommissioning
	(b) must contain an estimate of the expenditure likely to be incurred in carrying out those measures	Appendix D provides decommissioning costs
	(c) must make provision for the determination of the times at which, or the periods within which, those measures will have to be taken	Appendix C provides the indicative decommissioning schedule
	(d) if it proposes that the relevant object will be wholly or partly removed from a place in waters regulated under this Chapter, must include provision about restoring that place to the condition that it was in prior to the construction of the object; and must include provision about whatever continuing monitoring and maintenance of the object will be necessary	Section 12 details provision for restoration of the site

Condition Reference	Condition Text	Relevant Section of this DP
	(e) if it proposes that the relevant object will be left in position at a place in waters regulated under this Chapter or will not be wholly removed from a place in such waters, must include provision about whatever continuing monitoring and maintenance of the object will be necessary	Section 13 details post-decommissioning monitoring, maintenance and management of the site

2.3 Relevant Guidance

This DP has been prepared in accordance with the latest relevant guidance as follows:

- *Decommissioning of offshore renewable energy installations under the Energy Act 2004: Guidance notes for industry* (England and Wales) (BEIS, March 2019) – the ‘BEIS Guidance’
- *Decommissioning of offshore renewable energy installations in Scottish Waters or in the Scottish part of the Renewable Energy Zone under the Energy Act 2004: Guidance notes for industry* (Scotland) (Scottish Government, July 2022) – the ‘Scottish Government Guidance’
- OSPAR Guidance on Environmental Considerations for Offshore Wind Farm Development, 2008.
- *Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone* (IMO, October 1989)
- *Guidance Notes: Decommissioning of Offshore Oil and Gas Installations and Pipelines* (BEIS, November 2018)
- *Guidelines for Environmental Risk Assessment and Management – Green Leaves III* (Defra, November 2011)

2.4 Updates and Amendments

Although this DP has been finalised for approval, it will remain a live document throughout the operational life of the Projects. Consequently, there will be a requirement for the DP to be reviewed and updated on a regular basis to take into account changing market regimes and regulatory requirements, increased knowledge and understanding of the marine environment including the availability of new information, advancements in technology and working practices, changes to nearby infrastructure and navigational routes and any changes in cost estimates or financial security arrangements.

The DP will be reviewed and, where necessary, updated every 5 years throughout the life of the Projects. As such, it is anticipated that this DP will be revised and, where necessary, updated 5 years after approval by the Scottish Ministers and every 5 years thereafter throughout the life of the Projects.

Consultee bodies listed in the Section 105 notices, and any additional consultees identified by MS-LOT or Seagreen will be provided with the opportunity to comment on the DP prior to it being finalised. It is

anticipated that the final revision process will commence two years prior to the initiation of decommissioning.

In addition, the DP is expected to be reviewed and, where necessary, updated at the following specific points in time, as per the BEIS Guidance and the Scottish Government Guidance:

- Post-construction report to be submitted to Scottish Ministers within one year of completion of construction. This report will include information on any issues raised during construction which may impact eventual decommissioning methods and costs
- A comprehensive review 12-18 months before the first security provision is due to identify any changes in assumptions on costs and risks where these might affect size or timings of financial securities
- Annual reviews to be carried out from payment of the first security to ensure the financial security provisions are on track. Any changes that could affect these financial security provisions are to be reported to Scottish Ministers
- Consultation on the EIA required to inform the final decommissioning proposals should be commenced at least 3 years prior to commencing decommissioning with a final comprehensive review of the DP carried out at least two years prior to commencement of decommissioning

2.5 Structure of this Decommissioning Programme

This DP is divided into the sections summarised in Table 2-2 below and reflects the structure for the DP as set out in Annex C of both the BEIS Guidance and the Scottish Government Guidance.

Table 2-2 – Decommissioning Programme structure

Section	Title	Summary of Content
1	Executive Summary	Summary highlighting essential features of the DP
2	Introduction	Summary of S36 Consent, Marine Licence and Energy Act 2004 requirements for a Decommissioning Programme. Confirmation of the companies that are party to the programme and their ownership status
3	Background Information	Relevant background information including: <ul style="list-style-type: none"> • A description of the Projects to be decommissioned and their location • The physical, biological and human environment in the development area • Names and locations of nature conservation designated sites that may be affected by the decommissioning activities
4	Description of Items to be Decommissioned	A full description of all items associated with the Projects to be decommissioned
5	Description of Proposed Decommissioning Measures	An overview of the proposed approach to decommissioning the Projects including: <ul style="list-style-type: none"> • The guiding principles and industry guidance followed in the preparation of the DP • The proposed decommissioning processes for each component of the Projects • A summary of the items to be left in-situ • Proposed waste management solutions
6	Environmental Impact Assessment	Details of the EIAs that were prepared for the Projects and their consideration of decommissioning activities A description of the proposed approach to EIA of the decommissioning activities
7	Consultation with Interest Parties	The consultation process undertaken for the draft DP and future revisions to the DP
8	Costs and Financial Security	Cost information will be provided in line with the BEIS Guidance, Scottish Government Guidance and S105 notice, in a Confidential Appendix to this DP
9	Schedule	Details of the proposed decommissioning timescale, noting that final details of the schedule are only required towards the end of the life of the Projects

Section	Title	Summary of Content
10	Project Management and Verification	Information on how Seagreen will manage the implementation of the DP and provide verification to the Scottish Ministers concerning progress and compliance
11	Seabed Clearance and Restoration of the Site	Description of how Seagreen intends to restore the site as far as is reasonably practicable, to the condition that it was in prior to construction of the project Proposals for confirming that, following decommissioning, the site has been cleared. This includes information on site surveys
12	Post-Decommissioning Monitoring, Maintenance and Management of the Site	Details of the post decommissioning monitoring, maintenance and management activities that will be required
13	Supporting Studies	Details of supporting studies used to inform this DP
14	References	A list of references made in this DP
Appendices		Appendix A – List of Abbreviations and Definitions Appendix B – Section 105 and Section 106 Notices Appendix C – Decommissioning Schedule Appendix D – Decommissioning Costs and Financial Security Information (Confidential) Appendix E – Consultation Matrix Appendix F – Consultation Responses

3. Background Information

3.1 Seagreen Project

The Seagreen Project is located in the North Sea, in the outer Firth of Forth and Firth of Tay region and comprises the OWFs (the wind turbine generators (WTGs), their foundations and associated array cabling), together with associated infrastructure of the OTA (Offshore Substation Platforms - OSPs), their foundations and the offshore export cable), to facilitate the export of renewable energy to the national electricity transmission grid.

The Seagreen Project will consist of the following key components:

- 150 WTGs comprising installed on three-legged steel jackets, each installed on suction bucket caissons
- Two OSPs, each installed on up to 12 pin pile foundations
- A network of inter-array subsea cables as detailed below:
 - Circa 300km of inter-array cables to connect strings of WTGs to OSP 1
 - Circa 55km of inter-array cables to connect strings of WTGs to OSP 2
 - Circa 3km of interconnector cable to connect the two OSPs
 - Inter-array cables will be buried where possible and where burial is not possible cable protection will be provided
- Three subsea export cables, totalling circa 190km in length, to transmit electricity from the OSPs to the landfall at Carnoustie and connecting to the onshore export cables for transmission to the onshore substation and connection to the National Grid network. Export cables will be buried where possible and where burial is not possible cable protection will be provided.
- Four sections of HDPE duct of approximately 400m in length running from MHWS

The location of the Seagreen Project is shown in Figure 3-1. Figure 3-2 shows the proposed layout of the Project which is:

- West of Berwick Bank OWF (pre-consent)
- East and south of Inch Cape OWF (post-consent)
- North and west of Neart na Gaoithe OWF (under construction)

Construction of the Seagreen Project is underway having commenced main offshore works in September 2021 and is expected to be fully installed by late 2025.

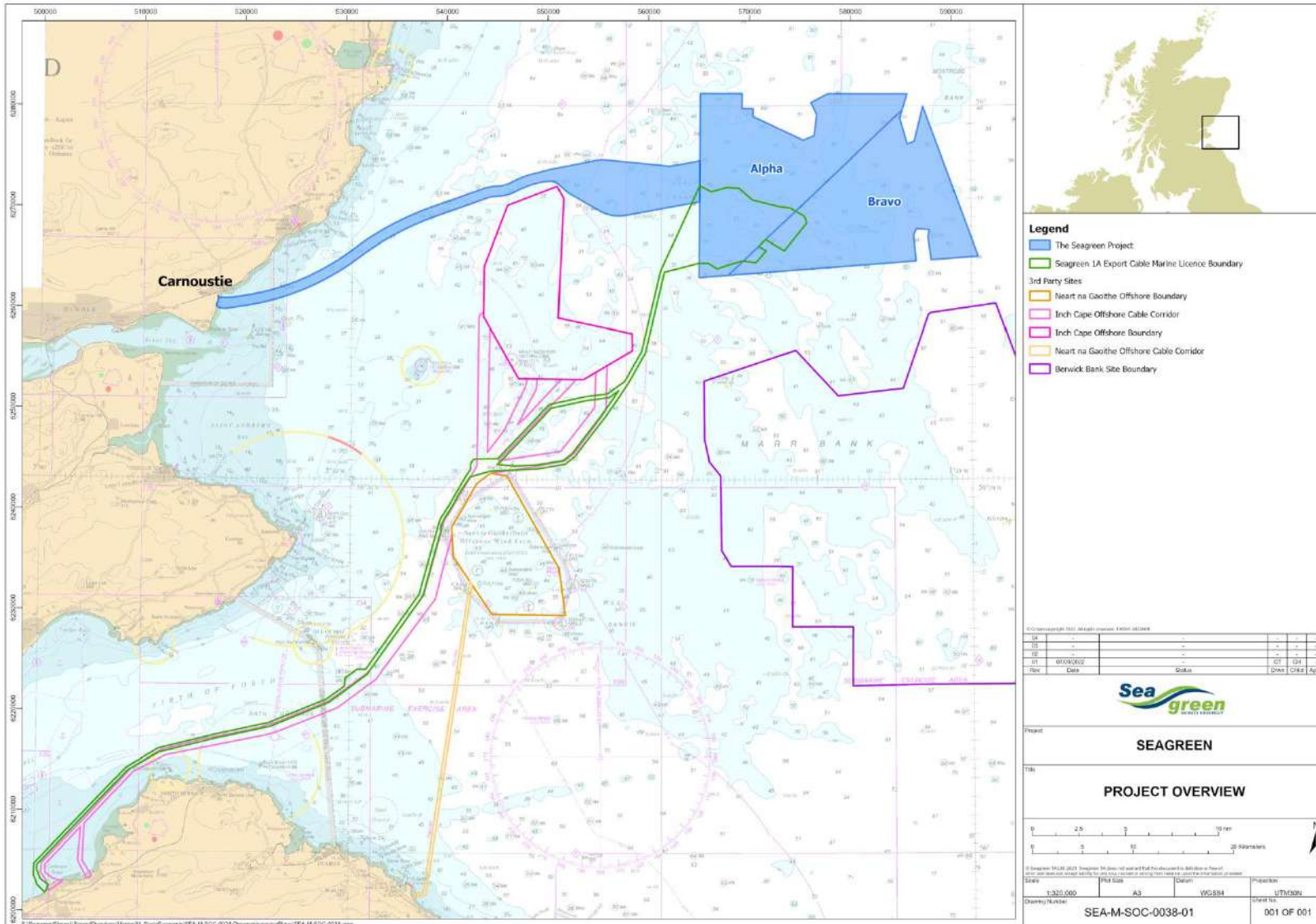


Figure 3-1 – Seagreen Project Location

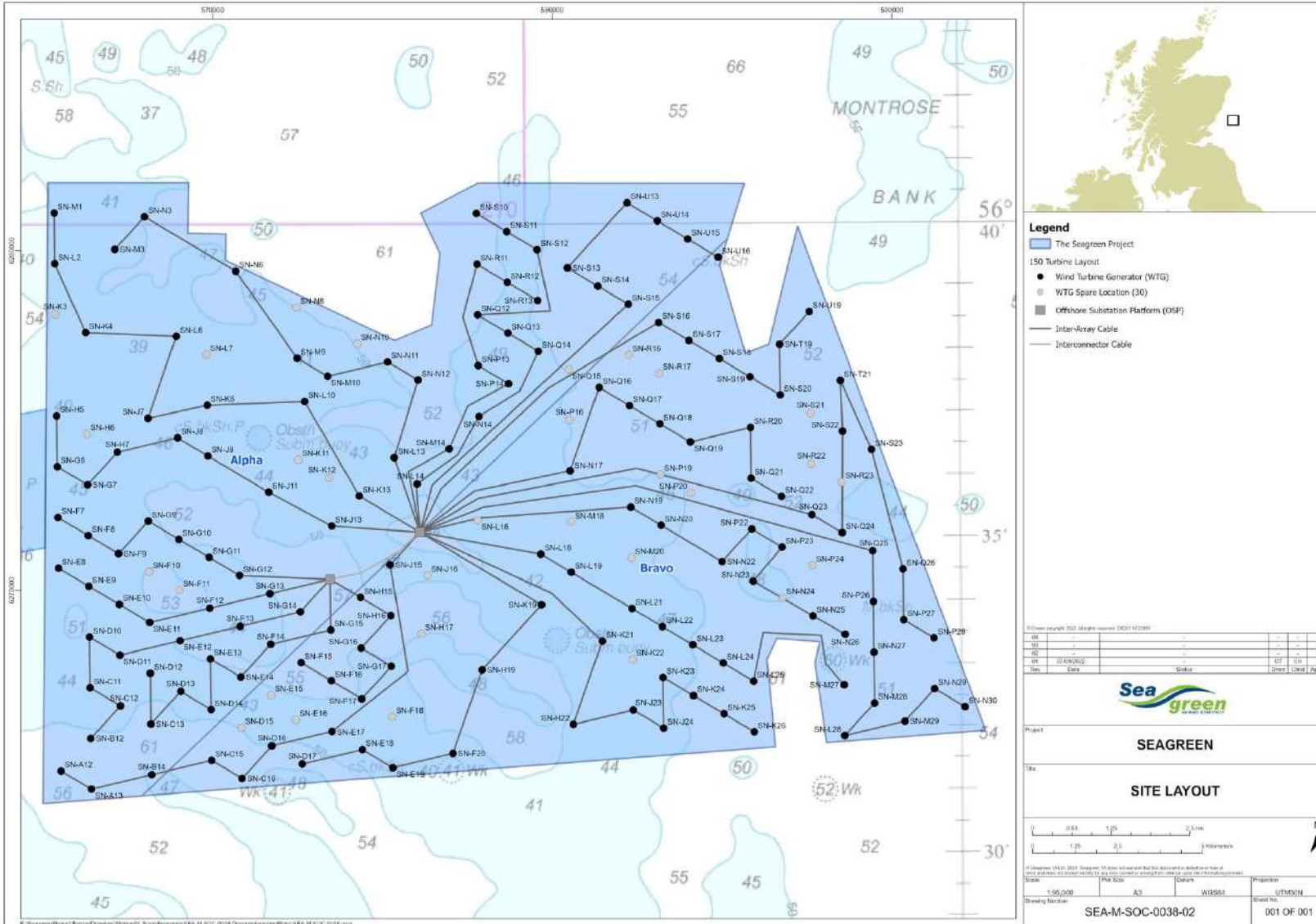


Figure 3-2 – Seagreen OWFs Project Layout

3.2 Seagreen 1A Project

The Seagreen 1A Project is located in the Firth of Forth and the outer Firth of Tay region of North Sea and consists of one buried HVAC subsea export cable, approximately 110km in length. The cable will connect one of the two Seagreen Project offshore substation platforms (OSPs), to landfall at Prestonpans Beach, east of the former Cockenzie power station in East Lothian.

At landfall, the offshore export cable will connect to an onshore export cable for transmission to an onshore substation and connection to the National Grid network thereby facilitating the export of renewable energy to the national electricity transmission grid.

The cable will be laid within a licensed cable corridor, running in a generally south-westerly direction from the Seagreen Project turbine array area to the landfall. The cable will be buried wherever possible. Additional protection (primarily loose rock) will be used where burial cannot be achieved to the target depth.

The location of the Seagreen 1A Project is shown in Figure 3-3. The export cable corridor commences within the Seagreen Project array area and passes:

- West of (and partially overlaps with) Berwick Bank OWF (pre-consent)
- East and south of Inch Cape OWF (post-consent), crossing the consented export cable corridors for this project
- North and west of Neart na Gaoithe OWF (under construction)

The export cable corridor is located parallel to the consented Inch Cape export cable corridor to landfall.

It is currently anticipated that offshore construction of the export cable (including landfall construction works and installation of cable protection) will take approximately 12 months.

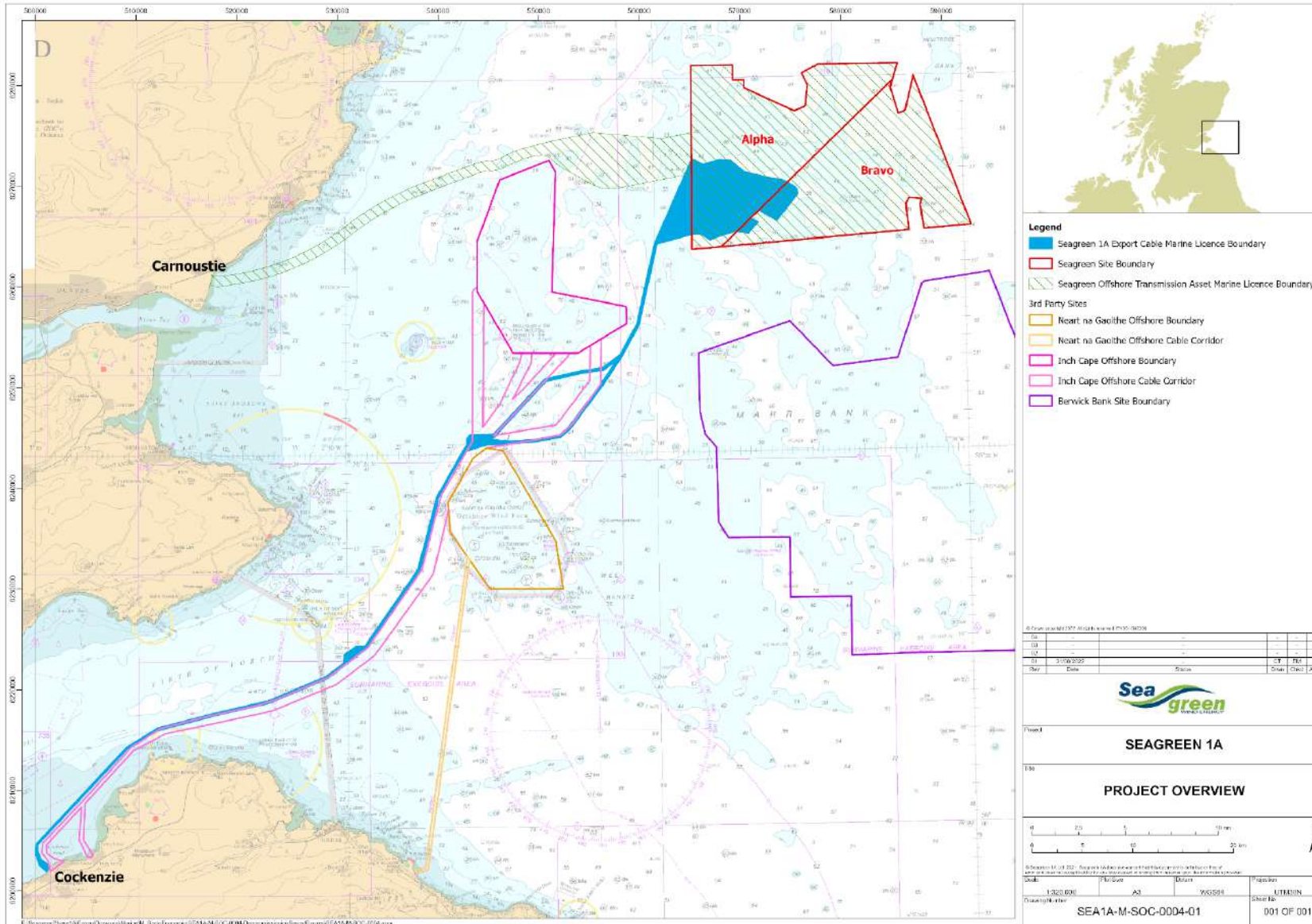


Figure 3-3 – Seagreen 1A Project Location

3.3 Seagreen Project Area Characteristics

A range of surveys have been completed by Seagreen to establish the characteristics of the Project Area. These studies informed the EIA for the Project, reported as part of the ES and ES Addendum. The following sections provides a summary of information from those documents to inform consideration of the decommissioning provisions and is reflective of environmental attributes identified in the Scottish Government Guidance and the BEIS Guidance. Refer to the ES and ES Addendum for full baseline descriptions, data sources and references.

3.3.1 Physical Characteristics

3.3.1.1 Met-Ocean Conditions

Strong winds can occur throughout the North Sea, with wave heights varying greatly due to fetch limitations and water depth effects. Waves in the northern North Sea can be generated either by local winds or from remote wind systems.

In the stormiest event over the 18-month wave buoy deployment (Dec 2010 to May 2012) as part of the Seagreen metocean survey a significant wave height of 6.7 m was recorded on 3 January 2012 which correlates with a 1 in 1 year sea wave climate return period event.

Tidal measurements undertaken at 8 moorings across the Project Area demonstrated a strong semi-diurnal signal throughout the duration of metocean deployment (Dec 2010-May 2012). A maximum current speed of up to 0.9m/s was recorded. Flood and ebb current directions are aligned generally parallel with the adjacent coastline. The maximum tidal range is 4.4m, mean spring tide range at the site is 3.3m, and the mean neap tidal range is 1.6m. The greatest Highest Astronomical Tide (HAT) and Lowest Astronomical Tide (LAT), relative to Mean Sea-Level (MSL) were 2.6 m and -2.6 m, respectively.

The tidal regime within the Project Area is semi-diurnal in nature and characterised by a variable mean spring tidal range. Currents are primarily driven by tides with a residual component generally dominated by storm driven currents (Ramsay & Brampton, 2000). The pattern of tidal elevations across the outer Firth of Forth is governed by a southerly directed flood tide that moves along the eastern coastline of Scotland into the Firth of Forth and around Fife Ness.

3.3.1.2 Bathymetry

The water depth across both the Alpha and Bravo OWF sites is generally in the range 40–60m (above lowest astronomical tide, LAT), with a greater area in Alpha at the shallower end of this range. The seabed comprises undulating coarse sands and gravels with occasional clusters of boulders. The maximum depth (86.2m LAT) is observed to the northwest of Project Alpha where a relatively deep northeast to southwest orientated channel crosses the sea floor. The shallowest areas occur along the north-south orientated Scalp Bank to the west of Project Alpha. There are limited areas of steeply sloping seabed associated with the channel feature across the northwest of Project Alpha however the majority of the seabed across Project Alpha and Project Bravo can be characterised as having a slight gradient (0° to 5°).

Depths along the OTA Corridor range from 3m above LAT close to the coast to approximately 69m below LAT in close proximity to Project Alpha.

Seabed levels within the central section of the OTA Corridor undulate between 39m below LAT and 69m below LAT, as the route crosses a series of frequently broad, gently-sloping ($\leq 2.6^\circ$) ridges or mounds of gravelly sands/ sandy gravels.

3.3.1.3 Geology and Seabed Sediments

Megaripples are the predominant feature across the seabed, with isolated sand waves in the western half of the OWF sites. Boulders are prevalent across the sites and are either represented as isolated boulders or as clusters. All of the features are characteristic of various stages of sediment erosion and transportation produced by fluid movement (waves and currents) over sediments.

Variable, generally granular sediments are present on the seabed across much of the OTA Corridor. The seabed sediments comprise silty fine sands, only broken by a number of irregular patches of coarser grained, fine to medium sands and larger patches of much coarser sandy gravels, with frequent small boulders.

3.3.2 Biological Environment

3.3.2.1 Benthic

Surveys were undertaken to characterise the marine plants and animals on the seabed within the Project Area as part of the EIA. The Project Alpha and Project Bravo OWF sites were found to be typical of the region and contained large areas of featureless, sediment dominated seabed with patchy communities of worms and shellfish. The only species of conservation importance found to be living within Project Alpha and Project Bravo OWF sites was the long-lived ocean quahog (*Arctica islandica*), however only small numbers of young specimens were identified.

Ross Worm (*Sabellaria spinulosa*) was present across the OWF sites which is a common and widely distributed species of high conservation value when found growing in reef structures. However, there was no evidence that it was forming reef structures within the surveyed areas.

A slightly more diverse range of species and habitats were found along the OTA Corridor, but no further species of conservation importance were identified. A survey of the landfall location at Carnoustie indicated it to be typical of a sand beach with few species present.

3.3.2.2 Fish and Shellfish Ecology

The lesser sandeel (*Ammodytes marinus*) was the most numerous species caught during the benthic trawl surveys, followed by common dab (*Limanda limanda*), goby (*Pomatoschistus norvegicus*), pogge (*Agonus cataphractus*) and butterfish (*Pholis gunnellus*).

Landing data indicated that key fish and shellfish species of commercial importance occurring within or in proximity to the Project Area include scallop (*Pecten maximus* and *Aequipecten opercularis*), crab (*Cancer pegasus*), lobster (*Homarus gammarus*) and nephrops (*Nephrops norvegicus*).

The wider study area of the project overlaps or is in close proximity to spawning and nursery grounds for cod (*Gadus morhua*), lemon sole (*Microstomus kitt*), herring (*Clupea harengus*), Nephrops (*Nephrops norvegicus*), mackerel (*Scomber scombrus*), plaice (*Pleuronectes platessa*), sandeel (*Ammodytes marinus*), saithe (*Pollachius virens*), sprat (*Sprattus sprattus*) and whiting (*Merlangius merlangus*).

Sandeel (a PMF and Scottish Biodiversity List species) are found in sandy substrates only so are unlikely to be present at high densities in muddy substrates. The highest density of this population is focused on the Wee Bankie, some 30km south of the Project Area however sandeels were found in the benthic trawls and drop-down camera surveys across the OWF sites and within the OTA Corridor.

Nephrops are found in high densities in the muddy substrates throughout the Firth of Forth and within the Project Area. However, nephrops were not recorded in any of the benthic surveys commissioned for the EIA. Additionally, it is noted that Nephrops have a relatively high tolerance to seabed disturbance due to their natural behaviour of burrowing.

Scallops are found in relatively low numbers within the Project Area. Scallops are sedentary and specifically settle on clean, firm sand, fine gravel or sandy gravel which is recorded small sections of the offshore part of the Project Area only.

It is assumed from the EIA and existing studies in the region that Atlantic salmon (*Salmo salar*) may utilise the Project Area for migration. Atlantic salmon is an Annex II species under the Habitats Directive, a Scottish Biodiversity Species and is of cultural, recreational and commercial importance in Scotland.

3.3.2.3 Marine Mammals

In support of the EIA, marine mammal activity in the Project Area was characterised using data from boat-based surveys, seal tracking studies, aerial surveys and existing published sources. A collaborative approach was adopted with the other wind farm developers in the Firth of Forth, via the Forth and Tay Offshore Wind Developers Group (FTOWDG). The key cetacean species are harbour porpoise (*Phocoena phocoena*) and bottlenose dolphin (*Tursiops truncatus*). Harbour seal (*Phoca vitulina*) and grey seal (*Halichoerus grypus*) are also of particular importance due to the proximity of internationally designated haul out and breeding sites.

Noise impacts from pile driving have the greatest potential to cause a significant effect to mammal species. It should be noted that as a result of Seagreen adopting a suction caisson solution for the WTG foundations, noise impacts from piling are limited to the two offshore substation platform installations.

3.3.2.4 Ornithology

The offshore areas of the Project Area (approximately 4 to 30km from the coast) are well within the regular foraging range of several seabird species breeding on islands in the Firth of Forth, in particular Isle of May, Bass Rock and Craighleith. All these islands are part of the Forth Islands SPA and support large numbers of breeding seabirds in particular, gannet, European shag, gull species (herring gull, lesser black-backed gull and kittiwake), tern species (Sandwich tern, common tern and Arctic tern and the very rare roseate tern) and auk species (common guillemot, razorbill and puffin). A number of seabird species regularly occur as passage migrants or winter visitors, most notably little gull (a species listed on Annex 1 of EU Birds Directive), Sandwich tern, Arctic skua and little auk.

3.3.3 Human Environment

3.3.3.1 Offshore Wind Farms

The Alpha and Bravo OWFs are close to the Inch Cape and Neart na Gaoithe offshore wind farms which lie in Scottish territorial waters (<12nm) approximately 9km to the west and 27km to the southwest respectively. Under 5km to the south of the Bravo project boundary lies the northern boundary of the Berwick Bank OWF.

3.3.3.2 Oil and Gas Exploration Activities

There are no known active oil and gas licence blocks located within or in close proximity to the OWF sites. The majority of blocks surrounding the Project Area are open but have never been licensed. The blocks at the northwest boundary of the Project Area, are open and were previously licensed. A single historical exploratory well (found to be dry, plugged and abandoned in 1985) is present within the Bravo site.

The nearest marine gas pipeline (FM13, owned and operated by National Grid) is approximately 7.5 km east of the export cable route in the mouth of the River Tay. The next closest gas pipeline is over 100km (St Fergus), and the nearest oil pipeline is 75km away (Cruden Bay).

3.3.3.3 Subsea Cables

There are no known active or disused, subsea cables located within the Project Area. The nearest active cables are Cantat 3 and Pangea North (both telecommunications cables) located over 200km south of the project.

3.3.3.4 Ports and Harbours

There are several ports in the vicinity of the Project Area including Montrose, Arbroath, the Port of Dundee and Aberdeen South Harbour.

3.3.3.5 Shipping and Navigation

The Alpha and Bravo OWF sites are located in an area of relatively low commercial shipping density. The main east-west shipping routes through the sites are between the Firth of Forth ports, Dundee or Montrose and destinations in Europe. The main north-south routes through the site run north to south between Aberdeen and the south of England or European destinations. There are other north-south routes that pass inshore or offshore of the sites. Those passing inshore cross the OTA Corridor. On average less than one vessel per day use any of these routes.

3.3.3.6 Commercial Fisheries

Principal Commercial Fisheries activities in the Project Area have been identified as:

- Scallop Fishing by boat dredges.
- Whitefish (principally haddock) by seine netters and demersal trawlers.
- Squid Fishing by trawlers.
- Crab and lobster fishing with creels.

The principal fishing activity occurring within the OWF sites is boat dredging for scallops. The large majority of activity is recorded by nomadic vessels over 15m in length. The crab and lobster static gear (creels) fishery extends across a wide area where seabed conditions are suitable, with grounds overlapping the OTA Corridor and western boundary of Project Alpha.

Static gear fishing is the main activity in nearshore waters, largely undertaken by locally based small (<10m) vessels. The scallop fishery is cyclical in nature, with activity currently relatively high. The static gear fishery is year-round but is at its lowest during winter. Squid trawling is an increasingly important fishery. Activity takes place during summer and autumn and catches are variable. Most squid fishing activity takes place inshore of the Alpha and Bravo OWF sites.

While the key Nephrops grounds are south of the OTA Corridor going into the Firth of Forth a limited, but locally important Nephrops fishery occurs off the Arbroath coast. An area named locally as the Goaty Trink is crossed by the OTA Corridor, which is considered by the local fishermen to be a gateway to other local inshore grounds.

It is recognised that potential changes to the commercial fisheries baseline are anticipated over the lifetime of the project prior to decommissioning. Communication with the fisheries and mitigation and management of any issues arising during operation of the wind farm are being managed on an ongoing basis via the Fisheries Mitigation and Management Strategy (FMMS) plan and regular meetings with the fisheries. This interaction will be maintained throughout the operational life of the windfarm and during decommissioning.

3.3.3.7 Aviation and Military Interests

The export cable landfall at Carnoustie is adjacent to the MOD Barry Buddon firing range, which is used for small weapons practice. The OTA Corridor lies within the firing range danger area that extends approximately 2km from the shoreline. Agreement of a management plan with the MOD will be required to enable offshore cable installation and decommissioning to take place at the landfall end. There is potential for UXO associated with historic military activities to be present, particularly at the landfall end of the OTA Corridor.

The OWFs are in line of sight of the air traffic control (ATC) radar for RAF Leuchars in Fife and the National Air Traffic Service (NATS) radar at Perwinnes in Aberdeenshire. The wind farms also have the potential to interfere with the operation of the air defence radars at Buchan in Aberdeenshire and Brizlee Wood in Northumberland. Both MOD and NATS raised objections to the OWF applications based on these effects. These objections were removed subject to conditions requiring mitigation to be implemented.

No aviation issues have been identified regarding the OTA.

3.3.4 Nature Conservation Designations

Table 3-1 lists the Special Areas of Conservation (SAC) and Special Protection Areas (SPAs) that were screened as having the potential to interact with the Seagreen Project, and their relevant qualifying features that required further assessment.

Table 3-1 – Nature Conservation Designations

Site	Type	Qualifying features requiring further assessment	Assessment outcome
Forth Islands	SPA	All qualifying features	No Likely Significant Effect
Fowlsheugh	SPA	All qualifying features	No Likely Significant Effect
St Abbs Head to Fast Castle	SPA	All qualifying features	No Likely Significant Effect
Outer Firth of Forth and St Andrews Bay	SPA	All seabird and waterfowl qualifying features	No Likely Significant Effect
Firth of Forth	SPA	All seabird and waterfowl qualifying features	No Likely Significant Effect
Berwickshire and North Northumberland Coast	SAC	All qualifying features	No Likely Significant Effect
Isle of May	SAC	Grey seals, reefs	No Likely Significant Effect
Firth of Tay and Eden Estuary	SAC	Harbour seals	No Likely Significant Effect
Moray Firth	SAC	Bottle nose dolphin	No Likely Significant Effect
South Esk, Tay, Teith, Tweed SAC	SAC	All qualifying features	No Likely Significant Effect
Firth of Forth Banks Complex	NCMPA	Ocean quahog aggregations	No Likely Significant Effect

3.4 Seagreen 1A Project Area Characteristics

A range of desktop studies and in-field surveys were completed by Seagreen 1A to establish the characteristics of the Project Area. These studies informed the scoping process undertaken as part of the EIA for the Seagreen 1A Project and are presented in the EIA Report (Seagreen 1A, 2021 – see also section 6) or, in the case of those topics scoped out of the EIA, in the Scoping Report (Seagreen 1A, 2020). The following subsections provides a summary of information from those documents to inform consideration of the decommissioning provisions. Refer to the EIA Report and Scoping Report for full baseline descriptions, data sources and references.

3.4.1 Physical Characteristics

3.4.1.1 Metocean Conditions

The mean spring tidal range across the Firth of Forth is in the order of 4m, increasing from outer areas towards the inner firth and estuary, due to the funnelling effect of the coastline the mean spring tidal range increases from approximately 4.4m in the vicinity of the Seagreen Project site to approximately 5.2m in proximity to the landfall. The duration of the flood is longer, corresponding to faster flow speeds on the ebb. The flow directions are mostly parallel to the coastline, resulting in variations in the flow direction along the

Project Area. The mean spring current speeds along the Project Area range between 0.25 and 1.0m/s, increasing across the entrance of the Firth of Forth. Mean neap current speeds are slower at speeds of between 0 and 0.5m/s along the Project Area.

Waves across the Project Area have an approach from the east to northeast associated with long-period swell waves and from the southwest associated with fetch limited locally generated wind waves. The dominant wave direction along much of the Project Area is from the northeast. The characteristic wave properties along the Project Area generally reduces towards the coast, due to depth limited influence of the seabed and the sheltering afforded by the coastline. Therefore, the most common significant wave heights associated with winter conditions can vary between less than 0.75m on approach to the landfall to up to 2m, in proximity to the Seagreen Project, with isolated events of up to 5m. Significant wave heights associated with summer conditions are considerably lower, with maximum heights of 1m at the offshore extent.

3.4.1.2 Bathymetry

The seabed slopes relatively smoothly from the coast to around 50m water depth on the Wee Bankie. Across the outer Firth of Forth and towards the Inch Cape, Seagreen, Neart na Gaoithe and Berwick Bank offshore wind developments, there are a number of bedforms and deeps ranging in depth between 40m and 80m. Tidally dominated seabed bedforms from mega-ripples to sandbanks are present along the Project Area, with evidence of movement associated with these features.

3.4.1.3 Geology and Seabed Sediments

There are several bedrock lithologies along the Project Area. The Firth of Forth is underlain by Carboniferous rocks which characterise the bedrock geology. The Carboniferous geology includes a zone of Coal Measures, which extends across the firth at Edinburgh. Elsewhere, the pre-Coal Measures (Namurian) sandstones and mudstones are largely of deltaic and fluvial origin, including oil-shales and thin limestones. Notably, some of these geological features are unconformably exposed at the coast, resulting in the designations associated with the Firth of Forth Site of Special Scientific Interest (SSSI).

The seabed sediment across much of the Firth of Forth predominantly comprises Holocene deposits of unconsolidated sand and gravel, particularly in the outer firth, with increasing silt and mud content towards the inner firth. Sediments range from sand to gravelly muddy sand with the mid-section of the Project Area characterised by muddy sand or sandy mud, in some cases with a very small proportion of gravel. Muddier sediments are present closest to the landfall with sediments grading to sandier sediments in the mid-section and offshore section of the Project Area. Sediments with the highest percentage of sand are found furthest offshore (within the Seagreen Project array area).

3.4.2 Biological Environment

3.4.2.1 Benthic

Three biotopes were identified during benthic validation surveys conducted in support of the EIA, consistent with the mud and sand sediments present within the Project Area:

- SS.SMu.ISaMu.MelMagThy (*Melinna palmata* with *Magelona* spp. and *Thyasira* spp. in infralittoral sandy mud)
- SS.SMu.CSaMu.AfilMysAnit (*Amphiura filiformis*, *Mysella bidentata* and *Abra nitida* in circalittoral sandy mud)
- SS.SMu.CFiMu.SpnMeg (seapens and burrowing megafauna in circalittoral fine mud)

A sea pen and burrowing megafauna community assessment identified that SS.SMu.CFiMu.SpnMeg is present across the majority of the mid-section of the Project Area. This is a protected habitat, being listed as a Scottish PMF, an OSPAR threatened and declining habitat as well as being component of the Scottish PMF 'burrowed mud'.

Sabellaria was recorded at low abundance and did not indicate the presence of *Sabellaria* reef habitat in the offshore section of the Project Area. Sampling within the Forth of Firth Banks Complex NCMPA recorded sand and mud habitats with small areas of gravelly sediment which reflects the designated features of the NCMPA.

3.4.2.2 Fish and Shellfish Ecology

A review of fish sensitivity data undertaken for the EIA indicates that the Project Area is within reported spawning and nursery grounds for cod (*Gadus morhua*), plaice (*Pleuronectes platessa*), lemon sole (*Microstomus kitt*), sandeel (*Ammodytes marinus* and *Ammodytes tobianus*), nephrops (*Nephrops norvegicus*) and whiting (*Merlangius merlangus*).

In addition, the Project Area is within or near nursery grounds for anglerfish, blue whiting, common skate, European hake, ling, mackerel, saithe, spotted ray, spar, spurdog and tope shark.

Sandeel (a PMF and Scottish Biodiversity List species) are found in sandy substrates only so are unlikely to be present at high densities in muddy substrates which comprise the majority of the Project Area. Existing studies indicate that sandeel may be present further offshore in the north-eastern part of the Project Area.

Nephrops are found in high densities in the muddy substrates throughout the Firth of Forth and within the Project Area. It is understood that Nephrops have a relatively high tolerance to seabed disturbance due to their natural behaviour of burrowing.

Scallops are found in relatively low numbers within the Project Area. Scallops are sedentary and specifically settle on clean, firm sand, fine gravel or sandy gravel which is recorded in the offshore part of the Project Area only.

Key fish and shellfish species of commercial importance occurring within or in proximity to the Project Area include scallop (*Pecten maximus*), crab (*Cancer pegarus*), lobster (*Homarus gammarus*) and nephrops. There are no significant whitefish landings from the area.

It is assumed from the Seagreen Project EIA and existing studies in the region that Atlantic salmon (*Salmo salar*) may utilise the Project Area for migration. Atlantic salmon is an Annex II species under the Habitats Directive, a Scottish Biodiversity Species and is of cultural, recreational and commercial importance in Scotland.

The Project Area, or waters in the vicinity, may be used by sea lamprey (*Petromyzon marinus*) and, occasionally, European eel (*Anguilla anguilla*) during migration from Scottish rivers.

3.4.2.3 Marine Mammals

Four cetacean species are known to frequently or seasonally visit the waters off the east coast of Scotland, including the Firth of Forth, which have been recorded in the region around the Project Area: harbour porpoise; bottlenose dolphin; minke whale (*Balaenoptera acutorostrata*) and white-beaked dolphin (*Lagenorhynchus albirostris*). Several other species may visit infrequently or seasonally in low abundance.

Density estimates from the most recent SCANS-III surveys indicated harbour porpoise are the most abundant species within the vicinity of the Project Area, with an estimated density of between 0.5 and 0.6 animals/km². This estimate is high compared with density estimates for bottlenose dolphin, white-beaked dolphin and minke whale.

There are no protected sites immediately adjacent to the Project Area designated for cetaceans. The closest is the Southern Trench NCMPA located 91.7km north of the Project Area.

The Moray Firth SAC is located 147.7m northeast of the Project Area and is designated for supporting the only known resident population of bottlenose dolphins in the North Sea. It is recognised that small sub-groups of bottlenose dolphins from the Moray Firth SAC may transit along the coast to the Firth of Forth, though they predominantly utilise the more accessible sheltered waters of estuaries further north. Given their affiliation for very shallow waters, the Project Area is not considered to form important habitat for this species.

Both harbour and grey seals may be present within the Project Area. Grey and harbour seals forage in coastal and offshore waters, depending on the seasonal distribution of their prey. However, both species tend to be concentrated close to shore, particularly during the breeding and pupping seasons which occurs from May to July for harbour seals and September to December for grey seals. Tagging studies indicate that at-sea habitat use by both harbour and grey seal is low compared to other locations in Scotland and to other regions in the North Sea, respectively.

The Isle of May SAC (designated for the protection grey seals) is located 3.9km northwest of the Project Area, and the Firth of Tay and Eden Estuary SAC (designated for the protection of harbour seals) is location 30km north of the Project Area.

3.4.2.4 Ornithology

The **offshore** areas of the Project Area (approximately 4 to 30km from the coast) are well within the regular foraging range of several seabird species breeding on islands in the Firth of Forth, in particular Isle of May, Bass Rock and Craighleith. All these islands are part of the Forth Islands SPA and support large numbers of breeding seabirds in particular, gannet, European shag, gull species (herring gull, lesser black-backed gull and kittiwake), tern species (Sandwich tern, common tern and Arctic tern and the very rare roseate tern) and auk species (common guillemot, razorbill and puffin). A number of seabird species regularly occur as passage migrants or winter visitors, most notably little gull (a species listed on Annex 1 of EU Birds Directive), Sandwich tern, Arctic skua and little auk.

The ornithological importance of the offshore part of the Project Area is recognised through two nature conservation designations: the Forth Islands SPA and Outer Firth of Forth and St Andrews Bay SPA. The Project Area overlaps with both sites.

The south-western most 16 km of the Project Area (i.e. the marine parts to the southwest of North Berwick headland) pass thorough **inshore** marine waters. These differ from the offshore areas (though the change occurs gradually) in having greater shelter, shallower depths (<25m) and being closer to the coast (1 to 4km). These inshore waters provide foraging for breeding seabirds in particular shag, gull and tern species. They also provide important foraging and resting habitat for wintering red-throated diver, grebe and seaduck species.

The ornithological importance of the inshore waters part of the Project Area is recognised through three nature conservation designations, all of which overlap the Project Area: Firth of Forth SPA, Forth Islands SPA and Outer Firth of Forth and St Andrews Bay SPA.

Note: Impacts on ornithological receptors were scoped out of the EIA for the Project due to the scope, nature, and duration of the construction (and decommissioning) works.

3.4.3 Human Environment

3.4.3.1 Seascape, Landscape and Visual

SLV was scoped out of the EIA as there are no impact pathways for a subsea cable during the operational phase. The presence of up to two installation vessels in an active shipping area was not considered to have any SLV impacts. Visual disturbance for landfall works, which are close to residential receptors, were considered as part of the onshore planning application and supporting environmental information.

3.4.3.2 Marine Archaeology and Cultural Heritage

No marine cultural heritage statutory designations are present within the Project Area.

Current research indicates that there is potential for submerged Holocene sediments and prehistoric remains evidencing human activity to survive in this part of the North Sea, but the chances of survival are low for remains of moderate or higher importance.

Five known shipwrecks are understood to be located within the Project Area, although the history of military activity means the presence of other shipwrecks, aircraft, UXO and other archaeological and heritage assets is possible. Two disused explosives dumping grounds are known to be present to the east of the Isle of May. Magnetic anomalies identified during geophysical surveys of the Project Area will be assessed for their anthropogenic potential and avoided as the primary mitigation strategy.

3.4.3.3 Shipping and Navigation

A total of twelve months AIS data from January to December 2019 was used to inform the baseline shipping analysis. A study area was defined as a 5 nm buffer around the Project Area. There was an average of 34 unique vessels recorded per day within the study area during the 12-month period. The most common vessel type recorded within the study area was fishing vessels which accounted for 32% of the overall distribution,

followed by tankers (26%) and cargo vessels (19%). It is noted that recreational craft and small fishing vessels less than 15 m in length may be under-represented due to AIS carriage requirements.

There are various ports and terminals in close proximity to the Project Area. Within the Firth of Forth are the ports of Leith, Rosyth and Grangemouth, the oil terminal at Hound Point and the gas terminal at Braefoot.

Forth Ports Limited exercises jurisdiction over all the waters of Firth of Forth and the River Forth. Approximately 31 km of the offshore Project Area lies within the limit of authority of Forth Ports Ltd.

A number of designated anchorage areas and anchor berths are located in the Firth of Forth and along the east coast of Scotland, one of which intersects the Project Area.

3.4.3.4 Commercial Fisheries

Commercial fisheries activity in and the vicinity of the Project Area primarily consists of:

- *Nephrops* (demersal trawls)
- Scallop (dredging)
- Squid (demersal trawls)
- Lobster and crab (static gear - creels)

Nephrops fishing is most intensive in nearshore areas, corresponding to the muddy substrates in this area. Lobster and crab fisheries are generally located further offshore with scallop dredging predominating at the central and northern sections of the Project Area (and within the Seagreen Project array area).

3.4.3.5 Military and Civil Aviation

Military and aviation were scoped out of the EIA as there are no impact pathways for a subsea cable during the operational phase. The presence of up to two installation vessels in an active shipping area was not considered to have any impacts on aviation.

The Project Area intersects a number of Ministry of Defence (MOD) practice and exercise areas (PEXA), including submarine exercise and firing practice areas. No restrictions are placed on the right to transit the firing practice areas at any time. Exercises and firing only take place when the areas are clear of all shipping and therefore are not expected to impact upon decommissioning works.

3.4.3.6 Other Human Activities

The Project Area is in close proximity to, or crosses/overlaps the Neart na Gaoithe, Inch Cape and Berwick Bank OWF projects. These projects are in construction, pre-construction and pre-consent phases respectively.

Crossing and proximity agreements will be entered into with the owners of these projects as required. Crossing of the Inch Cape OWF export cables will be required and the existence of one or more crossings may have implications for export cable removal (see section 5.4).

No oil and gas exploration or extraction infrastructure are located in the vicinity of the Project Area. A National Grid gas pipeline crosses the Project Area. No other pipeline or submarine cable infrastructure is known to be present.

3.4.4 Nature Conservation Designations

Table 3-2 lists the nature conservation designated sites that were screened as having the potential to interact with the Seagreen 1A Project, and their relevant qualifying features that required further assessment.

Table 3-2 – Designated sites screened for further assessment

Site	Type	Qualifying features requiring further assessment	Assessment outcome
Firth of Forth Banks Complex	NCMPA	Ocean quahog aggregations	Capable of Affect – effects insignificant
Forth Island	SPA	All qualifying features	No Likely Significant Effect
Outer Firth of Forth and St Andrews Bay	SPA	All seabird and waterfowl qualifying features	No Likely Significant Effect
Firth of Forth	SPA	All seabird and waterfowl qualifying features	No Likely Significant Effect
Isle of May	SAC	Grey seals	No Likely Significant Effect
Firth of Tay and Eden Estuary	SAC	Harbour seals	No Likely Significant Effect
Firth of Forth	SSSI	Offshore subtidal sands and gravel, ocean quahog aggregations	Capable of Affect – effects insignificant

No in-combination effects with other projects on any of the designated sites assessed were identified.

4. Description of Items to be Decommissioned

This section describes the key components of the Projects that will be decommissioned. Further details of the decommissioning process are set out in Section 5.

It should be noted that the transmission assets (defined in sections 4.3, 4.5 and 4.6) will be sold to an OFTO and thereafter the responsibility for decommissioning will transfer to the OFTO.


4.1 Wind Turbine Generators

Horizontal axis WTGs will be used which are made up of three main external components as follows.

- Rotor – comprised of the blades, hub, spinner and spinner bracket
- Nacelle - housing the electrical generator, the control electronics and gearbox, adjustable speed drive or continuously variable transmission
- Structural support - including the tower and rotor yaw mechanism which allows the WTG rotor to turn against the wind

The main components to be decommissioned are summarised in Table 4-1.

Table 4-1 – WTG components to be decommissioned

Component	Quantity	Image
Wind turbine tower sections	150 towers in up to 3 sections	
Wind turbine nacelles	114 Mitsubishi Vestas Offshore Wind (MVOW) nacelles 36 Siemens Gamesa Renewable Energy (SGRE) nacelles	
Wind turbine blades	150 x 3 rotor blades	

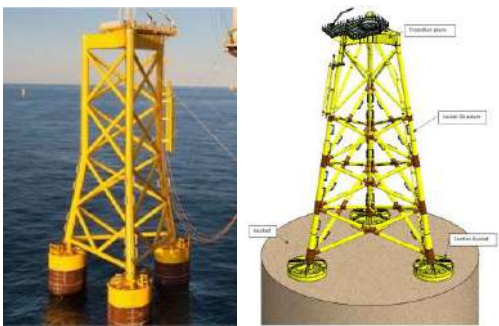
4.2 Wind Turbine Support Structures (Foundations and Substructures)

The selected WTG foundation type for the Project is a steel lattice jacket structure supported by suction bucket caissons. Each foundation structure will be comprised of the suction bucket caissons, the jacket structure and the jacket transition piece.

Note: Suction bucket caissons are the confirmed foundation type for the 114 turbines comprising Phase 1 of the Seagreen Project. They are the most likely foundation option for the 36 turbines comprising Phase 1A. However, should an alternative foundation option be selected for Phase 1A, this DP will be reviewed and updated in accordance with section 2.4.

The main components to be decommissioned are summarised in Table 4-2.

Table 4-2 – Support structure components to be decommissioned

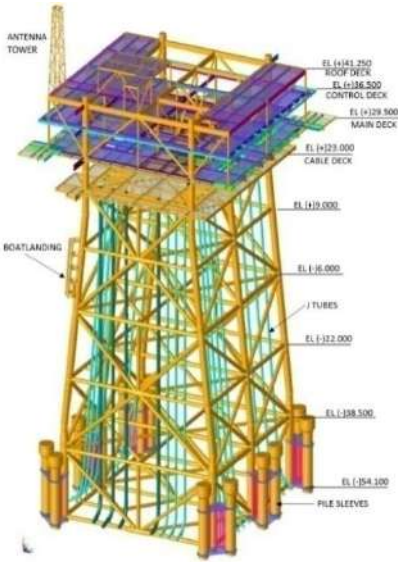
Component	Quantity	Suction Caisson Jacket
3- or 4-legged jacket structures	150	
Suction bucket caissons	450 (150 x 3)	
Transition Piece	150	

4.3 Offshore Substation Platforms (OSPs)

Two OSPs will be installed to collect the generated electricity and convert from 66 kV to 220 kV for transmission to shore by the three export cables.

Each of the OSPs is comprised of two main elements: the topside and the support structure. The main components to be decommissioned are summarised in Table 4-3.


Table 4-3 – Summary of OSP components to be decommissioned

Component	Description	OSP drawing
OSPs	Two OSPs comprising: <ul style="list-style-type: none"> • Two OSP topside modules • Two 6-legged jacket substructures with 2 pin piles per leg (12 pin piles in total per OSP) • Pin piles will be cut 1m below the seabed and left in-situ 	 <p>Figure 6. 3D SACS model</p>

4.4 Inter-Array and OSP Interconnector Cables

The inter-array cables are the cables which connect the WTGs to each other and to the OSPs. An interconnector cable will be installed between the two OSPs. The main components to be decommissioned are summarised in Table 4-4.


Table 4-4 – Summary of array cable components to be decommissioned

Component	Description	Image
Inter-array cabling	3-core 66kV armoured submarine cable Circa 355km of inter-array cables to connect strings of WTGs on suction bucket caissons together and to connect these WTGs to the OSPs	
Interconnector cable	3-core 66kV armoured submarine cable circa 3 km in total length	

4.5 Export Cables

HVAC export power cables will connect to the OSPs and run to the cable landfall points at Carnoustie (Seagreen Project) and Cockenzie (Seagreen 1A Project) where they will connect with the respective onshore transmission works. The main components to be decommissioned are summarised in Table 4-5.


Table 4-5 – Summary of export cabling to be decommissioned

Component	Description	Image
Export cables (Seagreen)	From OSP to landfall (approx. 63 km length, 190 km total): One armoured submarine 3-core 220kV cable per circuit (three circuits) consisting of aluminium/copper conductors with a cross-sectional area of 1200mm ²	 <p>Example 3 core cable</p>
Export cables (Seagreen 1A)	From OSP to landfall (approximately 110 km length) One armoured submarine 3-core 220kV or 275kV cable consisting of aluminium/copper conductors with a cross-sectional area of 1200mm ²	

4.6 HDPE Duct

High-density polyethylene (HDPE) ducts will be installed under the coastal defence at both landfalls. The export cables will be pulled through the ducts from a winch positioned in the transition bay onshore (above MHWS). The duct facilitates installation and provides protection to the cable. The main components to be decommissioned are summarised in Table 4-6.

Table 4-6 – Summary of duct components to be decommissioned

Component	Description	Image
HDPE Duct (Seagreen)	Three 400m sections of HDPE duct running from the transition joint bay on the landward side of MHWS to 400m offshore from MHWS	 <p>Example duct</p>
Export cables (Seagreen 1A)	One section of HDPE duct running from the transition joint bay on the landward side of MHWS to a point offshore from MHWS (length to be confirmed)	

4.7 Cable and Scour Protection

Cable protection will only be installed where necessary. The preference is for the cable to be buried, however there may be certain areas of harder ground conditions where the cable cannot be buried to a depth which provides the necessary protection. In these areas, the cable may require some form of additional protection. Cable protection will also be used where the Seagreen 1A cable crosses other cables and pipelines.

Cable protection will primarily consist of crushed rock berms on the free-span sections of cable. The rock berms will typically be 6m wide and 1m high. Crushed rock is the industry standard solution for protecting long sections of cable and installation has cost, practicality, safety and programme benefits over other forms of cable protection. Approximately 10% of the Seagreen Project export cable route, 10% of the inter-array cables and 20% of the Seagreen 1A Project is estimated to require rock protection.

Scour protection will be installed around each WTG foundation and will consist of a similar grade of crushed rock as for the cable protection.

The Marine Licences allow for the use of grout bags, rock nets and concrete mattresses although it is not currently foreseen that these will be used in significant quantities. Cast-iron shells may be installed at OSP J-tube exits and may also be used to protect the cable in shallow waters adjacent to the landfalls. The licenced volumes of cable and scour protection materials under the Seagreen project consents is provided in Table 4-7.

Table 4-7 – Summary of licenced cable protection and scour materials

Consent/Licence	Cable/scour protection material			
	Stone / Rock / Gravel (size range 50-200 mm)	Concrete Bags/ Mattresses	Grout Bags	Cast Iron Shell Segments
Seagreen Alpha OWF Marine Licence	1,720,000 m ³	30,000 no. 6m x 3m x 1.5m, 1,720,000 m ³	-	-
Seagreen Bravo OWF Marine Licence	1,720,000 m ³	30,000, 6m x 3m x 1.5m, 1,720,000 m ³	-	-
Seagreen OTA Marine Licence	435,000 m ³	No. 15,000, 6m x 3m x 1.5m, 390,000 m ³	-	-
Seagreen 1A Marine Licence	24,000 tonnes (rock)	4,000 tonnes	4,000 tonnes	40 No.

The need for, and type of cable and scour protection used, will be confirmed following installation and the amount of protection that is deposited will be within the envelope of the parameters assessed within the ES



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and EIAR provided in Table 4-7. In future versions of the DP, Seagreen will update the volumes to reflect the actual seabed deposits for cable and scour protection.

5. Description of Proposed Decommissioning Measures

5.1 Introduction

Decisions will need to be taken as to the next steps for the Projects once they approach the end of their operational life.

Further information on options for end-of-life asset management, the guiding principles considered when developing approaches for decommissioning and the proposed decommissioning measures are provided in this section.

The proposed decommissioning approach for each component is based on current technology, methodologies and good practice. The final details of the DP will be reviewed and confirmed prior to decommissioning of the Project to consider any changes in legislation, guidance, technology, decommissioning methods and good practice.

5.2 End of Life Asset Management

Decommissioning of the Projects is expected to occur at the end of their operational life (which, in accordance with the Section 36 Consents and Marine Licences for the Seagreen Project is 25 years from the date of commissioning). However, there is potential for these timescales to vary depending on whether Seagreen seeks to repower the wind farm or explore other options for extending the operational life of the Project, subject to securing the necessary consents.

All decisions for end-of-life asset management will be informed by environmental surveys and assessment carried out towards the end of the operational life of the asset. These surveys will be used to provide an assessment of the condition of the infrastructure, the state of the environment and any safety considerations to inform decisions on the best practicable environmental option (BPEO) with regard to proposals for end-of-life asset management. Where no future uses for the export cable asset can be identified, it shall be decommissioned. For the purpose of this programme, full decommissioning at the end of the lifetime of the Seagreen Project is currently the baseline approach.

An overview of the options for end-of-life asset management and repowering for the Seagreen Project are presented below.

5.2.1 Decommissioning and Construction of a New Wind Farm

In the case that wind power is still economically attractive at the time of decommissioning, but the technical integrity of the Seagreen Project is in decline, Seagreen may consider decommissioning and construction of a new wind farm. This would facilitate the installation of modern technology which would likely be preferable to increasing the operations and maintenance (O&M) effort for extending the existing wind farms operational life. Under such a scenario, and subject to all necessary consents being granted, the existing wind farm would be decommissioned, and a new wind farm constructed.

5.2.2 Re-powering

Where the technical integrity of the WTGs is declining but the electrical infrastructure and possibly the foundations remain sound, Seagreen may consider installation of new WTGs on existing foundations. The lifetime of the electrical infrastructure could be up to 50 years and from reference to the oil and gas industry it is anticipated that the lifetime of foundations can be extended outside the design specifications. By closely monitoring the structural integrity of the asset, it could be possible, subject to all necessary consents being granted, to re-use electrical infrastructure and foundations in a re-powering of the wind farm by fitting new WTGs to the existing foundation and electrical systems.

5.2.3 Life Extension

This scenario assumes that most of the Seagreen Project WTGs will continue to perform sufficiently beyond 25 years. Under this scenario, the Seagreen Project operational life would be extended subject to obtaining the relevant consents and would be decommissioned gradually as the WTGs technical integrity declined. A decommissioning campaign would most likely be undertaken when the entire wind farm is shut down, but this could be undertaken in a phased manner if this was found to be more cost effective or if the prevailing regulatory regime required this approach.

5.2.4 Removal

This scenario assumes it is not preferable to invest in new technology and that WTGs and/or their foundations will not continue to perform sufficiently beyond the 25-year lifetime. In this scenario the offshore wind farm and associated components (WTGs, OSP topsides, cables) are removed with no intention of redeveloping the site.

OSP foundations will be cut 1m below the natural level of the seabed, and the approach to decommissioning scour and cable protection will be considered in the final DP, where the approach taken will be in line with the position set out in the Scottish Government guidance (i.e. with the presumption of full removal unless this creates unacceptable risks to personnel or to the marine environment, be technically unfeasible or involve extreme cost.

The asset owners will liaise with other (including future) OWF developers and/or offshore transmission owners (OFTOs) in the vicinity of the Projects to evaluate any potential opportunities for synergy or economies of scale through decommissioning assets at the same time.

5.3 Guiding Principles

The principal aim of the provisions of sections 105 to 114 of the Energy Act 2004 is to restore the marine environment so that it can be used for other purposes including safe navigation. In all cases, the base case is complete removal of all offshore infrastructure, ensuring standards set for removal do not fall below those set by the IMO in 1989.

Seagreen has also considered the UK's commitments under the United Nations Convention for the Law of the Sea (UNCLOS) and the work of the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR).

This means that **Seagreen's starting assumption for decommissioning is the complete removal of the entire offshore wind farm and cable infrastructure**, with the offshore components being transported to shore for re-use, recycling or energy recovery leaving a clear seabed which does not pose a risk or restriction to other users of the sea in line with IMO guidance. This approach aligns with the presumption for full removal set out in section 7.2 of the BEIS Guidance and section 7.5 of the Scottish Government Guidance.

Where there is a requirement to consider alternative solutions involving partial removal, leaving some infrastructure in situ, these alternatives will only be considered where:

- Full removal would involve an unacceptable risk to personnel.
- Full removal would involve an unacceptable risk to the marine environment.
- Full removal would be technically unfeasible.
- Full removal would involve extreme cost. It is considered that design decisions should, as far as possible, result in installations which are affordable to remove but it is recognised that some elements may nonetheless be costly to remove.

The BEIS guidance further recommends considering the application of the Comparative Assessment Framework developed for the oil and gas industry and detailed within the *Decommissioning of Offshore Oil and Gas Installation and Pipelines Guidance Notes* (BEIS, 2018) to determine the best approach for decommissioning infrastructure where complete removal may not be the most appropriate option.

The approach taken by Seagreen to decommissioning the Projects will be informed by the guiding principles set out in Table 5-1 below. These are in accordance with the BEIS Guidance and the Scottish Government Guidance and are underpinned by the following:

- Health and safety considerations.
- Best Practicable Environmental Option (BPEO), that is the option which provides the most benefit or least damage to the environment as a whole, at an acceptable cost. This involves balancing the reduction in environmental risk with practicality and cost of reducing the risk.
- Safety of surface and subsurface navigation.
- Other uses of the sea

Table 5-1 - Comparative Assessment criteria and Seagreen objectives

Assessment Criteria	Key Considerations	Seagreen Objectives
Safety	No harm to people	Seagreen is committed to adhering to the highest standards for safety during the life of the Projects, including the decommissioning phase.
	Consider the rights and needs of legitimate users of the sea	Minimising any real or perceived safety risk to other stakeholders active in the vicinity of the Projects during or after decommissioning.
Environmental	Minimise environmental impact	The option which provides the most benefit or least damage to the environment as a whole in both the long and short term (BPEO).
	Maximise re-use of materials	Seagreen will seek to maximise re-use and recycling according to the waste hierarchy.
Technical	Ensure practical integrity	Methods necessary to achieve the objectives should be practicable, meaning feasible and realistic in the working environment.
Societal	Promote sustainable development	Ensure that future generations do not suffer from a diminished environment or have a compromised ability to use available marine resources.
	Adhere to the Polluter Pays Principle	Recognising the responsibility to sustain the costs associated with the impact on the environment.
Economic	Ensure commercial viability	The BATNEEC (Best Available Technique Not Entailing Excessive Costs) solution will be sought to ensure the commercial viability of the Projects.

5.4 Proposed Decommissioning Process

The approach to decommissioning of the Projects described below builds on the guiding principles set out in Table 5.1 and reflects the UK and Scotland’s commitment to seek decommissioning provisions in accordance with national and international legislation and standards.

There will be a requirement to carry out a number of pre-decommissioning studies and surveys in order to determine the most appropriate methods for decommissioning and finalise their detailed design. Results from these pre-decommissioning studies and surveys will be presented in an EIA Report which will be submitted with any application(s) for Marine Licence(s) that will be required for decommissioning of the Projects.

In considering the proposed DP for the Projects, Seagreen has sought solutions for each element of the Projects that follow the guiding principles described in Table 5-1 and discussed in Section 5.3. The proposed

approach to decommissioning the various components of the Project is presented in Table 5-3 below. Each of these approaches are discussed in more detail in the following subsections.

Table 5-2 – Summary of proposals for decommissioning of the Seagreen and Seagreen 1A Projects

Project Component	Proposed Decommissioning Method
Wind Turbines	Complete removal from site
Wind Turbine Support Structures	Complete removal from site
OSP (topsides)	Complete removal from site
OSP Support Structures	Entire jacket structure removed Pin pile foundations to be cut at 1m below the surface of the seabed so that the remaining parts do not pose a danger for shipping or fishing vessels, even if sediments should become relocated, and cut sections removed from site
Cables (inter-array and interconnector)	Complete removal from site <i>except</i> where there is a high risk to marine environment. It is anticipated that cable protection (loose rock) and the cable underneath will be left in situ, subject to further environmental assessment
Cables (marine export)	Complete removal from site <i>except</i> where there is a high risk to other assets (cable crossings) or to the marine environment, or health and safety concerns (in addition to extreme costs required for the removal). Where cable protection (loose rock) is to remain in-situ, the cable underneath will also remain in-situ.
HDPE duct	Decommissioning in-situ. Removal of the ducts is likely to require significant excavation of the sea defences and intertidal areas resulting in disturbance that is not considered commensurate with the environmental benefits associated with removal. Additionally, the process for Seagreen 1A (Cockenzie landfall) would require construction of a cofferdam requiring a significant campaign which in light of the environmental benefits associated with removal would have unacceptable risks to personnel and the marine environment and extreme costs.
Cable protection	Decommissioning measures will be dependent on the type, quantity and extent of cable protection used. Where loose rock is used, this will be left in-situ since recovery entails significant impacts on the benthic environment, health and safety risks and extreme costs when balanced against the decommissioning guiding principles The proposed decommissioning measures for cable protection will be considered further in future updates of the DP once the type and quantity of any installed protection is known, and will be subject to further environmental assessment

5.4.1 Wind Turbine Generators

WTG decommissioning is carried out step by step with the aid of a crane in reverse order to the installation. The dismantled parts are unloaded on the decommissioning vessel or another suitable vessel. Once the WTGs are disconnected from the electrical distribution and SCADA systems the following approach will be taken:

- De-energise WTGs and isolate from the grid
- Mobilise heavy lift vessel and support vessels
- Removal of three WTG blades (three lifts)
- Removal of the nacelle and hub (single lift)
- Successive dismantling of the tower sections (up to three lifts)
- Transportation by vessels to onshore decommissioning port
- Once onshore the WTGs will be broken down for recycling and/ or disposal:
 - All steel components will be sold and recycled
 - Blades are made of fibreglass and therefore will be transported to a suitable waste facility

Onshore, all components of the wind turbines are dismantled to manageable quantities to be reused or recycled. All remaining hazardous substances will be removed from the WTGs and supplied to a proven recovery facility according to the regulations in force at the time of the dismantling. All steel components are anticipated to be recycled as scrap. The rotor blades made of fibre composites and will be recycled (where facilities exist) or disposed of according to the regulation valid at the time of dismantling.

Table 5.3 below provides an assessment of the WTG decommissioning process against the guiding principles set out in Table 5-1.

Table 5-3 – Assessment of proposed WTG decommissioning process against Guiding Principles

Guiding principle	Complete removal of the WTGs
No harm to people	Safest option involving standard procedures
Consider the rights and needs of legitimate users of the sea	Complete removal of the WTGs is considered the best long-term solution. Appropriate notification and consultation prior to temporary works to minimise disruption
Minimise environmental impact	Very low risk to the environment. Risk of oil leak is low due to the nacelle being a fully contained unit and being removed in a single lift. The remaining WTG components will be dismantled onshore therefore minimising potential for pollution incidents
Maximise re-use of materials	All WTG components will be recycled with exception of the blades which will be disposed of in line with relevant regulations
Ensure practical integrity	Removal methods are tried and tested
Promote sustainable development	WTGs and support structures completely removed from site ensures no ongoing environmental impacts and no restriction on future use of marine resources
Adhere to the Polluter Pays Principle	Consistent, assuming suitable recycling option is found for steel components and a suitable disposal method is adopted for blades
Ensure commercial viability	Extensive cost of removal. Costs associated with removal may be partially offset by recycling of scrap metal

5.4.2 Wind Turbine Support Structures (Foundations and Substructures)

The foundations comprising jacket structure and suction bucket caisson will be decommissioned by ‘reverse installation’ – the component parts will be removed in the reverse order to that of the original installation. The foundations will be removed following completion of the WTG decommissioning activities and will follow the below methodology:

- Prior to removing the suction bucket jacket foundations, the array cable will be cut after the J-tube exit. The cable within the J-tube and any cable protection at the J-tube exit will be removed with the foundation.
- The foundations will be removed using a heavy lift vessel (HLV). A high-capacity vessel similar to the Saipem 7000 has been assumed. The foundations will be placed on a barge for transport to shore once they are removed.
- The suction bucket foundations will be removed by pumping water into the caisson to release the suction buckets from the mudline, they will then be lifted by the HLV.
- Prior to pumping water into the suction buckets the grout within the suction bucket must be drilled through. It is assumed that this drilling operation takes place from a multi-purpose vessel

(MPV) fitted with a remotely operated vehicle (ROV) and drilling equipment prior to the HLV arriving on site.

- The pumping equipment will be deployed from the HLV, and all three suction buckets will undergo pumping at the same time to release the foundation.
- In tandem to the pumping operation the crane on the HLV will lift the foundation out of the seabed.
- The crane will lift from a connection point on the transition piece and will recover the entire foundation (transition piece, jacket and suction caissons) to a transport barge ready for transportation to the decommissioning port.
- Following removal of the foundation the seabed will be inspected and any debris will be removed leaving a clear seabed surface.

Once the foundations have been returned to shore, they will be dismantled ready for recycling. The foundations contain no environmentally hazardous materials and can be recycled as steel scrap.

Table 5-4 below provides an assessment of the WTG decommissioning process against the guiding principles set out in Table 5-1.

Table 5-4 – Assessment of proposed foundation decommissioning process against Guiding Principles

Guiding principle	Complete removal of the foundations
No harm to people	Safest option involving standard procedures (reverse installation)
Consider the rights and needs of legitimate users of the sea	Complete removal of the foundation is considered the best long-term solution. Appropriate notification and consultation prior to temporary works to minimise disruption
Minimise environmental impact	Very low risk to the environment. The foundations contain no environmentally hazardous materials. Following removal, the seabed will be inspected and restored
Maximise re-use of materials	All foundation components will be recycled
Ensure practical integrity	Removal methods are tried and tested
Promote sustainable development	The foundations are completely removed from site leaving no buried infrastructure ensures no ongoing environmental impacts and no restriction on future use of marine resources
Adhere to the Polluter Pays Principle	Consistent, assuming suitable recycling option is found for steel components
Ensure commercial viability	Extensive cost of removal. Costs associated with removal may be partially offset by recycling of scrap metal

5.4.3 Offshore Substation Platforms (OSPs)

The decommissioning of the OSPs is anticipated to be carried out by a jack-up vessel or HLV. Prior to the commencement of decommissioning, the electrical systems will be de-energised, any liquids, chemicals present will be emptied, and loose items will be removed. The OSP topside will then be disconnected from the foundation, rigged to the HLV crane and will be lifted to the HLV or separate barge deck and sea fastened ready for transportation.

For the OSP foundations, the pin piles will be cut at least 1 metre below the seabed using an internal cutting method where possible or if required, excavation by dredging to allow access for an external diamond wire cutting tool which is clamped on to the pile. Once cut the pile is recovered to the decommissioning vessel and the remaining pin pile will be covered and left *in situ*. The cut structure (entire jacket and short section of pile) will then be lifted to the HLV or barge deck and sea fastened ready for transportation to shore. Following removal of the foundation the seabed will be inspected and any debris will be removed leaving a clear seabed surface.

Currently there is not a technical solution to remove entire pin piles from the seabed however should a suitable method be established during the operational life of the wind farm SWEL will reconsider the decommissioning options for the piles. This will be undertaken as part of the ongoing DP reviews proposed at 5-year intervals.

It is anticipated that the substations will be transported from the wind farm area to the decommissioning yard for recycling or re-use. The complete removal of the topsides is seen as the safest option and causes the minimum disruption to the local environment. All dismantling of the offshore substations will take place onshore minimising the risk of liquid spills and allowing maximum potential for reuse of materials.

Table 5-5 below presents an assessment of the WTG decommissioning process against the guiding principles set out in Table 5-1.

Table 5-5 – Assessment of OSP decommissioning options against Guiding Principles

Guiding principle	Complete removal of the topside, jacket structure and pin piles	Removal of the topside and jacket with pin piles cut 1m below seabed and left in-situ
<p>No harm to people</p>	<p>Significant excavation of the seabed down to penetration depth (max. 45m) required to remove seabed material prior to pin pile removal. Excavation of any surface sediment would be required to expose the pin pile at the rock layer requiring significant offshore activity. Breaking the grouted connection within the rock layer would require significant time resource and would therefore increase offshore activity.</p> <p>Currently complete excavation and removal of the pin piles is not technically feasible.</p>	<p>Significantly less activity required over a shorter campaign. Depending on the cutting method adopted it may be possible to avoid the use of divers, minimising risk to personnel.</p> <p>Provided the pin pile is cut below the seabed surface there will be no enduring health and safety risk to other sea users. Post decommissioning site monitoring will identify any unlikely exposure with the result that safety risk is insignificant.</p>
<p>Consider the rights and needs of legitimate users of the sea</p>	<p>Full removal would require longer campaigns and may result in significant excavation leaving significant scour holes. Currently complete excavation and removal of the pin piles is not technically feasible.</p>	<p>Negligible risk provided the pin pile is cut at a suitable depth below the seabed surface to ensure the risk of future exposure is minimised. The removal campaign would be significantly shorter causing less disturbance to other sea users.</p>
<p>Minimise environmental impact</p>	<p>Excavation pits over a wide area causing potentially significant impact to marine environment. Associated dumping of excessive volume of excavated waste material may be required. Disturbance would take place over long time period.</p>	<p>Considerably reduced works footprint relative to complete removal. Works would take place over reduced time period and involve less equipment. Seabed recovery time shorter than complete removal scenario.</p>
<p>Maximise re-use of materials</p>	<p>Maximum number of piled foundations potentially available for re-use.</p>	<p>Less foundation material available for re-use relative to complete removal. However, the entirety of the recovered material will be recycled to scrap metal.</p>
<p>Ensure practical integrity</p>	<p>As noted above, not technically viable. Significant risk associated with HLV, considerable excavation needed with associated storage or disposal of large volume of waste. Removal of the pin piles may not be possible in harder substrates.</p>	<p>Tried and tested procedures and equipment, and reduced risk due to minimising of offshore activity.</p>

Guiding principle	Complete removal of the topside, jacket structure and pin piles	Removal of the topside and jacket with pin piles cut 1m below seabed and left in-situ
<p>Promote sustainable development</p>	<p>In the long-term complete removal affords maximum flexibility over use of seabed.</p>	<p>Providing the buried pin piles do not become exposed, future activities will not be affected. The seabed will recover entirely following reinstatement.</p> <p>Note that there are only two OSPs each with six sets of two pin piles (12 in total) and therefore the area affected by the OSPs is very small relative to the wider wind farm area.</p>
<p>Adhere to the Polluter Pays Principle</p>	<p>Consistent in principle, assuming a suitable disposal solution can be found for the excavated waste material and that the seabed can be restored.</p>	<p>Consistent as far as is reasonably practicable, all remains of piled foundations to be below seabed level.</p>
<p>Ensure commercial viability</p>	<p>Costs are considered extreme - excavation and lifting involves major equipment requirements over longer periods of time. Campaign costs significantly higher due to level of risk.</p> <p>As noted above there is currently not a suitable technical and cost-effective method of removing pin piles.</p>	<p>Less expensive alternative to complete removal, involving minimal or no excavation and minimising environmental impacts.</p>

5.4.4 Inter-Array, OSP Interconnector and Export Cables

5.4.4.1 General Approach

The proposed baseline approach to the decommissioning of the buried cable is full removal. This approach acknowledges the preferences stated in the BEIS Guidance and the Scottish Government Guidance. However, the final methods that will be used to remove the cables will depend on the outcome of surveys and studies carried out to inform any pre-decommissioning EIA, and conclusions from the assessment of potential effects on benthic habitats and species along the export and inter array cable routes, as well as other users of the seabed.

Where, based on the outcome from the pre-decommissioning surveys, studies and EIA, it emerges that there is potential for significant adverse effects on any benthic habitats and species, it *may* be necessary to consider an alternative approach to decommissioning where it may be more appropriate to leave some sections of cable in-situ. This will only be the case where removal would create unacceptable risks to personnel or to the marine environment, be technically unfeasible or involve extreme costs.

Cable removal will be completed by reversing the installation process using a similar vessel and equipment spread to that of the installation campaign. The approximate sequence of operations for decommissioning cables is as follows:

- De-burial of the cable routes using a mass flow excavation (MFE) tool. The MFE equipment will use high flow hydraulic pumps to focus water on the seabed to agitate the soil sending seabed material into suspension in the water column and depositing it in a spoil berm adjacent to the focus point of the tool. See below note on MFE in regard to environmental impacts.
- A Remotely Operated Vehicle (ROV) will be used to cut cable at the bell mouth of the OSP or WTG foundation using shears at the bottom of the jackets
- The ROV will then attach a recovery clamp to the end of the cable and connect to the cable lay vessel winch wire
- The vessel will then transit towards shore while recovering the cable to the cable carousel on the vessel
- Once the carousel capacity is reached the cable will be cut and the cable end will be placed on temporary wet store rigging
- The vessel will transit to shore and offload the recovered cable
- The process will be repeated until the entire export, inter array or interconnector cable is recovered

At the decommissioning port, cables would likely be cut into manageable lengths ready for recycling of the suitable components and subsequent disposal.

Any cable protection system used at the J-tube exit would be removed from site at this time and recycled. If the foundation is removed ahead of the array or export cable removal, the end of the cable on the seabed will be appropriately protected to prevent risks to other sea users. This will most likely be achieved by burying the cable to the burial depths stated in the relevant Cable Plan or through the use of guard vessels.

It should be noted that MFE is significantly different to the method of jetting used to install the cable. The installation of the cable is undertaken using the method of laying the cable on the seabed followed by a post-burial campaign using a jetting tool. The jetting tool is dragged over the centre point of the cable and using water jets either side of the cable, fluidises the seabed sediment over a relatively small area around the cable (3 m to 5 m wide), the cable sinks to the desired burial depth and the fluidised sediment then settles on top of the buried cable. MFE uses the same principles, however the jets of water are significantly more powerful and instead of fluidising the immediate area of the cable, MFE cuts a wide trench with very shallow angled side walls and positions the spoil from the excavation adjacent to the trench. The trench will be approximately 15 to 20 m in width. The method of cutting a wide trench is required to ensure that the trench remains open for the period between the de-burial and cable retrieval campaigns. As a result of this, the area of impact is larger for decommissioning than construction and it is anticipated that the impacts will also be more significant. As noted in the introduction to this section, pre-decommissioning surveys will be undertaken to establish the ecology baseline and EIA will likely be required to understand the significance of any potential impacts that may be caused by MFE. In the case that potential impacts are significant it may be deemed more appropriate to leave certain sections of cable in-situ.

5.4.4.2 Exceptions

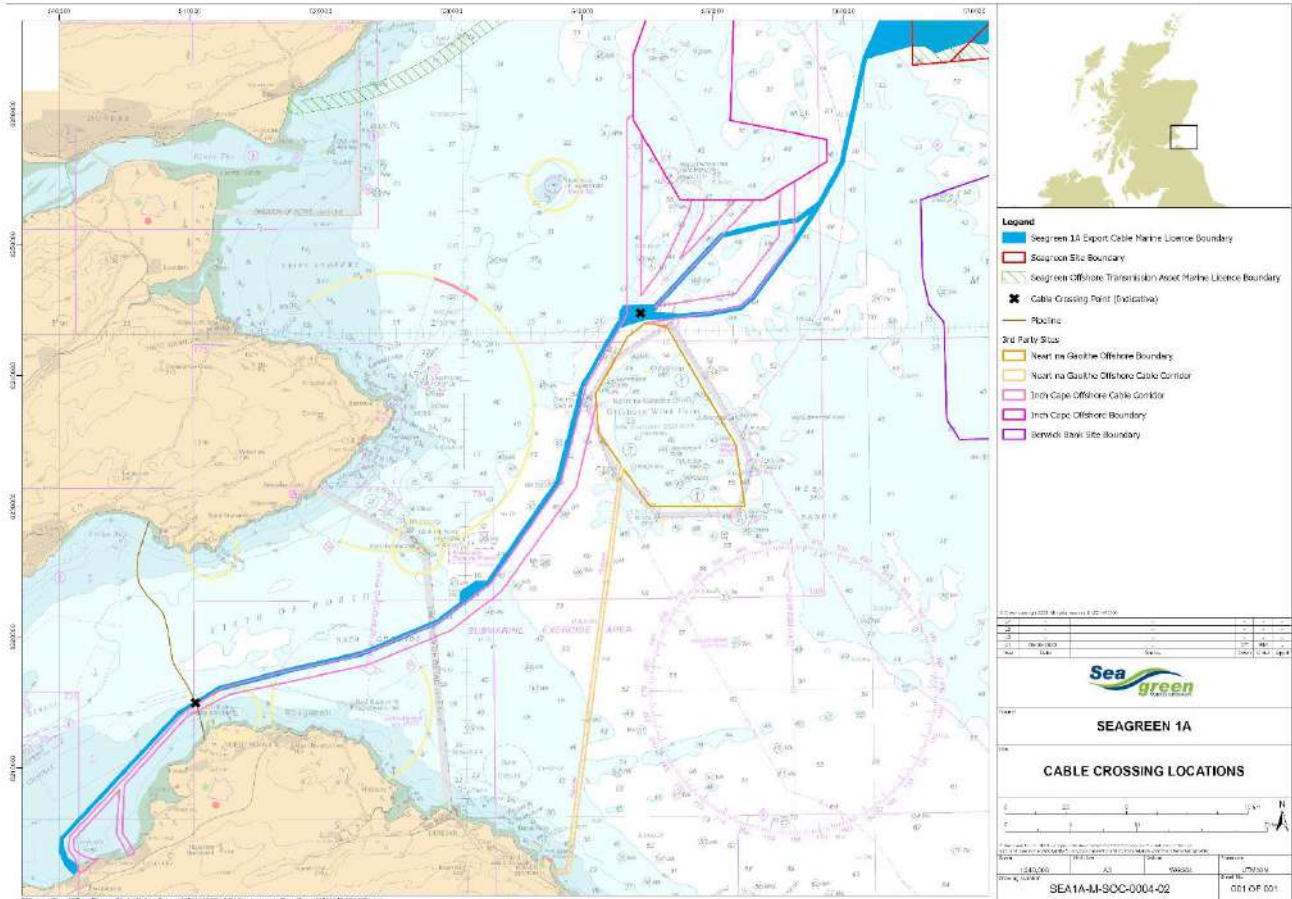
Complete removal may not be the best environmental or safe option and it may therefore be necessary to leave sections of cable in situ where:

- Full removal would have the potential to impact on existing subsea cables or gas pipelines, either at crossing areas or in areas of close proximity, and through direct disturbance during cable cutting/removal activities or by anchoring of vessels
- Environmental impact assessment indicates that the impacts associated with removal (MFE) are significant and outweigh the benefits of leaving the cable in-situ
- The cable is covered by loose rock protection berms (see section 5.4.6 below)

The Seagreen 1A export cable will cross the Inch Cape OWF export cables and one existing National Grid gas pipeline, as shown in Figure 5-1 below. At these crossings, the removal of the cable may present an unacceptable operational risk to the crossed or crossing assets. In these circumstances, the cable would be cut a suitable distance each side of the crossing leaving a short length in-situ. Note however that should the Inch Cape export cables be installed first, it may be possible to remove the SG1A (laid on top) without impacting upon the Inch Cape cables underneath.

In the case that the Seagreen cable crossing sections can be decommissioned without disturbing the third-party assets it crosses – or in cases where the overlying third party asset is removed first -the same method as described in Section 5.4.4.1 will be adopted.

Figure 5-1 – Location of proposed crossing with the Inch Cape OWF export cables and gas pipeline



Seagreen will obtain studies and evidence to support the cable decommissioning methods closer to the time of decommissioning. Where these studies (including EIA) indicate that valuable benthic features (such as PMFs, Scottish Biodiversity List species or Annex I habitats) have colonised parts of the cable routes, or otherwise where EIA indicates cable removal would result in a significant and unacceptable environmental impact, consultation with MS-LOT and NatureScot would be initiated to determine the most appropriate decommissioning option which may include leaving ‘high risk’ sections in-situ.

Where sections of cable are to be left in-situ, the cables will be cut, and the cable ends weighted to ensure that they are securely buried below the seabed reducing the risk of exposure. Additionally, where cables are decommissioned in-situ ongoing monitoring would be undertaken in order to ascertain if there is any risk of exposure in the future. The cable will not contain fluids and therefore there is no enduring pollution risk associated with cables remaining in-situ.

Cable protection is dealt with separately in section 5.4.6. However it should be noted that where it is considered more appropriate to leave rock protection *in-situ*, the cable section underneath the rock protection is also proposed to be left *in-situ*. Any such decision will be supported by further assessment closer to the time of decommissioning.

5.4.4.3 Assessment of Decommissioning Impacts and Guiding Principles

The following section provides a high-level assessment of the potential impacts of the decommissioning of the cables at the Projects. The potential impacts are identified as major, moderate, minor, and negligible. Major and moderate impacts are generally considered significant and warrant further consideration and discussion.

Table 5-6 - Environmental Assessment Matrix

Value/Sensitivity	Magnitude of potential environmental impact			
	High	Medium	Low	Negligible
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Negligible	Negligible	Negligible

This method is consistent with previous EIAs for the Seagreen Project which were accepted by regulatory stakeholders. All potential impacts are considered adverse unless expressed otherwise.

Table 5-7 - Significance definitions

Impact Significance	Definition
Major	Very large or large changes in site / asset conditions, which are likely to be important considerations at a regional or district level because they could result in exceedance of statutory objectives and / or breaches of legislation.
Moderate	Intermediate change in site conditions, which are likely to be important considerations at a local level.
Minor	Small change in site / asset conditions, which may be raised as local issues but are unlikely to be important in the decision-making process.
Negligible	A barely discernible change which may not be detectable in site / asset condition and is likely to have a negligible influence on the site / asset.
No Impact	No discernible change in site / asset conditions, likely to have no measurable influence, irrespective of other effects.

Table 5-8 presents a high-level assessment of the construction impacts compared to the decommissioning impacts. Table 5-9 provides an assessment of the buried cable decommissioning options against the guiding principles outlined in Table 5-1 above.

Table 5-8 - Construction and decommissioning impacts of cables

Receptor	Residual Construction Impacts	Decommissioning - Potential Impact Removal	Decommissioning - Potential Impact In-Situ	Decommissioning Impact	
				Removal	In-Situ
Water Quality & Sediments	All impacts assessed as minor or negligible	Sediment disturbance in immediate area and turbidity increase. The area of influence is expected to be significantly larger than for construction (approx. 15 – 20m trench width).	No change	Minor	No impact
		Hydrocarbon pollution due to fuel and oil spills from during decommissioning.		Negligible	
Benthic Ecology	All impacts assessed as Negligible following implementation of mitigation	Displacement, damage, and/or crushing of benthic communities in immediate area due to ground disturbing activities and removal of protective structures with an estimated recovery time of approximately 1 year depending on species resilience.	No change	Minor / Moderate (further assessment required prior to decommissioning)	No impact
Fish and Shellfish Ecology	All impacts assessed as Negligible following implementation of mitigation	Local turbidity from sediment disruption may persist up to a few days and reduce visibility which impacts the feeding ability of fish that detect prey visually.	No change	Minor	No impact

Receptor	Residual Construction Impacts	Decommissioning - Potential Impact Removal	Decommissioning - Potential Impact In-Situ	Decommissioning Impact	
				Removal	In-Situ
		Displacement, disturbance or injury to burrowing fish such as sandeel in immediate area.		Minor	
		Removal of artificial reef may reduce fish density in local area.		Minor	
		Disturbance, damage, and removal of shellfish species due to hard surface removal such as the pipes, rock revetment and protective structures.		Minor	
Marine Mammals	All impacts assessed as Negligible following implementation of mitigation	Vessel collisions with marine mammals may lead to injury or death.	No change	Negligible	No Impact
		Disturbance of essential functions due to noise pollution.		Negligible	No Impact
		Reduced health due to water quality.		Negligible	No Impact
Ornithology	All impacts assessed as Negligible following implementation of mitigation (cable installation)	Temporary changes to intertidal and subtidal habitats possibly affecting food sources in immediate/local area.	No change	Negligible	No Impact

Receptor	Residual Construction Impacts	Decommissioning - Potential Impact Removal	Decommissioning - Potential Impact In-Situ	Decommissioning Impact	
				Removal	In-Situ
Shipping and Navigation	All impacts assessed as Negligible following implementation of mitigation	Temporary disruption of path around the project area.	Damage or movement of exposed cable due to anchor drag.	Negligible	Negligible
Commercial Fishing	Negligible	Temporary disruption of fishing vessels in immediate area.	Damage or movement of HDPE Duct or damage to fishing equipment from snagging on exposed cable.	Negligible	Negligible

Table 5-9 – Assessment of buried cable decommissioning proposals against the guiding principles

Guiding principle	Complete removal of cable	Leave in-situ (where an exception applies)
No harm to people	Risk to personnel due to the requirement for extensive offshore operations, however risk is not considered excessive.	No works required (after cutting and reburial of cable ends) minimising risks to personnel.
Consider the rights and needs of legitimate users of the sea	Removal affords maximum flexibility over use of seabed, with no ongoing risks to other users of the sea.	Negligible risk presented providing adequate consultation and notification, burial is to a sufficient depth and site is monitored post decommissioning to identify any (unlikely) cable exposure. Cable left in-situ at crossings protects other legitimate users and their assets.
Minimise environmental impact	Given the considerable length of cable and the need for MFE techniques, removal would cause substantial disruption to the seabed and benthic habitats. Impacts are likely to be comparable to, or exceed, those reported in the original ES. As no infrastructure will be left in-situ, there will be no lasting impact on the environment.	Minimal disturbance after the temporally and spatially limited cable cutting and cable end re-burial operation. Inert materials (containing no fluid contaminants) resulting in no lasting environmental impact from cable left in-situ.
Maximise re-use of materials	Maximum material, e.g., aluminium, copper, lead, plastics, potentially available for re-use.	Cable material not available for re-use, although in the case of crossings, total volume of material not significant.
Ensure practical integrity	Removal is feasible but would require disturbance of seabed along full length of cable route during exposure and recovery.	Standard procedures and equipment. Reduced risk due to minimising offshore activity.
Promote sustainable development	Disturbance of the seabed in the short-medium term, although complete removal would allow flexibility over use of seabed in the longer term.	Providing remaining cable lengths do not become exposed, most future activities will not be affected.
Adhere to the Polluter Pays Principle	Consistent, assuming suitable disposal (recycling) option is found for cable components.	Consistent as far as practicable. Cables left in-situ will remain below seabed level (or below the sea defence) where they will pose minimal risk to the environment or other users of the sea. Decision to leave in situ will be balanced with risks to other assets and to benthic and other ecological receptors.
Ensure commercial viability	Extreme cost of removal where cable is buried by rock protection. Costs associated with removal may be partially offset by recycling of scrap cable where appropriate.	Minimal costs – simultaneously minimises environmental disturbance and impacts to other renewable energy assets.

5.4.5 HDPE Duct

5.4.5.1 General Approach

As described in section 5.4.4, the proposed approach is that the export cables will be removed as part of the decommissioning. This includes the section of export cables that are located within the HDPE ducts installed at the landfalls, in so far as engineering and environmental studies and surveys carried out pre-decommissioning do not provide compelling evidence that this would create unacceptable risks to personnel or to the marine environment, be technically unfeasible or involve extreme cost. However, where there is potential for cable removal to affect the integrity of the duct, which is to remain in-situ as discussed below, it may be necessary for the cable to also be left in-situ, with cable end cut well within the duct to ensure it remains buried well beneath the seabed/ground and therefore are not at risk of becoming exposed in the future.

Given the proposed depth of burial of the cable duct below the sea defence and the intertidal area (at least 2m below the seabed), it is proposed that the duct is left in-situ. This is on the basis that removal of the duct is likely to require significant excavation of the sea defence and intertidal area resulting in disturbance that is not considered commensurate with the guiding principles set out in Table 5-1. Additionally, decommissioning at Carnoustie is expected to require construction of a cofferdam due to the ground conditions and therefore costs are expected to be extreme. Further details of the cost assessments for duct removal have been provided in Appendix D – Decommissioning Costs and Financial Security Information which has been shared with MS-LOT on a confidential basis for review.

Leaving the duct in-situ long term is not considered to have any environmental or pollution impacts given the inherent properties of HDPE; nor is it considered to pose safety risks to mariners, navigation and commercial fisheries, or public land users at the landfall. As part of the landfall duct design and specification, studies will be undertaken to determine a suitable depth for the duct below the seabed and to demonstrate that it is unlikely to become exposed.

Post decommissioning, a monitoring programme will be in place to ensure the buried ducts remain buried. Where exposures are identified, appropriate remediation (re-burial) will be carried out.

5.4.5.2 Assessment of Decommissioning Impacts and Guiding Principles

A comparison of the construction and decommissioning impacts is presented in Table 5-10 for key receptors using the assessment matrix presented in Table 5-6. Table 5-11 provides an assessment of the buried export cable decommissioning proposals against the guiding principles outlined in Table 5-1 above. The below table is limited to receptors of relevance to the inter-tidal area with all other receptors having no impact.

Table 5-10 – Construction and decommissioning impacts of HDPE ducts

Receptor	Residual Construction Impacts	Decommissioning - Potential Impact Removal	Decommissioning - Potential Impact In-Situ	Decommissioning Impact	
				Removal	In-Situ
Water Quality & Sediments	All impacts assessed as Minor or Negligible	Sediment disturbance in immediate area and turbidity increase lasting approximately a few days.	No change	Minor	No impact
		Hydrocarbon pollution due to fuel and oil spills from during decommissioning.		Negligible	
Benthic Ecology	All impacts assessed as Negligible following implementation of embedded mitigation	Displacement, damage, and/or crushing of benthic communities in immediate area due to ground disturbing activities and removal of protective structures with an estimated recovery time of approximately 1 year depending on species resilience.	No change	Minor	No impact
Commercial Fishing	Negligible	Temporary disruption of fishing vessels in immediate area.	Damage or movement of HDPE Duct or damage to fishing equipment from snagging on exposed HDPE Duct.	Negligible	Negligible

Table 5-11 – Assessment of HDPE duct decommissioning proposals against the guiding principles

Guiding principle	Removal	Leave in-situ
No harm to people	Risk to personnel would be greater (than leaving in situ) due to increased offshore operations – and requirement for high-risk diving operations.	No works required (after cutting and reburial of duct end) minimising risks to personnel.
Consider the rights and needs of legitimate users of the sea	Removal affords maximum flexibility over use of seabed, with no ongoing risks.	Negligible risk presented providing adequate consultation and notification, burial is to a sufficient depth and site is monitored post decommissioning to identify any (unlikely) duct exposure.
Minimise environmental impact	Removal would cause disruption to the seabed and benthic habitats. Impacts may exceed those reported in the original ES and alternative landfall installation ER Due to the extent of the excavation required.	No impact as no works required. Inert materials resulting in no lasting environmental impact from duct left in-situ.
Maximise re-use of materials	Material available for re-use or recovery.	Duct material not available for re-use, although total volume of material not considered significant.
Ensure practical integrity	Removal is feasible using standard techniques and equipment but would require significant disturbance of seabed and sea defence.	Standard procedures and equipment. Reduced risk due to minimising offshore activity.
Promote sustainable development	Disturbance of the seabed in the short term, although removal would allow full flexibility over use of seabed in the longer term.	Providing remaining ducts do not become exposed future activities are unlikely to be affected. Note that due to water depths, existing activities in the shallow water nearshore area are minimal.
Adhere to the Polluter Pays Principle	Consistent, assuming suitable disposal (recycling or recovery) option is found for removed ducting.	Consistent as far as practicable. Ducts left in-situ will remain buried below seabed level (or below the sea defence) where they will pose minimal risk to the environment or other users of the sea.
Ensure commercial viability	Costs are considered excessive due to the extent of excavation (including through sea defence) required.	Minimal costs – simultaneously minimises environmental disturbance/impacts.

5.4.6 Cable and Scour Protection

5.4.6.1 General Approach

Where cable and scour protection are required during the construction or operational phase of the Projects, a determination of the decommissioning procedure will be presented in the final DP. For the purposes of this DP and in recognition of BEIS Guidance and Scottish Government Guidance around BPEO - and IMO Standards - **any loose rock protection covering cables will be left in situ** to preserve the marine habitat that will have established over the life of the wind farm, on the assumption that to do so would not have a detrimental impact on the environment, conservation aims, the safety of navigation and other uses of the sea. Where this is the case, sections of cable underneath the protection would also therefore remain in-situ for the same reasons. IMO Standards recognise that assets may be left in-situ if:

- It can be left without causing unjustifiable interference with other uses of the sea
- Entire removal is not technically feasible or would involve extreme cost, or an unacceptable risk to personnel or the marine environment

The BEIS Guidance and the Scottish Government Guidance do not make specific reference to suitable decommissioning measures for loose rock cable and scour protection beyond the requirement to undertake a comparative assessment of the available options. However, equivalent guidance for the oil and gas industry recognises that removal of rock-protected pipelines is 'unlikely to be practicable and it is generally assumed that the rock dump and the pipeline will remain in place'.

In their assessment of currently available options for the removal of cable protection, Natural England (2022) concluded that 'given the nature of the loose rock, it is very difficult and time consuming to remove extensive sections of rock dump'. All practical removal methods assessed in the research had risks (health, safety or environmental) or limitations which preclude their use in the recovery of the quantity of rock protection likely to be required for the Seagreen Project. All were assessed as having a significant impact on the benthic environment with potential long-term damage to marine habitats.

Future iterations of the decommissioning programme will review the type of cable and scour protection installed and the available technology at the time and will update the proposed decommissioning procedures accordingly taking into account the principles outlined in section 5.3. Any options would be subject to an updated comparative assessment. An EIA would likely be required to support this assessment to ensure the relative risks to the benthic environment and to future users of the seabed are appropriately considered. At this stage, it is not envisaged that cable protection other than loose rock berms will be used in significant quantities or as permanent deposits due to current project design and limited quantities consented in the Marine Licence. Any such cable protection will be subject to an assessment of its condition before determining that there is sufficient evidence to rebut the presumption of full removal.

5.4.6.2 Supporting Assessment

In support of the preparation of the Seagreen decommissioning programme, SWEL engaged specialist cable and pipeline engineering consultants Acteon¹ to undertake a technical review of the potential decommissioning options for the cable protection and export and array cables. The review considered the technical options for retrieving the rock protection and included a ground up Capex modelling assessment to estimate the projected costs of decommissioning the cable protection. The cost assessment for cable protection removal has been included in Appendix D – Decommissioning Costs and Financial Security Information which has been provided to MS-LOT for review on a confidential basis. A summary of the technical assessment is provided below.

It should be noted that there is not currently a bespoke solution for cable protection removal and further there is no precedent within either the oil and gas or offshore renewables industries. Acteon conducted a high-level search of emerging technologies in the offshore energy industry and concluded that one possible applicable method could be to utilise deep sea mining vehicles deployed from supersized purpose-built recovery ships, however at the time of writing, this technology is unproven and still in long term development. The expected daily cost of a vessel large enough to carry high flow, high pressure pumps, a rock transportation system capable of lifting tonnes of rock per second from the seafloor in 20-60m of water and operate large mining style trencher vehicles is expected to be an order of magnitude above even the most expensive cable lay vessels of today. Acteon's review therefore focused on technology and vessels currently available to the OSW market.

To remove the cable protection on top of the buried cables, a subsea excavator would be deployed and operated from a dynamically positioned Construction Support Vessel (CSV) equipped with a large open deck and a subsea crane. It should be noted that at the time of writing there are only a small number of suppliers of subsea excavators as this type of work is deemed highly specialist. Furthermore, they are not designed to undertake this type of material recovery and therefore the method proposed below has been adapted.

The excavator used would be based on a land-based excavator combined with an ROV and fitted with a large industry standard subsea dredger. The machine would be launched from a dedicated A-Frame or offshore vessel crane, the vehicle is powered and operated from surface as with a conventional ROV system. As the machine is tracked it is not sensitive to current forces and is therefore expected to only be recovered when adverse weather requires the vessel to leave site or to undertake maintenance.

The main components of the vehicle are the articulated digger arm and large capacity subsea dredge. The high flow suction system has few moving parts and utilises a pump which is adjacent to the suction hose but not in the firing line of the material being transported minimising the risk of rocks becoming lodged in the pump. In a conventional configuration the digger sucks individual rocks into a flexible hose travelling up the arm and along the length of the vehicle and they are jettisoned out of an exhaust port onto the seabed. For the purposes of this application, where the rock dump is returned to surface, the exhaust hose will be extended and routed into a heavy-duty subsea basket capable of holding 20Te or more of material which will

¹ <https://acteon.com/>

then be recovered to surface ready for offloading in port. The expected maximum volume of material which can be moved in this application per hour is ten cubic metres at which point a heavy-duty basket will be full and require recovery to deck using the vessel crane and replacement with an empty unit.

Rock would be recovered to a pair of 1,650mT capacity Hopper barges to provide a constant offloading capability which would allow the CSV to remain on location for up to 30 days but ship to ship transfer of 25Te baskets is complex and highly weather limited. Therefore, for the purposes of the study it has been assumed that the CSV will also be equipped with a rock handling machine such as an excavator which can transfer the recovered rock from baskets directly into the hopper barge tied up alongside. The Hopper barge will be accompanied by an attendant tug which will tow full barges to port for offloading and collect an empty barge to restart the process of rock transfer.

Based on the estimated rock protection volumes for export cables (both Projects), Acteon's assessment estimates the rock removal campaign to need approximately 307 days and require over 160 round trips to shore.

For the array cables the same method as described above would be utilised and the total campaign duration is estimated at 274 days and require approximately 150 round trips to shore.

For the array, interconnector and export cables the total offshore campaign duration to remove the rock protection is estimated to be 581 days (exclusive of weather and other contingencies) and will require significant resourcing and vessels.

Note that the activities associated with the handling of the rock onshore for recycling and/or disposal have not been considered in this study but are also expected to require significant resourcing, health and safety risks associated with the lifting and handling of materials and have potentially significant environmental effects.

The total duration of the campaign, the health and safety risks and the costs associated with these operations are considered to be extreme when balanced against the benign nature of the material, the marginal overall environmental benefits associated with removal and when assessed against the decommissioning guiding principles.

5.4.6.3 Assessment of Decommissioning Impacts and Guiding Principles

Table 5-12 below provides a comparison of the construction and decommissioning impacts for the cable protection decommissioning using the assessment matrix presented in Table 5-6. Decommissioning impacts for rock removal are anticipated to be more severe than for construction.

Table 5-13 provides an assessment of the cable protection (loose rock) decommissioning proposals against the guiding principles outlined in Table 5-1 above.

Table 5-12 - Construction and decommissioning impacts of cable and scour protection

Receptor	Residual Construction Impacts	Decommissioning - Potential Impact Removal	Decommissioning - Potential Impact In-Situ	Decommissioning Impact	
				Removal	In-Situ
Water Quality & Sediments	All impacts assessed as minor or negligible.	Sediment disturbance in immediate area and turbidity increase.	No change	Minor	No impact
		Hydrocarbon pollution due to fuel and oil spills from during decommissioning.		Negligible	
Benthic Ecology	All impacts assessed as Negligible following implementation of mitigation	Displacement, damage, and/or crushing of benthic communities in immediate area due to ground disturbing activities and removal of protective structures with an estimated recovery time of approximately 1 year depending on species resilience.	No change	Minor	No impact
Fish and Shellfish Ecology	All impacts assessed as Negligible following implementation of mitigation	Local turbidity from sediment disruption may persist up to a few days and reduce visibility which impacts the feeding ability of fish that detect prey visually.	No change	Minor	No impact
		Displacement, disturbance or injury to burrowing fish such as sandeel in immediate area.		Minor	No impact
		Removal of artificial reef may reduce fish density in local area.		Minor	No impact
		Disturbance, damage, and removal of shellfish species due to hard surface removal such as the pipes, rock revetment and protective structures.		Minor	No impact

Receptor	Residual Construction Impacts	Decommissioning - Potential Impact Removal	Decommissioning - Potential Impact In-Situ	Decommissioning Impact	
				Removal	In-Situ
Marine Mammals	All impacts assessed as Negligible following implementation of mitigation	Vessel collisions with marine mammals may lead to injury or death.	No change	Negligible	No Impact
		Disturbance of essential functions due to noise pollution.		Negligible	No Impact
		Reduced health due to water quality.		Negligible	No Impact
Ornithology	All impacts assessed as Negligible following implementation of mitigation (cable installation)	Temporary changes to intertidal and subtidal habitats possibly affecting food sources in immediate/local area.	No change	Negligible	No Impact
Shipping and Navigation	All impacts assessed as Negligible following implementation of mitigation	Temporary disruption of path around the project area.	Damage or movement of exposed cable due to anchor drag.	Negligible	Negligible
Commercial Fishing	Negligible	Temporary disruption of fishing vessels in immediate area.	Damage or movement of HDPE Duct or damage to fishing equipment from snagging on exposed cable.	Negligible	Negligible

Table 5-13 – Assessment of cable protection (rock berms) and scour protection decommissioning proposals against the guiding principles

Guiding principle	Removal	Leave in-situ
No harm to people	Risk to personnel would be significantly greater (than leaving in situ) due to lengthy, offshore operations (up to 1.5 years). Repeated lifting and handling of high volumes of rock to a vessel/barge is considered a high-risk activity.	No works required minimising risks to personnel.
Consider the rights and needs of legitimate users of the sea	Removal affords maximum flexibility over use of seabed, with no ongoing risks.	Minimal residual risks remain to specific users but can be mitigated by adequate consultation and notification to other users of the sea.
Minimise environmental impact	Removal would cause substantial disruption to or destruction of benthic habitats that are likely to have formed on and near the rock berms following installation. Impacts associated with removal may exceed those reported in the original ES.	Minimal impact as leaving in-situ avoids further disturbance to the benthic environment (and protects habitats that are likely to have formed on and near the rock berms following installation) and avoids the need for long offshore campaign and significant use of transportation vehicles.
Maximise re-use of materials	Material available for re-use or recovery.	Material not available for re-use.
Ensure practical integrity	Removal has been assessed as technically feasible using available techniques and equipment but at extreme cost. Removal of this volume of material is unproven.	No offshore activity required.
Promote sustainable development	Significant disturbance of the seabed in the short term, although removal would allow greater flexibility over use of seabed in the longer term.	Does not preclude the reuse of the seabed for most purposes.
Adhere to the Polluter Pays Principle	Consistent, assuming suitable disposal (recycling) option is found for recovered rock.	Consistent as far as practicable. Rock berms will present a minimal risk to the environment or other users of the sea and may result in biodiversity gain due to the introduction of the rock substrate.
Ensure commercial viability	Costs considered to be extreme due to the volume of rock requiring recovery, the technical difficulty in recovering the rock, the long offshore campaign and significant onshore handling costs.	Minimal costs – simultaneously minimises environmental disturbance/impacts.

5.4.7 Items to Remain In-Situ

To summarise the preceding subsections, and in line with the evidence of unacceptable risks to personnel or to the marine environment, technical unfeasibility or extreme cost set out above, it is proposed that the following items will remain in-situ following decommissioning:

- HDPE duct
- Cable and scour protection consisting of loose rock (subject to further comparative and technical assessment closer to the date of decommissioning)
- Lengths of cable protected by loose rock cable protection
- OSP pin piles (cut below seabed)

The following items *may* remain in-situ following decommissioning, where subsequent assessment demonstrates compelling evidence that full removal would present an unacceptable risk to personnel or to the marine environment, be technically unfeasible or involve extreme cost:

- Cable protection consisting of grout or rock bags or concrete mattresses (subject to an assessment of their condition and comparative assessment of decommissioning options)
- Lengths of cable at cable and pipeline crossings (noting the potential to remove these lengths when the crossed infrastructure is removed)
- Lengths of cable where environmental assessment indicates it is not appropriate to fully remove the cable (noting Seagreen's assumption that cable removal will be maximised and only remain in-situ where there is a compelling environmental or operational justification to do so)

5.5 Proposed Waste Management Solutions

Seagreen is committed to maximising the re-use of waste materials and will give full regard to the 'waste hierarchy' which suggests that re-use should be considered first, followed by recycling, incineration with energy recovery and, lastly, disposal. In any event, waste management will be carried out in accordance with all relevant legislation and with any necessary disposal taking place at licensed facilities.

The proposed approach to the disposal of the main components of the development is set out in Table 5-14 below.

Table 5-14 – Proposed disposal route for components to be removed

Waste material	Pre-treatment	Re-use/recycle/disposal
WTG and OSP support structures	Establish remaining design life	Re-use by repowering with new/superior WTGs or other renewable generation technology or dismantle and recycle the recovered material as much as possible
WTG tower and nacelle	Break down into transportable size	Recycle
Glass-fibre Reinforced Epoxy (GRE) from wind turbine blades	Break down into transportable size	Recycle where facilities exist or disposal if no alternative
OSP topside	Break down into transportable size	Recycle
Inter array, Interconnector and Export cables	Cut into transportable lengths. Split and separate into components	Aluminium/copper/lead/steel and insulation plastics – recycle Other components – recycle where facilities exist, otherwise energy recovery
Cast-iron shell segments	Dismantle to transportable size	Recycle
Concrete mattresses, grout and rock bags (if used and recoverable)	None	Re-use (if condition allows) Crush and re-use for other purposes Netting, fixings etc recycled or recovered as appropriate

5.6 Potential for Phasing and Integration

It is possible that there may be synergies and interactions between the decommissioning of the Projects and that of other nearby developments.

Seagreen will promote formal industry collaboration on this issue and, as a minimum, will approach the developers of the Neart na Gaoithe and Inch Cape OWFs to consider potential opportunities as part of the ongoing DP review process. However, Seagreen’s starting assumption is that decommissioning will be undertaken in isolation such that the provisions can be fully costed, and sufficient financial security provided. The status and requirements of surrounding projects will be carefully considered in the planning and execution of the decommissioning process. Any sharing of decommissioning activities would influence the phasing of the works.

5.7 Lighting and Marking

In accordance with the OWF Marine Licences, the Seagreen Project will be marked and lit, as agreed with relevant stakeholders until the point of removal of the structures. Seagreen will comply with any lighting and marking requirements specified in the consents granted for decommissioning.

6. Environmental Impact Assessment

In support of the consent applications SWEL undertook an EIA for the Seagreen Project as reported in the ES dated April 2012, with further information provided via the ES Addendum dated May 2013. Similarly, Seagreen 1A prepared an EIAR for the Seagreen 1A Project in support of the Marine Licence application.

As required by the EIA Directive, a lifecycle approach was taken in assessing the impacts of the Project and in seeking to mitigate and minimise the effect of the works. In all instances a 'worst case', Rochdale Envelope approach was taken to the assessment and the impact assessment included the process of decommissioning so far as it could be predicted at the time.

In consultation with MS-LOT, the information relating to decommissioning in the ES, ES Addendum and EIAR will be reviewed when the final details of the DP are confirmed prior to decommissioning activities taking place.

The following key criteria will inform the decision as to the need for a new or updated EIA:

- The understanding of the baseline environment at the time just prior to decommissioning, informed by the findings of the environmental monitoring of the project and engineering/asset surveys such as cable burial monitoring and Annex 1 habitat monitoring undertaken prior to decommissioning
- A review of other marine use (fishing, navigation, etc.) with potential to be affected by decommissioning
- Amenities, the activities of communities and on future uses of the environment
- Historic environment interests
- Seascape and landscape interests

If required, the decommissioning EIA will supplement existing information in relation to these issues and would also describe the measures envisaged to avoid, reduce and, if possible, remedy any likely significant adverse impacts arising from the decommissioning process. The conclusions of the EIA will be used to inform the final decommissioning options that will be detailed in the final DP.

7. Consultation with Interested Parties

7.1 Introduction

Seagreen recognises effective and open communication and consultation as essential elements to the successful development of the Projects. These principles have been adopted throughout the development of the Projects and will be applied during the life of the Projects including the decommissioning phase.

7.2 Consultation on Draft Decommissioning Programme

7.2.1 Consultation Process

Section 105(7) of the Energy Act 2004 provides that a notice given under Section 105 may require the recipient of the notice to carry out consultation specified in the notice before submitting a decommissioning programme. Schedule 2 to the S105 Notices issued to SWEL and Seagreen 1A by the Scottish Ministers sets out those organisations who were required to receive a copy of draft DP for comment, as listed in Table 7-1.

Table 7-1 - Consultees listed in Section 105 Notices

Consultees listed in the Section 105 Notices	
Aberdeen Harbour Authority	Marine Scotland Science
Angus Council	Maritime and Coastguard Agency
Arbroath Harbour Authority	Ministry of Defence
British Marine Aggregate Producers Association	Montrose Harbour Authority
Crown Estate Scotland	NatureScot
Dundee City Council	Northern Lighthouse Board
Dundee Harbour Authority	Royal Yacht Association (Scotland)
East Lothian Council	Scottish Borders Council
Fife Council	Scottish Environment Protection Agency
Forth Ports Authority	Scottish Fisherman's Federation
Joint Nature Conservation Committee	UK Chamber of Shipping
Health and Safety Executive	UK Hydrographic Office
Historic Environment Scotland	

The draft DP was issued to all consultees on 2 November 2022. Consultees were given a 30-day consultation period to respond, in line with the requirements of the S105 notices. Consultation therefore closed on 2 December 2022. The DP was made publicly available during this period on the Project's websites.

The Financial Security Information (Appendix D) associated with the DP was subject to a separate consultation process and was not circulated as part of the Section 105 consultation. The final Financial Security Information forms a confidential appendix to this document (Appendix D).

7.2.2 Consultation Responses

Responses were received from 22 consultees, as listed in Table 7-2 below. A summary of the consultation comments, the responses provided by Seagreen and where they have been addressed by amendment to the DP (where relevant) is provided in Appendix E. Copies of consultee responses are included in Appendix F.

Table 7-2 – Consultees listed in the Section 105 Notices and summary of those providing comments on the draft DP

Consultee	Comment received?
Aberdeen Harbour Authority	No
Angus Council	Yes
Arbroath Harbour Authority	Yes
British Marine Aggregate Producers Association	Yes
Crown Estate Scotland	Yes
Dundee City Council	Yes
Dundee Harbour Authority	Yes
East Lothian Council	Yes
Fife Council	Yes
Forth Ports Authority	Yes
Joint Nature Conservation Committee	Yes
Health and Safety Executive	No
Historic Environment Scotland	Yes
Marine Scotland Science	No
Maritime and Coastguard Agency	Yes
Ministry of Defence	Yes
Montrose Harbour Authority	Yes
NatureScot	Yes
Northern Lighthouse Board	Yes
Royal Yacht Association (Scotland)	Yes
Scottish Borders Council	Yes
Scottish Environment Protection Agency	Yes

Consultee	Comment received?
Scottish Fisherman's Federation	Yes
UK Chamber of Shipping	Yes
UK Hydrographic Office	Yes

7.3 Ongoing Consultation and Notifications

As per Section 2.4, throughout the lifespan of the Projects, the DP will be reviewed and updated at least every 5 years as new information relevant to the decommissioning strategy becomes available. Consultees listed in the S105 Notices, and any additional consultees identified by MS-LOT, SWEL or Seagreen 1A, will be provided with the opportunity to comment on the DP when it is updated and on the final DP prior to it being finalised. It is anticipated that the final revision process will commence two years prior to the initiation of decommissioning (see Section 10).

At the time of decommissioning, Seagreen will issue Notices to Mariners (NtMs) and other navigational warnings of the position and nature of the decommissioning activities taking place. Efforts will be made to ensure that this information reaches mariners in the shipping and fishing industry as well as recreational mariners. The UK Hydrographic Office (UKHO) will be notified as appropriate on the progress and completion of the works.

8. Costs and Financial Security

The decommissioning cost information required by Scottish Ministers is provided in confidence as Appendix D to this DP.

9. Schedule

A full decommissioning schedule will be provided closer to the point of decommissioning setting out the detailed programme of the proposed decommissioning works for consultation with the relevant authorities.

At this stage it is proposed that decommissioning would commence approximately 25 years after final commissioning of the Seagreen Project, coinciding with the end of the design life of Project (subject to any life-extension or re-powering options being pursued and consented).

The DP will be reviewed periodically throughout the operational phase in accordance with the BEIS guidance. A final review of the DP will commence at year 23, two years prior to the scheduled start of the decommissioning operations.

Offshore decommissioning and any necessary onshore dismantling of the decommissioned infrastructure would run in parallel. The total duration of the decommissioning campaign is estimated at approximately 2 years.

10. Project Management and Verification

Seagreen intends to undertake internal reviews of the DP throughout the lifetime of the project and formally update the plan a minimum of every 5 years. The review schedule will be agreed with MS-LOT taking account of the review points suggested in paragraph 5.7.4 of the BEIS guidance. Once the Projects are nearing the end of their operational period, and in any event, no later than two years prior to the commencement of decommissioning operations, Seagreen will initiate a final review of the DP and finalise the detail of the decommissioning provisions. This will include project management arrangements, the schedule, costs and the verification processes to ensure decommissioning is completed.

It should be noted that the transmission assets (defined in sections 4.3, 4.5 and 4.6) will be sold to one or more OFTOs and thereafter the responsibility for decommissioning will transfer to the OFTO.

Following completion of the decommissioning works a Decommissioning Report will be submitted to the appropriate regulatory authorities. In accordance with the Scottish Government Guidance, the decommissioning report will include:

- Independent third-party verification that decommissioning took place in accordance with the approved DP (e.g., statement from a third-party contractor or an independent observer) and a statement detailing any deviations from the approved DP with justification
- Evidence (e.g., photographic evidence of infrastructure out of the water, or survey footage of the seabed) that all infrastructure that was due to be removed, according to the DP, has been removed
- Where infrastructure has been left in-situ, evidence that it has been cut off/buried/otherwise treated in accordance with the DP
- A compliance statement setting out how relevant regulations (environment, health and safety) have been complied with together with any instances of non-compliance
- References to compliance with relevant EIAs and Appropriate Assessments
- References to any future monitoring and maintenance set out in the DP
- A cost breakdown to enable Scottish Ministers to understand the actual cost of decommissioning compared to the predicted cost, and an explanation of any major variances from forecast costs

11. Seabed Clearance and Restoration of the Site

Seagreen is committed to restoring the seabed areas occupied by the Projects, as far as is reasonably practicable, to the condition that it was in prior to installation of the assets. Consistent with the decommissioning provisions detailed in section 5, and where there is compelling evidence of unacceptable risks to personnel or to the marine environment, technical unfeasibility or extreme cost that justifies anything short of full removal, the key restoration work will relate to ensuring that:

- Where left in-situ, HDPE duct end is adequately buried
- OSP pin-piles that are left in-situ are adequately buried, or otherwise protected
- Any sections of cable (including cut ends) that are left in-situ are adequately buried, or otherwise protected
- Any rock protection left in-situ is re-profiled following cable removal works, should this be required for continued safety of other sea users
- Scour protection is reprofiled to level any seabed depressions left following foundation removal
- Open trenches resulting from MFE are reinstated and the seabed returned to its original profile, where practicable

It is anticipated that upon completion of the decommissioning works, a survey will be undertaken to ensure that all debris has been removed. The survey will enable identification and recovery of any debris located on the seabed which may have arisen from activities related to the decommissioning process and which may pose a risk to navigation or other users of the sea. The process of collecting and presenting evidence that the site is cleared is required to be independent of Seagreen. Seagreen proposes that an independent survey company complete the surveys and that the results of these surveys will be issued to MS-LOT for review and comment and circulated to stakeholders as agreed in advance with the Scottish Ministers.

The required survey area/corridor would be determined during the decommissioning phase of the project, taking into account good practice at the time and the views of stakeholders.

Analysis of any survey data gathered will also ensure that items for removal and disposal relate only to the asset. Consultation with relevant stakeholders will be conducted if other anomalies of archaeological interest are identified during seabed clearance.

Further details on how the site will be restored will be provided in the updated DP towards the end of the life of the Projects.

12. Post-Decommissioning Monitoring, Maintenance and Management of the Site

Given that Seagreen are not proposing to fully remove all assets, some post-decommissioning activities may be required, to identify and mitigate any unexpected risks to navigation or other users of the sea.

The requirement for monitoring and the extent and approach taken will be determined based on the scale of the remaining materials the risk of exposure and the risk to marine users and will be agreed upon with Marine Scotland in subsequent revisions of the Decommissioning Programme as the project matures.

It should be reiterated that Seagreen propose to fully remove all cables unless there is an overriding environmental justification for leaving sections in-situ. It is expected that any cable left in-situ will be limited to short sections where the cable is mechanically protected. Periodic monitoring of deep-buried HDPE ducts may be required if exposure risk is identified. Requirements for monitoring of any cable protection left in-situ will be determined only after the type and extent of protection is known.

Post-decommissioning monitoring surveys of the seabed will be carried out following the completion of the decommissioning works. Surveys are expected to comprise geophysical survey (such as swathe bathymetry, sidescan sonar and magnetometer). Surveys will be undertaken in line with the final DP, survey scopes consulted on with MS-LOT and relevant stakeholders, and MGN 654 (or equivalent guidance in place at the time). Compliance will be verified by means of independent third-party survey upon completion of the works.

A post-decommissioning report shall be submitted with an agreed timescale and will include (in accordance with paragraph 7.18 of the Scottish Government Guidance):

- Evidence that all infrastructure that was due to be removed, according to the DP, has been removed
- Where infrastructure is left in-situ, evidence that it has been cut-off, buried or otherwise treated in accordance with the DP
- References to any future monitoring, maintenance and mitigation as set out in the DP
- References to compliance with permitting obligations
- A comparative analysis of predicted and actual costs

Post-decommissioning hydrographic surveys will be undertaken in accordance with the requirements set out in the MGN 543 or relevant guidance in place at the time.

If an obstruction appears above the seabed following decommissioning which is attributable to the Project, it will be marked so as not to present a hazard to other sea users and remediated as required. Any remediation method will be agreed with Marine Scotland. The navigational marking will remain in place until such time as the obstruction is removed or no longer considered a hazard due to suitable remediation. The monitoring of the obstruction will be built into any monitoring and maintenance programme.

Details of the post-decommissioning monitoring, maintenance and management will be discussed with stakeholders close to the point of decommissioning and will consider relevant guidelines and industry standard good practice at the time and where possible this will take the form of non-intrusive survey techniques.

13. Supporting Studies

The documents for the Seagreen Project Phase 1 Environmental Statement and Addendum can be accessed online, on the Seagreen website www.seagreenwindenergy.com.

The Seagreen 1A Project EIAR can be accessed online, on the Seagreen 1A website www.seagreen1a.com.

14. References

Note: Data sources and references for section 3.2 can be found in the ES and ES Addendum, as referenced below. Data sources and references for section 3.3 can be found in the Seagreen 1A Screening Report and EIAR, as referenced below.

Department for Business, Energy and Industrial Strategy (BEIS). 2018. *Decommissioning of Offshore Oil and Gas Installations and Pipelines Guidance Note*

Department for Business, Energy and Industrial Strategy (BEIS). 2019. *Decommissioning of offshore renewable energy installations under the Energy Act 2004: Guidance notes for industry* [the 'BEIS Guidance']

International Maritime Organisation (IMO). 1989. *Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone*

OSPAR Convention for the Protection of the Marine Environment of the North East Atlantic. 1988

Scottish Government. 2022. *Decommissioning of Offshore Renewable Energy Installations in Scottish Waters or in the Scottish Part of Renewable Energy Zone under the Energy Act 2004: Guidance Notes for Industry (in Scotland)* [the 'Scottish Government Guidance']

United Nations Convention for the Law of the Sea (UNCLOS). 1982

OGUK. 2015. *Guidelines for Comparative Assessment in Decommissioning Programmes*

Natural England. 2022. *Scour and Cable Protection Decommissioning Study (Report NECR403)*

Seagreen Alpha and Bravo Environmental Statement, September 2012

Seagreen Environmental Statement Addendum, October 2013

Seagreen 1A Ltd. 2020. *Seagreen 1A Export Cable Corridor Screening Report*. Document reference: LF000012-CST-OF-LIC-DEV-REP-0001

Seagreen 1A Ltd. 2021. *Offshore Export Cable Corridor – Environmental Impact Assessment Report*. Document reference: LF000012-CST-OF-LIC-DEV-REP-0003

Appendix A – List of Abbreviations and Definitions

Term	Description
the Act	Energy Act 2004
BEIS	Department for Business, Energy and Industrial Strategy
Cable protection	Items installed over or around the cable to provide addition protection where burial is not possible or does not prove sufficient protection. Includes loose rock berms, grout bags, rock nets, concrete mattresses and cast-iron shells
DECC	Department for Energy and Climate Change [defunct]
Defra	Department of Environment, Food and Rural Affairs
DP	Decommissioning Programme
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
ES	Environmental Statement
HDPE	High Density Polyethylene
HLV	Heavy Lift Vessel
HVAC	High Voltage Alternating Current
IMO	International Maritime Organisation
Licencing Authority	Marine Scotland acting on behalf of the Scottish Ministers
Licensee	Seagreen Wind Energy Ltd in respect of the Seagreen Project, and Seagreen 1A Limited in respect of the Seagreen 1A Project
Marine Licence	A licence granted by the Scottish Ministers under the Marine (Scotland) Act 2010 and/or the Marine and Coastal Access Act 2009
MFE	Mass Flow Excavation
MS-LOT	Marine Scotland Licensing and Operations Team
NCMPA	Nature Conservation Marine Protected Area
OTA	Offshore Transmission Assets, comprising the OSPs and the export cables required to connect the wind farm assets to the onshore transmission works from the OSPs to the MHWS at the landfall at Carnoustie [part of the Seagreen Project]
OTA Corridor	The area in which the Seagreen Project export cables (connecting to Carnoustie) will be installed, as shown in Part 4 of the OTA Marine Licence (marked 'Export Cable Route (ECR) Corridor')
OTA Marine Licence	Marine Licence granted by the Scottish Ministers under the Marine (Scotland) Act 2010 and the Marine and Coastal Access Act 2009 in respect of the OTA on 10 October 2014 (as amended)

Term	Description
OFTO	Offshore Transmission Owner
OSP	Offshore Substation Platform
OWF	Offshore Wind Farm
(The) Projects	The Seagreen Project and Seagreen 1A Project collectively
Project Area	In relation to the Seagreen 1A Project: The area within which the Seagreen 1A Project will be constructed, as defined in Annex 1 to the Seagreen 1A Marine Licence In relation to the Seagreen Project: The area within which the Seagreen Project will be constructed, as defined Annex 1 to the S36 Consents
ROV	Remotely Operated Vehicle
S105	Section 105 of the Energy Act 2004
S106	Section 106 of the Energy Act 2004
S36 Consents	Consents under section 36 of the Electricity Act 1989 granted by the Scottish Ministers on 10 October 2014 in respect of the Seagreen Alpha and Seagreen Bravo OWFs (both as subsequently varied)
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
Seagreen	SWEL and Seagreen 1A collectively
Seagreen Project	The construction and operation of the Seagreen Alpha OWF, Seagreen Bravo OWF and the OTA
Seagreen 1A	Seagreen 1A Limited, a company with number 12575047 and having its registered office at No.1 Forbury Place, 43 Forbury Road, Reading, RG1 3JH
Seagreen 1A Marine Licence	Marine Licence granted by the Scottish Ministers under the Marine (Scotland) Act 2010 and the Marine and Coastal Access Act 2009 in respect of the Seagreen 1A Project on 8 December 2021 (as amended)
Seagreen 1A Project	The installation and operation of an export cable connecting the Seagreen Project to landfall at Cockenzie, East Lothian
SWEL	Seagreen Wind Energy Limited, a company with number 06873902 and having its registered office at No.1 Forbury Place, 43 Forbury Road, Reading, RG1 3JH
WTG	Wind Turbine Generator



Document Reference

LF000009-CST-MA-PRG-0003

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Appendix B – S105 notices

See following pages.

E: MS.MarineRenewables@gov.scot

NOTICE UNDER SECTION 105 OF THE ENERGY ACT 2004 DECOMMISSIONING OF RENEWABLE ENERGY INSTALLATIONS

24 March 2022

To:

Mr Michael Walker
Consent Team Manager
Seagreen Alpha Wind Energy Limited &
Seagreen Bravo Wind Energy Limited
No. 1 Forbury Place
43 Forbury Road
Reading
RG1 3JH

Seagreen Alpha Offshore Wind Farm and Seagreen Bravo Offshore Wind Farm located in the Firth of Forth

The Scottish Ministers, in exercise of their powers under section 105(2) of the Energy Act 2004 (“the Act”), hereby requires Seagreen Wind Energy Limited, on behalf of Seagreen Alpha Wind Energy Limited and Seagreen Bravo Wind Energy Limited (“Seagreen”), to submit to the Scottish Ministers a decommissioning programme for the Seagreen Alpha Offshore Wind Farm and the Seagreen Bravo Offshore Wind Farm located in the Firth of Forth (“the Seagreen Project”). The decommissioning programme relates to a renewable energy installation used for purposes connected with the production of energy from water or winds as defined in section 104(3) of the Act.

The decommissioning programme must include an estimate of expenditure likely to be incurred in carrying out decommissioning, in accordance with the template provided in Schedule 1 of this notice. The decommissioning programme will need to satisfactorily address all of the reasons for refusal and advice from MS-LOT in Annex A of the 106 notice served on 24 March 2022.

The Scottish Ministers, pursuant to section 105(7) of the Act, hereby further requires Seagreen to consult the bodies specified in Schedule 2, as well as any other consultees identified by Seagreen and any further persons subsequently identified by the Scottish Ministers, on the draft decommissioning programme and make the consultation draft of the decommissioning programme publically available for a minimum period of 30 days. In advance of the consultation period, Seagreen should provide a copy of the consultation draft of the decommissioning programme and details of the proposed consultation process to Marine Scotland - Licensing Operations Team (“MS-LOT”). Following the consultation, a copy of the latest draft of the decommissioning programme should be provided to MS-LOT no later than 24 September 2022.

The decommissioning programme should be submitted to MS-LOT within one month of the completion of the consultation. This latest draft of the decommissioning programme should include details of the consultation process, including the comments from each consultee (including ‘nil returns’). Information should be provided on how any consultation responses have been reflected in the submitted draft of the decommissioning programme. You should



E: MS.MarineRenewables@gov.scot

ensure that each consultee named in Schedule 2 of this notice acknowledges receipt of the consultation document.

Following conclusion of the consultation period, the decommissioning programme should demonstrate consideration of the representations made during the consultation(s) and should be submitted to MS-LOT within one month of the completion of the consultation. If this date is not met, the Scottish Ministers, in exercise of powers under section 107 of the Act, may prepare and approve their own decommissioning programme in relation to the Seagreen Project and charge all costs incurred to Seagreen or other relevant persons.

Schedule 1

DECOMMISSIONING PROGRAMME ESTIMATED COSTS APPENDIX TEMPLATE

Developers/operators should utilise the templates below when submitting decommissioning programmes to estimate the decommissioning expenditure to be incurred. Developers/operators should ensure that robust decommissioning costs are provided, including costs of disposal. Details of how the costs were developed should be provided alongside separate third party verification. If decommissioning is assumed to be taking place over multiple years, the ‘Year’ columns in the table below must be expanded and costs should be set out in the template for each individual year.

Work Package	Year 20XX £'000	Year 20XX £'000	Description of the work to be undertaken including for example vessel day rates, number of turbines etc.
Preparation of Assets			
Removal of generators			
Removal of foundations			
Removal of offshore substations			
Removal of all of cables			
Seabed clearance and restoration			
Recycling and Waste Management ⁶			
Monitoring			
VAT*			
Exchange rate fluctuation**			
Inflation***			
Optimism Bias****			
Contingency*****			
Total Security Per year			
Total Overall Security Fund			

Costs should be reviewed in line with decommissioning review timelines and altered as required. This includes any changes to the VAT rate, exchange rate and inflations. Developers/owners should not offset scrappage value from their cost assumptions.

⁶ This should include the costs of dealing with marine growth on structures / equipment.



E: MS.MarineRenewables@gov.scot

Annum (%)									
Total Costs to apply to inflation (£'000)									
Inflation cost (£'000)									

******Optimism Bias**

HM Treasury *Green Book* guidance should be utilised in the calculation of optimism bias. Optimism bias should be applied to the full cost of security, including exchange rate and inflation rate costs. Varying optimism bias rates can be applied to the different elements of decommissioning, based on the extent to which contributory factors are mitigated.

Work package	Work package cost (£'000)	Optimism bias rate applied (%)	Optimism bias cost (£'000)	Reason for rate used including mitigating factors

*******Contingency**

Contingency percentage applied should reflect the sum of measured risk. The assumptions made in determining the contingency percentage should be included in the reasons for the contingency rate applied.

Contingency Applied	Reason for rate used



Schedule 2 – Consultees

Angus Council

British Marine Aggregate Producers Association

Chamber of Shipping

Crown Estate Scotland

Fife Council

Joint Nature Conservation Committee

Health and Safety Executive

Historic Environment Scotland

Marine Scotland Science

Maritime and Coastguard Agency

Ministry of Defence

NatureScot

Northern Lighthouse Board

Royal Yacht Association (Scotland)

Relevant Harbour Authorities – Aberdeen, Dundee, Arbroath and Montrose

Scottish Environment Protection Agency

Scottish Fisherman's Federation

UK Hydrographic Office

Ms Ellie Noble
SEAGREEN 1A LIMITED
C/O SSE Renewables
Waterloo Street
Glasgow
G2 6AY

Date: 21 June 2022

Dear Ms Noble,

**ENERGY ACT 2004
REQUIREMENT TO PREPARE DECOMMISSIONING PROGRAMME UNDER
SECTION 105.**

1. In exercise of powers under section 105(2)(b) of the Energy Act 2004 (“the Energy Act”), I attach a notice on behalf of the Scottish Ministers. This requires you to submit to the Scottish Ministers a decommissioning programme for decommissioning the Seagreen 1A export cable corridor – as specified in the notice. The decommissioning programme must be prepared in accordance with section 105(8) of the Act and should follow relevant government guidance¹.
2. In accordance with section 105(3) of the Energy Act, the Scottish Ministers are satisfied that a statutory consent for the construction of a relevant object, as described in marine licence number MS-00009291 issued under the Marine (Scotland) Act 2010 and Marine and Coastal Access Act 2009, which was issued to Seagreen 1A Limited.
3. Section 105(7) of the Energy Act provides that a notice given under section 105(2) may require the recipient of the notice to carry out such consultation(s) as specified in the notice before submitting the decommissioning programme. Accordingly, the attached notice requires you to carry out consultations with the bodies specified in schedule 2 and any such further persons as you may subsequently be notified to consult. The decommissioning programme must also be made publicly available for a minimum period 30 days. In accordance with the ‘Decommissioning of offshore renewable energy installations: guidance notes for industry’ by the UK Department for Business, Energy and Industrial Strategy, when submitting the decommissioning programme, details of the consultation process and the results of the consultation should be included, with details of each consultee (including nil returns) and how any comments have been reflected in the latest draft of the decommissioning programme. You should

1

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/880737/decommissioning-offshore-renewable-energy-installations-energy-act-2004-guidance-industry.pdf



ensure that each consultee named in schedule 2 acknowledges receipt of the consultation document.

4. Under section 106(1) of the Energy Act, the Scottish Ministers may either approve or reject a decommissioning programme submitted to them. The Scottish Ministers may under Section 106(3) approve the programme with or without modification and/or subject to conditions or unconditionally. If the programme is rejected, the Scottish Ministers may require a new one.
5. Under section 107(1) of the Energy Act, where a notice given under section 105 is not complied with, or the Scottish Ministers reject a decommissioning programme, the Scottish Ministers may themselves prepare and impose a decommissioning programme in relation to the relevant object. The Scottish Ministers may under section 107(9) also recover any expenditure incurred in preparing the programme, with any interest (see section 107(10)&(11)).
6. In the event that the submitted decommissioning programme is approved, the persons who submitted it will have a duty under section 109(1) of the Energy Act to ensure that it is carried out in every respect and that all the conditions to which the approval is subject are complied with. Where a decommissioning programme approved by Scottish Ministers is not carried out in a particular respect, or a condition to which the approval is subject is contravened, the Scottish Ministers may, by notice under section 110(1), require the person concerned to take specified remedial action. A person who fails to comply with a notice given to him under section 110(1) of the Energy Act is guilty of an offence (s.110(3)).
7. If you consider that you should not be given a section 105 notice in respect of the installation, or if there are persons other than those named in the section 105 notice who you believe should be issued with a section 105 notice in respect of this installation, you should contact MS-LOT, in writing, within 10 days of the date of this notification
8. I am copying this letter and attached notice to Crown Estate Scotland.

Yours Sincerely

Helena Gardener
Marine Scotland Licensing Operations Team

DECOMMISSIONING NOTICE UNDER SECTION 105 OF THE ENERGY ACT 2004

21 June 2022

To:

SEAGREEN 1A LIMITED
C/O SSE Renewables
Waterloo Street
Glasgow
G2 6AY

ENERGY ACT 2004 REQUIREMENT TO PREPARE DECOMMISSIONING PROGRAMME UNDER SECTION 105.

The Scottish Ministers, in exercise of their powers under section 105(2) of the Energy Act 2004 (“the Energy Act”), hereby requires Seagreen 1A Limited, to submit a decommissioning programme for the Seagreen 1A export cable corridor. The decommissioning programme relates to a proposal to construct a relevant object in waters regulated by Chapter 3 of the Energy Act.

The decommissioning programme must include an estimate of expenditure likely to be incurred in carrying out decommissioning, in accordance with the template provided in Schedule 1 of this notice.

The Scottish Ministers, pursuant to section 105(7) of the Energy Act, hereby further requires Seagreen 1A Limited to consult the bodies specified in Schedule 2, as well as any other consultees identified by Seagreen 1A Limited and any further persons subsequently identified by the Scottish Ministers, on the draft decommissioning programme and make the consultation draft of the decommissioning programme publically available for a minimum period of 30 days.

In advance of the consultation period, Seagreen 1A Limited should provide a copy of the consultation draft of the decommissioning programme and details of the proposed consultation process to Marine Scotland - Licensing Operations Team (“MS-LOT”). Following the consultation, a copy of the latest draft of the decommissioning programme should be provided to MS-LOT no later than 31 December 2022, for review.

The decommissioning programme should be submitted to MS-LOT within one month of the completion of the consultation. This latest draft of the decommissioning programme should include details of the consultation process, including the comments from each consultee (including ‘nil returns’). Information should be provided on how any consultation responses have been reflected in the submitted draft of the decommissioning programme. You should ensure that each consultee named in Schedule 2 of this notice acknowledges receipt of the consultation document.

Schedule 1

DECOMMISSIONING PROGRAMME FINANCIAL APPENDIX TEMPLATE

Financial Information Requirements

Developers/operators must utilise the templates below when submitting decommissioning programmes to estimate the decommissioning expenditure to be incurred. Developers/operators should ensure that robust decommissioning costs are provided, including costs of disposal. Details of how the costs were developed should be provided alongside separate third party verification. If decommissioning is assumed to be taking place over multiple years, the "Year" columns in the table below must be expanded and costs should be set out in the template for each individual year.

Work Package	Year 20XX £'000	Year 20XX £'000	Description of the work to be undertaken including for example vessel day rates, number of turbines etc.
Preparation of Assets			
Removal of foundations			
Removal of all of cables			
Seabed clearance and restoration			
Recycling and Waste Management ²			
Monitoring			
VAT*			
Exchange rate fluctuation**			
Inflation***			
Optimism Bias****			
Contingency*****			
Total Security Per year			
Total Overall Security Fund			

Costs should be reviewed in line with decommissioning review timelines and altered as required. This includes any changes to the VAT rate, exchange rate and inflations.

Developers/owners should not offset scrappage value from their cost assumptions.

² This should include the costs of dealing with marine growth on structures / equipment.



Inflation Rate (%)									
Inflation uplift per Annum (%)									
Total Costs to apply to inflation (£'000)									
Inflation cost (£'000)									

******Optimism Bias**

HM Treasury *Green Book* guidance should be utilised in the calculation of optimism bias. Optimism bias should be applied to the full cost of security, including exchange rate and inflation rate costs. Varying optimism bias rates can be applied to the different elements of decommissioning, based on the extent to which contributory factors are mitigated.

Work package	Work package cost (£'000)	Optimism bias rate applied (%)	Optimism bias cost (£'000)	Reason for rate used including mitigating factors

*******Contingency**

Contingency percentage applied should reflect the sum of measured risk. The assumptions made in determining the contingency percentage should be included in the reasons for the contingency rate applied.

Contingency Applied	Reason for rate used

Schedule 2 – Consultees

Angus Council

Chamber of Shipping

Crown Estate Scotland

Dundee City Council

East Lothian council

Fife Council

Forth Ports Authority

Health and Safety Executive

Historic Environment Scotland

Maritime and Coastguard Agency

Ministry of Defence

NatureScot

Northern Lighthouse Board

Royal Yachting Association (Scotland)

Scottish Borders Council

Scottish Environment Protection Agency

Scottish Fishermen's Federation

The UK Chamber of Shipping

UK Hydrographic Office



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Appendix C – Decommissioning Schedule

[To be provided in future versions of the DP]



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Appendix D – Decommissioning Costs and Financial Security Information

[To be submitted under separate cover as confidential appendix]

Appendix E – Consultation Matrix

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
ANC01	Angus Council	Having considered the Draft Decommissioning Programme, Angus Council would ideally have preferred for the cabling and HDPE duct at the Carnoustie landfall site to be removed as part of the decommissioning scheme but we acknowledge the justification provided for proposing to leave the HDPE duct in situ following decommissioning of the OWF. Our Council has no further comments to make on the Draft Decommissioning Programme at this time.	Noted. The DP sets out a reasoned justification where objects are to remain in situ - in this case the marginal environmental benefit that will be realised through removal balanced against the environmental impacts of the decommissioning works to remove the HDPE pipe. Note that the HDPE pipe is buried at least 1.5m or lower and the risk of unburial occurring following decommissioning of the asset is extremely low. The items left in-situ will be monitored on an ongoing basis to ensure there is no change to the site conditions and no risk of unburial.	n/a
AHA01	Arbroath Harbour Authority	Confirmed no comment	Noted	n/a
BMA01	BMAPA	Confirmed no comment	Noted	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
CES01	Crown Estate Scotland	<p>Like Scottish Ministers, Crown Estate Scotland has adopted a general presumption that the whole of all disused infrastructure associated with offshore wind farm installations should be removed, including foundations and cables, this being in accordance with our general international obligations under UNCLOS and OSPAR. There is also an express provision in the agreed form of lease to this extent, subject to provisions of the final agreed decommissioning programme and legal obligations.</p> <p>The draft programme indicates that some elements will remain in-situ:</p> <ul style="list-style-type: none"> - pin pile foundations for the OSP Support Structures to be cut at 1m below the surface of the seabed; - some cables (e.g. cable crossings), cable protection (loose rock) and Intertidal HDPE Ducts. <p>We therefore reserve our position until the final decommissioning programme is produced, as to whether complete removal would be appropriate based on the latest technological advances in decommissioning, environmental circumstances and other relevant parameters.</p>	<p>Seagreen notes that the starting point for its decommissioning proposals was the removal of all infrastructure from site. The DP sets out where exceptions to this presumption have been made, in line with the Scottish Government and BEIS Guidance and the approved DPs for similar offshore wind developments in Scottish waters. Seagreen further notes that there is no express provision in its seabed leases that all infrastructure must be removed, only that the works must be decommissioned in accordance with the DP and legal obligations.</p> <p>Seagreen notes that CES will reserve its position until the final DP is produced and agrees that, for the reasons suggested, there may be circumstances in which a change to the decommissioning proposals is necessary or desirable.</p>	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
CES02	Crown Estate Scotland	Please note that if the final agreed decommissioning programme provides for less than the complete removal of any installed equipment we will wish to be provided with some form of indemnity, or insurance, underwritten by a suitable and approved entity for the residual risk the landowner may inherit.	At this stage it is anticipated that cable protection and the lengths of cable positioned underneath the cable protection will be left in-situ, however the exact method for decommissioning these items will be determined following detailed technical and environmental assessment prior to submission of the final DP. The asset owner will engage with CES at the time of preparation and submission of the final DP and will agree an appropriate form of agreement to underwrite any residual risk associated with items left in-situ.	n/a
DCC01	Dundee City Council	Confirmed no comment	Noted	n/a
DHA01	Dundee Harbour Authority	Confirmed no comment	Noted	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
ELC01	East Lothian Council	<p>I note that you have referred to the following documents in producing the decommissioning statement.</p> <ul style="list-style-type: none"> Decommissioning of offshore renewable energy installations under the Energy Act 2004: Guidance notes for industry (England and Wales) (BEIS, March 2019) – the ‘BEIS Guidance’ Decommissioning of offshore renewable energy installations in Scottish Waters or in the Scottish art of the Renewable Energy Zone under the Energy Act 2004: Guidance notes for industry (Scotland) (Scottish Government, July 2022) – the ‘Scottish Government Guidance’ <p>In particular we note guidance in the Scottish document that the taxpayer should be protected from having to organise and fund decommissioning activities.</p>	<p>The decommissioning fund will be secured via agreement with MS-LOT in line with the requirements set out in the Scottish Government Guidance. Seagreen has submitted a decommissioning budget and proposals for the financial security structuring to MS-LOT on a confidential basis (DP Appendix D).</p>	n/a
ELC02	East Lothian Council	<p>As most of this development is in the marine area the potential impacts on East Lothian are likely to be limited. The table below shows impacts we consider could occur in East Lothian and our comments on how the decommissioning program deals with them.</p>	Noted	n/a
ELC03	East Lothian Council	<p>Potential impact: Visual impact of above sea level structures Comment on programme: The DP proposes complete removal of wind turbines, wind turbine support structures and OSP topsides. The Council welcomes this.</p>	Noted	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
ELC04	East Lothian Council	<p>Potential impact: Physical impact of above seabed structures on fishing activity and recreational sailors from East Lothian</p> <p>Comment on programme: As above as regards wind turbines, wind turbine support structures and OSP topsides. The OSP support structures are to be cut to 1m below the seabed so as not to pose a danger to shipping or fishing. Cables are to be completely removed other than where there is a high risk to the marine environment, health and safety concerns or extreme costs. It would appear that there is some chance of these becoming exposed, and if so, financial provision should include the costs of dealing with this if it occurs.</p> <p>Others with more expertise than the Council will comment on potential dangers to shipping and the marine environment.</p>	<p>The budgeted costs for decommissioning (confidential Appendix D) include provision for any post-decommissioning monitoring that may be required in accordance with the commitments made in section 12 of the DP.</p>	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
ELC05	East Lothian Council	<p>Potential impact: Impact on the intertidal area</p> <p>Comment on programme: It is proposed that the HDPE ducts are left in situ, as removal of the ducts is stated to be likely to require significant excavation of the sea defences and intertidal areas resulting in disturbance that is not considered commensurate with the environmental benefits of removal and would also require the construction of a cofferdam which would have unacceptable risks to personnel and the marine environment and extreme costs. We agree that it is likely that this will be the best approach. However, the cofferdam was proposed to be used to install the cable in the first place, and risks to personnel and the marine environment, as well as costs, were considered acceptable. The coast is a sensitive and changing area, and may in time erode to the point where the ducts become exposed. Especially with climate change and rising sea level, it cannot be certain what the situation at decommissioning or, at that point, a reasonably foreseeable future would be. It is also not entirely clear from the DP whether there could be any impact on coastal processes or defences of leaving the duct in situ, including if the material breaks down. Therefore, the possibility of complete removal of this aspect should be kept open. This should also be budgeted for in terms of financial arrangements to protect the taxpayer from having to fund the works, should they be considered necessary at the time.</p>	<p>Seagreen considers that the costs and risks associated with the installation process were acceptable when balanced with the overall project objectives. However, there is minimal environmental benefit associated with removal of the HDPE ducts and therefore the costs and risks are not considered commensurate.</p> <p>It should be noted that the foreshore area will be monitored for the life of the wind farm to identify any exposure of assets. The DP will be subject to regular review and update (in accordance with section 2.4) and any changes to physical processes can be considered as part of those reviews. Seagreen further note that the ducts are buried to a depth that minimises exposure risk or impacts on coastal processes.</p> <p>The decommissioning option for the ducts will be confirmed in the final, pre-decommissioning update to the DP to reflect the environmental circumstances and legislative position at that time and monitoring arrangements (section 12) will be in place for any assets decommissioned in-situ.</p>	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
ELC06	East Lothian Council	<p>Potential impact: Material washing up on East Lothian's beaches</p> <p>Comment on programme: Some material is to be left in situ, including rocks used for cable protection, cables under them and HDPE duct. Although a rock is a normal thing to find in the sea, the HDPE duct and cable are not. It is possible that future conditions (say increased storminess) or ecological aims, may not make this a desirable approach. The Council expects others will comment on whether it is possible that the rocks could move into positions where they cause issues. It does seem possible that material could eventually be washed onto East Lothian's beaches, at decommissioning or subsequently, and provision for dealing with this if it happens should be included.</p> <p>The original ES at paragraph 5.2666 considered that the cable could be removed by pulling it out of the seabed using a grapnel, rather than jetting the seabed. This doesn't seem to have been considered in the DP and there is no explanation as to why this could not be used to extract the cables where it is not desirable to move the cable protection.</p>	<p>Section 12 covers post-decommissioning monitoring of the site. Any exposure of assets left in-situ would be identified and remediated. Full proposals for monitoring will be presented and agreed in future updates to the DP - this commitment is made in the second and final paragraphs of section 12. Seagreen consider it highly unlikely that rocks will wash up on East Lothian beaches. The grade of rock used for rock protection of cables is specified such that it remains in-situ and performs the function for which it is intended.</p> <p>The Seagreen Operations and Maintenance team have an environmental advisor who would investigate any materials attributable to the project washing up on beaches although the risk is low considering the nature of the materials which would be left.</p>	n/a
ELC07	East Lothian Council	<p>Potential impact: Impact on fishing vessels within East Lothian from decommissioning activity</p> <p>Comment on programme: I note that fishing interests are managed via the Fisheries Mitigation and Management Strategy and regular meetings with fisheries interests. I expect they will comment through this route if their interests are likely to be affected.</p>	<p>Noted. Seagreen will continue to engage the fishing community where their interests may be affected, in accordance with the project FMMS. See also comments from SFF below</p>	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
ELC08	East Lothian Council	Potential impact: Impact on East Lothian's wildlife Comment on programme: The Council values its biodiversity, including that of the Forth Islands and Firth of Forth SPAs and the marine mammals that can be seen from and visit our shores. We defer to the expertise of NatureScot in this matter.	Noted. Please refer to comments received from NatureScot (NAS01 to NAS03)	n/a
ELC09	East Lothian Council	Section 5.3 – Guiding Principles. We welcome the base case being complete removal of all offshore infrastructure, with transportation to shore for re-use, recycling or energy recovery. Full removal is only not to be considered where it would involve an unacceptable risk to personnel, the marine environment, would be technically unfeasible or would involve 'extreme cost'. It is not clear what 'extreme cost' is and a definition should be included in the DP.	The reference to 'extreme cost' is quoted directly from the Scottish Government and BEIS Guidance. It is not defined in the guidance since it is relative to the size and value of the project in question. Seagreen consider that costs for removal of an asset are extreme if their value clearly exceeds any environmental benefit to be gained from removal.	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
ELC10	East Lothian Council	Table 5.1 of the DP sets out Seagreen Objectives and the key considerations. Under 'Environmental' there are two heads. The first is 'minimise environmental impact', which mentions BPEO. The 'Economic' principle is 'ensure commercial viability', which then refers to BATNEEC. Both BPEO and BATNEEC are ways of balancing different goals, in particular environmental versus cost and practicality. I assume that these principles are to be used to determine the best course of action where this depends on future surveys and conditions closer to the time. It would therefore be useful to spell out a bit more here how this balance will be arrived at e.g. what environmental (and potentially societal) harms are considered significant and which can be accepted in order to achieve the economic goals. The carbon emission balance of different options does not appear to have been considered within 'minimise environmental impact' in the assessment tables for different elements, and this could usefully be included.	<p>The final decommissioning proposals will be confirmed in an updated DP prior to decommissioning. These will be informed by appropriate environmental surveys and an assessment of the methodologies and technologies available at the time. The decommissioning options for all assets have been assessed against the comparative assessment criteria and the outcomes presented in the DP. Initial environmental assessments of each option are also included in the DP. The proposals seek to balance the best environmental option against practicality and cost and the other comparative assessment criteria. The EIA produced in advance of decommissioning will more thoroughly assess and mitigate impacts associated with the final decommissioning methods.</p> <p>There is no requirement to undertake a carbon emission balance for the options presented.</p>	n/a
ELC11	East Lothian Council	The second environmental principle in Table 5.1 is 'maximise re-use of materials'. The waste hierarchy set out in Scotland's Zero Waste Plan is 'waste prevention, re-use, recycling and recovery'. It may be possible to prevent some waste by further consideration now of a positive destination for the materials as noted below.	Section 5.5 commits Seagreen to following the waste hierarchy when making decisions on the fate of materials generated during decommissioning. The disposal routes presented in Table 5-14 will be reviewed and refined throughout the life of the project to take account of technological advances which may allow, for the example, the re-use of materials that would otherwise be recycled.	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
ELC12	East Lothian Council	In Table 5.1 'Societal' notes 'adherence to the polluter pays principle'. This is welcomed. The Seagreen objectives then state under this head 'recognising the responsibility to sustain the costs associated with the impact on the environment'. It is not clear if this means there is a responsibility for the developer to 'sustain' as in, continue to pay the costs, or, alternatively, that they want it recognised that there is a responsibility for the DP to allow for the costs to be 'sustained' in the sense of being affordable to the developer. This second interpretation is a qualification to the polluter pays principle and should not be included as affordability is already referenced in 'Economic'. If the project cannot be decommissioned as stated in the EIA because the costs are too great, that should be addressed now.	<p>In accordance with legislative and policy requirements, Seagreen (and in the case of the transmission assets, the OFTO) are required to cover the costs of decommissioning so that the liability does not fall to the taxpayer. Confidential Appendix D sets out the calculated decommissioning costs and how this will be funded. The DP accords with the Scottish Government and BEIS guidance and the guiding principles set out therein.</p> <p>Seagreen notes that more of the project infrastructure is proposed to be removed than was indicated in the original project ES and in the previous version of the DP that was rejected by the Scottish Ministers.</p>	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
ELC13	East Lothian Council	Paragraph 5.2 notes that “all decisions for end of life asset management will be informed by environmental surveys and assessment carried out towards the end of the operational life of the asset”. It may be that in some cases, this assessment could usefully inform methods or materials of construction. For example, do different construction materials for the scour protection make it easier or more difficult to re-claim, re-use and re-cycle? Paragraph 5.5. notes that the waste hierarchy suggests re-use should be considered first: the Zero Waste Plan suggests that ‘prevent’ should be considered first, and considering the destination of used materials more fully now may help with that.	<p>The quoted sentence refers to surveys and assessment (for example EIA) that will need to be carried out in support of consent and licence applications to authorise the decommissioning works - the potential options for which are listed in section 5.2.</p> <p>All methods and materials used in the project have now been confirmed (and authorised via the project marine licences and consent plans) and align with industry standard or best practice - balancing engineering requirements, safety risks, environmental impact and costs.</p> <p>Table 5-14 sets out indicative waste management solutions for each project component, based on currently-available options. This table will be reviewed and updated should alternative solutions become available.</p>	n/a
ELC14	East Lothian Council	In paragraph 5.2.4. on end of life asset management, removal option, the DP states that the asset owners will liaise with other offshore windfarm developers and transmission owners to evaluate opportunities for synergy or economies of scale through decommissioning assets at the same time. This should extend to exploring possibilities of re-use of assets by others in situ.	Please refer to sections 5.2.2 (re-powering) and 5.2.3 (life extension) which consider the possibility of re-use of existing assets.	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
ELC15	East Lothian Council	Paragraph 5.4.1 on the wind turbine blades states that as they are fibreglass, they will be transported to a suitable waste facility, and states that they will then be disposed. No justification for this option is given. This does not tie up with Table 5-14 which states that they will be recycled where facilities exist, so it is not clear what their end will be. The DP notes that the blades, OSP topside, WTG tower and nacelle will be broken down into a transportable size, but not where this will occur. Paragraph 5.4.2 mentions a decommissioning yard, and 5.4.4 a decommissioning port. I cannot see a location for this in the original ES and it would be useful to include the locations of these in the DP.	<p>Noted. Blades will be recycled if a suitable facility exists at the time of decommissioning, or otherwise disposed of.</p> <p>While it is not possible to produce a detailed waste management plan at this stage, it is envisaged that the components will be returned to shore 'whole' and broken down for onward transportation (if required) at a suitable onshore facility. Seagreen do not consider it possible, or appropriate to identify potential decommissioning ports this far in advance of the decommissioning works. The choice of port will depend on the final decommissioning solutions(s) and the facilities available at the time, and will be a commercial decision for the asset owner.</p>	Section 5.4.1 updated to ensure consistency with Table 5-14.
ELC16	East Lothian Council	We would recommend that a detailed specification of how the works can be carried out, sufficient to employ a contractor on that basis, should be prepared so that the taxpayer could potentially employ a contractor on that basis of the information should be included.	The exact process for decommissioning is dependent on the final decommissioning option(s) selected. The appointed decommissioning contractor(s) will be responsible for developing the methodologies based on the vessels, equipment, technologies and best practices available at the time. This may be substantially different to what is considered usual or best practice today. Seagreen therefore do not consider it appropriate or necessary to produce a detail specification at this stage. Responsibility for decommissioning will rest with the asset owner at the time of decommissioning.	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
ELC17	East Lothian Council	Section 10 states that a schedule and project management arrangements will be provided once the projects are nearing the end of their operational period, and in any event, no later than two years prior to the commencement of decommissioning. I assume this refers to a Schedule of Works sufficient to employ a contractor. This appears to the Council to be rather late in the day, given the company could fail at any point during the life of the project. This may also apply to the transmission assets which will be transferred to OFTOs. In our view a Schedule of Works should be provided based on the most likely decommissioning scenario early in the life of the project, to avoid the organisation of works falling to the taxpayer.	<p>Seagreen would clarify that the commitment is to initiate the final review of the DP 'no later than two years' before the commencement of decommissioning. This will not preclude preparatory work (including environmental surveys and assessment, preparation of scope of work, contract tendering etc) being undertaken prior to that milestone.</p> <p>There is currently no requirement for a schedule of works to be developed at this stage of the DP process. See also response to comment ELC16.</p>	n/a
ELC18	East Lothian Council	In Section 12 on post-decommissioning monitoring, it is stated that monitoring requirements will be agreed with Marine Scotland. We would request that East Lothian Council be consulted by Marine Scotland on post-decommissioning monitoring arrangements.	MS-LOT will be responsible for identifying appropriate consultees for any consultations it initiates. Seagreen can confirm that it will engage with ELC during the development of post-decommissioning monitoring arrangements as part of the periodic review of the DP (see section 2.4 and revised section 7.3)	n/a
FIC01	Fife Council	Confirmed no comment	Noted	n/a
FPL01	Forth Ports Ltd	Confirmed no comment	Noted	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
HES01	Historic Environment Scotland	<p>Thank you for providing the draft Decommissioning Programme (DP) in relation to the Seagreen Project. We have reviewed the information submitted in the document for our historic environment interests. This covers World Heritage Sites, scheduled monuments and their settings, category A-listed buildings and their settings, inventory gardens and designed landscapes (GDLs), inventory battlefields and historic marine protected areas (HMPAs). In this case, our advice also includes matters relating to marine archaeology outwith the scope of the terrestrial planning system.</p> <p>We have considered the information received and do not have any comments to make on the Programme at this stage. The DP indicates that the decommissioning works will take place broadly within the same footprint as the original construction works, and we are content that the decommissioning works are unlikely to have a greater effect on historic environment assets than those caused by the original construction works. We will welcome further consultation on the decommissioning project should an EIA be required to inform the decommissioning options detailed in the final DP.</p>	<p>Noted. Any EIA required as part of the marine licensing required for decommissioning will be scoped in accordance with the legislation and guidance in place at the time. Consideration will therefore be given to historic environment assets as part of this process.</p>	n/a
JNC01	JNCC	<p>Given the delegation of Scottish renewables to NatureScot from JNCC a number of years ago we will not be commenting directly on the decommissioning programme but will work with NatureScot as required to input to their response.</p>	<p>Noted</p>	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
MCA01	Maritime and Coastguard Agency	<p>Thank you for the opportunity to comment on the decommissioning plan for The Seagreen and Seagreen 1A projects.</p> <p>The UK Technical Services Navigation team of the Maritime and Coastguard Agency has reviewed the documents and marine plans received. We would like to comment as follows:</p> <p>We note that as per Table 1-1, the developer intends to completely remove the project components including the wind turbines, support and OSP Structures.</p> <p>We also note that as per section 12 The Post-decommissioning monitoring surveys of the seabed will be carried out following the completion of the decommissioning works. Surveys are expected to comprise geophysical survey (such as swathe bathymetry, side-scan sonar and magnetometer), this survey should be conducted as per MGN-654 Annex 4- Hydrography Guidelines for Offshore Renewable Energy Developers.</p>	<p>Seagreen confirm that post-decommissioning monitoring geophysical surveys will be conducted in accordance with MGN 654, or the equivalent guidance in place at the time of decommissioning.</p>	<p>Section 12 updated to reference MGN 654.</p>
MCA02	Maritime and Coastguard Agency	<p>We also would like to point out that as per MGN-654 Section 7 Decommissioning An agreed and updated ERCoP must be in place prior to the removal of any offshore infrastructure.</p>	<p>Seagreen confirm that the project ERCoP will be updated, as necessary, for the life of the development including prior to the removal of infrastructure at the decommissioning stage.</p>	<p>n/a</p>

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
MOD01	Ministry of Defence	<p>Thank you for consulting the MOD on the draft Decommissioning Programme (DP) prepared by Seagreen Wind Energy Ltd (SWEL) and Seagreen 1A Ltd (S1A). As you have advised the draft DP has been prepared in response to notices issued under Section 105(2) of the Energy Act 2004 to SWEL and S1A by the Scottish Ministers. These notices require that SWEL/S1A submit a DP to the Scottish Ministers in respect of the Seagreen Project (the Seagreen Alpha and Bravo Offshore Wind Farms and associated Offshore Transmission Assets connecting to a landfall at Carnoustie, Angus) and the Seagreen 1A Project (additional export cable connecting the Seagreen Project to a landfall at Cockenzie, East Lothian).</p> <p>I have reviewed the draft decommissioning programme attached and have the following comments that should be taken into consideration and included in the decommissioning programme.</p>	Noted	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
MOD02	Ministry of Defence	<p>I note from the executive summary that a previous decommissioning programme was rejected by Scottish Ministers because of the methodology it identified for managing the export cable and inter-array cables which would have entailed leaving them situ. This has potential implications for the MOD in that the export cable corridor defined in the original S36 consent(s) for The Seagreen Project makes its land fall at Carnoustie via Barry Sands and overlaps the edge of Danger Area D604 which contains the offshore extent of the Barry Buddon firing range.</p> <p>Section 3.3.3.7 of the submission identifies the aviation and military interests relevant to the Seagreen Project area. It recognises that the export cable route that makes landfall at Carnoustie affects the Barry Buddon firing range. The need for a management plan for the installation phase is identified. However, no such need it included for the decommissioning phase which have the potential to have similar impacts upon range operations. Accordingly, the decommissioning programme needs to make provision for a management plan to coordinate any cable decommissioning works relating to that section of the export cable passing through or in proximity to Danger Area D604. The potential for unexploded ordnance (UXO) to be present in the locality as a result of historic military activities, particularly in association with the Barry Buddon firing range, are not specifically identified. Accordingly, it would be appropriate that the decommissioning programme takes this into account.</p>	<p>The requirement for a management plan for the decommissioning phase and the potential for UXO to be present is noted.</p>	<p>Section 3.3.3.7 amended to refer to decommissioning and to the possible presence of UXO.</p>

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
MOD03	Ministry of Defence	The impacts that the operation of the wind turbines will have upon the effective operation of the MOD air traffic control radar at Leuchars Station as well as the air defence radars at the remote radar heads at Buchan and Brizlee Wood have been identified. The submission identifies that the impacts the operation of the wind turbines will have upon these defence radars will be addressed through conditional requirements for the implementation of mitigation measures. On the basis that the radar mitigation measures will be maintained until all turbines have ceased to be used, in accordance with these conditional requirements, this issue does not need to be accounted for in the decommissioning programme.	Noted	n/a
MOD04	Ministry of Defence	The offshore development will be fitted with aviation warning lighting which will serve to maintain the safety of military aircraft that may engage in low flying activities in the area. Accordingly, the decommissioning programme should make provision to retain the lighting on these structures up to the point that they are removed. It should also take into account the potential need for floating cranes or other structures temporarily deployed to take down the turbines and other offshore structures to be fitted with aviation warning lighting as may be necessary.	Noted. Aviation lighting will be maintained on the WTGs up until their removal from site. Seagreen anticipates that conditions relating to marking and lighting will be included in the consents granted for decommissioning - to include the lighting of tall structures used in the decommissioning works.	New section 5.7 added to cover lighting and marking.

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
MOD05	Ministry of Defence	At section 3.4.3.5, the aviation and military interests relevant to the Seagreen Project 1A area are identified. This accurately identifies that the cable route that makes landfall at Cockenzie, East Lothian will pass through a number of MOD practise and exercise areas but accurately concludes that it will not be necessary for any associated cable works to be specifically coordinated with any military training activities that may be conducted in these areas.	Noted	n/a
MOD06	Ministry of Defence	Section 3.4.3.2 on Marine Archaeology and Cultural Heritage makes reference to the potential presence of UXO that may be present in the locality as a consequence of historic military activity. In this respect, it would be appropriate that the decommissioning programme specifically takes into account two disused explosives dumping grounds that are located to the east of the Isle of May in the locality of the cable corridor route.	Noted and agreed	Section 3.4.3.2 updated to make reference to the disused explosives dumping grounds.
MPA01	Montrose Port Authority	Confirmed no comment	Noted	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
NAS01	NatureScot	<p>While the Scottish Government guidance (Offshore renewable energy: decommissioning guidance for Scottish waters, August 2022) requires early thinking on decommissioning works for renewables development, it is accepted that the decommissioning programme will need review throughout the lifespan and increasingly towards the end of the project development.</p> <p>Therefore, we request to be consulted on each iteration of the plan, and particularly the final decommissioning programme to be submitted. We advise that due to the project duration of the wind farm, technological and engineering advances as well as environmental changes, updated environmental information will probably be required to inform any final decommissioning programme. We recommend that consideration is given to the amount of time for the developer to undertake any such environmental monitoring, prepare a final draft decommissioning plan and undertake a consultation period. This should be done in consultation with the relevant regulator and key advisers at that time.</p>	<p>Seagreen confirm that NatureScot (and other Interested Parties) will have the opportunity to comment on all iterations of the DP, and specifically the final DP as described in section 7.3.</p> <p>Seagreen note and concur with the observation that technological and engineering advances, environmental changes and updated environmental information will inform the final DP.</p> <p>As stated in section 7.3, Seagreen anticipates commencing the final DP revision process two years before decommissioning. Seagreen however recognises the need to ensure that appropriate environmental monitoring (over suitable timescales) is undertaken to inform the proposals and will engage with regulators and key advisers as part of this process.</p>	Section 7.3 updated to confirm consultation on interim updates to the DP.
NAS02	NatureScot	We note that the Firth of Forth SSSI is briefly discussed in section 3.4.1.3 on page 28 of the PDF. However, it is not included in Table 3-2 page 33, which lists designated sites screened for further assessment for Seagreen 1A, despite the landfall at Cockenzie passing through the SSSI. We advise that the Firth of Forth SSSI is included in Table 3-2 and that the text in section 3.4.4 is updated to reflect the inclusion of MPAs and SSSIs – i.e. Table 3-2 is not just SACs and SPAs.	Noted	Section 3.4.4 updated to refer to 'nature conservation designated sites'. Table 3-2 updated to include the Firth of Forth SSSI.

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
NAS03	NatureScot	We also advise that the 'Assessment outcome' for the Firth of Forth Banks Complex NCMPA in Table 3-2 is changed from 'Not Capable of Affect' to better reflect our response (30/06/21) to the Marine Licence consultation for Seagreen 1A. In this response, we advised that the proposal is capable of affecting the offshore subtidal sands and gravels and ocean quahog features of the Firth of Forth Banks Complex NCMPA. However, these effects are insignificant and further assessment is therefore not required.	Noted	Entry for Firth of Forth Banks Complex NCMPA updated to state that the project is capable of affecting the qualifying features but that the effects are considered to be insignificant.
NLB01	Northern Lighthouse Board	Northern Lighthouse Board note the amendments made for Revision 5 of this document, and have no objection to the draft document, and welcome Section 7 of the document, which creates provision for consultation between SWEL, NLB and Maritime and Coastguard Agency prior to any decommissioning work being conducted, with regard to the lighting and marking of windfarm throughout the decommissioning process.	Noted	n/a
RYA01	RYA Scotland	Confirmed no comment	Noted	n/a
SBC01	Scottish Borders Council	Confirmed no comment	Noted	n/a
SEP01	SEPA	Confirmed no comment	Noted	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
SEP02	SEPA	Please also note our recently published LUPS -GU13 - Standing advice for the Department for Business, Energy and Industrial Strategy and Marine Scotland on marine consultations- lups-gu13.pdf (sepa.org.uk). According to this we will not comment on decommissioning if consulted by Marine Scotland, however in general we advise that the removal of all devices and as much of the support infrastructure/cabling is removed and all waste materials are removed and reused, recycled or disposed of at a licensed onshore site.	Noted. The starting assumption is for all infrastructure to be removed, subject to the exceptions set-out in the DP. Waste management is addressed in section 5.5.	n/a
SFF01	Scottish Fishermen's Federation	P36, 4.4 and P37, 4.5 lists the various cables of the development, simply saying "to be decommissioned" this would be the expectation of the SFF, not the mix and match approach found throughout the plan. Indeed the default position throughout should be for a clean seabed post decommissioning	Sections 4.4 and 4.5 are intended to describe the items to be decommissioned. Details of the proposed decommissioning measures are then provided in section 5. In each case, the decommissioning options available were subject to a comparative and environmental assessment in order to arrive at the most appropriate option. Seagreen's starting assumption was for full removal of all infrastructure. In some cases, it may be necessary to decommission assets in-situ, detailed justifications for which are provided in the DP.	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
SFF02	Scottish Fishermen's Federation	Despite the fact that the DP SWEL submitted to the Scottish Ministers for the decommissioning of the Seagreen Project on 26 August 2020 was rejected primarily due to the decommissioning methodology proposed for inter array and export cables which was to leave these elements in-situ, Table 1-1 on page 6 repeats the claim that some cables will be left in situ, which given that there are over 550km of cables full recovery is preferable. Furthermore the cumulative impact of leaving all the proposed cables in situ has not been assessed, which could lead to a seabed strewn with retired cables and nothing else.	This DP commits to removal of all cables except 'where there is a high risk to other assets (cable crossings) or to the marine environment, or health and safety concerns (in addition to extreme costs required for the removal)'. This is a change of position from the previously rejected DP, which proposed leaving all cables in-situ. Seagreen therefore anticipates a significant proportion of the cable assets being removed from the seabed using the methodologies outlined in section 5.4.4.1 (subject to the outcome of the pre-decommissioning EIA). Seagreen has costed the DP assuming the removal of all non-mechanically protected sections of cable.	n/a
SFF03	Scottish Fishermen's Federation	Furthermore, in the same table, the section on cable/scour protection gives another untenable proposition, whereby 32000T + 7705000km3 [sic] of rock etc will be left on the seabed. This amount of material will have caused interference in the benthic environment for over 25 years, and it unthinkable that the cost in £ of removal is an excuse to leave it there rather than return the seabed to the state it was in when the development took over. The development is being installed to address the climate change/ energy security crisis, and the profits to be made are huge, so incurring a negative impact on the environment for the cost of removal is unthinkable. This is further outlined on P38, 4.7, if the cable/scour protection is too costly to retrieve it should not be deposited on the seabed in the first place, without a full assessment of its impacts.	Seagreen notes that the values listed in Table 4-7 are the maximum consented volumes of cable and scour protection materials. It is not anticipated that the development will require the quantities listed, principally because the number and lengths of cables required have been reduced since the project was originally consented and the values in the marine licences represent a 'worst case' scenario as it stood at the time of application. The as-built volumes will be included in a future update to the DP. Where it is proposed to decommission infrastructure in-situ, this is primarily on the grounds of the environmental impact and health and safety risks associated with removal. The environmental impacts arising from the deposition of cable and scour protection on the seabed was fully assessed in the original project ES and concluded that the impacts were not significant.	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
SFF04	Scottish Fishermen's Federation	P43, table 5.2 is a simple declaration of cable & scour protection being left in situ, which is totally undesirable for other legitimate users of the seabed, some form of removal should be described.	Seagreen notes SFF's preference for removal of cable protection. Seagreen's proposals for decommissioning of rock protection is fully described and justified in section 5.4.6.	n/a
SFF05	Scottish Fishermen's Federation	P45, 5.4.2 bullet 1, describes the foundation and scour protection being removed, so the rest of the protection should also be removed?	This bullet point makes no reference to scour protection. The exact volume of scour protection to be used to protect the foundations is still to be confirmed. The method to be used for decommissioning the scour protection will be determined following installation of the scour protection and confirmation of the final scour protection design and volumes of scour deposited. The methodology will be informed by technical and environmental assessments and will be considered in terms of the comparative assessment framework and guiding principles and the methodology will be included in future versions of the DP. It is currently anticipated that the scour protection will be either moved to the side of the foundation to allow decommissioning of the J-tube and array/export cable ends, the scour protection will then either be recovered to shore or used in the restoration of seabed around the area of the foundation base. In both cases the seabed will be restored and left without obstacles.	Tables 1-1, Table 5-2 and section 4.7 and 5.4.6 updated to refer more clearly to scour protection

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
SFF06	Scottish Fishermen's Federation	P50, 5.4.4, speaks of analysing and making assumptions about the potential effects of removal on species and habitats that have been created by the various cable routes, and these being a reason to leave them. The SFF finds this argument to be absurd, the cables are licenced to be laid, not to create a new paradigm on the seabed, which the fishing industry had hoped to see be restored to its original condition.	Decommissioning works themselves have the potential to affect environmental receptors along and in the vicinity of the cable routes. This section of the DP states that the final approach to decommissioning will be informed by an EIA but does not seek to make assumptions about the conclusions of that process. Seagreen would reiterate that the baseline position is full removal but notes that the decommissioning options proposed may need to be revised closer to the time of decommissioning.	n/a
SFF07	Scottish Fishermen's Federation	<p>The final word on this issue, looking at the statement on P54, "Where these studies (including EIA) indicate that valuable benthic features (such as PMFs, Scottish Biodiversity List species or Annex I habitats) have colonised parts of the cable routes, or otherwise where EIA indicates cable removal would result in a significant and unacceptable environmental impact, consultation with MS-LOT and Nature Scot would be initiated to determine the most appropriate decommissioning option which may include leaving 'high risk' sections in-situ." If there is a possibility of this option emerging surely it should have been assessed in the original EIA for stakeholders to comment on? Surely the SNCBs would take a view on this?</p> <p>The final line on P57 appears to confirm that approach, so, again, the SNCBs should be taking a view, the impact must be closer to moderate, if not major.</p>	<p>Decommissioning was considered in the original project Environmental Statement (2012). Chapter 16 of the ES states the following with respect to impacts on benthic ecology: "It is anticipated that surveying for Annex I habitat will be undertaken prior to decommissioning in line with those anticipated pre-construction. Should these surveys indicate the presence of any sensitive habitats, [Seagreen] will discuss how to decommission the wind farm with the regulators to avoid, where possible impacts upon such habitats". Chapter 5 of the ES states: "Cables may be left in situ if considered appropriate, or they may be wholly or partially removed. The ES was consulted upon at the time of application and accepted by the regulators. Please also refer to comment NAS01</p> <p>Decisions with respect to cable removal will be made following the completion of surveys and an EIA for the decommissioning works, in consultation with MS-LOT, NatureScot and other interested parties.</p>	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
SFF08	Scottish Fishermen's Federation	The description on P7 of the cost estimate of decommissioning, making it a separate entity to the cost of the development seems disingenuous, surely decommissioning is an integral part of the development, and as such the DP cost should be treated as such, and removal from the marine environment is as essential as putting it there in the first place.	The S105 Notice requires Seagreen and Seagreen 1A to produce a costed DP, with financial securities to ensure the costs associated with decommissioning are borne by the asset owner at the time of decommissioning. The DP follows the Scottish Government Guidance and commits to full removal of assets, subject to specific exceptions (in each case full justification is provided) and periodic reviews of the DP during the lifetime of the project.	n/a
SFF09	Scottish Fishermen's Federation	P34, 4.1 notes that there will be 450 Rotor blades to be decommissioned, which the SFF would expect to be comprehensively assessed for their impact as landfill. This cost, again, needs to be attributed to the total cost of the development and the environmental impact considered.	Waste management costs are factored into the total decommissioning costs, for which financial security will be provided by the asset owner. Environmental impacts associated with the waste generated during decommissioning will be considered in the pre-decommissioning EIA.	n/a
SFF10	Scottish Fishermen's Federation	P44, 5.4.1 notes that the rotors are of fibre composition, and non-recyclable, so the plan should acknowledge there will be a cost both monetarily and environmentally which must be covered under the polluter pays principle.	Please refer to response to comment SFF09.	n/a
SFF11	Scottish Fishermen's Federation	P12 referring to the Energy Act 2004 S105 (8)(d) specifically states that the area is intended to be restored to the condition it was in prior to development, and this is also the desire of the fishing industry. Taken in conjunction with S105 (8)(e) at the top of P13, the fishing industry would expect to see a full and proper monitoring and maintenance regime to look after any infrastructure which cannot be removed.	S105(8)(d) specifies the information that is required to be included in the DP in cases where a relevant object is wholly or partly removed. It is not a requirement or commitment that all infrastructure must be removed. S105(8)(e) specifies the information required to be included in the DP in cases where a relevant object will be left in-situ. Proposals for seabed clearance and restoration are included in section 11 of the DP. Post-decommissioning monitoring, maintenance and management measures are described in section 12.	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
SFF12	Scottish Fishermen's Federation	P26 claims that the FMMS will be covering the development interaction with fisheries, which has been far from ideal so far, so the fishing industry would seek stronger assurances on engagement going forward.	Fisheries representatives will be consulted with during periodic reviews of the DP and during any applications for consents for the decommissioning works. Fisheries engagement, therefore, can be managed through that process as well as the FMMS.	n/a
SFF13	Scottish Fishermen's Federation	The descriptions in Chapter 5 from P41, 5.3 to P72 are very comprehensive, but seem to ignore that the fishing industry, as legitimate users of the sea, sees complete removal as best practice. To this end we can agree with the presumption of total removal. The concept of leaving infrastructure of any sort behind because it has caused a reef effect does not fit with this ethos and should be omitted from the plan. Otherwise the development should pay for a new licence and all that that entails. Any variation from total removal should not be allowed to be ad hoc, there must be consultation and agreement on any particular piece to be left.	<p>Seagreen note and agree with SFF's view that complete removal of infrastructure is best practice. The proposals presented in section 5 of the DP take this as the starting assumption. Where it is proposed to decommission assets in-situ, this is fully justified in accordance with the Scottish Government Guidance.</p> <p>The DP does not argue that the creation of a 'reef effect' is grounds to leave infrastructure in situ, but does recognise that should valuable benthic communities have established on or near the infrastructure, this must be considered when identifying the most appropriate decommissioning option.</p> <p>The exact extent of infrastructure to be removed (or to be decommissioned in-situ) will be defined in the final DP. As noted in section 2.4, relevant stakeholders will have to opportunity to comment on the DP prior to it being finalised.</p>	n/a
SFF14	Scottish Fishermen's Federation	P42 table 5.1 should recognise, under the safety heading, that building and decommissioning are 2 different projects, which will require different skill sets.	Seagreen considers that for the purposes of this comparative assessment this would not add clarity or value to the document.	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
SFF15	Scottish Fishermen's Federation	On P60, much seems to be made of the monetary cost of removal and restoration. If the monetary cost to build was an issue in the face of the climate crisis it wouldn't have happened, so the argument is baseless, adhere to the "polluter pays" principle.	Cost is one guiding principle against which the decommissioning options have been comparatively assessed. Seagreen considers its proposals to accord with the Polluter Pays principle as far as practicable. Where assets are decommissioned in-situ, Seagreen (or the asset owner at the time) will remain liable for the costs associated with ongoing monitoring, maintenance and management.	n/a
SFF16	Scottish Fishermen's Federation	Moving on to P64, 5.4.6, if the developer expects to use this argument it should be assessed properly in the original EIA, which never happened. Furthermore, P65, 5.4.6.2 acknowledges the fact that the technology needed for decommissioning is far behind the demand for offshore Wind. This ends up reading like "let's see what it's like in 25 years" and address it then, when the reality should be that the impacts should be assessed in the present so that stakeholders know what to expect.	Decommissioning is covered in the original ES, although it is noted there is no specific reference to the decommissioning of rock protection. The DP includes a commitment to undertaking a pre-decommissioning EIA to inform the final decommissioning proposals. Seagreen considers this a more appropriate point to undertake EIA since the as-built parameters of the development, and a more up-to-date environmental baseline will be available at this time. The DP sets out a clear proposal for decommissioning rock protection (and all other infrastructure) while acknowledging that technological developments may present alternative options as the wind farm approaches the decommissioning phase.	n/a
SFF17	Scottish Fishermen's Federation	And on the next page but same para, to describe the material as benign is simplistic in that its impacts on stakeholders have not been assessed.	The impact of rock protection on the marine environment and other users of the sea was assessed in the original project ES. Seagreen has committed to conducting overtrawl surveys to ensure that fishing activity can safely resume in areas where it has been necessary to lay rock berms to protect cables. See also response to comment SFF16 with respect to pre-decommissioning EIA	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
SFF18	Scottish Fishermen's Federation	P68, Table 5-12, without the necessary assessment to say the impact on commercial fishing is negligible cannot be accepted.	The assessment in Table 5-12 relates to the impacts arising from the decommissioning <i>works</i> rather than the decommissioning solutions themselves.	n/a
SFF19	Scottish Fishermen's Federation	Table 5-14 on P72 appears to say that protection will be recycled?	Since it is proposed to decommission loose rock in-situ, it is not listed in Table 5-14. Other forms of cable protection (cast-iron shells, mattresses, rock bags etc) are listed and an indicative waste management solution provided.	n/a
SFF20	Scottish Fishermen's Federation	Looking at P79, 10, and P81, 12, it becomes increasingly clear that waiting 20+ years for the developer to decide on what comes out/ what stays in is not the best way to give other stakeholders confidence that the impacts on them will be minor. In order to do this there must be a full assessment of the proposals, otherwise we can end up in scenario where the buried cables are left in situ, and the rock dumped cables are left in situ, which is absolutely not where the SFF would like to be.	The DP clearly sets out proposals for decommissioning each element of the Projects. These are clearly described in section 5. However, in accordance with the Scottish Government Guidance (paragraph 5.21), it is necessary review the DP at regular intervals to take account of any changes to market conditions, the regulatory regime, the environmental baseline, new technologies etc. Therefore, while the DP is clear as to how Seagreen foresees the assets being decommissioned, it is essential to acknowledge that conditions in 20-25 years may be such that a different approach to decommissioning could be pursued.	n/a

Reference	Consultee	Consultee Comment	Seagreen Response	Amendment(s) to DP (if required)
UKS01	UK Chamber of Shipping	<p>The Chamber has reviewed the programme and fully advocates for full removal of all infrastructure where reuse or recycle is not available/feasible. The Chamber is broadly content with the programme however would like greater clarity provided on what exceptions may result in the cabling being left in situ.</p> <p>The sentence, under Table 1-1, which states: "Complete removal from site except where there is a high risk to other assets (cable crossings) or to the marine environment, or health and safety concerns (in addition to extreme costs required for the removal)." provides a number of exemptions from complete removal and leaving of the seabed unfettered to future activity but does not detail the thresholds at which they may apply. In doing so, the programme deviates from the Polluter Pays principle.</p>	<p>Noted. As described in section 5.3, "Seagreen's starting assumption for decommissioning is the complete removal of the entire offshore wind farm and cable infrastructure."</p> <p>Section 5.4.4 fully details the proposed approach to decommissioning cabling and sets out where exceptions to 'complete removal' apply, supported by environmental impact assessment and a comparative assessment of the two decommissioning options considered. Seagreen considers that the proposals adhere to the Polluter Pays Principle as far as is practicable when considered in the context of the risks to environmental receptors arising from full removal.</p>	n/a



Document Reference

LF000009-CST-MA-PRG-0003

Rev: 06

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Appendix F – Consultee Responses

See following pages.

Maxwell, Ed

From: Stephanie G Porter <PorterSG@angus.gov.uk>
Sent: 10 November 2022 08:30
To: Maxwell, Ed
Subject: [EXTERNAL] RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

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Dear Ed

Consultation Request for Comments on Draft Decommissioning Programme (DP) Prepared by Seagreen Wind Energy Ltd (SWEL) and Seagreen 1A Ltd (S1A)

I refer to your consultation in connection with above. Having considered the Draft Decommissioning Programme, Angus Council would ideally have preferred for the cabling and HDPE duct at the Carnoustie landfall site to be removed as part of the decommissioning scheme but we acknowledge the justification provided for proposing to leave the HDPE duct in situ following decommissioning of the OWF. Our Council has no further comments to make on the Draft Decommissioning Programme at this time.

Kind regards,

Stephanie Porter | Team Leader – Development Standards | Planning & Sustainable Growth | Angus Council | Angus House | Orchardbank Business Park, Forfar, DD8 1AN | (01307 492378)

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From: Maxwell, Ed <Edward.EM.Maxwell@sse.com>
Sent: 02 November 2022 13:25
To: Maxwell, Ed <Edward.EM.Maxwell@sse.com>
Subject: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

Please find attached a copy of a draft Decommissioning Programme (DP) prepared by Seagreen Wind Energy Ltd (SWEL) and Seagreen 1A Ltd (S1A) on which we are seeking your comments. *Please note the attachment replaces the version sent previously, in error, due to its size.*

The draft DP has been prepared in response to notices issued under Section 105(2) of the Energy Act 2004 to SWEL and S1A by the Scottish Ministers. These notices require that SWEL/S1A submit a DP to the Scottish Ministers in respect of the Seagreen Project (the Seagreen Alpha and Bravo Offshore Wind Farms and associated Offshore Transmission Assets connecting to a landfall at Carnoustie, Angus) and the Seagreen 1A Project (additional export cable connecting the Seagreen Project to a landfall at Cockenzie, East Lothian).

The Section 105(2) notices require SWEL/S1A to undertake consultation with interested parties on the draft DP prior to submitting a final version to Marine Scotland. The notices include a schedule setting out those organisations to be

Maxwell, Ed

From: Bruce Fleming <FlemingB@angus.gov.uk> on behalf of harbourmaster <harbourmaster@angus.gov.uk>
Sent: 02 December 2022 15:31
To: Maxwell, Ed
Subject: [EXTERNAL] RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

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Good Afternoon Ed

I can confirm receipt of the consultation draft of the Seagreen and Seagreen 1A Decommissioning Programme and have no comments to make on behalf of Arbroath Harbour.

Regards

Bruce Fleming | Team Leader – Arbroath Harbour Master | Angus Council | **INFRASTRUCTURE – Roads & Transportation** | Arbroath Harbour, Ladybridge Street, Arbroath, Angus, DD11 1PD | 01241 872166 | 07753 397199

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From: Maxwell, Ed <Edward.EM.Maxwell@sse.com>
Sent: 02 December 2022 14:05
To: harbourmaster <harbourmaster@angus.gov.uk>
Subject: RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

Further to my e-mail below, I would be grateful if you could confirm receipt of the consultation draft of the Seagreen and Seagreen 1A Decommissioning Programme (attached) and whether the Arbroath Harbour Authority wishes to provide any comments on the document as part of this consultation.

Many thanks,
Ed

Ed Maxwell || Offshore Consents Manager - Seagreen

Maxwell, Ed

From: Mark Russell <Mark.Russell@mineralproducts.org>
Sent: 02 November 2022 14:11
To: Maxwell, Ed
Subject: [EXTERNAL] RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

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No comments Ed – we have no interests in Scottish waters at this time.

Mark Russell
Executive Director - Planning, Mineral Resources & BMAPA

Mineral Products Association, 38-44 Gillingham Street, London, SW1V 1HU

T 07870 596865 W www.mineralproducts.org

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From: Maxwell, Ed <Edward.EM.Maxwell@sse.com>
Sent: 02 November 2022 13:25
To: Maxwell, Ed <Edward.EM.Maxwell@sse.com>
Subject: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

Please find attached a copy of a draft Decommissioning Programme (DP) prepared by Seagreen Wind Energy Ltd (SWEL) and Seagreen 1A Ltd (S1A) on which we are seeking your comments. *Please note the attachment replaces the version sent previously, in error, due to its size.*

The draft DP has been prepared in response to notices issued under Section 105(2) of the Energy Act 2004 to SWEL and S1A by the Scottish Ministers. These notices require that SWEL/S1A submit a DP to the Scottish Ministers in respect of the Seagreen Project (the Seagreen Alpha and Bravo Offshore Wind Farms and associated Offshore Transmission Assets connecting to a landfall at Carnoustie, Angus) and the Seagreen 1A Project (additional export cable connecting the Seagreen Project to a landfall at Cockenzie, East Lothian).

The Section 105(2) notices require SWEL/S1A to undertake consultation with interested parties on the draft DP prior to submitting a final version to Marine Scotland. The notices include a schedule setting out those organisations to be consulted (see Appendix B of the attached draft DP) which includes your organisation. **We are therefore seeking your views on the attached draft DP by 2 December 2022**, prior to finalising the DP for submission.

Should you have no comments to make, we would appreciate confirmation of this in writing, such that it can be recorded accordingly.

Please note that, with respect to the Seagreen Project, this DP replaces the DP which was consulted upon in 2020 and subsequently rejected by the Scottish Ministers. Appendix D will be submitted as a confidential appendix to the final DP and is not subject to this consultation.

Many thanks,

Maxwell, Ed

From: Kateryna McKinnon <Kateryna.McKinnon@crownestatescotland.com>
Sent: 25 November 2022 17:12
To: Maxwell, Ed
Subject: [EXTERNAL] RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

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Dear Ed,

Thank you for getting in touch regarding the draft Decommissioning Programme for Seagreen/SWEL and Seagreen 1A projects.

Like Scottish Ministers, Crown Estate Scotland has adopted a general presumption that the whole of all disused infrastructure associated with offshore wind farm installations should be removed, including foundations and cables, this being in accordance with our general international obligations under UNCLOS and OSPAR. There is also an express provision in the agreed form of lease to this extent, subject to provisions of the final agreed decommissioning programme and legal obligations.

The draft programme indicates that some elements will remain in-situ:

- pin pile foundations for the OSP Support Structures to be cut at 1m below the surface of the seabed;
- some cables (e.g. cable crossings), cable protection (loose rock) and Intertidal HDPE Ducts.

We therefore reserve our position until the final decommissioning programme is produced, as to whether complete removal would be appropriate based on the latest technological advances in decommissioning, environmental circumstances and other relevant parameters.

Please note that if the final agreed decommissioning programme provides for less than the complete removal of any installed equipment we will wish to be provided with some form of indemnity, or insurance, underwritten by a suitable and approved entity for the residual risk the landowner may inherit.

Regards,
Kateryna

Kateryna McKinnon
Development Manager – Agreements
Crown Estate Scotland
0131 2601019 / 07464 486503

www.crownestatescotland.com
@crownestatescot

Our team are currently working from home. Mail is occasionally being collected from our offices, addresses are at www.crownestatescotland.com/contact-us Where possible, please email or call us rather than post mail.

Maxwell, Ed

From: Alistair Hilton <alistair.hilton@dundeecity.gov.uk>
Sent: 03 November 2022 09:07
To: Maxwell, Ed
Subject: [EXTERNAL] RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

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Thank you for your email and attachment. I can advise that Dundee City Council has no comment to make on the decommissioning programme.

Regards,



Alistair Hilton
Principal Planning Officer (Planning & Economic Development) at City Development

E alistair.hilton@dundeecity.gov.uk

P 01382 433760

W www.dundeecity.gov.uk

A Dundee House, 50 North Lindsay Street, DUNDEE, DD1 1QE

From: Maxwell, Ed <Edward.EM.Maxwell@sse.com>
Sent: 02 November 2022 13:25
To: Maxwell, Ed <Edward.EM.Maxwell@sse.com>
Subject: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

Please find attached a copy of a draft Decommissioning Programme (DP) prepared by Seagreen Wind Energy Ltd (SWEL) and Seagreen 1A Ltd (S1A) on which we are seeking your comments. *Please note the attachment replaces the version sent previously, in error, due to its size.*

The draft DP has been prepared in response to notices issued under Section 105(2) of the Energy Act 2004 to SWEL and S1A by the Scottish Ministers. These notices require that SWEL/S1A submit a DP to the Scottish Ministers in respect of the Seagreen Project (the Seagreen Alpha and Bravo Offshore Wind Farms and associated Offshore Transmission Assets connecting to a landfall at Carnoustie, Angus) and the Seagreen 1A Project (additional export cable connecting the Seagreen Project to a landfall at Cockenzie, East Lothian).

The Section 105(2) notices require SWEL/S1A to undertake consultation with interested parties on the draft DP prior to submitting a final version to Marine Scotland. The notices include a schedule setting out those organisations to be consulted (see Appendix B of the attached draft DP) which includes your organisation. **We are therefore seeking your views on the attached draft DP by 2 December 2022**, prior to finalising the DP for submission.

Maxwell, Ed

From: Squires, Jean <jsquires@eastlothian.gov.uk>
Sent: 02 December 2022 14:43
To: Maxwell, Ed
Subject: [EXTERNAL] ELC comments, SEagreen Decommissioning Plan
Attachments: ELC response Seagreen Decommissioning.pdf

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Hi Edward,
I've attached our comments on the above,
Jean

Jean Squires
Planner, Policy and Projects
Work pattern: Monday - Friday but not Friday p.m.

Email and skype: jsquires@eastlothian.gov.uk
Write or visit: Planning Service, East Lothian Council, John Muir House, Haddington, EH41 3HA
Phone (direct line): 01620 827370
Phone (switchboard): 01620 827827
Website: www.eastlothian.gov.uk/localplan

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Our Ref: CONS GOV/MS/Seagreen/2022 Decom
 Date: 02/12/2022
 Direct Line: 01620 827370 (messages only)
 E-Mail: policy&projects@eastlothian.gov.uk

John Muir House
 Haddington
 East Lothian
 EH41 3HA
 Tel 01620 827827

Via email only to: Edward.EM.Maxwell@sse.com

Dear Edward,

Decommissioning Programme – Seagreen and Seagreen 1A

I refer to your request received 2 November 2022 for this Council’s views on the draft Decommissioning Programme for the above project and have the following comments.

I note that you have referred to the following documents in producing the decommissioning statement.

- Decommissioning of offshore renewable energy installations under the Energy Act 2004: Guidance notes for industry (England and Wales) (BEIS, March 2019) – the ‘BEIS Guidance’
- *Decommissioning of offshore renewable energy installations in Scottish Waters or in the Scottish art of the Renewable Energy Zone under the Energy Act 2004: Guidance notes for industry (Scotland)* (Scottish Government, July 2022) – the ‘Scottish Government Guidance’

In particular we note guidance in the Scottish document that the taxpayer should be protected from having to organise and fund decommissioning activities.

As most of this development is in the marine area the potential impacts on East Lothian are likely to be limited. The table below shows impacts we consider could occur in East Lothian and our comments on how the decommissioning program deals with them.

Potential Impact	Comment on programme
Visual impact of above sea level structures	The DP proposes complete removal of wind turbines, wind turbine support structures and OSP topsides. The Council welcomes this.
Physical impact of above sea bed structures on fishing activity and recreational sailors from East Lothian	As above as regards wind turbines, wind turbine support structures and OSP topsides. The OSP support structures are to be cut to 1m below the seabed so as not to pose a danger to shipping or fishing. Cables are to be completely removed other than where there is a high risk to the marine environment, health and safety concerns or extreme cots. It would appear that there is some chance of these becoming exposed, and if so financial provision should include the costs of dealing with this if it occurs. Others with more expertise than the Council will comment on potential dangers to shipping and the marine environment.
Impact on the intertidal area	It is proposed that the HDPE ducts are left in situ, as removal of the ducts is stated to be likely to require significant excavation of the sea defences and intertidal areas resulting in disturbance that is not considered commensurate with the environmental benefits of removal and would also require the construction of a cofferdam

	<p>which would have unacceptable risks to personnel and the marine environment and extreme costs.</p> <p>We agree that it is likely that this will be the best approach. However, the cofferdam was proposed to be used to install the cable in the first place, and risks to personnel and the marine environment, as well as costs, were considered acceptable. The coast is a sensitive and changing area, and may in time erode to the point where the ducts become exposed. Especially with climate change and rising sea level, it cannot be certain what the situation at decommissioning or, at that point, a reasonably foreseeable future would be. It is also not entirely clear from the DP whether there could be any impact on coastal processes or defences of leaving the duct in situ, including if the material breaks down.</p> <p>Therefore, the possibility of complete removal of this aspect should be kept open. This should also be budgeted for in terms of financial arrangements to protect the taxpayer from having to fund the works, should they be considered necessary at the time.</p>
Material washing up on East Lothian's beaches	<p>Some material is to be left in situ, including rocks used for cable protection, cables under them and HDPE duct. Although a rock is a normal thing to find in the sea, the HDPE duct and cable are not. It is possible that future conditions (say increased storminess) or ecological aims, may not make this a desirable approach. The Council expects others will comment on whether it is possible that the rocks could move into positions where they cause issues. It does seem possible that material could eventually be washed onto East Lothian's beaches, at decommissioning or subsequently, and provision for dealing with this if it happens should be included.</p> <p>The original ES at paragraph 5.2666 considered that the cable could be removed by pulling it out of the seabed using a grapnel, rather than jetting the seabed. This doesn't seem to have been considered in the DP and there is no explanation as to why this could not be used to extract the cables where it is not desirable to move the cable protection.</p>
Impact on fishing vessels within East Lothian from decommissioning activity	<p>I note that fishing interests are managed via the Fisheries Mitigation and Management Strategy and regular meetings with fisheries interests. I expect they will comment through this route if their interests are likely to be affected.</p>
Impact on East Lothian's wildlife	<p>The Council values its biodiversity, including that of the Forth Islands and Firth of Forth SPAs and the marine mammals that can be seen from and visit our shores. We defer to the expertise of NatureScot in this matter.</p>

Section 5.3 – Guiding Principles. We welcome the base case being complete removal of all offshore infrastructure, with transportation to shore for re-use, recycling or energy recovery. Full removal is only not to be considered where it would involve an unacceptable risk to personnel, the marine environment, would be technically unfeasible or would involve 'extreme cost'. It is not clear what 'extreme cost' is and a definition should be included in the DP.

Table 5.1 of the DP sets out Seagreen Objectives and the key considerations. Under 'Environmental' there are two heads. The first is 'minimise environmental impact', which mentions BPEO. The 'Economic' principle is 'ensure commercial viability', which then refers to BATNEEC. Both BPEO and BATNEEC are ways of balancing different goals, in particular environmental versus cost and practicality. I assume that these principles are to be used to determine the best course of action where this depends on future surveys and conditions closer to the time. It would therefore be useful to spell out a bit more here how this balance will be arrived at e.g. what environmental (and potentially societal) harms are considered significant and which can be accepted in order to achieve the economic goals. The carbon emission balance of different options does not appear to have been considered within 'minimise environmental impact' in the assessment tables for different elements, and this could usefully be included.

The second environmental principle in Table 5.1 is 'maximise re-use of materials'. The waste hierarchy set out in Scotland's Zero Waste Plan is 'waste prevention, re-use, recycling and recovery'. It may be possible to prevent some waste by further consideration now of a positive destination for the materials as noted below.

In Table 5.1 'Societal' notes 'adherence to the polluter pays principle'. This is welcomed. The Seagreen objectives then state under this head 'recognising the responsibility to sustain the costs associated with the impact on the environment'. It is not clear if this means there is a responsibility for the developer to 'sustain' as in, continue to pay the costs, or, alternatively, that they want it recognised that there is a responsibility for the DP to allow for the costs to be 'sustained' in the sense of being affordable to the developer. This second interpretation is a qualification to the polluter pays principle, and should not be included as affordability is already referenced in 'Economic'. If the project cannot be decommissioned as stated in the EIA because the costs are too great, that should be addressed now.

Paragraph 5.2 notes that "all decisions for end of life asset management will be informed by environmental surveys and assessment carried out towards the end of the operational life of the asset". It may be that in some cases, this assessment could usefully inform methods or materials of construction. For example, do different construction materials for the scour protection make it easier or more difficult to re-claim, re-use and re-cycle? Paragraph 5.5. notes that the waste hierarchy suggests re-use should be considered first: the Zero Waste Plan suggests that 'prevent' should be considered first, and considering the destination of used materials more fully now may help with that.

In paragraph 5.2.4. on end of life asset management, removal option, the DP states that the asset owners will liaise with other offshore windfarm developers and transmission owners to evaluate opportunities for synergy or economies of scale through decommissioning assets at the same time. This should extend to exploring possibilities of re-use of assets by others in situ.

Paragraph 5.4.1 on the wind turbine blades states that as they are fibreglass they will be transported to a suitable waste facility, and states that they will then be disposed. No justification for this option is given. This does not tie up with Table 5-14 which states that they will be recycled where facilities exist, so it is not clear what their end will be. The DP notes that the blades, OSP topside, WTG tower and nacelle will be broken down into a transportable size, but not where this will occur. Paragraph 5.4.2 mentions a decommissioning yard, and 5.4.4 a decommissioning port. I cannot see a location for this in the original ES and it would be useful to include the locations of these in the DP.

We would recommend that a detailed specification of how the works can be carried out, sufficient to employ a contractor on that basis, should be prepared so that the taxpayer could potentially employ a contractor on that basis of the information should be included.

Section 10 states that a schedule and project management arrangements will be provided once the projects are nearing the end of their operational period, and in any event, no later than two years prior to the commencement of decommissioning. I assume this refers to a Schedule of Works sufficient to employ a contractor. This appears to the Council to be rather late in the day, given the company could fail at any point during the life of the project. This may also apply to the transmission assets which will be transferred to OFTOs. In our view a Schedule of Works should be provided based on the most likely decommissioning scenario early in the life of the project, to avoid the organisation of works falling to the taxpayer.

In Section 12 on post-decommissioning monitoring, it is stated that monitoring requirements will be agreed with Marine Scotland. We would request that East Lothian Council be consulted by Marine Scotland on post-decommissioning monitoring arrangements.

Should you wish to discuss any of the above in more detail please contact J Squires in the first instance on jsquires@eastlothian.gov.uk .

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Keith Dingwall', written in a cursive style.

Keith Dingwall
Planning Service Manager

Maxwell, Ed

From: Martin Mcgroarty <Martin.McGroarty@fife.gov.uk>
Sent: 02 November 2022 13:52
To: Maxwell, Ed
Cc: Pamela Stevenson
Subject: [EXTERNAL] Re: Consultation: Seagreen and Seagreen 1A Decommissioning Programme
Attachments: LF000009-CST-MA-PRG-0003_Seagreen-Decommissioning_Programme_Rev05.pdf

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Many thanks for your email.

Having examined the draft Decommissioning Programme document I can confirm that Fife Council as Planning Authority has no comment to make on the decommissioning proposals.

I would remind you that Fife is well-placed to accommodate and support various aspects of the decommissioning work itself - my colleague Pamela Stevenson can assist with any queries you may have around the industry offer that Fife can supply in terms of land, facilities and expertise.

Kind regards,
Martin

Martin McGroarty

Lead Professional (Minerals)
Development Management
Planning Services
Fife Council
Fife House
North Street
GLENROTHES
Fife
KY7 5LT

development.central@fife.gov.uk

www.fife.gov.uk/planning

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LISTEN | CONSIDER | RESPOND

From: Maxwell, Ed <Edward.EM.Maxwell@sse.com>
Sent: 02 November 2022 13:25
To: Maxwell, Ed <Edward.EM.Maxwell@sse.com>
Subject: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

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Cc: Pamela Smyth <Pamela.Smyth@forthports.co.uk>

Subject: [EXTERNAL] RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

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Ed

Thank you for your email. Forth Ports have no comment on the proposal.

Kind regards.

Carol

Carol Forman | In-house Paralegal | LSS Accredited Paralegal | Forth Ports Limited
Head Office | 1 Prince of Wales Dock | Edinburgh | EH6 7DX
T: 0131 555 8721 | M: 07858 368 260 | <https://forthports.co.uk>

From: Maxwell, Ed [<mailto:Edward.EM.Maxwell@sse.com>]

Sent: 25 November 2022 13:34

To: Maxwell, Ed <Edward.EM.Maxwell@sse.com>

Subject: RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

Further to the e-mail below, please be advised that the consultation on the Seagreen and Seagreen 1A Decommissioning Programme (DP) closes on **Friday 2 December 2022**. Please ensure that any comments you have on the DP are submitted on or before that date. Should you have no comments to make, we would appreciate confirmation of this in writing, such that it can be recorded accordingly.

Should you have any questions regarding the DP or the consultation process, please do not hesitate to contact me.

Many thanks,

Ed

Ed Maxwell || Offshore Consents Manager - Seagreen

SSE Renewables

1 Waterloo Street

Glasgow

G2 6AY

E: Edward.EM.Maxwell@sse.com

saserenewables.com



From: Maxwell, Ed

Sent: 02 November 2022 13:25

To: Maxwell, Ed <Edward.EM.Maxwell@sse.com>

Subject: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

Maxwell, Ed

From: Karen Millichip <Karen.Millichip@jncc.gov.uk>
Sent: 05 December 2022 15:38
To: Maxwell, Ed
Subject: [EXTERNAL] RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

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Hi Ed,

Given the delegation of Scottish renewables to NatureScot from JNCC a number of years ago we will not be commenting directly on the decommissioning programme, but will work with NatureScot as required to input to their response.

Kind Regards,

Karen

Karen Millichip
Marine Management Co-Team Leader
BSc (Hons), MRes

Please note I do not work on Wednesdays.

JNCC, Inverdee House, Baxter Street, Torry, Aberdeen, AB11 9QA
Tel: 0330 1242162, Direct Dial: +441224 083 523
Email: karen.millichip@jncc.gov.uk



jncc.gov.uk



From: Maxwell, Ed <Edward.EM.Maxwell@sse.com>
Sent: 02 December 2022 14:04
To: Karen Millichip <Karen.Millichip@jncc.gov.uk>
Subject: RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

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Hi Karen,

Further to my e-mail below, I would be grateful if you could confirm receipt of the consultation draft of the Seagreen and Seagreen 1A Decommissioning Programme (attached) and whether JNCC wishes to provide any comments on the document as part of this consultation.

Maxwell, Ed

From: navigation safety <navigationsafety@mcga.gov.uk>
Sent: 29 November 2022 10:43
To: Maxwell, Ed
Cc: Nick Salter; Vaughan Jackson
Subject: [EXTERNAL] RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

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Good Morning Ed,

Thank you for the opportunity to comment on the decommissioning plan for The Seagreen and Seagreen 1A projects.

The UK Technical Services Navigation team of the Maritime and Coastguard Agency has reviewed the documents and marine plans received. We would like to comment as follows:

We note that as per Table 1-1, the developer intends to completely remove the project components including the wind turbines, support and OSP Structures.

We also note that as per section 12 The Post-decommissioning monitoring surveys of the seabed will be carried out following the completion of the decommissioning works. Surveys are expected to comprise geophysical survey (such as swathe bathymetry, side-scan sonar and magnetometer), this survey should be conducted as per **MGN-654 Annex 4- Hydrography Guidelines for Offshore Renewable Energy Developers**.

We also would like to point out that as per **MGN-654 Section 7 Decommissioning** *An agreed and updated ERCoP must be in place prior to the removal of any offshore infrastructure.*

The MCA confirms we have no objections to the proposed decommissioning plan on this occasion. This is on the understanding that all maritime safety legislation is adhered to, and that the developer complies with the proposed decommissioning plan.

Best Regards

Vinu

Vinu John
Navigation Policy Advisor
Marine Licensing and Consenting
UK Technical Services Navigation

+44 (0) 7970 156169
vinu.john@mcga.gov.uk



Maritime &
Coastguard
Agency

Maritime & Coastguard Agency
Spring Place
105 Commercial Road,
Southampton SO15 1EG



Safer Lives, Safer Ships, Cleaner Seas
www.gov.uk/mca

Maxwell, Ed

From: Oulaghan, Teena C2 (DIO Estates-SafegdgMgr1) <Teena.Oulaghan100@mod.gov.uk>
Sent: 02 December 2022 15:07
To: Maxwell, Ed
Subject: [EXTERNAL] 20221202_MOD_Response_Draft Decommissioning_programme
Attachments: LF000009-CST-MA-PRG-0003_Seagreen-Decommissioning_Programme_Rev05.pdf

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Good afternoon Edward

Thank you for consulting the MOD on the draft Decommissioning Programme (DP) prepared by Seagreen Wind Energy Ltd (SWEL) and Seagreen 1A Ltd (S1A). As you have advised the draft DP has been prepared in response to notices issued under Section 105(2) of the Energy Act 2004 to SWEL and S1A by the Scottish Ministers. These notices require that SWEL/S1A submit a DP to the Scottish Ministers in respect of the Seagreen Project (the Seagreen Alpha and Bravo Offshore Wind Farms and associated Offshore Transmission Assets connecting to a landfall at Carnoustie, Angus) and the Seagreen 1A Project (additional export cable connecting the Seagreen Project to a landfall at Cockenzie, East Lothian).

I have reviewed the draft decommissioning programme attached and have the following comments that should be taken into consideration and included in the decommissioning programme.

I note from the executive summary that a previous decommissioning programme was rejected by Scottish Ministers because of the methodology it identified for managing the export cable and inter-array cables which would have entailed leaving them situ. This has potential implications for the MOD in that the export cable corridor defined in the original S36 consent(s) for The Seagreen Project makes its land fall at Carnoustie via Barry Sands and overlaps the edge of Danger Area D604 which contains the offshore extent of the Barry Buddon firing range.

Section 3.3.3.7 of the submission identifies the aviation and military interests relevant to the Seagreen Project area. It recognises that the export cable route that makes landfall at Carnoustie affects the Barry Buddon firing range. The need for a management plan for the installation phase is identified. However, no such need it included for the decommissioning phase which have the potential to have similar impacts upon range operations. Accordingly, the decommissioning programme needs to make provision for a management plan to coordinate any cable decommissioning works relating to that section of the export cable passing through or in proximity to Danger Area D604. The potential for unexploded ordnance (UXO) to be present in the locality as a result of historic military activities, particularly in association with the Barry Buddon firing range, are not specifically identified. Accordingly, it would be appropriate that the decommissioning programme takes this into account.

The impacts that the operation of the wind turbines will have upon the effective operation of the MOD air traffic control radar at Leuchars Station as well as the air defence radars at the remote radar heads at Buchan and Brizlee Wood have been identified. The submission identifies that the impacts the operation of the wind turbines will have upon these defence radars will be addressed through conditional requirements for the implementation of mitigation measures. On the basis that the radar mitigation measures will be maintained until all turbines have ceased to be used, in accordance with these conditional requirements, this issue does not need to be accounted for in the decommissioning programme.

The offshore development will be fitted with aviation warning lighting which will serve to maintain the safety of military aircraft that may engage in low flying activities in the area. Accordingly, the decommissioning programme should make provision to retain the lighting on these structures up to the point that they are removed. It should

also take into account the potential need for floating cranes or other structures temporarily deployed to take down the turbines and other offshore structures to be fitted with aviation warning lighting as may be necessary.

At section 3.4.3.5, the aviation and military interests relevant to the Seagreen Project 1A area are identified. This accurately identifies that the cable route that makes landfall at Cockenzie, East Lothian will pass through a number of MOD practise and exercise areas but accurately concludes that it will not be necessary for any associated cable works to be specifically coordinated with any military training activities that may be conducted in these areas.

Section 3.4.3.2 on Marine Archaeology and Cultural Heritage makes reference to the potential presence of UXO that may be present in the locality as a consequence of historic military activity. In this respect, it would be appropriate that the decommissioning programme specifically takes into account two disused explosives dumping grounds that are located to the east of the Isle of May in the locality of the cable corridor route.

I hope the above will be taken into consideration and i will be happy to discuss/advise further if required

Kindest regards

Teena Oulaghan

Safeguarding Manager
Estates – Safeguarding

St George's House | Defence Infrastructure Organisation Head Office |
DMS Whittington | Lichfield | Staffordshire | WS14 9PY

Mobile Tel: 07970170934

Website: www.gov.uk/dio/ | **Twitter:** @mod_dio

Read DIO's blog: <https://insidedio.blog.gov.uk/>



Due to covid-19 I am working from home until further notice.

In line with the latest guidance, I am working offline where possible to ease the pressure on the IT network, so I will only be checking emails and Skype periodically. This means I might not respond as promptly as usual, so if you need my attention more urgently, please call me on 07970170934.

Maxwell, Ed

From: Shirley Cheyne <Shirley@montroseport.co.uk> on behalf of Thomas Hutchison <tom@montroseport.co.uk>
Sent: 13 November 2022 11:53
To: Maxwell, Ed
Subject: [EXTERNAL] FW: Consultation: Seagreen and Seagreen 1A Decommissioning Programme
Attachments: LF000009-CST-MA-PRG-0003_Seagreen-Decommissioning_Programme_Rev05.pdf

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Good morning Ed,

Thank you for sending a copy of a draft Decommissioning Programme (DP) prepared by Seagreen Wind Energy Ltd (SWEL) and Seagreen 1A Ltd (S1A).

Please be advised that Montrose Port Authority have no comments to make.

Kind regards,

Tom

Capt. Tom Hutchison

Chief Executive Officer/Harbour Master

MONTROSE PORT AUTHORITY

South Quay

Ferryden

Montrose

Angus

DD10 9SL

Tel. +44 (0)1674 672302 (O)

Mob +44 (0)7786960610

Email: tom@montroseport.co.uk

Web: www.montroseport.co.uk

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From: Maxwell, Ed <Edward.EM.Maxwell@sse.com>

Sent: 02 November 2022 13:25

Maxwell, Ed

From: Caitlin Cunningham <Caitlin.Cunningham@nature.scot>
Sent: 06 December 2022 14:32
To: Maxwell, Ed
Cc: Marineenergy; Noble, Ellie
Subject: [EXTERNAL] RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

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Dear Ed,

Thank you for the consultation on the draft Decommissioning Programme (DP) for Seagreen Wind Energy Limited and Seagreen 1A. Thank you also for the extension until the 9th December.

We have reviewed the draft DP (LF000009-CST-MA-PRG-0003 Rev 05) and have the following comments.

NatureScot advice

While the Scottish Government guidance (*Offshore renewable energy: decommissioning guidance for Scottish waters*, August 2022) requires early thinking on decommissioning works for renewables development, it is accepted that the decommissioning programme will need review throughout the lifespan and increasingly towards the end of the project development.

Therefore, we request to be consulted on each iteration of the plan, and particularly the final decommissioning programme to be submitted. We advise that due to the project duration of the wind farm, technological and engineering advances as well as environmental changes, updated environmental information will probably be required to inform any final decommissioning programme. We recommend that consideration is given to the amount of time for the developer to undertake any such environmental monitoring, prepare a final draft decommissioning plan and undertake a consultation period. This should be done in consultation with the relevant regulator and key advisers at that time.

We note that the Firth of Forth SSSI is briefly discussed in section 3.4.1.3 on page 28 of the PDF. However, it is not included in Table 3-2 page 33, which lists designated sites screened for further assessment for Seagreen 1A, despite the landfall at Cockenzie passing through the SSSI. We advise that the Firth of Forth SSSI is included in Table 3-2 and that the text in section 3.4.4 is updated to reflect the inclusion of MPAs and SSSIs – i.e. Table 3-2 is not just SACs and SPAs.

We also advise that the 'Assessment outcome' for the Firth of Forth Banks Complex NCMPA in Table 3-2 is changed from 'Not Capable of Affect' to better reflect our response (30/06/21) to the Marine Licence consultation for Seagreen 1A. In this response, we advised that the proposal is capable of affecting the offshore subtidal sands and gravels and ocean quahog features of the Firth of Forth Banks Complex NCMPA. However, these effects are insignificant and further assessment is therefore not required.

I hope this advice is of assistance.

Best Wishes,

Caitlin

Caitlin Cunningham (she/her) | **Marine Sustainability Adviser**

NatureScot | Silvan House | 3rd Floor East | 231 Corstorphine Road | Edinburgh | EH12 7AT | t: 01738 458531 | m: 07774 161076

NàdarAlba | Taigh Silvan | 3mh Làr an Ear | 231 Rathad Chros Thoirphin | Dùn Èideann | EH12 7AT

[nature.scot](https://www.nature.scot) – Scotland's Nature Agency – Buidheann Nàdair na h-Alba - [@nature_scot](https://twitter.com/nature_scot)

From: Caitlin Cunningham
Sent: 01 December 2022 16:37
To: Maxwell, Ed <Edward.EM.Maxwell@sse.com>
Cc: MARINEENERGY <MARINEENERGY@nature.scot>; Malcolm Fraser <Malcolm.Fraser@nature.scot>; Noble, Ellie <Ellie.EN.Noble@sse.com>
Subject: RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

Hi Ed,

My mistake re Section 105. Thank you for the extension – that's appreciated and we will endeavour to get our advice to you for the 9th.

Best Wishes,

Caitlin

From: Maxwell, Ed <Edward.EM.Maxwell@sse.com>
Sent: 01 December 2022 15:59
To: Caitlin Cunningham <Caitlin.Cunningham@nature.scot>
Cc: MARINEENERGY <MARINEENERGY@nature.scot>; Malcolm Fraser <Malcolm.Fraser@nature.scot>; Noble, Ellie <Ellie.EN.Noble@sse.com>
Subject: RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

Hi Caitlin,

Thank you for the clarification and apologies you weren't on the original distribution list. The Section 105 notices require that consultation with Interested Parties (such as NatureScot) is undertaken by the developer prior to submission of the final Decommissioning Programme. To our knowledge, Marine Scotland (on behalf of the Scottish Ministers) will not necessarily carry out further consultation with external stakeholders as part of their review and approval process. I would therefore be grateful for your comments at this stage in order to ensure the DP is as complete as possible and fully reflects the views of all key parties. We would be happy to extend the consultation window and receive your comments by Friday 9th December, if that would be helpful?

Many thanks,
Ed

Ed Maxwell || Offshore Consents Manager - Seagreen

T: 07854 666633
E: Edward.EM.Maxwell@sse.com

From: Caitlin Cunningham <Caitlin.Cunningham@nature.scot>
Sent: 01 December 2022 14:53

To: Maxwell, Ed <Edward.EM.Maxwell@sse.com>

Cc: Marineenergy <marineenergy@nature.scot>; Malcolm Fraser <Malcolm.Fraser@nature.scot>

Subject: [EXTERNAL] RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

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Good Afternoon Ed,

In future, please can you send all correspondence to the Marine Energy inbox (cc'd) in addition to the casework officer, allowing us to triage effectively in the case of absence. Please note that I am the casework officer for Seagreen and Seagreen 1A.

We also highlight that we did not receive the initial consultation on the 2nd November.

In this instance, we will wait until the formal consultation from Marine Scotland to provide our advice.

All the best for the Decommissioning Programme submission.

Best,

Caitlin

Caitlin Cunningham (she/her) | **Marine Sustainability Adviser**

NatureScot | Silvan House | 3rd Floor East | 231 Corstorphine Road | Edinburgh | EH12 7AT | t: 01738 458531 | m: 07774 161076

NàdarAlba | Taigh Silvan | 3mh Làr an Ear | 231 Rathad Chros Thoirphin | Dùn Èideann | EH12 7AT

nature.scot – Scotland's Nature Agency – Buidheann Nàdair na h-Alba - [@nature_scot](https://twitter.com/nature_scot)

From: Maxwell, Ed <Edward.EM.Maxwell@sse.com>

Sent: 25 November 2022 13:34

To: Maxwell, Ed <Edward.EM.Maxwell@sse.com>

Subject: RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

Further to the e-mail below, please be advised that the consultation on the Seagreen and Seagreen 1A Decommissioning Programme (DP) closes on **Friday 2 December 2022**. Please ensure that any comments you have on the DP are submitted on or before that date. Should you have no comments to make, we would appreciate confirmation of this in writing, such that it can be recorded accordingly.

Should you have any questions regarding the DP or the consultation process, please do not hesitate to contact me.

Many thanks,
Ed

Ed Maxwell || Offshore Consents Manager - Seagreen

SSE Renewables
1 Waterloo Street
Glasgow
G2 6AY



Northern Lighthouse Board

84 George Street
Edinburgh EH2 3DA

Tel: 0131 473 3100
Fax: 0131 220 2093

Website: www.nlb.org.uk
Email: enquiries@nlb.org.uk

Your Ref: Seagreen & Seagreen 1A – Decommissioning Programme
Our Ref: AL/OPS/ML/O6_02_758

Mr Ed Maxwell
Seagreen Wind Energy Ltd
c/o SSE plc
1 Waterloo Street
Glasgow
G2 6AY

3 November 2022

SEAGREEN AND SEAGREEN 1A OFFSHORE WINDFARMS – DECOMMISSIONING PROGRAMME

Thank you for your e-mail correspondence dated 2nd November 2022 relating to the revised Decommissioning Programme submitted for consultation by **Seagreen Wind Energy Ltd**, covering the Seagreen and Seagreen 1A Offshore Windfarms sites.

Northern Lighthouse Board note the amendments made for Revision 5 of this document, and have no objection to the draft document, and welcome Section 7 of the document, which creates provision for consultation between SWEL, NLB and Maritime and Coastguard Agency prior to any decommissioning work being conducted, with regard to the lighting and marking of windfarm throughout the decommissioning process.

Yours sincerely

Peter Douglas
Navigation Manager

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Maxwell, Ed

From: Adam Lewis <Adam.Lewis@nlb.org.uk> on behalf of navigation <navigation@nlb.org.uk>
Sent: 03 November 2022 12:19
To: Maxwell, Ed
Subject: [EXTERNAL] RE: [EXT] Consultation: Seagreen and Seagreen 1A Decommissioning Programme
Attachments: O6_02_758 - NLB Response.pdf

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Good afternoon Ed,

Please find attached the NLB response to the revised Seagreen OWF Decommissioning programme.

Regards

Adam

Official - Northern Lighthouse Board Email

Adam Lewis
Coastal Inspector

From: Maxwell, Ed <Edward.EM.Maxwell@sse.com>
Sent: 02 November 2022 13:25
To: Maxwell, Ed <Edward.EM.Maxwell@sse.com>
Subject: [EXT] Consultation: Seagreen and Seagreen 1A Decommissioning Programme

Please find attached a copy of a draft Decommissioning Programme (DP) prepared by Seagreen Wind Energy Ltd (SWEL) and Seagreen 1A Ltd (S1A) on which we are seeking your comments. *Please note the attachment replaces the version sent previously, in error, due to its size.*

The draft DP has been prepared in response to notices issued under Section 105(2) of the Energy Act 2004 to SWEL and S1A by the Scottish Ministers. These notices require that SWEL/S1A submit a DP to the Scottish Ministers in respect of the Seagreen Project (the Seagreen Alpha and Bravo Offshore Wind Farms and associated Offshore Transmission Assets connecting to a landfall at Carnoustie, Angus) and the Seagreen 1A Project (additional export cable connecting the Seagreen Project to a landfall at Cockenzie, East Lothian).

The Section 105(2) notices require SWEL/S1A to undertake consultation with interested parties on the draft DP prior to submitting a final version to Marine Scotland. The notices include a schedule setting out those organisations to be consulted (see Appendix B of the attached draft DP) which includes your organisation. **We are therefore seeking your views on the attached draft DP by 2 December 2022**, prior to finalising the DP for submission.

Maxwell, Ed

From: Pauline McGrow <Pauline.McGrow@ryascotland.org.uk>
Sent: 14 November 2022 15:37
To: Maxwell, Ed
Subject: [EXTERNAL] RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

This Message Is From an Untrusted Sender

You have not previously corresponded with this sender.

Dear Ed,

I write to inform you that RYA Scotland has no comment that they wish to make on this application.

Kind Regards

Pauline

Pauline McGrow
Senior Administrator
Mob: 07436 296765

Royal Yachting Association Scotland
T: 0131 317 7388
E: pauline.mcgrow@ryascotland.org.uk



RYA Scotland, Caledonia House, 1 Redheughs Rigg, South Gyle, Edinburgh, EH12 9DQ
T: 0131 317 7388, Fax: 0844 556 9549

Protecting your personal information is important to us, view our full Privacy Statement [here](#)



From: Maxwell, Ed <Edward.EM.Maxwell@sse.com>
Sent: 02 November 2022 13:02

Maxwell, Ed

From: Miller, Craig <CMiller@scotborders.gov.uk>
Sent: 05 December 2022 10:27
To: Maxwell, Ed
Subject: [EXTERNAL] [OFFICIAL] RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme 18/01345/S36

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Ed

Apologies. SBC have no comments to make on the Decommissioning Programme,

Regards

Craig

Craig Miller
Principal Planning Officer
Planning Housing and Related Services
Scottish Borders Council
Tel: 01835 825029
E-mail : cmiller@scotborders.gov.uk

[Web](#) | [Twitter](#) | [Facebook](#) | [Flickr](#) | [YouTube](#)

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Quality in Planning
2017: Award Winner

From: Maxwell, Ed <Edward.EM.Maxwell@sse.com>
Sent: 02 December 2022 14:04
To: Miller, Craig <CMiller@scotborders.gov.uk>
Subject: RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

CAUTION: External Email

Hi Craig,

Maxwell, Ed

From: Planning South East <PlanningSouthEast@sepa.org.uk>
Sent: 09 November 2022 11:10
To: Maxwell, Ed
Subject: [EXTERNAL] RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme SEPA 7323

WARNING: This email was sent from outside SSE. Think twice before opening any links or attachments and report anything you are unsure about with your 'Report Phishing' button.

OFFICIAL

Ed,

Thank you for contacting SEPA about the Seagreen and Seagreen 1A de-commissioning programme (DP). We understand from the document that all related onshore assets are consented under the Town and Country Planning (Scotland) Act 1997 and are therefore not considered in this DP. As SEPA only comment on onshore aspects, we have no comment to make on this draft. Please also note our recently published LUPS -GU13 -Standing advice for the Department for Business, Energy and Industrial Strategy and Marine Scotland on marine consultations- [lups-gu13.pdf \(sepa.org.uk\)](#). According to this we will not comment on decommissioning if consulted by Marine Scotland, however in general we advise that the removal of all devices and as much of the support infrastructure/cabling is removed and all waste materials are removed and reused, recycled or disposed of at a licensed onshore site.

Kind Regards

Silvia Cagnoni
Senior Planning Officer
Scottish Environment Protection Agency

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Registered office: Strathallan House, Castle Business Park, Stirling FK9 4TZ. Under the Regulation of Investigatory Powers Act 2000, the email system at SEPA may be subject to monitoring from time to time.

Dh'fhaodadh gum bi am fiosrachadh sa phost-d seo agus ceanglachan sam bith a tha na chois dìomhair, agus cha bu chòir am fiosrachadh a bhith air a chleachdadh le neach sam bith ach an luchd-faighinn a bha còir am fiosrachadh fhaighinn. Chan fhaod neach sam bith eile cothrom

fhaighinn air an fhiosrachadh a tha sa phost-d no a tha an cois a' phuist-d, chan fhaod iad lethbhreac a dhèanamh dheth no a chleachdadh arithist.

Mura h-ann dhuibhse a tha am post-d seo, feuch gun inns sibh dhuinn sa bhad le bhith cur post-d gu postmaster@sepa.org.uk. Oifis chlàraichte: Taigh Srath Alain, Pàirc Gnothachais a' Chaisteil, Sruighlea FK9 4TZ. Fo Achd Riaghladh nan Cumhachdan Rannsachaidh 2000, dh'fhaodadh gun tèid an siostam puist-d aig SEPA a sgrùdadh bho àm gu àm.

Maxwell, Ed

From: Malcolm Morrison <M.Morrison@sff.co.uk>
Sent: 12 December 2022 10:43
To: McKiernan, Fingal; Maxwell, Ed
Subject: [EXTERNAL] RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme
Attachments: Response Decomm Plan.docx

WARNING: This email was sent from outside SSE. Think twice before opening any links or attachments and report anything you are unsure about with your 'Report Phishing' button.

Here is our response, all the best, Malcolm

Best Regards, Malcolm

Fishery Policy Officer
Mob. +44 (0) 7738545543

Tel. +44 (0) 1224 646944
www.sff.co.uk

Please be aware that as I am working from home, there may be occasions where I will send emails outwith the 9-5, that is to suit me, I don't expect replies at these times, only when you are working!

Connect with us:

Scottish Fishermens Federation | 24 Rubislaw Terrace | Aberdeen | Scotland | AB10 1XE

Connect with SFF:



From: Malcolm Morrison
Sent: 02 December 2022 11:06
To: McKiernan, Fingal <Fingal.McKiernan@sse.com>; Maxwell, Ed <Edward.EM.Maxwell@sse.com>
Subject: FW: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

Guys

Never heard back from you, so just to confirm we did not receive the mail of 2/11, please use my address for any correspondence, but I will have a response ready for you early in the week,
Best, Malcolm

From: Maxwell, Ed <Edward.EM.Maxwell@sse.com>
Sent: 25 November 2022 13:34
To: Maxwell, Ed <Edward.EM.Maxwell@sse.com>
Subject: RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

Further to the e-mail below, please be advised that the consultation on the Seagreen and Seagreen 1A Decommissioning Programme (DP) closes on **Friday 2 December 2022**. Please ensure that any comments you have on the DP are submitted on or before that date. Should you have no comments to make, we would appreciate confirmation of this in writing, such that it can be recorded accordingly.



Our Ref:

Your Ref:

1 December 2022

Scottish Fishermen's Federation
24 Rubislaw Terrace
Aberdeen, AB10 1XE
Scotland UK

T: +44 (0) 1224 646944
F: +44 (0) 1224 647078
E: sff@sff.co.uk

www.sff.co.uk

(Address)

Seagreen Decommissioning Plan

The Scottish Fishermen's Federation (SFF) on behalf of the 450 plus fishing vessels in membership of its constituent associations, The Anglo Scottish Fishermen's Association, Fife Fishermen's Association, Fishing Vessel Agents and Owners Association, Mallaig & North West Fishermen's Association, Orkney Fisheries Association, Scottish Pelagic Fishermen's Association, the Scottish White Fish Producer's Association, Shetland Fishermen's Association and the NECrIFG, are pleased to respond to this consultation.

P36, 4.4 and P37, 4.5 lists the various cables of the development, simply saying "to be decommissioned" this would be the expectation of the SFF, not the mix and match approach found throughout the plan. Indeed the default position throughout should be for a clean seabed post decommissioning

Despite the fact that the DP SWEL submitted to the Scottish Ministers for the decommissioning of the Seagreen Project on 26 August 2020 was rejected primarily due to the decommissioning methodology proposed for inter array and export cables which was to leave these elements in-situ, Table 1-1 on page 6 repeats the claim that some cables will be left in situ, which given that there are over 550km of cables full recovery is preferable. Furthermore the cumulative impact of leaving all the proposed cables in situ has not been assessed, which could lead to a seabed strewn with retired cables and nothing else.

Furthermore, in the same table, the section on cable/scour protection gives another untenable proposition, whereby 32000T + 7705000km³ of rock etc will be left on the seabed. This amount of material will have caused interference in the benthic environment for over 25 years, and it unthinkable that the cost in £ of removal is an excuse to leave it there rather than return the seabed to the state it was in when the development took over. The development is being installed to address the climate change/ energy security crisis, and the profits to be made are huge, so incurring a negative impact on the environment for the cost of removal is unthinkable.

Members:

Anglo Scottish Fishermen's Association · Fife Fishermen's Association · Fishing Vessel Agents & Owners Association (Scotland) Ltd · Mallaig & North-West Fishermen's Association Ltd · Orkney Fisheries Association · Scottish Pelagic Fishermen's Association Ltd · The Scottish White Fish Producers' Association Ltd · Shetland Fishermen's Association

VAT Reg No: 605 096 748

This is further outlined on P38, 4.7, if the cable/scour protection is too costly to retrieve it should not be deposited on the seabed in the first place, without a full assessment of its impacts.

P43, table 5.2 is a simple declaration of cable & scour protection being left in situ, which is totally undesirable for other legitimate users of the seabed, some form of removal should be described.

P45, 5.4.2 bullet 1, describes the foundation and scour protection being removed, so the rest of the protection should also be removed?

P50, 5.4.4, speaks of analysing and making assumptions about the potential effects of removal on species and habitats that have been created by the various cable routes, and these being a reason to leave them. The SFF finds this argument to be absurd, the cables are licenced to be laid, not to create a new paradigm on the seabed, which the fishing industry had hoped to see be restored to its original condition.

The final word on this issue, looking at the statement on P54, “Where these studies (including EIA) indicate that valuable benthic features (such as PMFs, Scottish Biodiversity List species or Annex I habitats) have colonised parts of the cable routes, or otherwise where EIA indicates cable removal would result in a significant and unacceptable environmental impact, consultation with MS-LOT and Nature Scot would be initiated to determine the most appropriate decommissioning option which may include leaving ‘high risk’ sections in-situ.” **If there is a possibility of this option emerging surely it should have been assessed in the original EIA for stakeholders to comment on? Surely the SNCB’s would take a view on this?**

The final line on P57 appears to confirm that approach, so, again, the SNCBs should be taking a view, the impact must be closer to moderate, if not major.

The description on P7 of the cost estimate of decommissioning, making it a separate entity to the cost of the development seems disingenuous, surely decommissioning is an integral part of the development, and as such the DP cost should be treated as such, and removal from the marine environment is as essential as putting it there in the first place.

P34, 4.1 notes that there will be 450 Rotor blades to be decommissioned, which the SFF would expect to be comprehensively assessed for their impact as landfill. This cost, again, needs to be attributed to the total cost of the development and the environmental impact considered.

P44, 5.4.1 notes that the rotors are of fibre composition, and non-recyclable, so the plan should acknowledge there will be a cost both monetarily and environmentally which must be covered under the polluter pays principle.

P12 referring to the Energy Act 2004 S105 (8) (d) specifically states that the area is intended to be restored to the condition it was in prior to development, and this is also the desire of the fishing industry. Taken in conjunction with the S105 (8) € at the top of P13, the fishing industry would expect to see a full and proper monitoring and maintenance regime to look after any infrastructure which cannot be removed.

P26 claims that the FMMS will be covering the development interaction with fisheries, which has been far from ideal so far, so the fishing industry would seek stronger assurances on engagement going forward.

The descriptions in Chapter 5 from P41, 5.3 to P72 are very comprehensive, but seem to ignore that the fishing industry, as legitimate users of the sea, sees complete removal as best practice. To this end we can agree with the presumption of total removal. The concept of leaving infrastructure of any sort behind because it has caused a reef effect does not fit with this ethos and should be omitted from the plan. Otherwise the development should pay for a new licence and all that that entails. Any variation from total removal should not be allowed to be ad hoc, there must be consultation and agreement on any particular piece to be left.

P42 table 5.1 should recognise, under the safety heading, that building and decommissioning are 2 different projects, which will require different skill sets.

On P60, much seems to be made of the monetary cost of removal and restoration. If the monetary cost to build was an issue in the face of the climate crisis it wouldn't have happened, so the argument is baseless, adhere to the "polluter pays" principle.

Moving on to P64, 5.4.6, if the developer expects to use this argument it should be assessed properly in the original EIA, which never happened. Furthermore, P65, 5.4.6.2 acknowledges the fact that the technology needed for decommissioning is far behind the demand for offshore Wind. This ends up reading like "lets see what its like in 25 years" and address it then, when the reality should be that the impacts should be assessed in the present so that stakeholders know what to expect.

And on the next page but same para, to describe the material as benign is simplistic in that its impacts on stakeholders have not been assessed.

P68, Table 5-12, without the necessary assessment to say the impact on commercial fishing is negligible cannot be accepted. Table 5-14 on P72 appears to say that protection will be recycled?

Looking at P79, 10, and P81, 12, it becomes increasingly clear that waiting 20+ years for the developer to decide on what comes out/ what stays in is not the best way to give other stakeholders confidence that the impacts on them will be minor. In order to do this there must be a full assessment of the proposals, otherwise we can end up in scenario where the buried cables are left in situ, and the rock dumped cables are left in situ, which is absolutely not where the SFF would like to be.

.

Maxwell, Ed

From: Robert Merrylees <RMerrylees@ukchamberofshipping.com>
Sent: 02 December 2022 14:52
To: Maxwell, Ed
Subject: [EXTERNAL] RE: Consultation: Seagreen and Seagreen 1A Decommissioning Programme

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Dear Ed,

Thank you for the consultation to the Chamber on the Seagreen Decommissioning Programme. Please refer any future enquiries to me as the offshore renewable lead.

The Chamber has reviewed the programme and fully advocates for full removal of all infrastructure where reuse or recycle is not available/feasible. The Chamber is broadly content with the programme however would like greater clarity provided on what exceptions may result in the cabling being left in situ.

The sentence, under Table 1-1, which states: *“Complete removal from site except where there is a high risk to other assets (cable crossings) or to the marine environment, or health and safety concerns (in addition to extreme costs required for the removal).”* provides a number of exemptions from complete removal and leaving of the seabed unfettered to future activity, but does not detail the thresholds at which they may apply. In doing so, the programme deviates from the Polluter Pays principle.

Kind regards,
Robert

Robert Merrylees
Policy Manager (Safety & Nautical) & Analyst

UK Chamber of Shipping
30 Park Street, London, SE1 9EQ

DD +44 (0) 20 7417 2843
Mob +44 (0) 7425 863 719
rmerrylees@ukchamberofshipping.com
www.ukchamberofshipping.com



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Maxwell, Ed

From: Offshore Energy <offshore.energy@ukho.gov.uk>
Sent: 30 November 2022 13:11
To: Maxwell, Ed
Subject: [EXTERNAL] FW: UKHO Case CS-265423-D3G0 - Consultation: Seagreen and Seagreen 1A Decommissioning Programme Email ID:0895225

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Good afternoon

Thank you for the draft decommissioning programme.

The UK Hydrographic Office have no comments regarding the proposal but would like to remind the project team that we should be kept informed as structures are installed/removed from location. We would also appreciate details of any hazards (surface and submerged) identified during surveys. This information will enable us to keep Admiralty products and services up to date.

Kind regards

Duncan Metcalfe (He/Him) – On behalf of Offshore Energy

Senior Geospatial Analyst – Offshore Installations
Marine Geospatial Data Management Team

DD: +44 (0)1823 483639

Emai: offshore.energy@ukho.gov.uk



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admiralty.co.uk    



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Further to the e-mail below, please be advised that the consultation on the Seagreen and Seagreen 1A Decommissioning Programme (DP) closes on **Friday 2 December 2022**. Please ensure that any comments you have on the DP are submitted on or before that date. Should you have no comments to make, we would appreciate confirmation of this in writing, such that it can be recorded accordingly.

Should you have any questions regarding the DP or the consultation process, please do not hesitate to contact me.