

Hornsea Offshore Wind Farm

Project Two

Multiphase Construction Schedule

**Appendix O to the Response submitted for Deadline I
Application Reference: EN010053**

15 July 2015

smartwind.co.uk

Appendix O: Multiphase Construction Schedule

The Applicant sets out below two indicative four phased construction programmes for the Project. These supplement the single phased construction programme found in Figure 3.42, Volume 1, Chapter 3: Project Description of the ES (Doc ref No 7.1.3) and paragraph 3.5.5 (as well as the and roman numbered points below it) of the same document.

The below Figures set out how a multi-phased construction programme may differ from a single phased construction programme. These programmes were used by the Applicant when defining the worst case scenarios for each parameter that underpinned the assessments within the ES.

Figure 1 shows an indicative four phased programme in which each phase completes work on a given activity before the next phase begins work on that activity (For example: Phase 1 “WTG Installation” completes before Phase 2 “WTG Installation” begins).

Figure 2 shows an indicative four phased programme in which there is some overlap of phases undertaking the same activities as each other at the same time. For example: Phase 2 “WTG Installation” overlaps with Phase 1 at the beginning and Phase 3 at the end.

Figure 1 - Four Phased Construction with Two Piling Vessels per Phase

Multiphase Continuous (2 Piling Vessels per Phase)													
Component	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6							
Onshore	Export Cable	Phase 1		Phase 2	Phase 3	Phase 4							
	Substation	Phase 1		Phase 2	Phase 3	Phase 4							
Inter-tidal	Ducting	Phase 1 (4 Ducts)	Phase 1 (4 Ducts)	Phase 1 (contingency)									
	Cable Installation	Phase 1 (2 Cables)		Phase 2 (2 Cables)	Phase 3 (2 Cables)	Phase 4 (2 Cables)							
Offshore	Export Cable	Phase 1		Phase 2	Phase 3	Phase 4							
	WTG Foundation - Piling	Phase 1		Phase 2	Phase 3	Phase 4							
	WTG Foundation - Jackets	Phase 1		Phase 2	Phase 3	Phase 4							
	Substations	Phase 1		Phase 2	Phase 3	Phase 4							
	Inter-Array Cables	Phase 1		Phase 2	Phase 3	Phase 4							
	WTG Installation	Phase 1		Phase 2	Phase 3	Phase 4							
	Commissioning	Phase 1		Phase 2	Phase 3	Phase 4							

Scenario Description:
One phase of construction straight after the other which is similar to a single phase however this would allow for different owners of each 450MW phase

Figure 2 - Four Phased Construction with One Piling Vessel per Phase

Multiphase Sequential (1 Piling Vessel per Phase)													
Component	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7						
Onshore	Export Cable	Phase 1		Phase 2	Phase 3	Phase 4							
	Substation	Phase 1		Phase 1 & Phase 2	Phase 3	Phase 4							
Inter-tidal	Ducting	Phase 1 (4 Ducts)	Phase 1 (4 Ducts)	Phase 1 (contingency)									
	Cable Installation	Phase 1 (2 Cables)		Phase 2 (2 Cables)	Phase 3 (2 Cables)	Phase 4 (2 Cables)							
Offshore	Export Cable	Phase 1		Phase 2	Phase 3	Phase 4							
	WTG Foundation - Piling	Phase 1		Phase 1 & Phase 2	Phase 2 & Phase 3	Phase 3 & Phase 4	Phase 4						
	WTG Foundation - Jackets	Phase 1		Phase 1 & Phase 2	Phase 2 & Phase 3	Phase 3 & Phase 4	Phase 4						
	Substations	Phase 1		Phase 2	Phase 3	Phase 4							
	Inter-Array Cables	Phase 1		Phase 1 & Phase 2	Phase 2 & Phase 3	Phase 3 & Phase 4	Phase 4						
	WTG Installation	Phase 1		Phase 1 & Phase 2	Phase 2 & Phase 3	Phase 3 & Phase 4	Phase 4						
	Commissioning	Phase 1		Phase 1 & Phase 2	Phase 2 & Phase 3	Phase 3 & Phase 4	Phase 4						

Scenario Description:
Where phases of construction are overlapping with each other. Likely scenario for HVAC option.