

# **RWE Renewables UK Dogger Bank South (West) Limited**

# **RWE Renewables UK Dogger Bank South (East) Limited**

## **Dogger Bank South Offshore Wind Farms**

**Environmental Statement**

**Volume 7**

**Appendix 25-3 Construction Noise Assessment  
(Revision 2) (Tracked)**

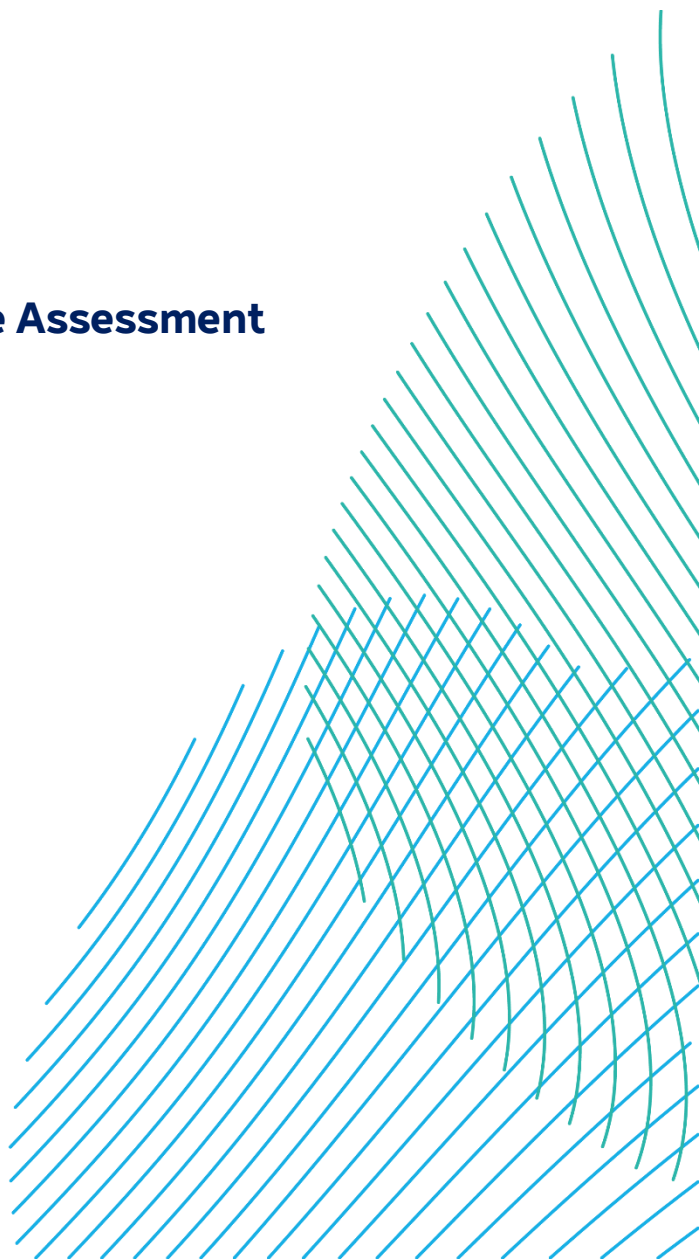
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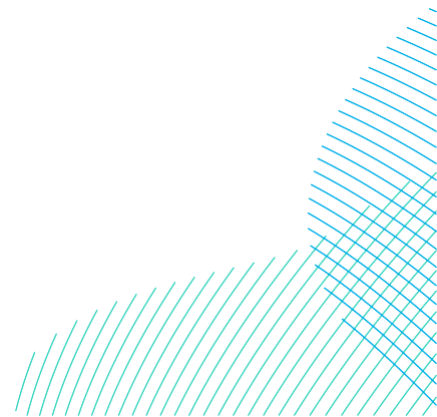
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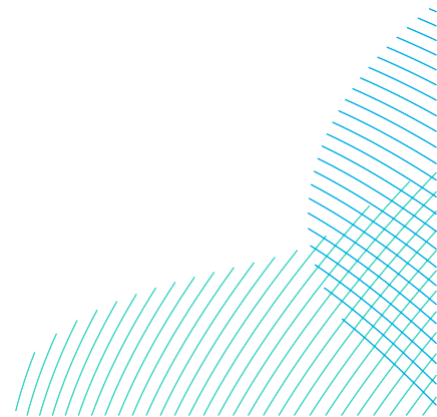


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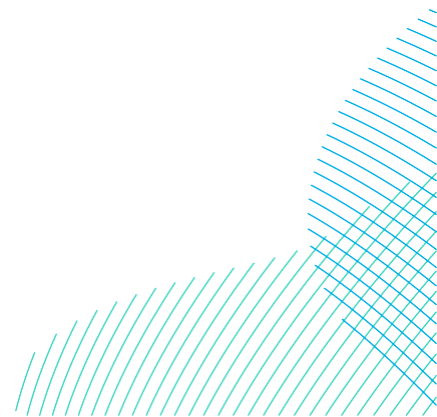
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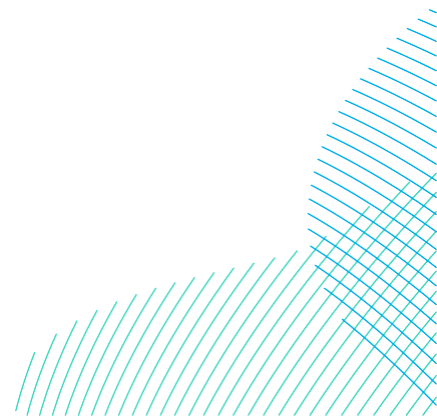


## Glossary

Term	Definition
Horizontal Directional Drill (HDD)	HDD is a trenchless technique to bring the offshore cables ashore at the landfall and can be used for crossings other obstacles such as roads, railways and watercourses onshore.
$L_{Aeq,T}$ – equivalent continuous A-weighted sound pressure level	The $L_{Aeq,T}$ is the value of the A-weighted sound pressure level in decibels of continuous steady sound that, within a specified time interval, $T = t_2 - t_1$ , has the same mean-squared sound pressure as a sound that varies with time.
Landfall	The point on the coastline at which the Offshore Export Cables are brought onshore, connecting to the onshore cables at the Transition Joint Bay (TJB) above mean high water.
Landfall Zone	The generic term applied to the entire landfall area between Mean Low Water Spring (MLWS) and the Transition Joint Bays (TJBs) inclusive of all construction works, including the landfall compounds, Onshore Export Cable Corridor and intertidal working area including the Offshore Export Cables.
Onshore Converter Stations	A compound containing electrical equipment required to transform and stabilise electricity generated by the Projects so that it can be connected to the electricity transmission network. There will be one Onshore Converter Station for each Project.
Onshore Export Cable Corridor	This is the area which includes cable trenches, haul roads, spoil storage areas, and limits of deviation for micro-siting. For assessment purposes, the cable corridor does not include the Onshore Converter Stations, Transition Joint Bays or temporary access routes; but includes Temporary Construction Compounds (purely for the cable route).
Onshore Export Cables	Onshore Export Cables take the electric from the Transition Joint Bay to the Onshore Converter Stations.

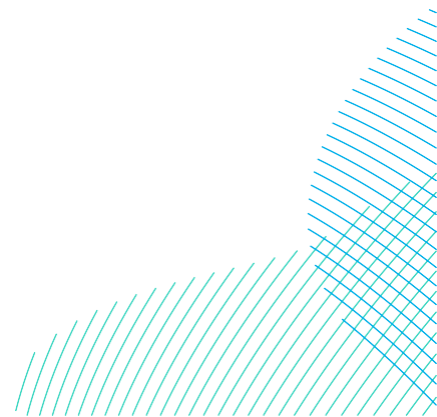


Term	Definition
Onshore Substation Zone	Parcel of land within the Onshore Development Area where the Onshore Converter Station infrastructure (including the haul roads, Temporary Construction Compounds and associated cable routeing) would be located.
Temporary Construction Compound (TCC)	An area set aside to facilitate construction of the Projects. These will be located adjacent to the Onshore Export Cable Corridor and within the Onshore Substation Zone, with access to the highway.
Transition Joint Bay (TJB)	The Transition Joint Bay (TJB) is an underground structure at the landfall that houses the joints between the Offshore Export Cables and the Onshore Export Cables.



## Acronyms

Term	Definition
BS	British Standard
BSI	British Standards Institution
dB	Decibel
DBS	Dogger Bank South
DCO	Development Consent Order
HDD	Horizontal Directional Drilling
m	Meters
NSR	Noise Sensitive Receptor
TCC	Temporary Construction Compound
TJB	Transition Joint Bay
UK	United Kingdom



## 25.3 Construction Noise Assessment

### 25.3.1 Introduction

1. This appendix provides additional technical information regarding the construction noise assessment, to accompany **Volume 7, Chapter 25 Noise (application ref: 7.25)**. This appendix details construction prediction assumptions, construction noise predictions and their associated magnitude of impact.

### 25.3.2 Noise Sensitive Receptor (NSR) Locations

2. **Table 25-3-1** shows the NSR locations and denotes an “x” for those that were scoped in for each construction noise impact (Impacts 1 to 3). NSRs have been scoped in if they are within 300m of the works locations related to the impact (e.g. Landfall Zone).

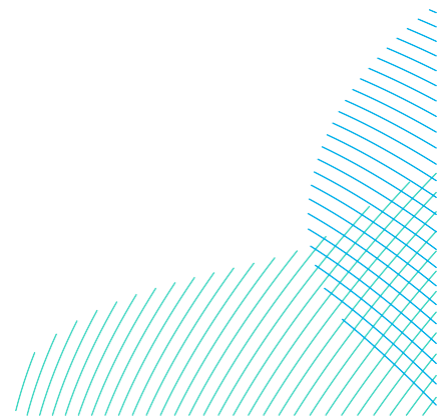
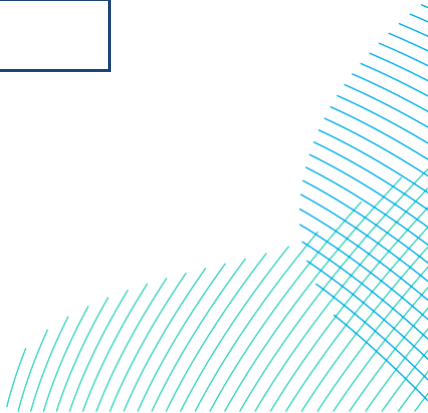




Table 25-3-1 Construction Noise NSR Locations

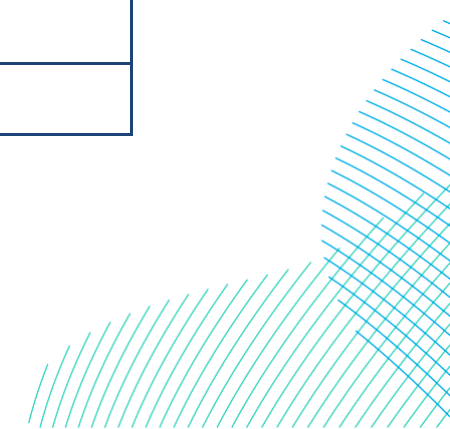
NSR Identifier	Coordinates		Classification	Sensitivity	Impact 1	Impact 2		Impact 3
	X	Y			Landfall	TCC	HDD	Onshore converter station
R1	517765	455943	Residential	Medium	x	x		
R2	517336	457637	Residential	Medium		x		
R3	517414	455124	Residential	Medium	x	x	x	
R4	517616	455099	Residential	Medium	x	x	x	
R5	517282	455048	Education	Medium		x	<del>xx</del> *	
R6	518142	455105	Residential	Medium	x			
R7	517560	454581	Residential	Medium		x	x	
R13	514433	449028	Residential	Medium		x	x	



# RWE

## Dogger Bank South Offshore Wind Farms

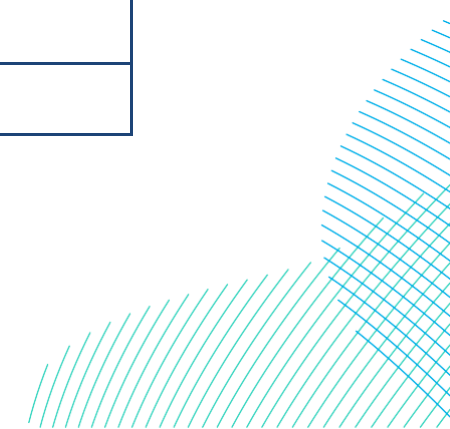
NSR Identifier	Coordinates		Classification	Sensitivity	Impact 1	Impact 2		Impact 3
	X	Y			Landfall	TCC	HDD	Onshore converter station
R14	514875	446081	Residential	Medium		x	x	
R15	514752	446378	Residential	Medium			x	
R16	511377	443545	Residential	Medium			x	
R19	509163	442245	Residential	Medium			x	
R22	508594	442430	Residential	Medium		x	x	
R23	508291	442241	Residential	Medium		x	x	
R24	508184	442105	Residential	Medium		x		
R25	506507	443165	Residential	Medium		x		
R26	503617	441906	Residential	Medium			x	
R27	503105	441364	Residential	Medium		x		



# RWE

## Dogger Bank South Offshore Wind Farms

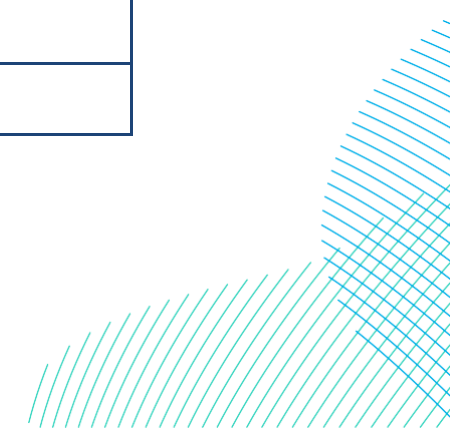
NSR Identifier	Coordinates		Classification	Sensitivity	Impact 1	Impact 2		Impact 3
	X	Y			Landfall	TCC	HDD	Onshore converter station
R29	502969	441369	Education	Medium		x		
R30	502867	441355	Residential	Medium		x	x	
R33	502080	441179	Healthcare	Medium			x	
R34	501913	441765	Residential	Medium			x	
R35	501183	441043	Residential	Medium		x	x	
R37	501934	438191	Residential	Medium		x	x	
R38	501835	437956	Residential	Medium		x	x	
R39	502021	437001	Residential	Medium			x	x
R40	502459	437120	Residential	Medium			x	
R42	502509	436990	Residential	Medium			x	x



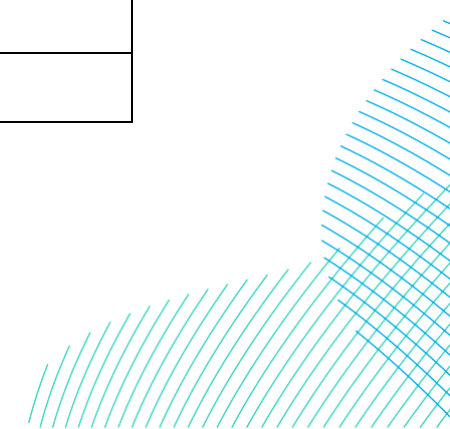
# RWE

Dogger Bank South Offshore Wind Farms

NSR Identifier	Coordinates		Classification	Sensitivity	Impact 1	Impact 2		Impact 3
	X	Y			Landfall	TCC	HDD	Onshore converter station
R43	502543	436497	Residential	Medium		x	x	
R46	502837	436280	Residential	Medium		x	x	
R47	503342	435888	Residential	Medium			x	
R48	503617	435667	Residential	Medium			x	
R51	501295	438889	Residential	Medium			x	
R53	504728	441206	Residential	Medium		x		
R54	501123	439618	Residential	Medium			x	
R55	513746	444423	Residential	Medium			x	
R56	510798	442379	Residential	Medium			x	
R58	514345	447010	Residential	Medium			x	



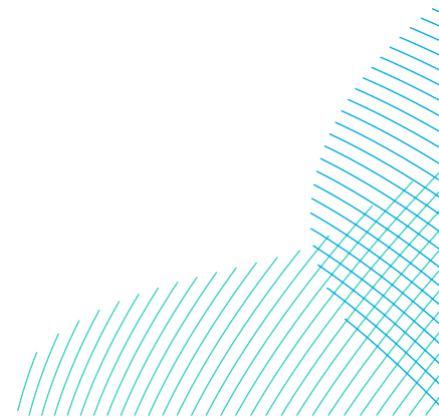
NSR Identifier	Coordinates		Classification	Sensitivity	Impact 1	Impact 2		Impact 3
	X	Y			Landfall	TCC	HDD	Onshore converter station
R59	506784	442506	Residential	Medium			x	
R60	506946	443246	Residential	Medium			x	
R61	516425	454206	Residential	Medium			x	
R62	515183	453365	Residential	Medium			x	
R63	513999	451285	Residential	Medium			x	
R64	514527	448278	Residential	Medium			x	
R65	514215	449743	Residential	Medium			x	
R66	502562	436624	Residential	Medium		x	x	
R67	502579	436748	Residential	Medium		x	x	
R68	503516	442438	Residential	Medium			x	



# RWE

Dogger Bank South Offshore Wind Farms

NSR Identifier	Coordinates		Classification	Sensitivity	Impact 1	Impact 2		Impact 3
	X	Y			Landfall	TCC	HDD	Onshore converter station
R69	517182	455432	Residential	Medium	x			
R70	504464	441132	Residential	Medium		x		
<b>Total</b>					5	24	<del>3940</del> *	2
<p><u>*R5 is not sensitive during evening, weekend and night-time hours</u></p>								



### 25.3.3 Noise Modelling Assumptions

3. The predictions were undertaken using CadnaA 3D modelling software. The following parameters were assigned to all noise models:
  - A receptor height of 4m has been used for each NSR, except for single-storey buildings (e.g. bungalows) where a receptor height of 1.5m was used;
  - Soft ground absorption,  $G=1$  to be representative of ground within the works sites and of the surrounding areas;
  - Two orders of reflection;
  - Buildings are reflecting (smooth, non-structured facade); and
  - BS5228-1 calculation methodology.
4. **Table 25-3-2** outlines the assumed construction phase noise sources used for the noise predictions. Where possible, noise source levels were referenced from BS 5228-1 Annex C and incorporate on-time corrections, as outlined in BS 5228-1.

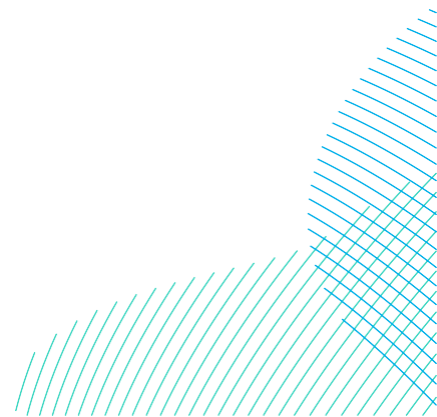
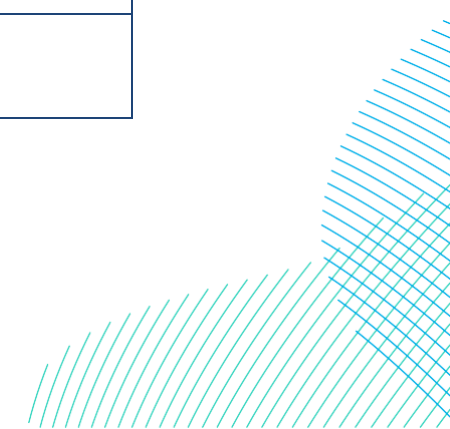


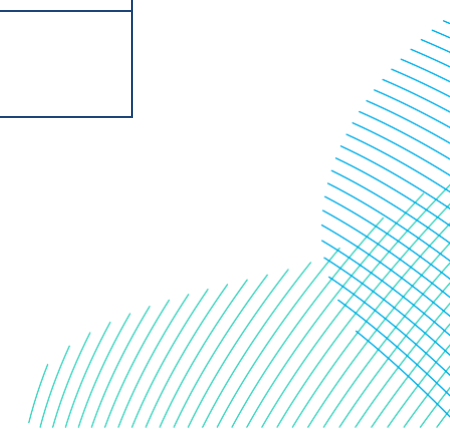
Table 25-3-2 Details of Assumed Construction Plant for Worst-case Activities

Plant	No.	BS5228 reference	L <sub>Aeq</sub> (dB) at 10m	Localised Screening (dB)	On-time correction (%) - Daytime	On-time correction (%) - Night-time
<b>Landfall Zone – Roof and Backfill over Transition Joint Bay (TJB)</b>						
D6 Dozer	1	Table C2 - Ref 12	81	N/A	100	N/A
30T excavator	1	Table C2 - Ref 16	75	N/A	100	N/A
20T Dumper	2	Table C2 - Ref 31	87	N/A	100	N/A
21T excavator	1	Table C2 - Ref 3	78	N/A	100	N/A
5T Forward Tipping Dumper	1	Table C4 - Ref 7	78	N/A	100	N/A
Loading shovel	1	Table C2 - Ref 27	80	N/A	100	N/A
Trench Roller	1	Table C2 - Ref 40	73	N/A	75	N/A
Tractor & trailer	1	Table C4 - Ref 75	79	N/A	25	N/A
Tractor & Fuel bowser (or self-propelled)	1	Table C6 - Ref 36	89	N/A	10	N/A

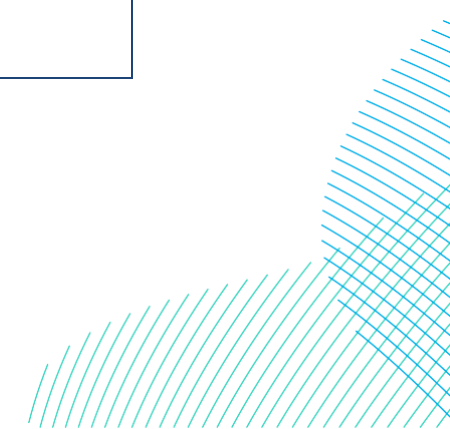




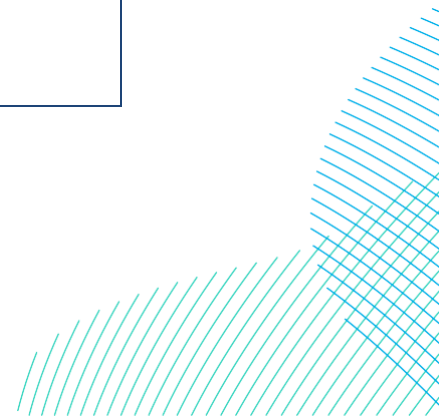
Plant	No.	BS5228 reference	L <sub>Aeq</sub> (dB) at 10m	Localised Screening (dB)	On-time correction (%) - Daytime	On-time correction (%) - Night-time
Tractor & Water bowser (for dust suppression)	1	Table C6 - Ref 38	83	N/A	25	N/A
Cement mixer	1	Table C4 - Ref 23	61	N/A	25	N/A
Mobile crane	1	Table C4 - Ref 45	82	N/A	25	N/A
Pre-cast concrete truck	1	Table C6 - Ref 22	83	N/A	5	N/A
Telehandler	1	Table C2 - Ref 35	71	N/A	25	N/A
Mobile self-contained welfare unit	1	Table C4 - Ref 78	66	N/A	25	N/A
Mobile generator	2	Table C4 - Ref 84	74	N/A	25	N/A
Temporary lighting	4	Table C4 - Ref 86	65	N/A	25	N/A
Pump	2	Table C6 - Ref 41	78	N/A	100	N/A



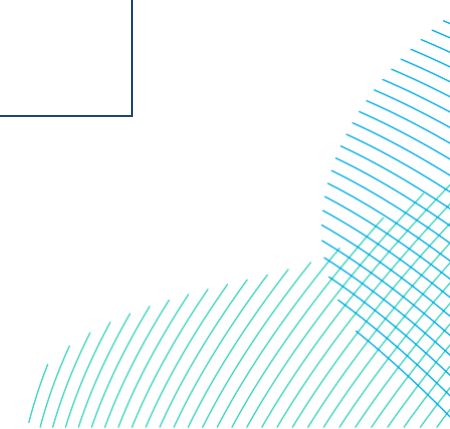
Plant	No.	BS5228 reference	L <sub>Aeq</sub> (dB) at 10m	Localised Screening (dB)	On-time correction (%) - Daytime	On-time correction (%) - Night-time
<b>TCC Locations - Temporary Construction Compound Operations</b>						
Generator	2	Table C4 - Ref 84	74	N/A	100	N/A
Wheel Wash	0	Assumed to have generator	80	N/A	10	N/A
Telehandler	1	Table C4 - Ref 54	79	N/A	75	N/A
Road Sweeper	1	Table C4 - Ref 90	76	N/A	10	N/A
<b>HDD Locations - Trenchless Crossing (e.g HDD) Compound Operations</b>						
Generator	1	Table C4 - Ref 84	74	-10	100	100
Telehandler	2	Table C2 - Ref 35	71	N/A	75	75
Vibratory Piling Rig	1	Table C3 - Ref 8	88	N/A	10	N/A
Directional Drill Generator	1	Table C4 - Ref 96	77	-10	100	100



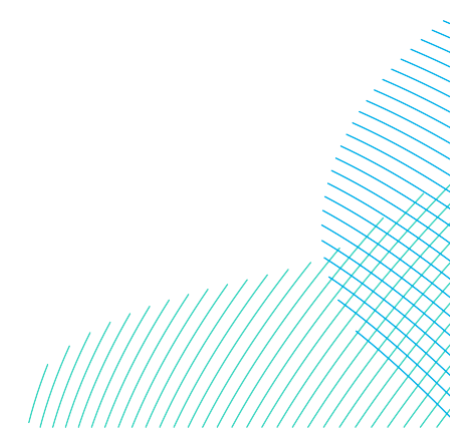
Plant	No.	BS5228 reference	L <sub>Aeq</sub> (dB) at 10m	Localised Screening (dB)	On-time correction (%) - Daytime	On-time correction (%) - Night-time
Mounting supports for directional drill (hydraulic hammer)	1	Table C4 - Ref 92	87	-10	25	N/A
Mud Pump	1	Provided by Riggall & Associates based on measurements made on previous projects	80	-10	100	100
Mixing Tank	1	Provided by Riggall & Associates based on measurements made on previous projects	75	-10	100	100
Cuttings / Recycling Tank	1	Provided by Riggall & Associates based on measurements made on previous projects	80	-10	100	100



Plant	No.	BS5228 reference	L <sub>Aeq</sub> (dB) at 10m	Localised Screening (dB)	On-time correction (%) - Daytime	On-time correction (%) - Night-time
<b>Onshore Converter Station locations - Development platform earthworks</b>						
D6 Dozer	3	Table C2 - Ref 12	81	N/A	100	N/A
30T excavator	4	Table C2 - Ref 16	75	N/A	100	N/A
20T Dumper	8	Table C2 - Ref 31	87	N/A	100	N/A
Smooth Drum vibrio road roller	2	Table C5 - Ref 20	75	N/A	100	N/A
21T excavator	2	Table C2 - Ref 3	78	N/A	75	N/A
5T Forward Tipping Dumper	2	Table C4 - Ref 7	78	N/A	75	N/A
Tractor & Fuel bowser (or self-propelled)	1	Table C6 - Ref 36	89	N/A	10	N/A
Tractor & Water bowser (for dust suppression)	1	Table C6 - Ref 38	83	N/A	25	N/A



<b>Plant</b>	<b>No.</b>	<b>BS5228 reference</b>	<b>L<sub>Aeq</sub> (dB) at 10m</b>	<b>Localised Screening (dB)</b>	<b>On-time correction (%) - Daytime</b>	<b>On-time correction (%) - Night-time</b>
Mobile self-contained welfare unit	1	Table C4 - Ref 78	66	N/A	25	N/A
Temporary lighting	20	Table C4 - Ref 86	65	N/A	25	N/A
Pump	3	Table C6 - Ref 41	78	N/A	50	N/A



## 25.3.4 Predicted Construction Noise Levels

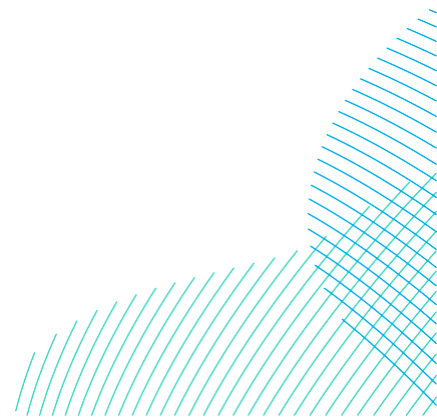
5. This section presents construction noise modelling results. The magnitude of impact assessment is presented alongside the predicted noise levels to provide context to the results. The magnitude of impact criteria are set out in **Volume 7, Chapter 25 Noise (application ref: 7.25)** and these criteria have been agreed with the EHO at East Riding of Yorkshire Council.
6. It is important to note that the assessment of effects (rather than magnitude of impact) is presented within **Volume 7, Chapter 25 Noise (application ref: 7.25)**. In addition to the magnitude of impact, the assessment of effects considers factors such as receptor sensitivity, activity duration and the nature of the existing sound climate.

### 25.3.4.1 Landfall Zone

7. Predicted worst-case construction noise levels at NSRs from the Landfall Zone works are displayed in **Table 25-3-3**.

Table 25-3-3 Predicted Construction Noise Levels - Landfall Zone

NSR identifier	Predicted $L_{Aeq,T}$ (dB)	Magnitude of impact		
		Daytime	Evening and weekends	Night-time
<b>Landfall Zone – Roof and Backfill over Transition Joint Bay (TJB)</b>				
R1	58	Negligible	Low	N/A
R3	60	Negligible	Low	N/A
R4	65	Low	Medium	N/A
R6	61	Negligible	Low	N/A

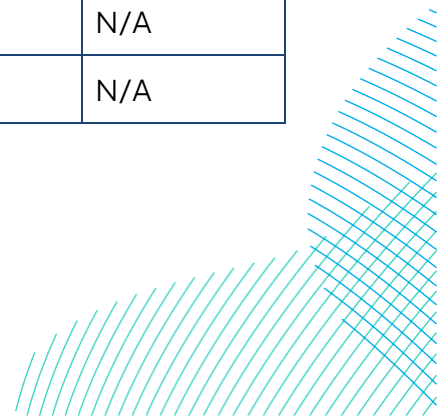


## 25.3.4.2 Temporary Construction Compounds (TCCs)

8. Predicted construction noise levels at NSRs from the TCC works are displayed in **Table 25-3-4**.
9. There are multiple options for each cable route section. The worst-case noise levels (i.e. from the nearest TCC site) are presented for each receptor.
10. Upon refinement of the work areas for each construction activity, the separation distance between construction works and NSRs may be increased; and therefore, a lower noise level will be predicted.

Table 25-3-4 Predicted Construction Noise Levels - TCC Locations

NSR identifier	Predicted $L_{Aeq,T}$ (dB)	Magnitude of impact		
		Daytime	Evening and weekends	Night-time
R1	50	Negligible	Negligible	N/A
R2	67	Low	Medium	N/A
R3	57	Negligible	Low	N/A
R4	60	Negligible	Low	N/A
R5	55	Negligible	Low	N/A
R7	47	Negligible	Negligible	N/A
R13	51	Negligible	Negligible	N/A
R14	57	Negligible	Low	N/A
R22	51	Negligible	Negligible	N/A
R23	61	Negligible	Low	N/A
R24	49	Negligible	Negligible	N/A
R25	52	Negligible	Negligible	N/A
R27	52	Negligible	Negligible	N/A
R29	55	Negligible	Low	N/A
R30	55	Negligible	Low	N/A



NSR identifier	Predicted $L_{Aeq,T}$ (dB)	Magnitude of impact		
		Daytime	Evening and weekends	Night-time
R35	56	Negligible	Low	N/A
R37	54	Negligible	Negligible	N/A
R38	61	Negligible	Low	N/A
R43	52	Negligible	Negligible	N/A
R46	58	Negligible	Low	N/A
R53	60	Negligible	Low	N/A
R66	56	Negligible	Low	N/A
R67	51	Negligible	Negligible	N/A
R70	59	Negligible	Low	N/A

### 25.3.4.3 Trenchless Crossing Works i.e. Horizontal Directional Drilling (HDD)

11. Predicted construction noise at NSRs from the proposed trenchless crossing works locations are displayed in **Table 25-3-5**.
12. Horizontal Directional Drilling (HDD) has been assumed to be used at these locations as a worst case.
13. For some receptors there are multiple potential HDD locations within 300m (construction noise study area). The worst-case noise levels (i.e. from the nearest HDD location) are presented for each receptor.
14. It is important to note that although noise levels have been predicted at NSRs during evening and night-time periods, this does not necessarily mean work will be carried out during these periods and in most cases out of hours working will be unlikely to happen or only be required for a short period of time. This is discussed in more detail section 25.6.1.2 of **Volume 7, Chapter 25 Noise (application ref: 7.25)**.

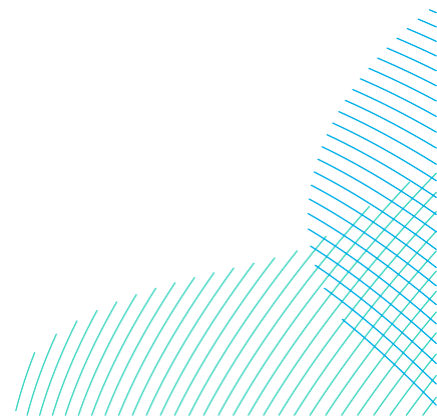
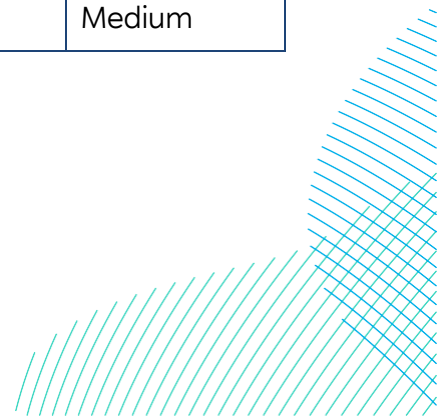




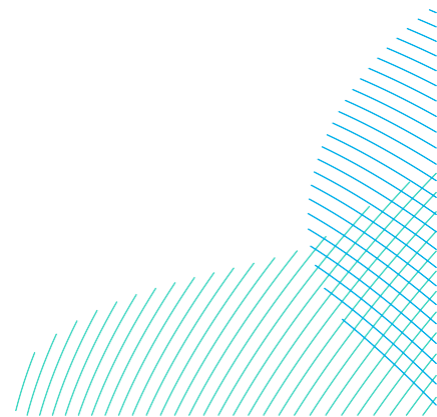
Table 25-3-5 Predicted Construction Noise Levels - Trenchless Crossing Locations

NSR identifier	Predicted L <sub>Aeq,T</sub> (dB)		Magnitude of impact		
	Daytime	Evening and weekends and Night-time	Daytime	Evening and weekends	Night-time
R3	68	64	Low	Low	High
R4	60	56	Negligible	Low	Medium
R5	59	55	Negligible	<u>N/A*Negligible</u>	<u>N/A*Low</u>
R7	51	47	Negligible	Negligible	<u>NegligibleLow</u>
R13	54	50	Negligible	Negligible	Low
R14	52	48	Negligible	Negligible	<u>NegligibleLow</u>
R15	54	50	Negligible	Negligible	Low
R16	56	52	Negligible	<u>LowNegligible</u>	<u>LowMedium</u>
R19	64	60	Negligible	<u>NegligibleLow</u>	<u>HighLow</u>
R22	56	52	Negligible	Negligible	Low
R23	59	55	Negligible	<u>NegligibleLow</u>	<u>LowMedium</u>
R26	55	51	Negligible	Negligible	Low
R30	52	48	Negligible	Negligible	Low
R33	50	46	Negligible	Negligible	Low
R34	53	49	Negligible	<u>NegligibleLow</u>	<u>LowMedium</u>
R35	63	59	Negligible	Low	Medium



NSR identifier	Predicted $L_{Aeq,T}$ (dB)		Magnitude of impact		
	Daytime	Evening and weekends and Night-time	Daytime	Evening and weekends	Night-time
R37	60	56	<del>Low</del> Negligible	Low	<del>Medium</del> High
R38	69	65	Negligible <del>Low</del>	<del>Medium</del> Negligible	<del>High</del> Low
R39	56	52	<del>Negligible</del> Low	<del>Negligible</del> Low	<del>Low</del> High
R40	50	46	Negligible	<del>Low</del> Negligible	<del>Medium</del> Low
R42	57	53	Negligible	<del>Low</del> Negligible	<del>Low</del> Medium
R43	66	62	Negligible <del>Low</del>	<del>Negligible</del> Low	<del>Low</del> High
R46	56	52	Negligible	<del>Negligible</del> Negligible	Low
R47	59	55	Negligible	<del>Negligible</del> Low	<del>Low</del> Medium
R48	55	51	Negligible	Negligible	Low
R51	63	59	Negligible	<del>Negligible</del> Low	<del>Low</del> Medium
R54	53	49	Negligible	<del>Low</del> Negligible	<del>High</del> Low
R55	53	49	Negligible	Negligible	Low
R56	52	48	Negligible	<del>Negligible</del> Low	<del>Low</del> Medium
<u>R58</u>	<u>60</u>	<u>56</u>	<u>Negligible</u>	<u>Low</u>	<u>Medium</u>
R59	44	40	Negligible	Negligible	<del>Low</del> Negligible

NSR identifier	Predicted $L_{Aeq,T}$ (dB)		Magnitude of impact		
	Daytime	Evening and weekends and Night-time	Daytime	Evening and weekends	Night-time
R60	53	49	Negligible	Negligible	Low
R61	54	50	Negligible	Negligible	Low
R62	53	49	Negligible	Negligible	Low
R63	56	52	Negligible	<del>Low</del> Negligible	<del>Low</del> Medium
R64	54	50	Negligible	<del>Low</del> Negligible	<del>Medium</del> Low
R65	55	51	<del>Low</del> Negligible	<del>Medium</del> Negligible	<del>High</del> Low
R66	<del>58</del> 66	<del>54</del> 62	<del>Negligible</del> Low	<del>Negligible</del> Low	<del>Low</del> High
R67	58	54	Negligible	Negligible	Low
R68	52	48	Negligible	Negligible	Low
<u>*Not sensitive during evening, weekend and night-time hours</u>					



## 25.3.4.4 Onshore Converter Stations

15. Predicted construction noise levels at NSRs associated with construction of the Onshore Converter Stations are displayed in **Table 25-3-6**.

Table 25-3-6 Predicted Construction Noise Levels – Onshore Converter Stations

NSR identifier	Predicted $L_{Aeq,T}$ (dB)	Magnitude of impact		
		Daytime	Evening and weekends	Night-time
<b>Onshore Converter Stations</b>				
R39	65	Low	Medium	N/A
R42	62	Negligible	Low	N/A

## 25.3.5 Summary

16. **Table 25-3-7** provides a summary of the number of NSRs defined by each level of magnitude of impact for the predicted daytime construction noise levels for the Landfall Zone (Impact 1), TCC (Impact 2), trenchless crossing i.e. HDD (Impact 2) and Onshore Converter Stations (Impact 3).
17. It is noted that any individual NSR may be affected by more than one type of work site. For example, there may be interactions between the Landfall Zone and Onshore Export Cable Corridor construction as well as the Onshore Export Cable Corridor and Onshore Converter Stations construction. It should be noted that worst-case assumptions have been used for each impact (Impacts 1-3) within the construction noise assessment therefore the magnitude of impact is unlikely to increase at any individual NSR.

Table 25-3-7 Number of NSR Locations per Magnitude of Impact Criteria – Daytime

<b>Magnitude of impact (daytime)</b>			
<b>Negligible</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>
<b>Landfall Zone (Impact 1)</b>			
3	1	0	0
<b>TCC locations (Impact 2)</b>			
23	1	0	0

Magnitude of impact (daytime)			
Negligible	Low	Medium	High
<b>Trenchless Crossing i.e. HDD locations (Impact 2)</b>			
36	<del>34</del>	0	0
<b>Onshore Converter Station (Impact 3)</b>			
2	0	0	0

18. **Table 25-3-8** provides a summary of the number of NSRs defined by each level of magnitude of impact for the predicted evenings and weekends construction noise levels.

Table 25-3-8 Number of NSR Locations per Magnitude of Impact Criteria - Evenings and Weekends

Magnitude of impact (evenings and weekends)			
Negligible	Low	Medium	High
<b>Landfall Zone (Impact 1)</b>			
0	3	1	0
<b>TCC locations (Impact 2)</b>			
10	13	1	0
<b>Trenchless Crossing i.e. HDD locations (Impact 2)</b>			
<del>278</del>	<del>110</del>	1	0
<b>Onshore Converter Station (Impact 3)</b>			
0	2	0	0

19. **Table 25-3-9** provides a summary of the number of NSRs defined by each level of magnitude of impact for the predicted night-time construction noise levels.

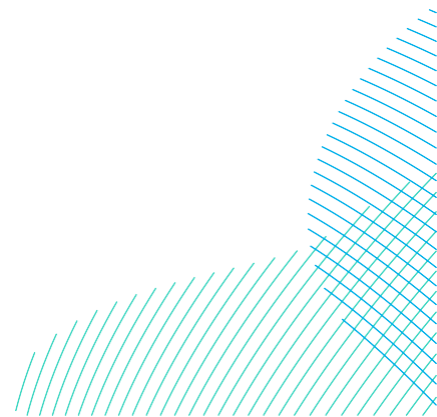
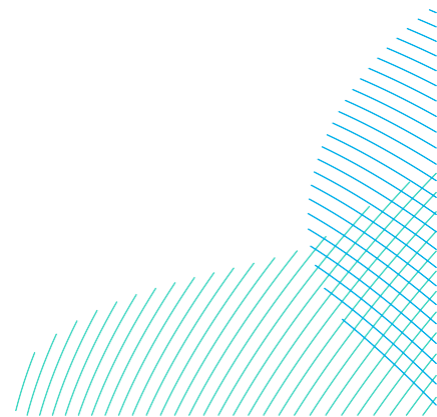


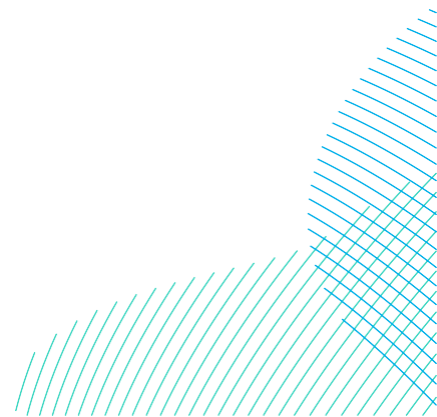
Table 25-3-9 Number of NSR Locations per Magnitude of Impact Criteria – Night-Time

Magnitude of impact (night-time)			
Negligible	Low	Medium	High
Trenchless Crossing i.e. HDD locations			
1	<del>26</del> 7	7	<del>5</del> 4



## References

BSI (2014). British Standards Institution [BS] 5228-1:2009+A1:2014 “Code of practice for noise and vibration control on construction and open sites – Part 1: Noise”.



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