

Vattenfall Wind Power Ltd

Thanet Extension Offshore Wind Farm

Appendix 20 to Deadline 4 Submission: MCZ
Assessment Clarification Note

Relevant Examination Deadline: 4

Submitted by Vattenfall Wind Power Ltd

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Contents

1	Goodwin Sands pMCZ Clarification Note.....	5
1.1	Context and Background.....	5
1.2	Applicant Response.....	5
1.3	Revision for Deadline 4.....	6
1.4	Revised Goodwin Sands pMCZ Assessment.....	10
	Introduction.....	10
	Screening of Potential Effects and Habitats/Features.....	12
	Stage One Assessment.....	17
	Construction Phase – Temporary habitat loss/ disturbance due to cable installation activities.....	17
	Construction Phase – Temporary localised increases in SSC and associated sediment deposition.....	18
	O&M Phase – Long-term habitat loss/ change due to the presence of cable protection.....	20
	O&M Phase – Direct disturbance to the seabed from cable maintenance activities.....	21
	Decommissioning Phase.....	22
1.5	Potential cumulative impacts with maintenance dredging at Ramsgate Harbour...22	
1.6	Potential cumulative effects with aggregate dredging within the pMCZ for the Western Docks Revival project by Dover Harbour Board.....	23

Figures

Figure 1:	Locations of confirmed blue mussel beds and <i>Sabellaria spinulosa</i> reefs as identified by Cefas (2014) subtidal verification surveys.....	11
Figure 2:	Seabed habitats/ sediment types in the area of overlap between the pMCZ and the export cable corridor as identified by the Fugro (2016) site-specific survey for the Thanet Extension baseline characterisation.....	12
Figure 3:	Seabed habitats present in the area of overlap between the Goodwin Sands pMCZ and the export cable corridor as defined by the Cefas (2014) rMCZ subtidal verification survey.....	12
Figure 4:	Plan of the DHB dredging scheme and Thanet Extension in relation to the Goodwin Sands pMCZ.....	24

Tables

Table 1: Natural England’s comments on the MCZ Clarification Note submitted at Deadline 2 and how they have been addressed in this revised document.....6

Table 2: Habitats and features of the Goodwin Sands pMCZ with relevant conservation objectives from the Thanet Coast MCZ as a proxy in the absence of published conservation objectives for the Goodwin Sands.14

Table 3: Advice on Operations provided by Natural England for the Thanet Coast MCZ. Natural England suggested in their Written Representation that these be used as a proxy for the Goodwin Sands pMCZ in the absence of Advice on Operations or Conservation Objectives for the site. Only pressures which are described as ‘High-Medium Risk’ have been included. S = Sensitive, NS = Not sensitive15

1 Goodwin Sands pMCZ Clarification Note

1.1 Context and Background

- 1 At the time of Application, the Goodwin Sands proposed MCZ (pMCZ) (then the Goodwin Sands recommended MCZ (rMCZ)) had not been taken forward for consultation for inclusion in the third tranche of MCZ designations. As such, there was no obligation for formal consideration of the site within an MCZ Assessment. In addition to this, the lack of certainty with regards to conservation objectives against which potential effects could be assessed made assessment impractical.
- 2 In response to Section 42 consultation on the PEIR, a proxy MCZ assessment was undertaken, with reference to assessments already undertaken in the Environmental Statement (ES), specifically Volume 2, Chapter 2: Marine Geology, Oceanography and Physical Processes (PINS Ref: APP-043/ Application Ref: 6.2.2) and Volume 2, Chapter 5: Benthic Subtidal and Intertidal Ecology (PINS Ref: APP-046/ Application Ref: 6.2.5). This proxy assessment was set out in Volume 4, Annex 5.3: MCZ Assessment of the ES (PINS Ref: APP-083/ Application Ref: 6.4.5.3).
- 3 Following submission of the application, the Goodwin Sands rMCZ was brought forward for consultation as a pMCZ. As the Goodwin Sands pMCZ is only proposed, rather than fully designated, there are no published conservation objectives for the site. Natural England have advised that the Thanet Coast MCZ package be used as a proxy for the Goodwin Sands. This includes conservation objectives, advice on operations and general management approach for those features shared between the two sites.

1.2 Applicant Response

- 4 In order to address the concerns raised by Natural England, the Applicant has prepared this clarification note. It identifies the sensitive features of the Goodwin Sands pMCZ according to the Natural England advice on operations, with an assessment of impacts to those features against the relevant conservation objectives of the Thanet Coast MCZ as a proxy, in the absence of published conservation objectives for the Goodwin Sands pMCZ.
- 5 This document provides a revised MCZ Assessment for the Goodwin Sands pMCZ following the advice of Natural England in its Written Representation. For context, it should be read alongside the original MCZ Assessment submitted as part of the Application (Volume 4, Annex 5-3: MCZ Assessment (PINS Ref: APP-083/ Application Ref: 6.4.5.3)).

- 6 At Deadline 3, the Applicant submitted (at the request of the ExA) a figure illustrating the geographical extents of the proposed Thanet Extension works within the Goodwin Sands pMCZ and the consented aggregate dredging within the pMCZ for the Dover Harbour Board Western Docks Revival project. The Applicant has also submitted a revised Sandwave Clearance, Dredging and Drill Arisings Disposal Site Characterisation (Appendix 15 to the Deadline 4 Submission) which details the disposal activities from the proposed development.

1.3 Revision for Deadline 4

- 7 The MCZ Clarification Note was submitted as Appendix 25 to the Deadline 2 submission. Natural England subsequently reviewed this document and provided comment on the submissions at Deadlines 1 and 2 in their Deadline 3 response (PINS Ref: REP3-020). This revised MCZ Clarification note seeks to address the concerns raised within Table 2 of Natural England's comments on clarification notes submitted at Deadlines 1 and 2 (PINS Ref: REP3-020). This is in addition to comments being addressed in the Appendix 3 to the Applicant's Deadline 4 response (Response to Other IPs). The comments raised by Natural England in relation to the MCZ Clarification Note are listed, alongside with how they have been addressed in this revised document, in Table 1 below.

Table 1: Natural England's comments on the MCZ Clarification Note submitted at Deadline 2 and how they have been addressed in this revised document.

Point	Section (of Rev A)	Comment	How it has been addressed
1	11	Considering the ephemeral nature of Sabellaria and the fact data was collected in 2014 for the MCZ characterisation data, by the time construction is due to take place this feature could have colonised this area. The biogenic reef plan and pre-construction surveys with the potential for ground truthing, if this feature is identified, would further the understanding of the cabling area. However, these ground truthed points for biogenic reef to be replicated post construction to determine any impacts.	The presence of <i>Sabellaria spinulosa</i> reefs will be informed by pre-construction surveys. These will be ground-truthed where potential reef is identified as described in the biogenic reef mitigation plan. Post-construction monitoring will be used to determine the effectiveness of any micro-siting required.

Point	Section (of Rev A)	Comment	How it has been addressed
2	17	Disposal events need to be more specific in relation to the MCZ.	<p>A revised document 'Sandwave Clearance, Dredging and Drill Arisings: Disposal Site Characterisation' has been submitted as Appendix 15 to the Deadline 4 Submission. This provides detailed information as regards the sandwave clearance, dredging and disposal activities for Thanet Extension.</p> <p>Sediments within the pMCZ will be retained within the pMCZ as far as reasonably practicable.</p>
3	Table 2	Although not highlighted as a "High-Medium" risk, the pressure "Habitat structure changes-removal of substratum (extraction)" is still highly relevant to the cable activities within the pMCZ especially if sandwave clearance is to take place. Querying the Advice on operations for the Thanet Coast MCZ all features related to Goodwins Sands pMCZ features are sensitive to this pressure.	<p>As described in the Caption for Table 3, only 'high-medium risk' pressures have been included here.</p> <p>Any sediments 'removed' through sandwave clearance will be re-deposited and retained within the pMCZ as far as reasonably practicable.</p>
4	22	Why does this paragraph relate to direct habitat loss instead of temporary habitat loss as highlighted within the title?	The terms 'direct habitat loss' and 'temporary habitat loss' have been used interchangeably here. For clarity, the document has been updated to ensure consistent use of terms.
5	31	This section should clearly state what the anticipated levels of smothering in the pMCZ on the relevant habitats are. There could be the potential for heavy smothering due to deposition from sandwave clearance.	Further clarification has been provided in paragraph 32.

Point	Section (of Rev A)	Comment	How it has been addressed
6	32	As highlighted above, dredged material should be deposited on material of the same sediment grain size to avoid loss of extent.	Sediments dredged within the pMCZ through sandwave clearance will be retained within the pMCZ as far as reasonably practicable. See also Appendix 15 of the Deadline 4 Submission.
7	33	If there is going to be long term habitat loss due to the presence of cable protection we require site specific information to assess the significance of this loss in the pMCZ. This also raises the need for sufficient cable burial to occur to avoid this loss in the first instance, which could be ensured by further site specific surveys at the pre-construction stage.	The Applicant notes that cable burial is the preferred method, and that cable protection would only be required where burial to a sufficient depth was not possible. The final position of cables will be decided in the pre-construction phase and will be informed by pre-construction surveys. See paragraph 36.
8	33	The assumption by the applicant is that 100 % of the cable within the pMCZ will require additional cable protection. Although we appreciate this is a conservative estimate, Natural England advise that due to the pressure of habitat modification / loss, the amount of rock protection should be kept to a minimum.	The Applicant notes that cable burial is the preferred method, and that cable protection would only be required where burial to a sufficient depth was not possible. The final position of cables will be decided in the pre-construction phase and will be informed by pre-construction surveys.
9	33	This percentage loss is not necessarily considered an insignificant amount and could have the potential to hinder the conservation objectives.	A typographic error incorrectly described the percentage loss as 0.25%. the correct percentage loss is 0.025% (now corrected in paragraph 34). It is noted that this is a conservative assumption and the use of cable protection is not a preferred option. Any cable protection is likely to become covered with a layer of surficial sediment as evidenced by monitoring at the existing Thanet Wind Farm and it is therefore considered that there is no

Point	Section (of Rev A)	Comment	How it has been addressed
			potential for this impact to hinder the conservation objectives of the site.
10	34	We request a copy of the Thanet OWF monitoring report with regard to the infilling of the rock protection.	Please see above response to NE comment 34
11	35	Natural England disagree with the overall conclusions as stated in this paragraph. Although the overall extent is relatively small, it still represents a loss of a feature for which the site is designated for. Therefore, it needs to be refined, as well as an assessment of the functional importance of the lost habitat, using attributes from Natural England's conservation advice.	The area of potential habitat loss as a result of the presence of cable protection represents 0.025% of the Goodwin Sands pMCZ as a conservative worst-case. In practice, cables will be buried where possible (subject to the CBRA) with additional protection not being the preferred option. In addition, monitoring from TOWF has shown cable protection becoming covered in surficial sediments such that there is no fundamental change in habitat type. It is therefore considered that the potential impacts from the project do not hinder the conservation objectives of the site.
12	40	With regards to bullet point 2, if the WCS of 100 % cable protection is utilised within the site, the extent of the feature will be affected and will not be stable.	As stated above, the area of potential habitat loss as a result of the presence of cable protection represents 0.025% of the total area of the Goodwin Sands pMCZ as a conservative worst-case. Reference to monitoring of the existing TOWF has shown that cable protection has become covered with a layer of surficial sediment and therefore there is no fundamental change in habitat.

1.4 Revised Goodwin Sands pMCZ Assessment

Introduction

- 8 This section describes the revised assessment of potential impacts to the Goodwin Sands pMCZ following the advice of Natural England to use the Conservation Objectives and Advice on Operations of the Thanet Coast MCZ (where applicable) in lieu of that for the pMCZ.
- 9 The Thanet Extension Offshore Export Cable Corridor (OECC) overlaps with the north-western corner of the Goodwin Sands pMCZ, covering an area of approximately 1.13 km² the Thanet Extension array boundary is approximately 3.08 km from the pMCZ at its closest point. Due to this area of overlap, there is the potential for a receptor-impact pathway that could result in effects on the habitats and features of conservation importance of the proposed site.
- 10 According to the Goodwin Sands pMCZ consultation factsheet (Defra, 2018), the site would protect:
- Subtidal sand;
 - Subtidal coarse sediment;
 - Blue mussel beds;
 - English Channel outburst features;
 - Moderate energy circalittoral rock; and
 - Ross worm reefs (*Sabellaria spinulosa*).
- 11 The broadscale habitats 'subtidal sand' and 'subtidal coarse sediment' are the dominant features, covering 160 km² and 116 km² of the site, respectively, whilst 'moderate energy infralittoral rock' covers an area of approximately 1 km². The 'moderate energy circalittoral rock' features are approximately 8 km from the export cable corridor and 3.6 km from the array.
- 12 *Sabellaria* reefs and blue mussel beds cover much smaller areas, approximately 600 m² and 300 m², respectively. These features are not known to occur in the area of overlap between the cable corridor and the pMCZ, as evidenced by subtidal verification surveys (Figure 1) undertaken for the MCZ characterisation (presented in Defra, 2018).

- 13 The habitats present in the area of overlap have been identified by site-specific characterisation surveys for Thanet Extension (illustrated in Figure 2). Data from the 2014 Cefas pMCZ subtidal verification survey is also illustrated in Figure 3. These data show that the seabed habitats present in the area of overlap consist mainly of subtidal sand, with smaller areas of subtidal mixed sediments and subtidal coarse sediment.

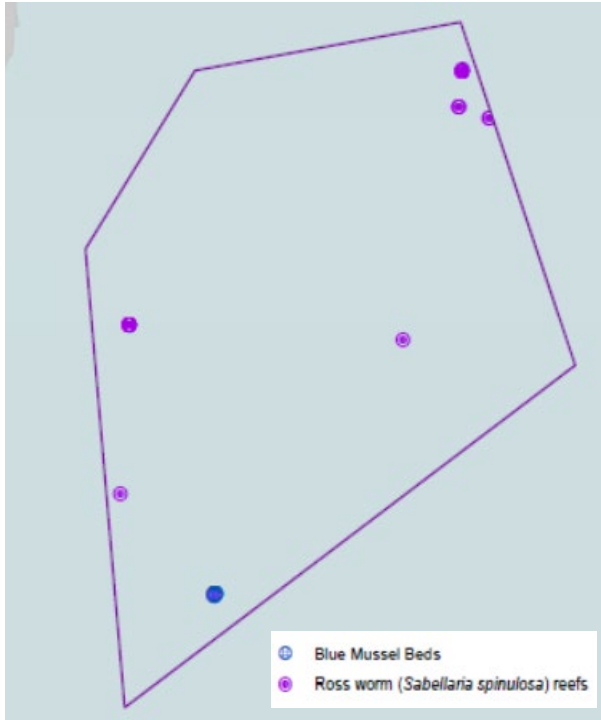


Figure 1: Locations of confirmed blue mussel beds and *Sabellaria spinulosa* reefs as identified by Cefas (2014) subtidal verification surveys.

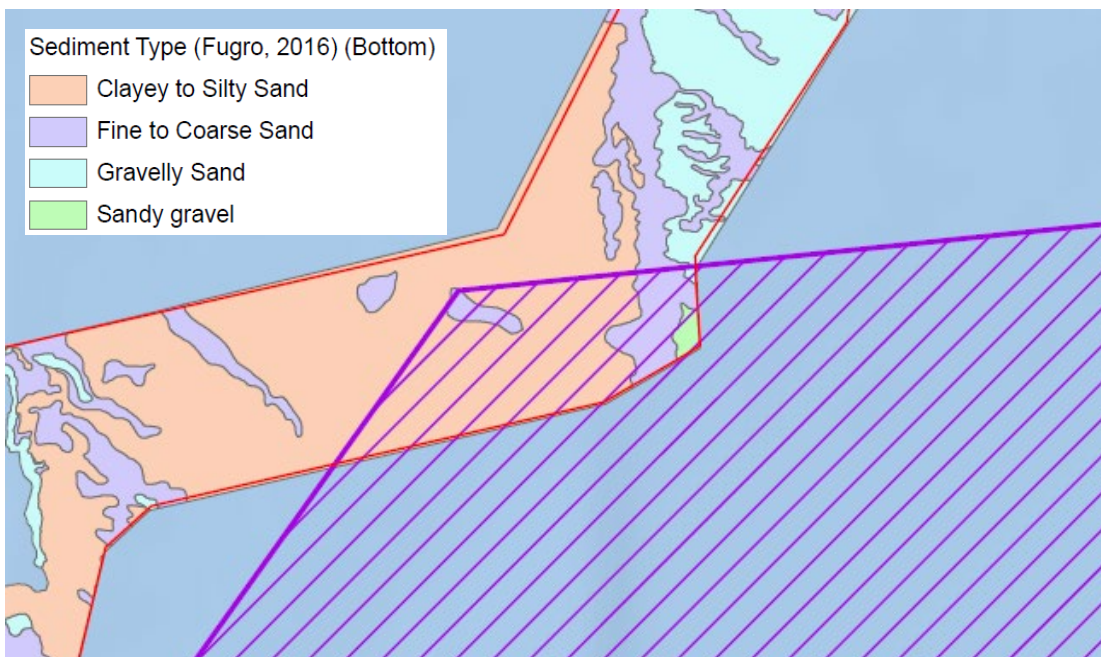


Figure 2: Seabed habitats/ sediment types in the area of overlap between the pMCZ and the export cable corridor as identified by the Fugro (2016) site-specific survey for the Thanet Extension baseline characterisation.

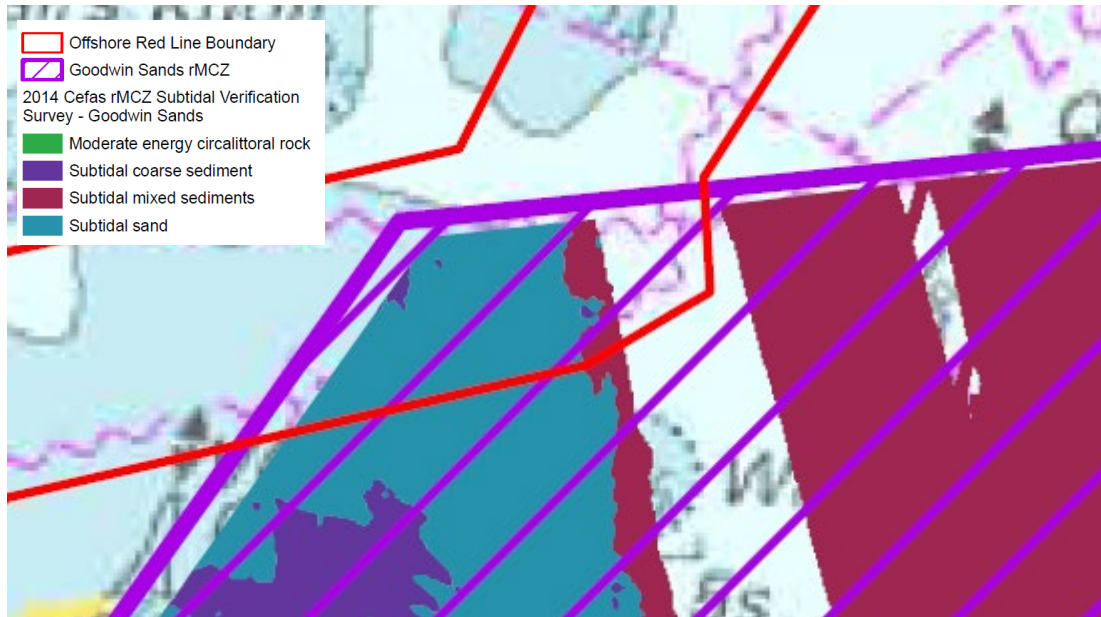


Figure 3 Seabed habitats present in the area of overlap between the Goodwin Sands pMCZ and the export cable corridor as defined by the Cefas (2014) rMCZ subtidal verification survey.

Screening of Potential Effects and Habitats/Features

- 14 A screening exercise to identify the potential impacts to MCZs was undertaken in Volume 4, Annex 5.3: MCZ Assessment (PINS Ref: APP-083/ Application Ref: 6.4.5.3), including for the Goodwin Sands pMCZ.
- 15 The habitats and features within the boundary of the Goodwin Sands pMCZ have the potential to be affected by Thanet Extension. The offshore export cable corridor overlaps with the north-western corner of the pMCZ, an area of approximately 1.13 km³. Although there is an area of overlap, it should be noted that this is small in the context of the rest of the Goodwin Sands site (approximately 0.4% of the total 279.28 km²). The overlap is also partial, and whilst cable installation could take place anywhere within the development boundary, it is possible that they may be installed further to the north, outside of the pMCZ altogether.
- 16 The impacts screened in for assessment in were:
- Construction:

- Temporary habitat loss/ disturbance due to cable installation activities in the Goodwin Sands pMCZ; and
 - Temporary increases in SSC and associated deposition.
 - O&M:
 - Long-term habitat loss due to the presence of cable protection in the Goodwin Sands pMCZ; and
 - Direct disturbance to the seabed from cable maintenance activities.
- 17 The conservation objectives of an MCZ establish whether a habitat or feature meets the required state (quality) and should be ‘maintained’ or falls below the required state and should be ‘recovered to a favourable condition’. In lieu of published conservation objectives for the Goodwin Sands pMCZ, relevant conservation objectives for the Thanet Coast MCZ are described as a proxy in Table 2 against the habitats and features of Goodwin Sands.
- 18 Volume 2, Chapter 2: Marine Geology, Oceanography and Physical Processes of the Environmental Statement (PINS Ref: APP-043/ Application Ref: 6.2.2) concluded that increases in SSC and associated deposition during cable installation (inclusive of sandwave clearance where required) would occur in close proximity to cable installation activity, with the majority of sediments settling within a few metres of the cable. Much of the seabed within the export cable corridor consists of coarse sediments and sands, including within the area of overlap with the Goodwin Sands pMCZ. As such, cable installation/sandwave clearance is not expected to create persistent plumes as the coarse material would settle quickly to the seabed. Furthermore, the low height of release of sediments from cable installation (up to a few metres above seabed level), the deposition of materials will be spatially limited up to approximately 20 m for gravels and a few hundred metres for sands. Finer material may be advected over greater distances, at which it would be near background concentrations.
- 19 As such, there is no potential for effects on either blue mussel bed or ross worm (*S. spinulosa*) reefs within the Goodwin Sands pMCZ and these features are screened out of the assessment. Furthermore, the Advice on Operations for the Thanet Coast MCZ provided by Natural England (Table 3) identifies that blue mussel beds are ‘not sensitive’ to changes in suspended solids, and *S. spinulosa* reefs are ‘not sensitive’ to changes in suspended solids or light smothering and siltation rate changes.
- 20 ‘Moderate energy circalittoral rock’ features of the Goodwin Sands pMCZ are approximately 3.6 km from the array and 8 km from the export cable corridor. Therefore, for the same reasons outlined above, there is no potential for effects on these features and they are screened out of the MCZ assessment.

- 21 English Channel outburst flood features are not a part of the Thanet Coast SAC and are therefore cannot be compared in terms of conservation objectives or Advice on Operations. The English Channel outburst flood features consist of a deep channel in the eastern part of the site and are unlikely to be affected by cable installation activities. These features are therefore also screened out of the assessment.
- 22 The habitats and features screened in/out of the MCZ assessment are described in Table 2, along with the relevant conservation objectives from the Thanet Coast MCZ.

Table 2: Habitats and features of the Goodwin Sands pMCZ with relevant conservation objectives from the Thanet Coast MCZ as a proxy in the absence of published conservation objectives for the Goodwin Sands.

Habitats and features of the Goodwin Sands pMCZ	Relevant Conservation Objectives from the Thanet Coast MCZ	Screened into the Goodwin Sands pMCZ Assessment?
Subtidal Sand	Maintain in Favourable Condition	Yes
Subtidal Coarse Sediment		
Moderate Energy Circalittoral Rock		No
Blue Mussel Beds		
Ross Worm Reefs (<i>Sabellaria spinulosa</i>)	Recover to Favourable Condition	
English Channel Outburst Flood	N/A	N/A

Table 3: Advice on Operations provided by Natural England for the Thanet Coast MCZ. Natural England suggested in their Written Representation that these be used as a proxy for the Goodwin Sands pMCZ in the absence of Advice on Operations or Conservation Objectives for the site. Only pressures which are described as ‘High-Medium Risk’ have been included. S = Sensitive, NS = Not sensitive

Pressure	Habitat/ feature									
	Peat and clay exposures	Moderate energy infralittoral rock	Blue mussel beds	Subtidal chalk	Ross worm reefs	Subtidal coarse sediment	Subtidal mixed sediments	Subtidal sand	Moderate energy circalittoral rock	Stalked jellyfish (<i>Calvadosia cruxmelitensis</i>)
<i>Power cable: laying, burial and protection</i>										
Abrasion/disturbance of the substrate on the surface of the seabed	S	S	S	S	S	S	S	S	S	S
Changes in suspended solids (water clarity)	NS	S	NS	S	NS	NS	S	S	NS	S
Penetration and/ or disturbance of the substratum below the surface of the seabed, including abrasion	S	S	S	S	S	S	S	S	S	-

Pressure	Habitat/ feature									
	Peat and clay exposures	Moderate energy infralittoral rock	Blue mussel beds	Subtidal chalk	Ross worm reefs	Subtidal coarse sediment	Subtidal mixed sediments	Subtidal sand	Moderate energy circalittoral rock	Stalked jellyfish (<i>Calvadosia cruxmelitensis</i>)
Smothering and siltation rate changes (light)	S	S	S	S	NS	S	S	S	S	S
<i>Power cable: operation and maintenance</i>										
Abrasion/disturbance of the substrate on the surface of the seabed	S	S	S	S	S	S	S	S	S	S
Changes in suspended solids (water clarity)	NS	S	NS	S	NS	NS	S	S	NS	S
Penetration and/ or disturbance of the substratum below the surface of the seabed, including abrasion	S	S	S	S	S	S	S	S	S	-
Smothering and siltation rate changes (light)	S	S	S	S	NS	S	S	S	S	S

Stage One Assessment

Construction Phase – Temporary habitat loss/ disturbance due to cable installation activities

- 23 The worst-case scenario for temporary habitat loss and disturbance would be that four export cables are required to be installed by energetic means across the area of overlap between the Goodwin Sands pMCZ and the cable corridor, with each cable covering a highly conservative distance of 2.5 km. Assuming a maximum trench width of 10 m, this would result in a maximum area of direct disturbance of 0.1 km², representing 0.036% of the total area of the Goodwin Sands rMCZ, although the actual area affected is likely to be significantly lower.
- 24 The principle habitats in the area of overlap and therefore likely to be affected are ‘subtidal sand’ and ‘subtidal coarse sediment’, which are also present in the Thanet Coast MCZ. These habitats were identified according to the MarESA criteria as having high or medium recoverability to direct disturbance. It was assessed in Volume 2, Chapter 5: Benthic Subtidal and Intertidal Ecology (PINS Ref: APP-046/ Application Ref: 6.2.5) that impacts from direct disturbance within the subtidal zone would be of minor adverse significance.
- 25 This is also reflected in the Advice on Operations which identifies the features of relevance (i.e. the subtidal coarse sediments within the pMCZ) in relation to the assessment of temporary habitat loss/ disturbance is equivalent to the pressure identified for cable laying, burial and protection of ‘abrasion/ disturbance of the substrate on the surface of the seabed’. The Advice on Operations identifies that the relevant features have a range of sensitivities from low to medium at the pressure benchmark (physical damage to the habitat). Given the discrete, temporary and reversible nature of the effect, and the information drawn from the MarESA resources, overall sensitivity is concluded as low.
- 26 With respect to the proxy conservation objectives outlined in Table 2, it can be concluded that there is no significant risk of temporary habitat loss or disturbance due to cable installation activities hindering the conservation objectives of the Goodwin Sands pMCZ as:
- Temporary habitat loss/ disturbance is expected to affect a relatively small proportion of the proposed designated habitats of the MCZ during construction, with effects predicted to be short-term and reversible within the extent of the proposed designated features; and

- The structure and function, quality and composition of characteristic biological communities will remain in a favourable condition and will not deteriorate. Recovery of the lost/ disturbed habitats is expected within a few months to 2-3 years of cable installation, though this is considered conservative.

Construction Phase – Temporary localised increases in SSC and associated sediment deposition

- 27 Increases in SSC and associated deposition are predicted to occur as a result of construction activities, seabed preparation and cable installation. Volume 2, Chapter 2: Marine Geology, Oceanography and Physical Processes (PINS Ref: APP-043/ Application Ref: 6.2.2) provides a full description of the physical assessment, including a specific assessment with respect to increases in SSC and subsequent sediment deposition. The installation scenario that represents the worst-case for increases in SSC and associated sediment deposition is the use of energetic means of cable installation (such as jetting or mass-flow excavation, or dredging for sandwave clearance), which is assumed to result in up to 50% of material is actually ejected from the trench; the rest is retained as sediment cover within the trench. As well as the drilling of up to 50% of all foundations with drill arisings being deposited at the sea surface.
- 28 Effects from increased SSC and sediment deposition are expected to occur in close proximity to the construction activity, with the majority of disturbed material expected to settle quickly within a few metres. It is expected that any increases in SSC would be within the natural variation beyond a few metres. Finer material may be advected over greater distances, but it is not expected to settle to a measurable thickness beyond a few metres.
- 29 The principle habitats in the area of overlap and therefore likely to be affected are ‘subtidal sand’ and ‘subtidal coarse sediment’, which are also present in the Thanet Coast MCZ.
- 30 The impact of increases in SSC and associated sediment deposition is predicted to be of local spatial extent, short-term and intermittent in duration, and reversible following the cessation of activities. the habitats present were assessed in Volume 2, Chapter 5: Benthic Subtidal and Intertidal Ecology (PINS Ref: APP-046/ Application Ref: 6.2.5) as having high recoverability to changes in SSC and deposition. The habitats in the region are accustomed to high levels of SSC that occur naturally and consequently have some tolerance to these effects. Effects from SSC and associated deposition were assessed as being of minor adverse significance.

- 31 This is also reflected in the proxy Advice on Operations for the Thanet Coast MCZ, which identifies that the features of relevance have a range of sensitivities from not sensitive to low in relation to the pressure 'changes in suspended solids (water clarity)'. The Advice on Operations bases this sensitivity on the pressure benchmark 'a change in one Water Framework Directive (WFD) ecological status class for one year within site'. Given that the cables will be installed in less than one year, and that cable installation will be a series of discrete operations rather than continuous, it can be concluded that the sensitivities of features in the MCZ will be low.
- 32 The Advice on Operations also provides information on the sensitivities of relevant features in relation to the pressure of 'smothering and siltation rate changes (light)'. The Advice on Operations identified a range of sensitivities from not sensitive to medium, and not sensitive to high for subtidal mixed sediments, based on the pressure benchmark of "light' deposition of up to 5 cm fine material added to the habitat in a single discrete event'. In the ES, it was predicted that sediment displaced from export cable installation could spread to a thickness of 5 cm up to 500 m from the activity, assuming a uniform spread of sediment. However, in practice, the vast majority of this sediment will be re-deposited within the footprint, or immediately adjacent to, the activity. Fine material is not expected to be deposited at a measurable thickness further than a few metres away from the cable and the impact will therefore be highly localised. As such, due to the limited spatial extent of the cable installation operations, it can be concluded that these features are of medium sensitivity.
- 33 With respect to the proxy conservation objectives outlined in Table 2, it can be concluded that there is no significant risk of temporary habitat loss or disturbance due to cable installation activities hindering the conservation objectives of the Goodwin Sands pMCZ as:
- The extent of the designated features will not be affected by increases in SSC and associated sediment deposition, remaining stable following the construction phase; and
 - The structure and function, quality and composition of characteristic biological communities will remain in a stable condition and will not deteriorate.

O&M Phase – Long-term habitat loss/ change due to the presence of cable protection

- 34 Long-term habitat loss may occur within the Goodwin Sands pMCZ during the O&M phase where cable protection is required for sections of the offshore export cables. Export cables are expected to be buried for the majority of the export cable route, only requiring additional cable protection where burial to target depth is not achievable. It has been assumed that 25% of the cable route may require additional cable protection. Based on the conservative assumption that 100% of the cable route that passes through the area of overlap (2.5 km) will require additional cable protection on the maximum four cables, and assuming a maximum cable protection width of 7 m, this would result in the loss of ~0.07 km² of seabed within the pMCZ, equivalent to 0.025% of the total area of the site.
- 35 Whilst the impact will result in a permanent change to seabed habitat, the area affected will be highly localised. Volume 2, Chapter 5: Benthic Subtidal and Intertidal Ecology (PINS Ref: APP-046/ Application Ref: 6.2.5) assessed all biotopes as having sensitivity to habitat loss/ change to a different seabed type as this is, in effect, a complete loss of the existing habitat and consequently there can be no recovery, although species may remain or re-colonise the area. Given that the sedimentary habitats are widespread throughout the pMCZ, and that the pMCZ already contains hard substrate outcrops (moderate energy circalittoral rock), the introduction of a relatively limited area of new hard substrate will not represent a significant change from the baseline environment within the site. It is also important to note that the existing seabed sediment transport, as detailed within the marine physical processes chapter (PINS Ref: APP-043/ Application Ref 6.2.2) at paragraph 2.11.36, is anticipated to infill the interstitial spaces within the rock material within a period of a few weeks to months, this is also evidenced by the existing Thanet OWF monitoring results. The surficial sediments are therefore expected to revert to baseline conditions and not result in a significant net loss of surface sediments. The significance of the effects of long-term habitat loss was assessed as being of minor adverse significance.
- 36 The requirement for cable protection will be informed by a Cable Burial Risk Assessment and pre-construction surveys. It is noted that burial is the preferred option and additional cable protection would only be required where burial to a sufficient depth is not achievable. Based on monitoring undertaken for the existing Thanet Offshore Wind Farm it is expected that any cable protection required will become covered with a layer of surficial sediments and therefore there will be no fundamental long-term change to the habitat type.

- 37 With respect to the proxy conservation objectives outlined in Table 2, it can be concluded that there is no significant risk of temporary habitat loss or disturbance due to cable installation activities hindering the conservation objectives of the Goodwin Sands pMCZ as:
- The extent of the designated features affected are small in the context of the overall available habitat in the rest of the pMCZ, even when considering the highly conservative assumptions above; and
 - The change in seabed type does not represent a fundamental shift in terms of the other habitats in the pMCZ, or indeed the predicted infilling of the interstitial spaces of the cable protection, and therefore the structure and function, quality and composition of characteristic biological communities will remain in a stable condition and will not deteriorate.

O&M Phase – Direct disturbance to the seabed from cable maintenance activities

- 38 Direct disturbance and temporary habitat loss within the Goodwin Sands pMCZ may occur as a result of export cable maintenance activities, although the extent of this will be small relative to the entire pMCZ. The impacts would be of temporary, short-term duration and intermittent, and would be similar to those described above for ‘Construction Phase – Temporary habitat loss/ disturbance due to cable installation activities’. It should be noted that beyond survey and monitoring, cable maintenance is not anticipated as a regular occurrence during O&M.
- 39 The habitats and species directly affected by temporary habitat loss/ disturbance have a low sensitivity to disturbance of this nature, and the significance of this effect, as predicted in Volume 2, Chapter 5: Benthic Subtidal and Intertidal Ecology (PINS Ref: APP-046/ Application Ref: 6.2.5) is considered to be minor adverse.
- 40 The proxy Advice on Operations for the Thanet Coast MCZ identify that the relevant features have a range of sensitivities to ‘abrasion/ disturbance of the substrate on the surface of the seabed’ as identified for the construction phase impact above. Given the discrete, temporary and reversible nature of the effect, and the information drawn from the MarESA resources, overall sensitivity is concluded as low.
- 41 The habitats directly affected by temporary habitat loss/ disturbance have low sensitivity to disturbance of this nature, and therefore the significance of this effect is predicted to be minor adverse.
- 42 With respect to the proxy conservation objectives of the Thanet Coast MCZ as outlined in Table 2, it can be concluded that there is no significant risk from direct disturbance to the seabed from cable maintenance activities as:

- The extent of the proposed designated features will not be affected by the temporary disturbance, remaining stable during the O&M phase; and
- The structure and function, quality and composition of the characteristic biological communities will remain in a stable condition and will not deteriorate.

Decommissioning Phase

- 43 Potential impacts from decommissioning are expected to be no greater than those listed for construction, if project infrastructure is removed from the seabed at the end of the proposed development's operational life.
- 44 If it is deemed closer to the time of decommissioning that removal of certain parts of the proposed development would have a greater environmental impact than leaving *in situ*, it may be preferable to leave those parts *in situ*. In this case, the impacts would be no greater than those predicted for the O&M phase.
- 45 To date, no large offshore wind farm has been decommissioned in UK waters. It is anticipated that any future programme of decommissioning would be developed in close consultation with the relevant statutory marine and nature conservation bodies. This would enable the guidance and best practice at the time to be applied to minimise any potential impacts.

1.5 Potential cumulative impacts with maintenance dredging at Ramsgate Harbour

- 46 The Applicant notes that Natural England have also requested that the ongoing maintenance dredging works (fluidisation rather than use of the disposal site) at Ramsgate Harbour are also included within this clarification note. It is noted that this activity only occurs within the Harbour itself, and in line with the Harbour Authority's permit to undertake clearance works. As such there is limited information available, i.e. it is not a licensable activity for which information is available in the Marine Case Management System. What is known is that it is a temporally discrete, ongoing activity which predates the baseline surveys undertaken for Thanet Extension. Equally the proposed cable installation works, which will occur outwith the cable exclusion zone, are temporally and spatially discrete in a receiving environment which is characterised by coarse sands and sediments rather than the silts understood to form the basis of the Ramsgate Harbour maintenance works (Discussion held with Thanet Fishermen's Association, January 2019).

- 47 Any interaction will therefore be temporally limited and will occur against the baseline of the works already occurring and being considered as part of the project baseline characterisation. As such it is the Applicant's position that no further assessment of in-combination effects is necessary, with any likely interaction being temporally discrete and not significant in EIA terms, and therefore not likely to have a significant effect on the conservation objectives of the Thanet Coast MCZ.

1.6 Potential cumulative effects with aggregate dredging within the pMCZ for the Western Docks Revival project by Dover Harbour Board

- 48 At ISH3 it was requested that the Applicant provide a plan showing the geographical separation between the proposed activities associated with Thanet Extension and those associated with aggregate dredging for the Dover Harbour Board Western Docks Revival project.
- 49 Dredging for the DHB project is anticipated to be completed in two separate campaigns between September 2019 and September 2020, prior to the start of offshore works for Thanet Extension in Q1 2021. As well as being temporally isolated events, the two activities are geographically separated by approximately 10 km within the pMCZ. For ease of reference, this plan is shown below in Figure 4.
- 50 It is noted that spatially, the works from Thanet Extension represent a much smaller extent within the pMCZ than those from the DHB dredging scheme, and therefore any construction phase impacts (i.e. temporary habitat loss and temporary increases to SSC and deposition) from Thanet Extension make a comparatively smaller contribution to any cumulative impacts to the site. As described in paragraph 26, bullet point 2 of this document, full recovery is expected within months to up to 2-3 years (noting this is a conservative assessment). Considering the lack of temporal and spatial overlap of activities within the pMCZ, it is highly likely that cumulative recovery of communities would also fall within this timescale.

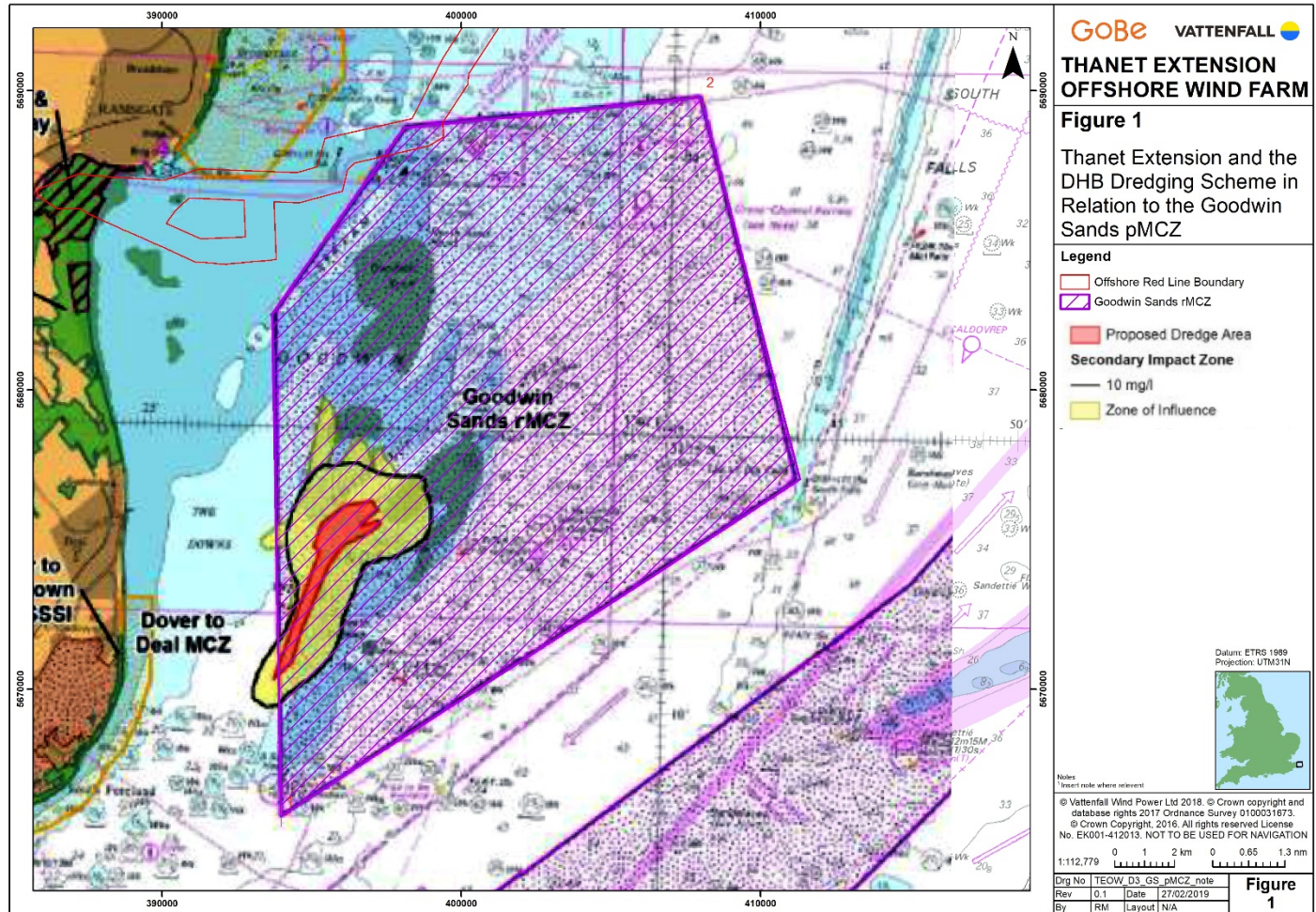


Figure 4 Plan of the DHB dredging scheme and Thanet Extension in relation to the Goodwin Sands pMCZ.