

# **Vattenfall Wind Power Ltd**

## **Thanet Extension Offshore Wind Farm**

Appendix 14 to Deadline 2 Submission: Review of the Environment Statement following the removal of the Option 2 landfall design

Relevant Examination Deadline: 2

Submitted by Vattenfall Wind Power Ltd

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Revision A

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## 1 Introduction

- 1 At Deadline 1 the Applicant submitted a note stating that the proposed landfall Option 2 and associated onshore cabling had been removed from the proposed project design envelope (PINS Ref REP1-014). It is noted that the design revision has been welcomed by all relevant stakeholders, including key statutory stakeholders Natural England (PINS Ref REP1-113), Environment Agency (PINS Ref REP1-092) and local authorities (PINS Ref REP1-096).
- 2 Within that document the Applicant committed to providing a number of deliverables, amongst which was the provision of a review of Environmental Statement chapters, giving consideration of the implications of removing landfall Option 2.
- 3 In compliance with the commitment the Applicant has undertaken an audit of the potential implications for the design change. This document has been drafted with a view to providing the Examining Authority and stakeholders with a clear audit trail of the implications of the design change.

### 1.1 Landfall Options

- 4 Whilst landfall Option 2 has been removed from the proposed project design envelope, there remains a need to retain some design optionality prior to the final design and installation methodology being confirmed. This refinement is subject to Site Investigation works, detailed design, and the need to ensure adequate management of the landfill material. As such the Applicant is pursuing consent for both the landfall Options 1 and 3. Full details of these design options are provided in Volume 3, Chapter 1: Project Description (Onshore) of the Environmental Statement (ES) (PINS Ref: APP-057/ Application Ref 6.3.1).
- 5 As noted within the onshore Project Description chapter (*ibid*) the use of a cofferdam was required for both Options 2 and 3 to ensure appropriate containment of contaminants within the landfill, and protection against tidal inundation. The dimensions for the cofferdam (165 m x 25 m) within the project envelope are the same under both Option 2 and 3 landfall designs. Therefore the worst case with regards this project parameter remains the same.

- 6 Under Option 2 all project infrastructure, including cables and transitional joint bays (TJBs), would be installed above ground within berms in the Pegwell Bay Country Park. Under Options 1 and 3 all project infrastructure would be buried below ground in the Pegwell Bay Country Park. The worst case with regards above ground infrastructure is therefore now removed from the design envelope. The worst case with regards works for Option 1 and 3 (such as excavation) remains the same.

## 1.2 Environmental Statement

- 7 The following sections present an appraisal of maximum design scenario assessed for the landfall design options assessed within each of the ES chapters. An initial screening process has been undertaken to identify which of the landfall Options considered within the ES formed the worst case, or where the landfall was not a material consideration within the assessment chapter. This is presented in Table 1.

**Table 1: Screening table for consideration within this clarification note**

Chapter	Screened in/out of consideration
Volume 2, Chapter 2: Marine Geology, Oceanography and Physical Processes	Screened in - landfall options assessed
Volume 2, Chapter 3: Marine Water and Sediment Quality	Screened in - landfall options assessed
Volume 2, Chapter 4: Offshore Ornithology	Screened out – landfall option not relevant (intertidal ornithological receptors considered within the onshore biodiversity chapter)
Volume 2, Chapter 5: Benthic Subtidal and Intertidal Ecology	Screened in - landfall options assessed
Volume 2, Chapter 6: Fish and Shellfish Ecology	Screened out – landfall option not relevant (supporting habitat for fish and shellfish assessed within the benthic chapter)
Volume 2, Chapter 7: Marine Mammals	Screened in - landfall options assessed
Volume 2, Chapter 8: Offshore Designated Sites	Screened in - landfall options assessed
Volume 2, Chapter 9: Commercial Fisheries	Screened out – landfall option not relevant (supporting habitat for fish and shellfish assessed within the benthic chapter)
Volume 2, Chapter 10: Shipping and Navigation	Screened out – landfall option not relevant
Volume 2, Chapter 11: Infrastructure and Other Users	Screened out – landfall option not relevant
Volume 2, Chapter 12: Seascape, Landscape Visual Impact Assessment (LVIA)	Screened out – landfall option not relevant (above ground infrastructure considered within the onshore LVIA chapter)
Volume 2, Chapter 13: Offshore Archaeology and Cultural Heritage	Screened in - landfall options assessed
Volume 3, Chapter 2: Landscape Visual Impact Assessment	Screened in - landfall options assessed

Chapter	Screened in/out of consideration
Volume 3, Chapter 3: Socioeconomics	Screened out – landfall option not relevant (coastal recreation considered within the tourism and recreation chapter)
Volume 3, Chapter 4: Tourism and Recreation	Screened in - landfall options assessed
Volume 3, Chapter 5: Onshore Biodiversity	Screened in - landfall options assessed
Volume 3, Chapter 6: Ground Conditions, Flood Risk and Land Use	Screened in - landfall options assessed
Volume 3, Chapter 7: Historic Environment	Screened in - landfall options assessed
Volume 3, Chapter 8: Traffic and Access	Screened out – landfall option not relevant (worst case represented by trenching volumes)
Volume 3, Chapter 9: Air Quality	Screened in - landfall options assessed
Volume 3, Chapter 10: Noise and Vibration	Screened in - landfall options assessed
Volume 3, Chapter 11: Aviation and Radar	Screened out – landfall option not relevant
Volume 3, Chapter 12 Public Health	Screened out – landfall option not relevant



## 2 Rochdale envelope

- 8 The Thanet Extension Environmental Impact Assessment (EIA), in line with the PINS Advice Note Nine: Rochdale Envelope, was based on identifying the 'worst-case' scenario, referred to throughout the EIA as the 'maximum design scenario', for the impact assessment for each topic area. This approach ensured that the scenario that would have the greatest impact (i.e. largest footprint, longest exposure, or tallest dimensions - depending on the topic) was assessed; it can then be assumed that any other (lesser) scenarios will have an impact that is no greater than that assessed.
- 9 The design information included in the project design envelope was based on the best available information and the parameters outlined in onshore and offshore Project Description chapters (Chapter 1 of Volumes 2 and 3 (PINS Refs APP-042 and APP-057/ Application Refs 6.2.1 and 6.3.1) are realistic yet conservative estimations of future design parameters. Therefore, each chapter assessed the 'realistic worst-case' scenario for each of the identified potential impacts.
- 10 The maximum adverse scenario for each topic and the assessment of potential impacts was derived from the options for each parameter/ methodology outlined in the onshore and offshore Project Description chapters (PINS Refs APP-042 and APP-057/ Application Refs 6.2.1 and 6.3.1) respectively). The use of existing data and site-specific survey enabled an adequate characterisation of the receiving environment to enable a robust assessment to be undertaken against a realistic worst-case 'Rochdale Envelope' approach to project design. Post-consent, further survey work will be required to inform the final detailed design pre-construction.

### 3 Review of the Environmental Statement

#### 3.1 Marine Geology, Oceanography and Physical Processes

11 The assessment in Volume 2, Chapter 2: Marine Geology, Oceanography and Physical Processes (PINS Ref APP-043/ Application Ref 6.2.2) considered all three of the landfall Options, each forming the worst case for different identified potential effects. The effects considered, with the relevant Option identified in Table 2.

**Table 2: Landfall options assessed in Marine Geology, Oceanography and Physical Processes assessment**

Impact (taken from the Rochdale Envelope table)	Landfall design assessed as worst case
Construction	
Impacts to designated coastal feature receptors (due to construction activities) - Trenching	Options 2 and 3
Impacts to designated coastal feature receptors (due to construction activities) - HDD	Option 1
Impacts to designated coastal feature receptors (due to construction activities) - Cofferdam	Options 2 and 3
Impacts to designated coastal feature receptors (due to construction activities) – re-aligned seawall	Option 2

12 With regards to the construction phase and associated temporary effects Options 2 and 3 were considered to both be the worst case in terms of the requirement for a cofferdam and trenching in the intertidal areas. Option 3 remains the worst case and has been appropriately and adequately assessed regardless of the removal of Option 2 from the design envelope.

- 13 With regards to operational and long term effects Option 2 formed the worst-case in the assessment of the realignment of the seawall and associated impacts on designated coastal features. Following the removal of this design option there will be no realignment of the seawall and therefore no effects are anticipated.
- 14 The removal of Option 2 will not result in any effects greater than those considered within the physical processes assessment and no further assessment is required.

### 3.2 Marine Water Quality and Sediment Quality

- 15 The assessment in Volume 2, Chapter 2: Marine Water Quality and Sediment Quality (PINS Ref APP-043/ Application Ref 6.2.2) considered two different of the landfall Options, each forming the worst case for different identified potential effects. The effects considered, with the relevant Option identified in Table 3.

**Table 3: Landfall options assessed in Marine Water Quality and Sediment Quality assessment**

Impact (taken from the Rochdale Envelope table)	Landfall design assessed as worst case
Construction	
Contamination from leachate from the historic landfill during construction	Option 3
Release of bentonite from HDD at the landfall during construction	Option 1

- 16 With regards to the construction phase and associated temporary effects Options 1 and 3 as the worst case scenarios for the identified effects (contamination from leachate and release of bentonite). Therefore, worst case scenarios have been appropriately and adequately assessed regardless of the removal of Option 2 from the design envelope.
- 17 No longer term, operational effects, were assessed with regards to the landfall design within this assessment.
- 18 The removal of Option 2 will not therefore alter the worst case considered within the assessment, and no further assessment is required.

### 3.3 Benthic Subtidal and Intertidal Ecology

19 The assessment in Volume 2, Chapter 5: Benthic Intertidal and Subtidal Ecology (PINS Ref APP-046/ Application Ref 6.2.5) considered two of the three the landfall Options, each forming the worst case for different identified potential effects. The effects considered, with the relevant Option identified in Table 4.

**Table 4: Landfall options assessed in Benthic Intertidal and Subtidal Ecology assessment**

Impact (taken from the Rochdale Envelope table)	Landfall design assessed as worst case
Construction	
Direct disturbance to the intertidal from cable installation operations, including in the saltmarsh	Options 2 and 3
O&M	
Permanent loss of saltmarsh habitat at landfall	Option 2

20 With regards to the temporary effect of disturbing the intertidal area , the assessment considered the use of a cofferdam and trenching through the intertidal habitats in terms of temporary habitat loss (both Options 2 and 3). Option 3 remains the worst case and has been appropriately and adequately assessed regardless of the removal of Option 2 from the design envelope.

21 The assessment considered the permanent loss of saltmarsh at the landfall, during the O&M phase of the project, under the Option 2 design scenario. By the removal of this option there will be no permanent loss of habitat and therefore no further assessment of this impact is required.

22 The removal of Option 2 will not result in any effects greater than those considered within the benthic subtidal and intertidal ecology assessment and no further assessment is required.

### 3.4 Marine Mammals

23 The assessment in Volume 2, Chapter 7: Marine Mammals (PINS Ref APP-048/ Application Ref 6.2.7) considered two of the three the landfall Options, each forming the worst case for different identified potential effects. The effects considered, with the relevant Option identified in Table 5.

**Table 5: Landfall options assessed in the Marine Mammals assessment**

Impact (taken from the Rochdale Envelope table)	Landfall design assessed as worst case
Construction	
Disturbance at seal haul-outs from cable landfall activities	Option2 and 3

24 With regards to the construction phase and the associated short term effects of the potential disturbance to the seal haul-outs; Options 2 and 3 were considered to both be the worst case in terms of the requirement for piling of the cofferdam. Therefore, the removal of Option 2 will not result in any effects greater than those considered within the marine mammals assessment and no further assessment is required.

### 3.5 Offshore Designated Sites

25 The assessment in Volume 2, Chapter 8: Offshore Designated Sites (PINS Ref APP-049/ Application Ref 6.2.8) considered two of the three the landfall Options, each forming the worst case for different identified potential effects. The effects considered, with the relevant Option identified in Table 6.

**Table 6: Landfall options assessed in the Offshore Designated Sites assessment**

Impact (taken from the Rochdale Envelope table)	Landfall design assessed as worst case
Construction	
Temporary loss/ disturbance of saltmarsh habitat from cable installations	Options 2 and 3
O&M	
Permanent loss of saltmarsh habitat from alterations to sea defences	Option 2

26 Similarly, to the benthic subtidal and intertidal ecology assessment (PINS Ref APP-046/ Application Ref 6.2.6) the offshore designated sites assessment considered the temporary loss of habitat in the intertidal area. As noted in section 3.3, Option 3 is the worst case, for both the use of a cofferdam and trenching in the intertidal, following the removal of Option 2 from the project design envelope. However, Option 3 will not result in greater effects than those considered within the assessment submitted with the Application; and so no further assessment is required.

- 27 As noted in section 3.3, there will be no permanent loss of habitat following the removal of Option 2 and therefore no further assessment of this impact is required.
- 28 The removal of Option 2 will not result in any effects greater than those considered within the offshore designated sites assessment and no further assessment is required.

### 3.6 Offshore Archaeology and Cultural

- 29 The assessment in Volume 2, Chapter 13: Offshore Archelogy and Cultural Heritage (PINS Ref APP-054/ Application Ref 6.2.13) considered all of the landfall Options, each forming the worst case for different identified potential effects. The effects considered, with the relevant Option identified in Table 7.

**Table 7: Landfall options assessed in the Offshore Archelogy and Cultural Heritage assessment**

Impact (taken from the Rochdale Envelope table)	Landfall design assessed as worst case
Construction	
Permanent physical loss/ disturbance of known and potential seabed receptors in shallow sediments from seabed preparation, construction activities.	Options 1, 2 and 3
Permanent physical loss/ disturbance of known and potential palaeogeographic receptors from construction activities where activities penetrate the seabed.	Options 2 and 3

- 30 The disturbance of intertidal deposits and paleogeographic receptors was considered within the assessment through the use of trenching and a cofferdam within the intertidal area. As noted in section 3.3, Option 3 is the worst case, for both the use of a cofferdam and trenching in the intertidal, following the removal of Option 2 from the project design envelope.
- 31 The removal of Option 2 will not result in any effects greater than those considered within the offshore archaeology and cultural heritage assessment and no further assessment is required.

### 3.7 Onshore Landscape and Visual Impact Assessment

32 The assessment in Volume 3, Chapter 1: Onshore Landscape and Visual Impact Assessment (PINS Ref APP-057/ Application Ref 6.3.1) considered all of the landfall Options, each forming the worst case for different identified potential effects. The effects considered, with the relevant Option identified in Table 8.

**Table 8: Landfall options assessed in the Onshore Landscape and Visual Impact assessment**

Visual and Landscape Impacts arising from the presence of the following infrastructure	Landfall design assessed as worst case
Construction	
Presence of a cofferdam	Options 2 & 3
Presence of HDD pits	Option 1
O&M	
The presence of the proposed above ground structures and extended rock armour within Pegwell Country Park	Option 2

33 The temporary effects, during construction, due to the use and presence of a cofferdam for both Options 2 and 3 landfall design options was assessed. Following the removal of Option 2 no effects greater than those assessed will occur.

34 The temporary effects, during construction, due to the presence of HDD pits in the intertidal has been assessed under Option 1 (as the only applicable option), which remains as the worst case scenario for this effect.

35 The longer term effects from the installation of infrastructure above ground in the Pegwell Bay Country Park and the associated seawall extension were assessed with Option 2 representing the worst case. Therefore, the removal of this option will result in reduced effects when compared with those considered within the assessment submitted with the Application. Following the removal of the Option 2 design there will be no infrastructure above ground in the Pegwell Bay Country Park and therefore no further assessment is required.

### 3.8 Tourism and Recreation

36 The assessment in Volume 3, Chapter 4: Tourism and Recreation (PINS Ref APP-060/ Application Ref 6.3.4) considered Option 2 as forming the worst case for different identified potential effects. The effects considered, with the relevant Option are identified in Table 9.

**Table 9: Landfall options assessed in the Tourism and Recreation assessment**

Impact (taken from the Rochdale Envelope table)	Landfall design assessed as worst case
Construction	
Bund construction severing footpaths	Option 2
O&M	
Presence of bunds obstructing access	Option 2

37 Option 2 was identified as the worst case for the temporary effects for severing footpaths in the Pegwell Bay Country Park. Following the removal of Option 2 the effect will be no greater than those assessed, noting that temporary path closures will still be required.

38 The longer term effects, of the bunds obstructing access, within the Pegwell Bay Country Park is only relevant to Option 2. Therefore, the removal of this option will result in reduced effects when compared with those considered within the assessment submitted with the Application.

39 The removal of Option 2 will not result in any effects greater than those considered within the tourism and recreation assessment and no further assessment is required.

### 3.9 Onshore Biodiversity

40 The assessment in Volume 3, Chapter 5: Onshore Biodiversity (PINS Ref APP-061/ Application Ref 6.3.5) considered Options 2 and 3 as forming the worst case for different identified potential effects. The effects considered, with the relevant Option are identified in Table 10.



**Table 10: Landfall options assessed in the Onshore Biodiversity assessment**

Impact (taken from the Rochdale Envelope table)	Landfall design assessed as worst case
Construction	
Temporary habitat loss/ disturbance (intertidal)	Options 2 and 3
Disturbance to faunal species (noise/ vibration, visual, lighting)	Options 2 and 3
Pollution (water environment)	Options 2 and 3
O&M	
Permanent habitat loss (intertidal)	Option 2
Temporary habitat loss/ disturbance (intertidal)	As noted in the assessment, Information regarding the likely extent of planned maintenance works is taken from Volume 3, Chapter 1: Project Description (Onshore) (PINS Ref APP-057/ Application Ref 6.3.1). The extent or nature of any unplanned corrective maintenance required can't be predicted at this stage and therefore the worst case landfall option for O&M activities was not defined.
Disturbance (noise/ vibration, visual, lighting) (intertidal)	
Pollution (water environment)	

- 41 The assessment considered the temporary effects of a cofferdam and trenching through the intertidal habitats in terms of temporary habitat loss and disturbance to faunal species; and accidental release of pollutants. The assessment identified Options 2 and 3 as the worst case and was assessed accordingly. Therefore, will not result in greater effects than those considered within the assessment submitted with the Application.
- 42 The assessment of O&M phase effects considered the permanent loss of saltmarsh at the landfall under the Option 2 design scenario. By the removal of this option there will be no permanent loss of habitat and therefore no further assessment of this impact is required.

- 43 The removal of Option 2 will not result in any effects greater than those considered within the onshore biodiversity assessment and no further assessment is required.

### 3.10 Ground Conditions, Flood Risk and Land Use

- 44 The assessment in Volume 3, Chapter 6: Ground Conditions, Flood Risk and Land Use (PINS Ref APP-062/ Application Ref 6.3.6) considered all three landfall options as forming the worst case for different identified potential effects. The effects considered, with the relevant Option are identified in Table 11.

**Table 11: Landfall options assessed in the Ground Conditions, Flood Risk and Land Use assessment**

Impact (taken from the Rochdale Envelope table)	Landfall design assessed as worst case
Construction	
Effects on human health during construction works through disturbance and mobilisation of existing, contaminated soil and/or groundwater, generation of dust and fibres, and the potential need to remove existing underground tanks and pipeline.	Options 1 and 3
Effects on human health and property during construction works due to existing sea wall removal/ breakthrough and escape of landfill gases.	Options 2 and 3
Pollution of controlled waters, WFD water bodies, designated conservation sites and off-site Grade 2 and Grade 3a soils from construction work through creation of pathways	Options 1 and 3
Pollution of controlled waters, WFD water bodies, designated conservation sites and off-site Grade 2 and Grade 3a soils during construction works through concrete batching and use of cement products, release of contaminants from backfilling and building materials, spillages of oils and chemicals	Option 2

Impact (taken from the Rochdale Envelope table)	Landfall design assessed as worst case
Pollution of controlled waters and designated conservation sites during construction works through existing sea wall amendment/ breakthrough and subsequent escape of landfill contaminants.	Options 2 and 3
Changes in the quantity of surface and groundwater abstractions, and flows to watercourses, WFD water bodies and designated conservation sites during construction works	Options 1, 2 and 3
Effects on surface waters during construction works through the proposed watercourse crossing and changes in flow volumes associated with the discharge of dewatered groundwater.	Options 1, 2 and 3
Increased risk of coastal flooding towards historic landfill due to temporary sea wall works.	Options 2 and 3
Volumetric displacement of flood water during construction works through the placement of temporary spoil mounds, construction compounds and hardstanding in flood plain areas.	Options 1, 2 and 3
O&M	
Effects on human health during maintenance works through disturbance of any residual contamination, spillages of oils and chemicals, and previous inappropriate reuse/ use of contaminated fills and soils.	Options 1 and 3
Effects on human health during maintenance works through ingress and accumulation of ground and landfill gas in buildings and facilities.	Option 1
Effects on property from location of infrastructure and maintenance works	Option 1

Impact (taken from the Rochdale Envelope table)	Landfall design assessed as worst case
through ground and landfill gas ingress and accumulation in buildings.	
Effect on property from location of infrastructure and maintenance works through previous inappropriate reuse/ use of contaminated fills and soils, aggressive ground conditions and settlement of infrastructure.	Options 1,2 and 3 Option 1 – settlement of soil
Pollution of controlled waters, WFD water bodies, designated conservation sites and off-site Grade 2 and Grade 3a soils during maintenance works through spillages of oils and chemicals, landfill leakage and previous inappropriate reuse/ use of contaminated fills and soils.	Options 1, 2 and 3

- 45 For each of the effects considered within the assessment the worst case landfill option is presented, for different effects different landfill options are considered the worst case, see Table 11.
- 46 For the temporary effects, Option 2 and 3 are considered to be the joint worst case for the effects associated with interactions with the seawall. Option 3 is the worst case following the removal of Option 2 from the project design envelope and will not result in greater effects than those considered within the assessment submitted with the Application.
- 47 Option 2 was considered the worst case for contamination from cement, due to the requirements of the above ground infrastructure, including the seawall extension. Therefore, the removal of Option 2 from the project design envelope and will not result in greater effects than those considered within the assessment submitted with the Application.
- 48 In terms of longer term effects, during the operational and maintenance phase the below ground options (Options 1 and 3) were assessed as the worst case with the exception of the re-use of contaminated materials which assessed all of the landfill options. Therefore, the worst case scenarios have been appropriately and adequately assessed regardless of the removal of Option 2 from the design envelope.

- 49 The removal of Option 2 will not result in any effects greater than those considered within the ground conditions, flood risk and land use assessment and no further assessment is required.

### 3.11 Onshore Historic Environment

- 50 The assessment in Volume 3, Chapter 7: Onshore Historic Environment (PINS Ref APP-063/ Application Ref 6.3.7) considered Option 2 as forming the worst case for different identified potential effects. The effects considered, with the relevant Option are identified in Table 12.

**Table 12: Landfall options assessed in the Tourism and Recreation assessment**

Impact (taken from the Rochdale Envelope table)	Landfall design assessed as worst case
Construction	
Disturbance or loss of heritage assets	Options 1, 2 and 3
O&M	
Visibility of operational offshore and onshore infrastructure (so as to cause loss of contribution of setting to significance of an asset)	Option 2

- 51 Disturbance to archaeological remains as a result of cable installation at the landfall was considered within the assessment, identifying each of the landfall as the worst cases for remains at either the near-surface (Options 2 and 3) or more deeply buried deposits (Option 1). Therefore, the worst case scenarios have been appropriately and adequately assessed regardless of the removal of Option 2 from the design envelope.
- 52 Longer term changes to the existing landscape character were considered with the presence of a berm under Option 2 assessed as the worst case. Therefore, the removal of Option 2 from the project design envelope and will not result in greater effects than those considered within the assessment submitted with the Application.
- 53 The removal of Option 2 will not result in any effects greater than those considered within the onshore archaeology and cultural heritage assessment and no further assessment is required.

### 3.12 Air Quality

54 The assessment in Volume 3, Chapter 9: Air Quality (PINS Ref APP-065/ Application Ref 6.3.4) considered Option 2 as forming the worst case for different identified potential effects. The effects considered, with the relevant Option are identified in Table 13.

**Table 13: Landfall options assessed in the Air Quality assessment**

Impact (taken from the Rochdale Envelope table)	Landfall design assessed as worst case
Construction	
Construction dust impacts – human receptors	Options 1, 2 and 3
Construction odour impacts	Options 3

55 The assessment identified that dust may be created from the construction, but the dust assessment methodology is not sensitive to the differences between the three landfall options, which are similar in terms of their dust-generating potential, so each of the three landfall options was considered in the dust assessment. The removal of Option 2 from the project design envelope and will not result in greater effects than those considered within the assessment submitted with the Application.

56 The assessment also considered the temporary impact of releasing odours from the historic landfall via trenching and exposure. Therefore, worst case scenarios have been appropriately and adequately assessed regardless of the removal of Option 2 from the design envelope.

57 Longer term effects of dust generation occurring throughout the O&M period of the development was scoped out of the assessment, as it was not considered to be material.

58 The removal of Option 2 will not result in any effects greater than those considered within the air quality assessment and no further assessment is required.

### 3.13 Noise and Vibration

59 The assessment in Volume 3, Chapter 10: Noise and Vibration (PINS Ref APP-0660/ Application Ref 6.3.10) considered Option 2 as forming the worst case for different identified potential effects. The effects considered, with the relevant Option are identified in Table 14.

**Table 14: Landfall options assessed in the Noise and Vibration assessment**

Impact (taken from the Rochdale Envelope table)	Landfall design assessed as worst case
Construction	
Temporary noise effects of construction at landfall	Options 2 and 3

60 As outlined in section 3.4, the noise parameters associated with the installation of a cofferdam at the landfall are the same for Options 2 and 3. Therefore, Option 3 is the worst case following the removal of Option 2 from the project design envelope and will not result in greater effects than those considered within the assessment submitted with the Application.

61 Longer term effects of noise occurring at the landfall during O&M period of the development was scoped out of the assessment, as it was not considered to be material.

62 The removal of Option 2 will not result in any effects greater than those considered within the noise and vibration assessment and no further assessment is required.

## 4 Conclusions

63 For each of the relevant assessments within the ES, the removal of Option 2 from the project design envelope and will not result in any additional or greater effects than those considered within the assessment submitted with the Application. Therefore, no further assessment is required following the removal of the design option from the project envelope.

64 A summary of this clarification note is provided in Table 15.

**Table 15: Summary of conclusions**

Chapter	Design refinement implication
Volume 2, Chapter 2: Marine Geology, Oceanography and Physical Processes	Section 3.1 confirms no implications for the EIA as a result of the design change.
Volume 2, Chapter 3: Marine Water and Sediment Quality	Section 3.2 confirms no implications for the EIA as a result of the design change.
Volume 2, Chapter 4: Offshore Ornithology	Screened out
Volume 2, Chapter 5: Benthic Subtidal and Intertidal Ecology	Section 3.3 confirms no implications for the EIA as a result of the design change.
Volume 2, Chapter 6: Fish and Shellfish Ecology	Screened out
Volume 2, Chapter 7: Marine Mammals	Section 3.4 confirms no implications for the EIA as a result of the design change.
Volume 2, Chapter 8: Offshore Designated Sites	Section 3.5 confirms no implications for the EIA as a result of the design change.
Volume 2, Chapter 9: Commercial Fisheries	Screened out
Volume 2, Chapter 10: Shipping and Navigation	Screened out
Volume 2, Chapter 11: Infrastructure and Other Users	Screened out
Volume 2, Chapter 12: Seascape, Landscape Visual Impact Assessment	Screened out
Volume 2, Chapter 13: Offshore Archaeology and Cultural Heritage	Section 3.6 confirms no implications for the EIA as a result of the design change.



Chapter	Design refinement implication
Volume 3, Chapter 2: Landscape Visual Impact Assessment	Section 3.7 confirms no implications for the EIA as a result of the design change.
Volume 3, Chapter 4: Tourism and Recreation	Section 3.8 confirms no implications for the EIA as a result of the design change.
Volume 3, Chapter 5: Onshore Biodiversity	Section 3.9 confirms no implications for the EIA as a result of the design change.
Volume 3, Chapter 6: Ground Conditions, Flood Risk and Land Use	Section 3.10 confirms no implications for the EIA as a result of the design change.
Volume 3, Chapter 7: Historic Environment	Section 3.11 confirms no implications for the EIA as a result of the design change.
Volume 3, Chapter 8: Traffic and Access	Screened out
Volume 3, Chapter 9: Air Quality	Section 3.12 confirms no implications for the EIA as a result of the design change.
Volume 3, Chapter 10: Noise and Vibration	Section 3.13 confirms no implications for the EIA as a result of the design change.
Volume 3, Chapter 11: Aviation and Radar	Screened out
Volume 3, Chapter 12 Public Health	Screened out

## 5 References

- Planning Inspectorate (PINS) (2018) 'Advice Note Nine: Rochdale Envelope.', <https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2013/05/Advice-note-9.-Rochdale-envelope-web.pdf> [Accessed: January 2019].