Norfolk Boreas Offshore Wind Farm

Development Principles: Layout Design Rules

DCO Document 8.23

Applicant: Norfolk Boreas Limited
Document Reference: 8.23
Pursuant to APFP Regulation: 5(2)(q)

Date: June 2019
Revision: Version 1
Author: Womble Bond Dickinson

Photo: Ormonde Offshore Wind Farm

Development Principles: Layout Design Rules (Norfolk Boreas)

Noting the DCO still allows for final sign off any layout developed within these rules by the MMO in consultation with the MCA and TH (and as per MGN 543).

	Design Rule	Reason
1	A minimum spacing of 720m shall be maintained between the centre points of all structures	*To assist internal surface navigation*
2	SAR Access Lanes of 500m width shall be maintained in at least one direction within the array, with a safety justification to support, as per MGN 543, justification would set out reasoning why a single line of orientation is considered sufficient and safe for SAR surface and air navigation. In the case of wind turbines this distance is measured from the blade tips that are transverse to the SAR lane.	*To facilitate SAR asset access*
3	The position of Structures, so far as is practicable, shall be arranged in straight lines to a tolerance of +-100m either side of the centre line of an internal row for micro siting or wind energy capture; as rule 2, a safety justification will be provided) in an easily understandable pattern. Spacing between these straight lines is referred to as SAR Access Lanes.	*To facilitate SAR asset access and assist internal surface navigation; whilst accounting for micro siting, turbines foundation size and energy capture.*
4	As far as practicable, the position of all periphery structures around a windfarm area will be arranged in straight lines (to a tolerance of 50m either side of the centre line of the row) in an easily understandable pattern. Where routeing measures exist (e.g. the DWR), periphery structures must be aligned with it. There should be no outliers, or surface infrastructure isolated on the periphery. Should Norfolk Boreas be within 1nm (in line with design rule 6) and 3nm (based on maximum SPS spacing) of an existing offshore windfarm site (consented, constructed or layout agreed) then the peripheral turbine edge facing that site shall be reviewed with Trinity House and MCA to confirm required compliance with design rule 4 (peripheral alignment).	*To facilitate safe navigation for marine traffic navigating within routeing measures*
5	Where SAR Access Lanes are more than 10nm, a Helicopter Refuge Area perpendicular to the SAR Access Lanes shall be included within the layout design. The Helicopter Refuge Area shall be at least 1nm (tip to tip) in width and allow access across the array.	*To facilitate SAR asset access*
6	Where an array is proposed to border another array with different alignment and/or spacing a minimum spacing of 1nm (blade tip to blade tip) must be maintained between the two arrays.	*To facilitate SAR asset access and to assist internal surface navigation*