

# WEST OF ORKNEY WINDFARM

## Outline Biodiversity Enhancement Plan

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# 1. Introduction

## 1.1 Project Background

Offshore Wind Power Limited (herein referred to as OWPL) is proposing the development of the West of Orkney Windfarm (the Project) located approximately 23 km from the north coast of Scotland and around 28 km from the west coast of Hoy, Orkney. Following the ScotWind leasing round, Crown Estate Scotland (CES) awarded OWPL the Option to Lease Agreement (OLA) in January 2022. The OLA was signed in April 2022. OWPL’s West of Orkney Windfarm lies wholly within the “N1” Plan Option (PO) and encompasses an area of approximately 657 km<sup>2</sup>. The proposed West of Orkney Windfarm is a joint venture between Corio Generation, TotalEnergies and Renewable Infrastructure Development Group (RIDG).

The Project is proposed to consist of up to 125 wind turbine generators (WTGs) that will provide an agreed connection to the National Grid at Spittal, Caithness (see Figure 1-1). The Project will require an onshore substation, for which the preferred location is immediately north of the existing SHET-L Spittal substation (see Figure 1-2). A summary of the offshore and onshore infrastructure is provided in Table 1-1.

**Table 1-1 Summary of proposed Project infrastructure**

Offshore Project infrastructure	Onshore Project infrastructure
Up to 125 WTGs with fixed-bottom foundations (monopile, piled jacket or suction bucket jacket)	Landfall infrastructure landward of mean low water spring (MLWS) at Greeny Geo and / or Crosskirk, Caithness Up to five Transition Joint Bays (TJBs) at each landfall
Up to five HVAC offshore substation platforms (OSPs)	Up to five underground onshore export cables
Up to 500 km of inter-array cables	One new onshore substation at Spittal (this may be Air Insulated Substation (AIS) or Gas Insulated Substation (GIS)) consisting of up to 12 buildings (GIS option)
Up to 150 km of OSP interconnector cables	Temporary compounds during construction of the onshore substation and onshore export cables
Up to five offshore export cables to landfalls at Greeny Geo and / or Crosskirk in Caithness, with a total combined length of up to 320 km (up to 64 km per offshore export cable).	Temporary haul road and access tracks during construction Permanent access tracks for access to the onshore substation and Horizontal Directional Drilling (HDD) locations

Further detail can be found in the Project Description chapters of both the Offshore and Onshore EIA Reports.

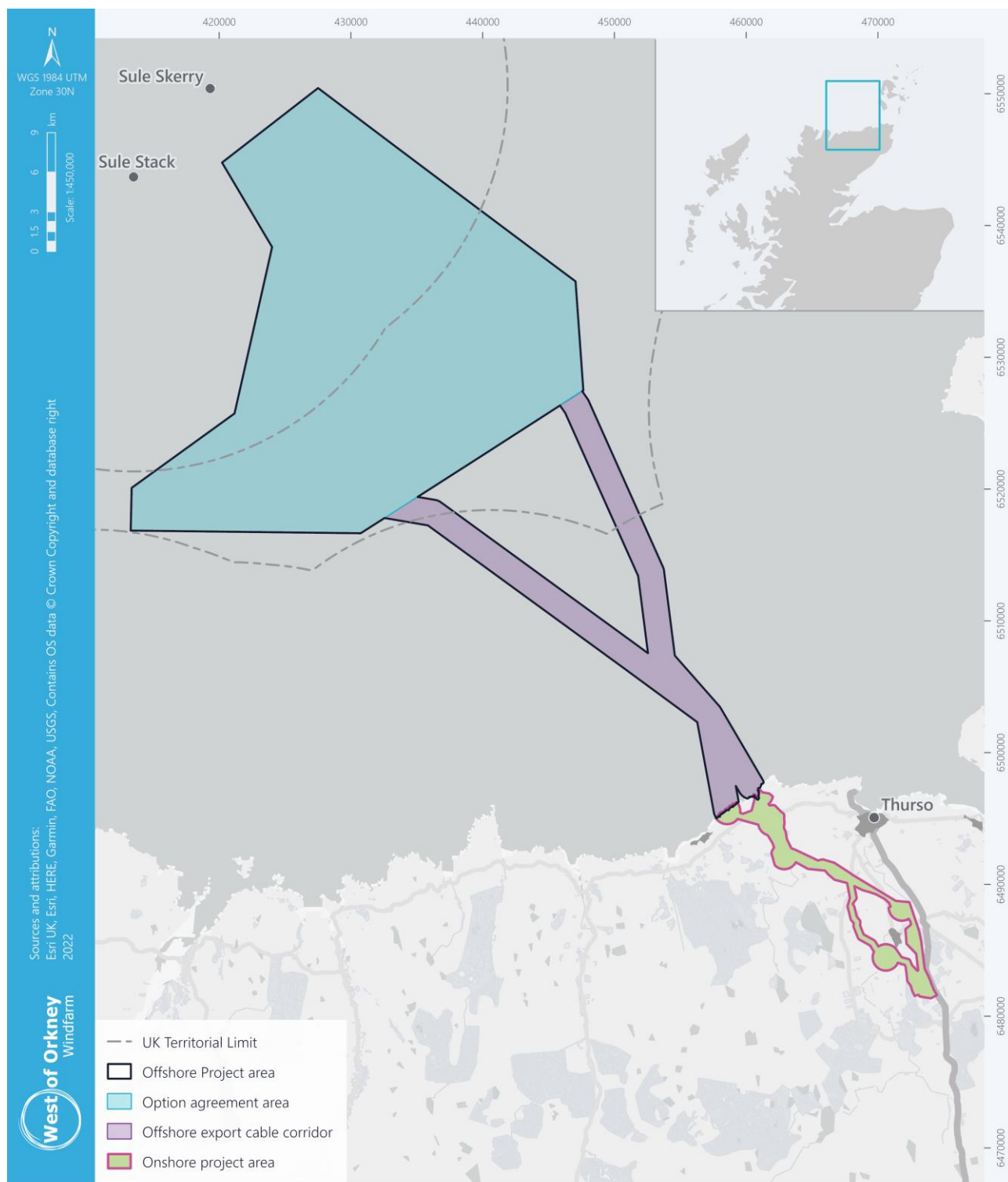


Figure 1-1 Overview of the offshore and onshore Project areas



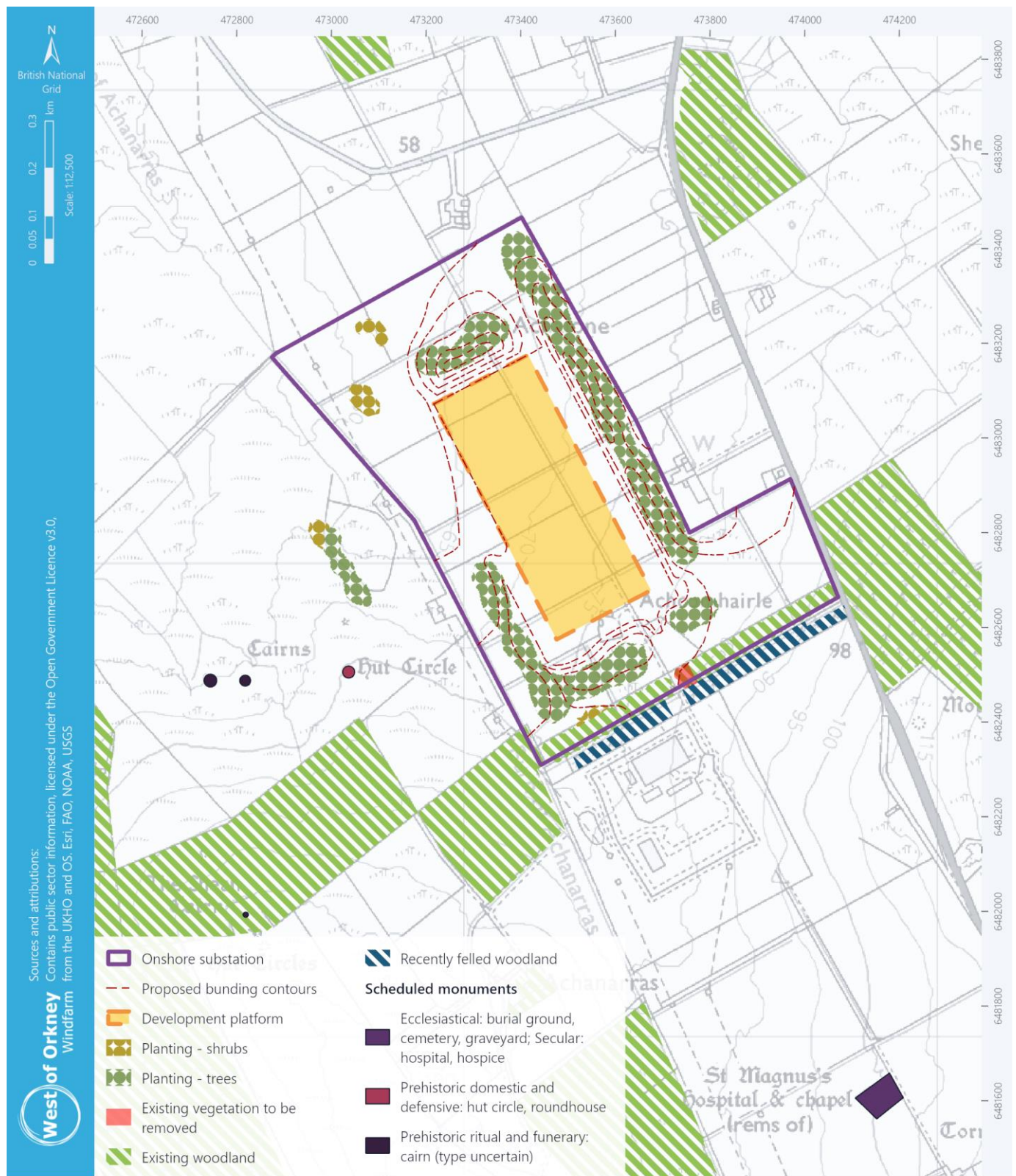


Figure 1-2 Indicative onshore substation location and landscape mitigation

## 1.2 West of Orkney Windfarm Biodiversity Ambition

The West of Orkney Windfarm is committed to protecting the environment by ensuring best practice, embedded mitigation and additional mitigation measures are followed at all times during construction, operation and maintenance and decommissioning. Additionally, the West of Orkney Windfarm is committed to enhancing the environment, where possible. The approach includes, but is not limited to, partnering with key stakeholders, neighbouring developers and the local community to ensure that any proposed enhancements are suited to the environment that they are situated in and will benefit not only the primary species but the wider ecosystem.

To achieve this ambition, the West of Orkney Windfarm will:

- Engage with appropriate stakeholders prior to establishment of any enhancement plans, where necessary;
- Produce a refined biodiversity enhancement plan, post consent, which will be tailored following consultation with the relevant stakeholders and partners (delivering no less overall benefit than is envisaged in this outline plan); and
- Working with the local community.

## 1.3 Policy Overview

### 1.3.1 National Planning Framework 4

The National Planning Framework 4 (NPF4) (adopted February 2023) has a key focus on Scotland's national assets, particularly the environment which is covered under Policy 3 and 4 (Biodiversity and Natural Places). These policies are part of a strategy to support, plan and deliver Sustainable Places through restoration and enhancement opportunities to protect and strengthen the local biodiversity. It should be noted that Policy 4 (Natural Places), *'To protect, restore and enhance natural assets making the best use of nature-based solutions.'* is covered within the Onshore EIA Report due to be submitted to The Highland Council (THC) in October 2023.

Policy 3 – Biodiversity – *'To protect biodiversity, reverse biodiversity loss, deliver positive effects from development and strengthen nature networks.'*

- Demonstrate conservation, restoration and enhancement of biodiversity including but not limited to nature networks, which will include future management (this will be defined post consent);
- There should be an understanding of the current existing ecological characteristics (local to national level) particularly areas where there are irreplaceable habitats;
- The integration of nature-based solutions should be used, where possible, and made use of in the best practicable way;
- Prior to any enhancement works an assessment should be conducted of potential negative effects that may occur and identifying ways in which these should be fully mitigated;
- The biodiversity enhancements should consider and include nature connectivity and networks not just within but beyond the development and *'secured within a reasonable timescale with reasonable certainty'* (this will be defined post consent); and

- As part of any enhancement opportunities, community benefit should also be considered and incorporated.

### 1.3.2 Local Development Plans

The onshore Project falls under two local development plans (LDPs); the Highland-wide Local Development Plan (HwLDP) and the Caithness and Sutherland Local Development Plan (CaSPlan). Both LDPs take into consideration the importance of conserving and protecting the local biodiversity when developing and designing large infrastructure projects.

Chapter two of CaSPlan takes into consideration the conservation, protection and enhancement of nature, green networks and green spaces (THC, 2018).

There are four HwLDP policies that focus on the local biodiversity; Policy 51, Policy 58, Policy 59 and Policy 60 (THC, 2012). These are outlined below:

- Policy 51: Trees and Development - The policy promotes developments which provide significant protection to existing hedges, trees and woodlands areas;
- Policy 58 – Protected Species - The policy states that where protected species are present the council will require surveys to be carried out to establish presence and if necessary, mitigation will need to be implemented to avoid or minimise impacts on species;
- Policy 59 – Other Important Species - The policy states that species listed under the Habitats Directive, UK and LBAPs and the SBL will need to be considered in terms of adverse effects from proposals; and
- Policy 60 – Other Important Habitats and Article 10 Features - The policy states that the council will seek safeguarding of integrity features of the landscape which are of major importance because of their linear or continuous structures or combination as habitat 'stepping stones' for the movement of wild fauna and flora. This policy also seeks to protect those habitats which are protected under legislation or conservation plans.



## 2. Habitat Loss

### 2.1 Methodology

For the purposes of this outline plan and due to the early design stages of the Project, habitat loss has been calculated instead of biodiversity loss. This will be updated and modified accordingly as detailed design progresses. The habitats loss has been calculated on those areas of permanent infrastructure throughout the life cycle of the Project and does not include areas that will be temporarily disturbed during construction as such areas will be fully reinstated.

### 2.2 Results

Although the proposed Project covers a large area both offshore and onshore the total quantifiable loss of habitat / biodiversity is minimal.

The total long-term footprint from the offshore Project infrastructure is 7.34 km<sup>2</sup> (comprising 5.407 km<sup>2</sup> in the Option Agreement Area (OAA) and 1.93 km<sup>2</sup> in the offshore Export Cable Corridor (ECC)). Given the combined area of the OAA and ECC is approximately 782 km<sup>2</sup>, the long-term footprint is only 0.94% of the total offshore Project area. This impact area will be as a result of WTG and OSP installation, cable installation in the OAA and ECC, required scour and cable protection, cable crossings and moorings associated with construction.

The onshore Project area similarly represents a small area of permanent habitat loss as all cables will be underground with the habitat fully reinstated, therefore leaving the only permanent loss at the onshore substation, TJBs, Cable Joint Bays (CJBs) and permanent access tracks. There are seven proposed permanent access tracks totalling 5.08 km in length, however, approximately 23.53% (1.2 km) are existing tracks, 43.54% (2.21 km) are existing tracks that require improvements and 32.93% (1.67 km) will be newly installed tracks. Therefore, the approximate area of habitat which will be lost by each is outlined below in Table 2-1.

**Table 2-1 Table detailing total permanent loss of habitat in the onshore Project area**

Onshore Project Infrastructure	Area m <sup>2</sup>
Onshore substation	239,200 m <sup>2</sup>
TJBs	30 m long x 6 m wide per TJB (5) = 900 m <sup>2</sup>
CJBs	30 m long x 3 m wide per CJB (288) = 25,920 m <sup>2</sup>
Permanent access tracks	1,670 m long x 5 m wide = 8,350 m <sup>2</sup>
<b>Total area of permanent loss m<sup>2</sup></b>	<b>266,028.35 m<sup>2</sup> (26.6 hectares (ha))</b>

The onshore Project area is approximately 33,200,000 m<sup>2</sup> of which 266,020 m<sup>2</sup> (26.6 ha) of habitat will permanently be lost for the duration of the operational life of the Project, this equates to approximately 0.8% of habitat loss across the total onshore

Project area. Although this is a small percentage the Project is looking to accommodate this loss of habitat and subsequently biodiversity through enhancement of other areas within the onshore Project area.

# 3. Biodiversity Enhancement Proposals

## 3.1 Introduction

The West of Orkney Windfarm Project is proposing, in addition to already existing mitigation, four biodiversity enhancement projects, three onshore proposals (Section 3.2) and an offshore proposal (Section 3.3). The West of Orkney Windfarm Project is committed to enhancing the local biodiversity wherever possible. These proposals will be consulted on with the relevant stakeholders and subsequently tailored to produce a detail plan, post consent, that will fulfil current policy, community benefit and the Project’s ambition to protect and conserve the natural environment.

## 3.2 Onshore Enhancement Proposals

The three onshore enhancement proposals focus on three difference areas of ecology; freshwater (Atlantic salmon *Salmo salar*, non-avian (Great yellow bumblebee *Bombus distinguendus*) and ornithology (farmland breeding birds). The three enhancement proposals are discussed below and summarised in Table 3-1, Table 3-2 and Table 3-3.

The first onshore enhancement proposal is focussing on freshwater ecological receptors, particularly Atlantic salmon which is a designating feature of the River Thurso Special Area of Conservation (SAC) and on the Scottish Biodiversity List (SBL). The River Thurso runs across a portion of the onshore Project area and is a prime location for Atlantic salmon fishing. Similarly, the Forss Water flows through a large portion of the northern part of the onshore Project area and is currently in poor health. For further details on freshwater ecology see chapter 9: Freshwater ecology of the Onshore EIA Report. The Project therefore proposes to contribute to planting of trees along the Forss Water and River Thurso to provide shade for freshwater ecological receptors, proposal details are summarised in Table 3-1.

**Table 3-1 Proposed tree planting along the Forss Water and River Thurso**

Enhancement Proposal	Stakeholders that will require engagement
Tree planting along the Forss Water and River Thurso banks.	<ul style="list-style-type: none"> <li>• The Highland Council</li> <li>• NatureScot</li> <li>• Caithness District Salmon Fisheries Board</li> <li>• SEPA</li> <li>• Landowners</li> <li>• Forestry Scotland</li> </ul>
Objective	
To provide areas of shade along the two watercourses (Forss Water and River Thurso) for freshwater ecology species (e.g. Atlantic salmon).	
Existing Characteristics	

At present the River Thurso and Forss Water has minimal areas of shelter for freshwater ecological species (in particular Atlantic salmon). The Forss Water, in particular, is in poor health and with increasing temperatures there are few areas for freshwater species to shelter, this in combination with the current poor health (due to *Saprolegnia Parasitica*) of the river is impacting on the current population of Atlantic salmon. Jackson et al (2018) also shows that climate predictions for both watercourses indicate the highest temperature increases in rivers across Scotland.

**Nature Based Solutions**

The West of Orkney Windfarm would provide approximately 5,000 saplings to those organisations that manage the Forss Water and River Thurso to be planted in various pockets along both water courses which will in time provide natural shade for those freshwater ecological features found in the watercourses.

**Adaptive Management Plan**

This will be developed post consent. The adaptive management plan will be a live plan that will apply information learned prior to and throughout the enhancement proposal to subsequently refine it.

**Community Benefits**

Potential to bring organisations and individuals within the community together to plant saplings across the area to benefit those communities that use the two watercourses for recreational purposes.

Great yellow bumblebee is a nationally scarce species and are listed on the SBL. They are now restricted to coastal areas of Orkney, Western Isles and Caithness and Sutherland. The species has declined by 80% over the last century and is primarily due to loss of flower-rich meadow habitats (Bumblebee Conservation Trust, 2021). For further details on great yellow bumblebee see chapter 10: Non-avian ecology, Onshore EIA Report. The Project therefore proposes to create more wildflower meadows with key flower species for great yellow bumblebees, proposal details are summarised in Table 3-2.

**Table 3-2 Proposed enhancement for great yellow bumblebee**

Enhancement Proposal	Stakeholders that will require engagement
Wildflower meadow planting for great yellow bumblebee at the onshore substation.	<ul style="list-style-type: none"> <li>• The Highland Council</li> <li>• NatureScot</li> <li>• The Royal Society for the Protection of Birds (RSPB)</li> </ul>
<b>Objective</b>	
To create wildflower meadows to increase areas of important pollen habitats for great yellow bumblebees.	
<b>Existing Characteristics</b>	
The onshore Project area is primarily of arable / agricultural land however, there is presence of bird's foot trefoil and kidney vetch in patches throughout the onshore Project area. Habitats for hibernation were noted within the field margins and tussocky grassland across the onshore Project.	
<b>Nature Based Solutions</b>	

As part of the landscape and planting mitigation for the proposed onshore substation there will be planting of approximately 30,000 m <sup>2</sup> (3 ha) of native wildflower meadows. In particular, vetch species will be planted as this is considered to be an important species for great yellow bumblebee. This will be in place for the lifetime of the Project (30 years).
<b>Adaptive Management Plan</b>
This will be developed post consent. The adaptive management plan will be a live plan that will apply information learned prior to and throughout the enhancement proposal to subsequently refine it.
<b>Community Benefits</b>
Planting approximately 3 ha of wildflowers around the substation will provide a wild space of recreation and aesthetic value to the local community that lives in and around the area.

The onshore Project area predominantly consists of arable / agricultural land that is of particular interest to farmland breeding birds, this is clear from the breeding bird surveys conducted for the Project onshore EIA (chapter 11: Terrestrial ornithology, Onshore EIA Report). Farmland breeding birds have been suffering decline over the last few decades, predominantly due to intensive farming. The Project therefore proposes to partner with RSPB (Caithness wetlands and waders initiative) to manage important habitats for farmland breeding birds, proposal details are summarised in Table 3-3.

**Table 3-3 Proposed partnership with RSPB for habitat management of farmland breeding birds**

Enhancement Proposal	Stakeholders that will require engagement
Partnership with the RSPB for management of farmland breeding bird habitats	<ul style="list-style-type: none"> <li>RSPB</li> </ul>
<b>Objective</b>	
To conserve and manage habitats to the benefit of farmland breeding birds within the onshore Project area.	
<b>Existing Characteristics</b>	
A significant portion of the onshore Project area is of suitable habitat for farmland breeding birds (arable / agricultural land) and breeding across the onshore Project area has been recorded. The Caithness area is showing declines in curlew, lapwing and redshank while oystercatcher, snipe and ringed plover are appearing to be relatively stable. It should be noted, however, that woodcock is uncommon in the area.	
<b>Nature Based Solutions</b>	
Management of important habitats, through partnership with RSPB, will consist of collaborating with farmers and landowners / managers and their grazing practices. The Caithness wetlands and waders initiative is to <i>‘provide the best possible habitat for these species’</i> for waders, twite and great yellow bumblebee (great yellow bumblebee is covered in the enhancement proposal in Table 3-2).	
<b>Adaptive Management Plan</b>	
This will be developed post consent. The adaptive management plan will be a live plan that will apply information learned prior to and throughout the enhancement proposal to subsequently refine it.	

#### Community Benefits

Engagement and contribution with the local RSPB wardens and their volunteers to manage the important habitats for farmland wading birds across Caithness. This includes helping to achieve the five objectives for this initiative, which focuses on high-quality habitat, collaboration to deliver high-quality habitat, land management, equipment, and knowledge to deliver and raising awareness.

### 3.3 Offshore enhancement proposals

The offshore enhancement proposal focuses on offshore and intertidal ornithology (storm petrel *Hydrobates pelagicus*) (Table 3-4).

Storm petrel are an offshore bird pelagic in nature, they only come onto land during the summer months for breeding (see chapter 13: Offshore and intertidal ornithology of the Offshore EIA Report for further details). They are currently listed as Amber on the UK Birds of Conservation Concern. To help better understand the breeding of storm petrel nesting boxes with cameras would be installed. The Project therefore proposes to install nesting boxes for storm petrel on Sule Skerry and Sule Stack, proposal details are summarised in Table 3-4. An example of the types of storm petrel nesting boxes on the island of Skokholm are shown in Figure 3-1 (British Birds, 2020).





Figure 3-1 Storm petrel nesting boxes on the island of Skokholm (British Birds, 2020)

**Table 3-4 Proposed installation of nesting boxes for storm petrel**

Enhancement Proposal	Stakeholders that will require engagement
Installation of storm petrel nesting boxes at Sule Skerry and Sule Stack	<ul style="list-style-type: none"> <li>• Orkney Islands Council (OIC)</li> <li>• Northern Lighthouse Board</li> <li>• RSPB</li> <li>• NatureScot</li> <li>• Orkney Ringing Group</li> </ul>
<b>Objective</b>	
To provide areas of nesting for storm petrel on Sule Skerry and Sule Stack and provide research through nesting box cameras for the breeding periods for storm petrel.	
<b>Existing Characteristics</b>	
During offshore and intertidal ornithological surveys, storm petrel were recorded during August and September but not during the non-breeding season. They are known to breed in Orkney, Shetland and the Western Isles.	
<b>Nature Based Solutions</b>	
To better understand storm petrel breeding and provide more nesting spaces, installation of approximately 100 nesting boxes that represent their natural nesting spaces of crevices in rock spaces on Sule Skerry and Sule Stack is proposed. This will in place for the lifetime of the Project (30 years) and will be maintained in conjunction with the Orkney Ringing Group and RSPB	
<b>Adaptive Management Plan</b>	
This will be developed post consent. The adaptive management plan will be a live plan that will apply information learned prior to and throughout the enhancement proposal to subsequently refine it.	
<b>Community Benefits</b>	
The proposed installation of storm petrel nesting boxes will invite collaboration with local groups such as the Orkney Ringing Group throughout the lifecycle of the Project.	

## 4. Conclusion

The West of Orkney Windfarm proposes up to 125 offshore WTGs to connect into a substation at Spittal, Caithness. A relatively small area of seabed habitat 7.34 km<sup>2</sup> of the offshore area and approximately 266,028.35 m<sup>2</sup> (26.6 ha) for onshore, is likely to be permanently lost as a result of the Project. This overall loss is minimal in the context of the wider area within which the offshore and onshore infrastructure is located. However, the West of Orkney Windfarm has an ambition to not only conserve local biodiversity but to also enhance it, where possible. Subsequently, the Project is proposing four enhancement opportunities additional to the mitigation measures already embedded into the Project and document in the Offshore and Onshore EIA Reports. These will require engagement with the relevant stakeholders and subject to necessary consents being obtained (as outlined in Table 3-1 to Table 3-4). The biodiversity enhancement proposals consist of:

- Planting of trees along the River Thurso and Forss Water;
- Planting of wildflower meadows around the substation bunding for great yellow bumblebee;
- Collaboration with RSPB on management of habitats for farmland wading birds; and
- Installation of storm petrel nesting boxes on Sule Skerry and Sule Stack.

Following consent of the West of Orkney Windfarm this outline Biodiversity Enhancement Plan will be further developed, through consultation, with stakeholders and the community to finalise this Biodiversity Enhancement Plan.

## 5. References

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## 6. Abbreviations

Abbreviation	Description
CaSPlan	Caithness and Sutherland Local Development Plan
CES	Crown Estate Scotland
CJB	Cable Joint Bay
ECC	Export Cable Corridor
Ha	hectares
HDD	Horizontal Directional Drilling
HwLDP	Highland-wide Local Development Plan
km	Kilometres
km <sup>2</sup>	Kilometres squared
LDP	Local Development Plan
m <sup>2</sup>	Metres squared
MD-LOT	Marine Directorate Licencing Operations Team
NPF4	National Planning Framework 4
OAA	Option Agreement Area
OIC	Orkney Islands Council
OLA	Option to Lease Agreement
OSP	Offshore Substation Platform
OWPL	Offshore Wind Power Limited
PO	Plan Option
RSPB	The Royal Society for the Protection of Birds
RIDG	Renewable Infrastructure Development Group
SAC	Special Area of Conservation
SBL	Scottish Biodiversity List
SFF	Scottish Fisherman's Federation
SWFPA	Scottish White Fish Producers Association
THC	The Highland Council
TJB	Transition Joint Bay

UK	United Kingdom
WTG	Wind Turbine Generator



