

# VikingLink

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## UK Onshore Scheme

Environmental Statement

Volume 4 Document ES-4-B.11

Appendix 15.1

Noise & Vibration (Proposed Underground DC  
Cable Route)

VKL-08-39-G500-009

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# Annex 1 Construction Assumptions

Construction Programme	Cable installation would occur over a 2-3 year period. The precise programme is dependent on the detailed scheme design following appointment of Contractor(s). Construction could be undertaken throughout the year observing seasonal restrictions where they apply.	
Hours of working	Construction activities would usually be undertaken during daytime periods although there would be some activities, such as trenchless crossing and cable jointing operations where some 24 hour working will be required.	
	Works would typically be undertaken Monday to Saturday. Works would not normally be undertaken on Sundays or Bank Holidays but may need to during 24 hour continuous activities.	
Typical construction activity durations.	Open cut trench and direct burial	30 days per km
	Open cut trench and ducting	20 days per km
	Trenchless methods*	7 to 20 days per crossing
	Jointing	10 to 12 days per joint bay

\* Subject to method utilised, ground conditions encountered and the length of the crossing.

# Annex 2 Prediction of Noise from Construction and Decommissioning of Cable Installation

**Prediction of Noise from Construction and Decommissioning of Cable Installation; Trenched DC Cable Route Works**

Cable Installation		Overall	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Tracked Excavator & Dozer	$L_{Aw}$ (dB)	106	77	86	96	101	100	98	95	88

By BS 5228-1; soft ground; no acoustics barriers or intervening noise attenuating topographical features

Distance (m)	LA01	LAeq,T (dB)								
		Overall LAeq	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
20	77	72	43	52	63	67	66	65	61	54
25	75	70	41	50	60	65	64	62	59	52
30	73	68	39	48	58	63	62	60	57	50
40	70	65	36	45	55	60	59	57	54	47
50	67	62	33	42	53	57	57	55	52	44
60	65	60	31	40	51	55	55	53	50	42
70	64	59	30	39	49	54	53	51	48	41
80	62	57	28	37	48	52	51	50	46	39
90	61	56	27	36	47	51	50	48	45	38
100	60	55	26	35	45	50	49	47	44	37
125	57	52	23	32	43	47	47	45	42	34
150	55	50	21	30	41	45	45	43	40	32
175	54	49	20	29	39	44	43	41	38	31
200	52	47	18	27	38	42	41	40	36	29
225	51	46	17	26	37	41	40	38	35	28
250	50	45	16	25	35	40	39	37	34	27
275	49	44	15	24	34	39	38	36	33	26
300	48	43	14	23	33	38	37	35	32	25
350	46	41	12	21	32	36	35	34	30	23
400	45	40	11	20	30	35	34	32	29	22
450	43	38	9	19	29	33	33	31	28	21
500	42	37	8	17	28	32	32	30	27	19
600	40	35	6	15	26	30	30	28	25	17
700	39	34	5	14	24	29	28	26	23	16
800	37	32	3	12	23	27	26	25	21	14
900	36	31	2	11	22	26	25	23	20	13
1000	35	30	1	10	20	25	24	22	19	12

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Appendix 15. Noise & Vibration (Proposed Underground DC Cable)

# Annex 3 Prediction of Noise from Horizontal Directional Drilling Compounds



### Prediction of Noise from Horizontal Directional Drilling Compounds, Landfall Construction Works

		Overall	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Large HDD Compound	L <sub>Aw</sub> (dB)	116	79	102	103	107	110	111	107	98

Equivalent to 80 dB(A) at 25 m

By BS 5228-1: soft ground; no acoustics barriers or intervening noise attenuating topographical features

Distance (m)	LA01	L <sub>Aeq,T</sub> (dB)								
		Overall LAeq	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
20	87	82	45	68	70	73	76	78	73	64
25	85	80	43	66	67	71	74	75	71	62
30	83	78	41	64	65	69	72	73	69	60
40	80	75	38	61	62	66	69	70	66	57
50	77	72	35	58	60	63	67	68	64	54
60	75	70	33	56	58	61	65	66	62	52
70	74	69	32	55	56	60	63	64	60	51
80	72	67	30	53	55	58	61	63	58	49
90	71	66	29	52	54	57	60	61	57	48
100	70	65	28	51	52	56	59	60	56	47
125	67	62	25	48	50	53	57	58	54	44
150	65	60	23	46	48	51	55	56	52	42
175	64	59	22	45	46	50	53	54	50	41
200	62	57	20	43	45	48	51	53	48	39
225	61	56	19	42	44	47	50	51	47	38
250	60	55	18	41	42	46	49	50	46	37
275	59	54	17	40	41	45	48	49	45	36
300	58	53	16	39	40	44	47	48	44	35
350	56	51	14	37	39	42	45	47	42	33
400	55	50	13	36	37	41	44	45	41	32
450	53	48	11	35	36	39	43	44	40	31
500	52	47	10	33	35	38	42	43	39	29
600	50	45	8	31	33	36	40	41	37	27
700	49	44	7	30	31	35	38	39	35	26
800	47	42	5	28	30	33	36	38	33	24
900	46	41	4	27	29	32	35	36	32	23
1000	45	40	3	26	27	31	34	35	31	22

# Annex 4 Prediction of Noise from Cable Route Construction Access Road & Jointing Bay Works

### Prediction of Noise from Construction of Temporary Cable Route Access Road; Jointing Bay Works

		Overall	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Tracked Excavator	L <sub>Aw</sub> (dB)	103	74	83	93	98	97	95	92	85
Dump Truck (tipping fill)	L <sub>Aw</sub> (dB)	107	87	86	97	98	101	103	96	90
Total	L <sub>Aw</sub> (dB)	108	87	88	99	101	102	104	97	91

By BS 5228-1; soft ground; no acoustics barriers or intervening noise attenuating topographical features

Distance (m)	LA01	L <sub>Aeq,T</sub> (dB)								
		Overall LAeq	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
20	80	75	53	54	65	67	69	70	64	58
25	77	72	51	52	63	65	67	68	62	55
30	75	70	49	50	61	63	65	66	60	53
40	72	67	46	47	58	60	61	63	56	50
50	70	65	44	44	55	57	59	60	54	48
60	68	63	42	42	53	55	57	58	52	46
70	66	61	40	41	52	54	55	57	50	44
80	65	60	38	39	50	52	54	55	49	43
90	64	59	37	38	49	51	53	54	48	41
100	62	57	36	37	48	50	51	53	46	40
125	60	55	34	34	45	47	49	50	44	38
150	58	53	32	32	43	45	47	48	42	36
175	56	51	30	31	42	44	45	47	40	34
200	55	50	28	29	40	42	44	45	39	33
225	54	49	27	28	39	41	43	44	38	31
250	52	47	26	27	38	40	42	43	37	30
275	51	46	25	26	37	39	40	42	35	29
300	50	45	24	25	36	38	40	41	35	28
350	49	44	22	23	34	36	38	39	33	26
400	47	42	21	22	33	35	36	38	31	25
450	46	41	20	20	32	33	35	37	30	24
500	45	40	19	19	30	32	34	35	29	23
600	43	38	17	17	28	30	32	33	27	21
700	41	36	15	16	27	29	30	32	25	19
800	40	35	13	14	25	27	29	30	24	18
900	39	34	12	13	24	26	28	29	23	16
1000	37	32	11	12	23	25	26	28	21	15

# Annex 5 Construction Noise Assessment Summary

Description of Receptor	Value / Sensitivity	Description of Residual Effect	Significance	Significant
			Adverse or Beneficial, and	Yes / No
			Major, Moderate, Minor or Negligible (e.g. Adverse, Minor)	
Residential Receptors	Medium	Landfall Construction Works Noise	Adverse Moderate (residential NVSRs within 100 m, daytime) Adverse Moderate (residential NVSRs within 615 m, night time)	Yes
Residential Receptors	Medium	Trenched DC cable route - Construction Works Noise (daytime only)	Adverse Moderate (residential NVSRs within 40 m)	Yes
Residential Receptors	Medium	Temporary construction areas, including the DC cable jointing bays	Adverse Moderate (residential NVSRs within 50 m, daytime) Adverse Moderate (residential NVSRs within 315 m, night time)	Yes
Residential Receptors	Medium	Trenchless Construction works (excluding Landfall)	Adverse Moderate (residential NVSRs within 100 m, daytime) Adverse Moderate (residential NVSRs within 615 m, night time)	Yes
Residential Receptors	Medium	Construction Traffic (daytime only)	Minor Adverse	No
Residential Receptors	Medium	Construction Traffic (night-time)	Neutral	No
Residential Receptors	Medium	Construction Vibration	Adverse Negligible	No
Residential Receptors	Medium	Operational Noise	None	No
Residential Receptors	Medium	Operational Vibration	None	No

Route Section 1 Proposed Landfall to Well High Lane				Route Section 2 Well High Lane to A16/Keal Road				Route Section 3 A16/Keal Road to River Witham				Route Section 4 River Witham to the Proposed Com			
<b>Table 15.11 Summary of Impact Distances – Landfall Construction Works</b>				<b>Table 15.15 Summary of Impact Distances – Trenched DC Cable Route Works</b>				<b>Table 15.18 Summary of Impact Distances – Trenched DC Cable Route Works</b>				<b>Table 15.21 Summary of Impact Distances – Trenched DC Cable Route Works</b>			
Impact Boundary	Distance in Relation to Impact Magnitude (NVSRs) / m			Impact Boundary	Distance to Impact Magnitude (NVSRs) / m			Impact Boundary	Distance to Impact Magnitude (NVSRs) / m			Impact Boundary	Distance to Impact Magnitude (NVSRs) / m		
	Daytime	Evening	Night		Daytime	Evening	Night		Daytime	Evening	Night		Daytime	Evening	Night
Negligible / Low	154	388	975	Negligible / Low	61	154	387	Negligible / Low	61	154	387	Negligible / Low	61	154	387
Low / Medium	97	245	615	Low / Medium	39	97	244	Low / Medium	39	97	244	Low / Medium	39	97	244
Medium / High	39	97	245	Medium / High	15	39	97	Medium / High	15	39	97	Medium / High	15	39	97
<b>Table 15.12 Summary of Impact Distances – Trenched DC Cable Route Works</b>				<b>Table 15.16 Summary of Impact Distances – Trenched DC Cable Route Jointing Bay Works</b>				<b>Table 15.19 Summary of Impact Distances – Trenched DC Cable Route Jointing Bay Works</b>				<b>Table 15.22 Summary of Impact Distances – Trenched DC Cable Route Jointing Bay Works</b>			
Impact Boundary	Distance in Relation to Impact Magnitude (NVSRs) / m			Impact Boundary	Distance to Impact Magnitude (NVSRs) / m			Impact Boundary	Distance to Impact Magnitude (NVSRs) / m			Impact Boundary	Distance to Impact Magnitude (NVSRs) / m		
	Daytime	Evening	Night		Daytime	Evening	Night		Daytime	Evening	Night		Daytime	Evening	Night
Negligible / Low	61	154	387	Negligible / Low	79	198	497	Negligible / Low	79	198	497	Negligible / Low	79	198	497
Low / Medium	39	97	244	Low / Medium	50	125	314	Low / Medium	50	125	314	Low / Medium	50	125	314
Medium / High	15	39	97	Medium / High	20	50	125	Medium / High	20	50	125	Medium / High	20	50	125
<b>Table 15.13 Summary of Impact Distances – Jointing Bay Works</b>				<b>Table 15.17 Summary of Impact Distances – Trenchless Construction Worksite</b>				<b>Table 15.20 Summary of Impact Distances – Trenchless Construction Worksite</b>				<b>Table 15.23 Summary of Impact Distances – Trenchless Construction Worksite</b>			
Impact Boundary	Distance in Relation to Impact Magnitude (NVSRs) / m			Impact Boundary	Distance to Impact Magnitude (NVSRs) / m			Impact Boundary	Distance to Impact Magnitude (NVSRs) / m			Impact Boundary	Distance to Impact Magnitude (NVSRs) / m		
	Daytime	Evening	Night		Daytime	Evening	Night		Daytime	Evening	Night		Daytime	Evening	Night
Negligible / Low	79	198	497	Negligible / Low	154	388	975	Negligible / Low	154	388	975	Negligible / Low	154	388	975
Low / Medium	50	125	314	Low / Medium	97	245	615	Low / Medium	97	245	615	Low / Medium	97	245	615
Medium / High	20	50	125	Medium / High	39	97	245	Medium / High	39	97	245	Medium / High	39	97	245
<b>Table 15.14 Summary of Impact Distances – Trenchless Construction Worksite</b>															
Impact Boundary	Distance in Relation to Impact Magnitude (NVSRs) / m														
	Daytime	Evening	Night												
Negligible / Low	154	388	975												
Low / Medium	97	245	615												
Medium / High	39	97	245												



## CONTACT US

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