

# Form No. 22 - Attachment 1: Description of Proposed Development

The proposed development is the Arklow Bank Wind Park 2 (ABWP2) Offshore Infrastructure (hereinafter referred to as the Proposed Development). The Proposed Development is an offshore wind farm, located off the coast of Co. Wicklow and Co. Wexford, on the east coast of Ireland. A Maritime Area Consent (MAC) (Ref 2022-MAC-002) was granted in December 2022 for the construction and operation of an offshore windfarm and associated infrastructure (including decommissioning and other works) on and around the Arklow Bank in the Irish Sea.

The site of the Proposed Development comprises an Array Area (the area within which the Wind Turbine Generators (WTGs), the Offshore Substation Platforms (OSPs), and associated cables (export, inter-array and interconnector cabling) and foundations will be installed) and a Cable Corridor and Working Area (the area within which export, inter-array and interconnector cabling will be installed). The overall Proposed Development site area is 139.4 km<sup>2</sup> and all of the Proposed Development will be seaward of the High Water Mark (HWM). The Array Area is located approximately 6 km to 15 km off the coast and covers an area of approximately 63.4 km<sup>2</sup>. The Cable Corridor and Working Area extends from the Array Area to the HWM at Johnstown North, north of Arklow Town, Co. Wicklow where the offshore export cables make landfall (the Landfall). The area of the Cable Corridor and Working Area is 76.0 km<sup>2</sup>.

The Proposed Development will comprise:

- I. One of two Project Design Options - Project Design Option 1 (which comprises Models 1a and 1b, one of which will be selected) or Project Design Option 2. Project Design Option 1 (Models 1a and 1b) comprises WTGs with the same rotor diameter, hub height and tip heights and with slight variations in chord width and revolutions per minute (RPM) between the two models. The Project Design Options comprise the following parameters:

| Parameters                                            | Project Design Option 1 |          | Project Design Option 2 |
|-------------------------------------------------------|-------------------------|----------|-------------------------|
| Number of WTGs                                        | 56                      |          | 47                      |
| Hub height (above Lowest Astronomical Tide (LAT)) (m) | 155                     |          | 162                     |
| Rotor diameter (m)                                    | 236                     |          | 250                     |
| Upper blade tip height (above LAT) (m)                | 273                     |          | 287                     |
| Lower blade tip height (above LAT) (m)                | 37                      |          | 37                      |
| Chord Width (m)                                       | Model 1a                | Model 1b | 6.9                     |
|                                                       | 5.4                     | 6.8      |                         |
| Average annual RPM                                    | 6.34                    | 5.73     | 6.19                    |

- II. The WTGs for both Project Design Options will comprise three blades and a horizontal axis rotor. The blades will be connected to the hub, forming a rotor which turns a shaft connected either directly to the generator ('direct drive') or to a gearbox, which are located within the nacelle. Each WTG will be installed on a steel monopile foundation with a diameter ranging from 7 m to 11 m.
- III. Two OSPs each comprising a topside structure with a main structure height of 53 m above LAT, an antennae height of 63 m above LAT, topside length of 46 m and topside width of 33.5 m, supported on a monopile foundation ranging from 7 m to 14 m in diameter. One OSP will be located in the north, and one will be located in the south of the Array Area. The OSP topside structure will contain switch gear, transformers, control equipment, auxiliary electrical equipment, cranes, batteries, generators, fire control systems, communication mast and other ancillary equipment.
- IV. The monopile foundations for the WTGs and OSPs will consist of a hollow steel tube installed into the seabed. WTG monopile foundations will be installed to a depth ranging from 20 m to 37 m below Lowest Seabed Level (LSBL), while OSP monopile foundations will be installed to a depth ranging from 20 m to 45 m below LSBL.
- V. A network of inter-array cabling between WTG and OSP locations with a length of between 110 km and 122 km.
- VI. Interconnector cabling between the two OSPs with a length of between 25 km and 28 km.
- VII. Two export cable circuits extending from the OSPs to the proposed Landfall at Johnstown North with a combined length of between 35 km and 40 km.
- VIII. Associated ancillary works comprising cable protection and scour protection. Cable protection will be installed to prevent movement and exposure of the cables over the lifetime of the Proposed Development where the cables cannot be buried to the required depth. Scour protection will be used to protect the monopile foundations from tide induced scour that may occur around the monopile foundation.
- IX. Ancillary components to be mounted on the monopile foundations including boat landings, J-tubes, platforms and davit cranes to support the construction, operation and decommissioning of the infrastructure described above.
- X. Confirmatory surveys comprising geotechnical, geophysical and environmental surveys.
- XI. Project Design Options 1 and 2 have defined WTG and OSP layouts with a 100 m limit of deviation applying to each location to allow avoidance of site constraints such as difficult ground conditions during construction.
- XII. At Landfall, the export cables will be installed using trenchless techniques between the HWM and the exit point of the trenchless technique. This involves installing the export cables along underground drilled pathways of length between 350 m and 880 m, without the need to excavate an open trench.
- XIII. This application is seeking a ten-year permission and 36.5 year operational life from the date of final commissioning of the Proposed Development.