

Orkney's Community Wind Farm Project - Faray

Marine Licence Application – Construction Operations

Outline Method Statement

Introduction

Construction of the new extended slipway and landing jetty is currently planned to commence on 1 April 2025, at the earliest, and scheduled to be completed by 30 April 2026, at the latest. Construction works will be dependent on an offtake mechanism for the electricity generated, likely to require a new transmission connection to Orkney from mainland Scotland. The actual construction date may, therefore, be determined by factors out with the control of the Applicant and, as such, it is not possible to confirm the construction date with certainty. Thus, the dates provided are indicative with further details provided following consent, upon appointment of installation contractor(s).

The construction works will be within the Faray and Holm of Faray Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) (see Figure 1). The site is designated for grey seals, supporting the second largest grey seal breeding colony in the UK. As detailed in the EIA Report, there is a project wide commitment for no construction to take place between 15 September to 31 December to avoid the grey seal breeding season. Thus, all construction works associated with the new extended slipway and landing jetty will be out with this period. In addition, sheet piling will take place no later than 15 August. This will ensure piling is out with the breeding season and for a month prior where seals are expected to be returning to the island for breeding purposes.

The below method statement is based on project information available at the time of writing, further details will be provided following consent, upon appointment of installation contractor(s). The location of the proposed infrastructure and required dredging areas are shown in Figures 1 and 2, respectively, which accompany this marine licence application.

Slipway construction

The new extended slipway will be constructed within the same location as the current slipway and will measure up to 36 m long by 8 m wide. The slipway has been designed to accommodate standard local vessels up to the size of the MV Thorsvoe (35 m by 10 m, 385 gross tonnage, Marine Traffic, 2021). The exact vessels will not be known until post-consent when a construction contractor(s) is selected. Thus, the dimensions provided are the maximum size of the structure based on the largest vessel it could support.

Existing concrete slabs will be demolished/removed and any unsuitable fill material underneath the concrete removed, from an excavator using the existing slipway as a means of access. Once unsuitable material has been removed, mass pre-cast concrete stepped retaining walls to form the sides of the slipway will be installed. The area between these walls will then be infilled with Class 1B and Class 1A fill, via an excavator using the existing ramp/slope to provide access to build up to slab formation level. Once this is complete pre-cast and in situ (onsite batched) reinforced concrete slabs will be installed.

Maximum material estimates for the slipway are provided in Table 2. This is based on provisional information available at the time of writing, further details will be provided following consent, upon appointment of installation contractor(s).

Landing Jetty construction

Overview

The new landing jetty will be constructed to the north of the slipway. It will comprise a causeway measuring a maximum of 55 m long by 10 m wide, terminating in a square docking structure measuring a maximum 20 m by 20 m. As per the slipway, the landing jetty has been designed to accommodate the maximum abnormal load vessel that could be used for the site, the MV Meri (105.4 m by 18.8 m, 3,360 gross tonnage – Marine Traffic, 2021). The exact vessels will not be known until post-consent when a construction contractor(s) is selected. Thus, the dimensions provided are the maximum size of the structure based on the largest vessel it could support.

The causeway will be in-filled and capped-off with concrete batched onsite. The berthing end of the jetty will be formed from sheet piles. Sheet piling will commence on 1 May 2025, at the earliest, and last up to 21 days. All piling works will be completed by 15 August 2025, at the latest, to avoid the seal breeding season (15 September to 31 December) and the month leading up to it.

Landing fill materials will then be delivered to site on 1 June 2025, at the earliest, to 15 September 2025. There will then be a pause in construction to allow for the seal breeding season (from 15 September to 31 December inclusive). Construction will then recommence on 1 March 2026, including shipping the landing jetty concrete materials to Faray, and is scheduled to be completed by 30 April 2026.

Maximum material estimates are provided in Table 3, again this is based on provisional information available at the time of writing, further details will be provided following consent, upon appointment of installation contractor(s).

Piling Operations

As outlined in Chapter 16 of the EIA Report, all piling operations will be in line with JNCC's (2010) piling protocol.

In line with the piling protocol, a 500m mitigation zone will be established during the piling operations to construct the docking structure to minimise the risk of injury to marine mammals from piling noise.

A pre-piling search of at least 30 minutes will be undertaken by a suitably qualified Marine Mammal Observer (MMO). If marine mammals are sighted within the respective mitigation zones, then the start of piling operations will be delayed until 20 minutes after the last sighting of the marine mammal or the MMO is satisfied the marine mammal has left the appropriate mitigation zone.

The MMO will have the authority to stop the piling works and a direct line of communication shall be maintained between the MMO and the Piling Foreman during all pre-piling searches.

It is anticipated that piles will be driven into the seabed via a hydraulic impact hammer with a 2 or 2.5 tonne drop weight.

The positioning of the pile gating equipment and barge will be undertaken first and be set up with piling operations in daylight hours. Piling operations will not commence in the hours of darkness, during times of fog/mist or when weather/sea conditions prohibit the MMO's pre-piling search.

The piles (PU 28) along with special corner piles and beams will be installed utilising a 100 tonne crawler crane or similar, positioned on a floating barge 25 metres x 12 metres with a suitable system for pile gates or utilising the causeway for access.

Piles will require to be driven approximately 1.5m – 2.0m into the rock by the impact pile hammer. As per the piling protocol, a soft start procedure shall be adopted whereby the power output of the pile hammer is gradually increased over a minimum of 20 minutes. If the MMO detects a marine mammal within the mitigation zone during the soft-start period then, wherever possible, the piling will cease or, where this is not possible, the power will not be increased until the marine mammal exits the mitigation zone and there is no further marine mammal detection for 20 minutes. When piling at full power, there is no requirement to cease piling or reduce the power if a marine mammal is detected in the mitigation zone as it is deemed to have entered "voluntarily". The piling protocol does recognise that it may not be technically possible to stop piling at full power until the pile is in position.

If there is a pause in the piling operations for a period of greater than 10 minutes, then the pre-piling search and soft-start procedure will be repeated before piling recommences. However, if a watch has been kept during the piling operation, the MMO should be able to confirm the presence or absence of marine mammals, and it should be possible to commence the soft-start immediately. If there has been no watch, the complete pre-piling search and soft-start procedure will be undertaken.

Once the sheet piles of the docking structure have been driven in, tie rods and wailings will be installed and the 20x20m box infilled from the causeway before being capped off with reinforced a concrete deck slab using concrete batched onsite.

Dredging and Seabed Footprint

Dredging will be required for both structures, as shown in Figure 2 which accompanies this marine licence application. A separate dredging application will be submitted with an accompanying method statement.

To summarise, a total of up to 3,000 m³ will be dredged. Four seabed sediment samples were obtained with the following densities recorded - 1.418 g/cm³, 1.203 g/cm³, 1.180 g/cm³, and 1.360 g/cm³. Based on the average density of 1.290 g/cm³, 3,000 m³ is estimated to equate to 3,870 tonnes.

Dredging will occur in two areas, details provided below:

- **Dredge Area A:** Up to 600 m³ (774 tonnes) will be dredged (maximum of 1 m depth) to allow for construction of the new extended slipway.
- **Dredge Area B:** Up to 2,400m³ (3,096 tonnes) will be dredged (maximum of 1 m depth) to allow for construction of the new landing jetty. This includes channel dredging to allow for abnormal load vessel access.

Dredging would be of overlaying sediment only, no blasting of underlying rock is planned for the Proposed Development. A summary of the area of seabed disturbance as a result of the proposed infrastructure and dredging activities is provided in Table 1 with dredging areas illustrated in Figure 2.

Table 1– Seabed disturbance

Structure	Structure footprint	Dredging area
New extended slipway	Maximum 36 m long and 8 m wide (288 m ²). The existing slipway is 20 m by 3.5 m, resulting in an additional 218 m ² of seabed disturbance	Up to 600 m ³ of sediment would be dredged at the end of slipway to a maximum of 1 m depth Resulting in up to 600 m ² of seabed disturbance
Landing jetty	Causeway measuring a maximum of 55 m long by 10 m wide, terminating in a square docking structure measuring a maximum 20 m by 20 m. Resulting in up to 950 m ² of seabed disturbance	Approximately 2,400m ³ of sediment would be dredged to a maximum of 1m depth, equating to up to 2,400m ² of seabed. This includes dredging within the footprint of the landing jetty. Thus, dredging would result in up to an additional 1,450m ² of seabed disturbance
Total	Up to 1,168 m²	Up to 2,050 m²

A backhoe and hopper barge operation is the assumed dredging methodology. As detailed in the accompanying dredging marine licence application, the preference for the dredged material is disposal at sea at a designated disposal site. As shown on Marine Scotland’s National Marine Plan interactive (NMPi) map (Marine Scotland, 2021), there are four operational at sea dredge disposal sites in Orkney, with Stromness A the closest to, and preference for, the Proposed Development.

Due to the distance from the dredging site to the disposal site, the backhoe dredger will operate most efficiently if two hopper barges are provided to the works, or the backhoe operates daytime only operation with disposal occurring by the hopper barge at the end of the shift.

The estimated backhoe dredger production rate was modelled as 3,400 m³/week which means that the work would be carried out in under a week. This is expected to produce spillage of soil (i.e. of all sediment fractions) at a rate of 0.6 kg/s. If boulders are found, this release rate can be expected to be even smaller due to natural cementation of material.

The rate of release of fine sediment (silt/clay) particles is 0.4% of 0.6 kg/s, however this produces the almost negligible figure of approximately 0.002 kg/s.

Further details on dredging and disposal are provided in Chapters 17 and 18 of the EIA Report and the dredging marine licence application.

References

Joint Nature Conservation Committee (2010). *Statutory Nature Conservation Agency Protocol for Minimising the Risk of Injury to Marine Mammals from Piling Noise. Report by Joint Nature Conservation Committee (JNCC)*. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/50006/jncc-protocol.pdf

Marine Scotland (2021). National Marine Plan interactive (NMPi). Available at: <https://marinescotland.atkinsgeospatial.com/nmpi/>

Marine Traffic (2021). Vessel Database. Available at: https://www.marinetraffic.com/en/data/?asset_type=vessels&columns=flag,shipname,photo,recognized_next_port,reported_eta,reported_destination,current_port,imo,ship_type,show_on_live_map,time_of_latest_position,lat_of_latest_position,lon_of_latest_position,notes

Table 2 – Slipway Permanent Deposits

Type of Deposit/Removal	Deposits		Removals	
	Description	Quantity & Dimensions (metric)	Description	Quantity & Dimensions (metric)
Steel/Iron	Rebar and dowels	No.	N/A	No.
		Dimensions		Dimensions
		0.5 tonnes Weight (kg/tonnes)		Weight (kg/tonnes)
Timber	N/A	No.	N/A	No.
		Dimensions		Dimensions
		Weight (kg/tonnes)		Weight (kg/tonnes)
Concrete	Reinforced concrete slab for slipway	No.	N/A	No.
		50m ³ Dimensions		
		Weight (kg/tonnes)		
	Mass concrete slipway walls	No.		Dimensions
		50m ³ Dimensions		Weight (kg/tonnes)
		Weight (kg/tonnes)		
Plastic/Synthetic	N/A	No.	N/A	No.
		Dimensions		Dimensions
		Weight (kg/tonnes)		Weight (kg/tonnes)
Clay (<0.004 mm)	N/A	No.	N/A	No.
		Dimensions		Dimensions
		Weight (kg/tonnes)		Weight (kg/tonnes)
Silt (0.004 ≤ Silt < 0.063 mm)	N/A	No.	N/A	No.
		Dimensions		Dimensions
		Weight (kg/tonnes)		Weight (kg/tonnes)
Sand (0.063 ≤ Sand < 2.0 mm)	N/A	No.	Dredging (see separate dredging application)	No.
		Dimensions		600 m ³ Dimensions
		Weight (kg/tonnes)		774 Weight (kg/tonnes)
Gravel (2.00 ≤ Gravel < 64.0 mm)	N/A	No.	N/A	No.
		Dimensions		Dimensions
		Weight (kg/tonnes)		Weight (kg/tonnes)
Cobbles (64.0 ≤ Cobbles < 256.0 mm)	Class 1A and Class 1B granular infill to structures	No.	N/A	No.
		300 m ³ Dimensions		Dimensions
		Weight (kg/tonnes)		Weight (kg/tonnes)
Boulders (≥ 256.0 mm)	N/A		N/A	No.
				Dimensions
				Weight (kg/tonnes)
Pipe	N/A	No.	N/A	No.
		Dimensions		Dimensions
		Weight (kg/tonnes)		Weight (kg/tonnes)
Other (please describe below):				

Table 3 Landing Jetty Permanent Deposits

Type of Deposit/Removal	Deposits		Removals					
	Description	Quantity & Dimensions (metric)	Description	Quantity & Dimensions (metric)				
Steel/Iron	Sheet Piles	No.	N/A	No.				
		800m ² Dimensions		Dimensions				
		Weight (kg/tonnes)		Weight (kg/tonnes)				
	Tie Rods	No.		N/A	N/A			
		700m Dimensions						
	Wailings	No.				N/A	N/A	
		200m Dimensions						
		Weight (kg/tonnes)						
Timber	N/A	No.	N/A					No.
		Dimensions						Dimensions
		Weight (kg/tonnes)						Weight (kg/tonnes)
Concrete	N/A	No.	N/A	No.				
		Dimensions		Dimensions				
		Weight (kg/tonnes)		Weight (kg/tonnes)				
Plastic/Synthetic	N/A	No.	N/A	No.				
		Dimensions		Dimensions				
		Weight (kg/tonnes)		Weight (kg/tonnes)				
Clay (<0.004 mm)	N/A	No.	N/A	No.				
		Dimensions		Dimensions				
		Weight (kg/tonnes)		Weight (kg/tonnes)				
Silt ((0.004 ≤ Silt < 0.063 mm)	N/A	No.	N/A	No.				
		Dimensions		Dimensions				
		Weight (kg/tonnes)		Weight (kg/tonnes)				
Sand (0.063 ≤ Sand < 2.0 mm)	N/A	No.	Dredging of seabed (see separate dredging application)	No.				
		Dimensions		2,400 m ³ Dimensions				
		Weight (kg/tonnes)		3,096 tonnes Weight (kg/tonnes)				
Gravel (2.00 ≤ Gravel < 64.0 mm)	N/A	No.	N/A	No.				
		Dimensions		Dimensions				
		Weight (kg/tonnes)		Weight (kg/tonnes)				
Cobbles (64.0 ≤ Cobbles < 256.0 mm)	Class 1A and Class 1B granular infill to structures	No.	N/A	No.				
		6250m ³ Dimensions		Dimensions				
		Weight (kg/tonnes)		Weight (kg/tonnes)				
Boulders (≥ 256.0 mm)	Rock Armour to causeway	No.	N/A	No.				
		2750 m ³ Dimensions		Dimensions				
		Weight (kg/tonnes)		Weight (kg/tonnes)				
Pipe	N/A	No.	N/A	No.				
		Dimensions		Dimensions				
		Weight (kg/tonnes)		Weight (kg/tonnes)				
Other (please describe below):								
Vessel Berthing	Rubber Marine Fenders	12 Nr						