



Preliminary Environmental Information Report Volume 2

Appendix 15.2 Construction Noise and Vibration Assumptions and Results

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1 Construction noise and vibration assessment assumptions

1.1 Project description

- 1.1.1 LionLink is a proposed electricity interconnector between Great Britain and the Netherlands that will supply up to 2.0 gigawatts (GW) of electricity and will connect to Dutch offshore wind via an offshore converter platform in Dutch waters (hereafter ‘the Project’).
- 1.1.2 The Proposed Scheme (defined as the part of the Project within the British jurisdiction) would involve the construction of a proposed Converter Station and the installation of offshore and onshore Underground High Voltage Direct Current (HVDC) Cables to the onshore Converter Station and Underground High Voltage Alternating Current (HVAC) Cables between the proposed Converter Station and Kiln Lane Substation.

1.2 Overview

- 1.2.1 This appendix provides the construction activity assumptions that form the basis for the prediction of construction noise in accordance with BS 5228. For details on the methodology of assessment for construction noise including assumptions and limitations, please refer to **Chapter 15 Noise and Vibration** of the Preliminary Environmental Information Report (PEIR).
- 1.2.2 The construction activities selected are based on the information available at the time of writing. The construction activities which have been considered for the construction noise assessment are listed below:
- Activity A - Enabling works and site preparation;
 - Activity B - Trenched excavation works;
 - Activity C - Horizontal Directional Drilling (HDD) activities;
 - Activity D - Cable installation;
 - Activity E – Demobilisation works;
 - Activity F – Compound construction and demobilisation;
 - Activity G – Converter Station construction works;
 - Activity H – Full Build Out of Kiln Lane Substation construction works which include construction, demolition and modification of pylons;
 - Activity I – Landfall construction works;
 - Activity J – Haul roads; and
 - Activity K – Bridge erection.
- 1.2.3 Activities with their corresponding plant items, number of units, sound power levels and usage assumptions are presented below. It is noted that the proposed

Landfall constructions works for the night-time are covered separately in **Section 2.9** of this appendix.

Table 1.1: Construction noise assumptions

Activity name	Source (BS 5228 Table)	Sound power dBL _{wA}	Num.	On- time (%)	Sound power level per frequency band (Hz)							
					63	125	250	500	1k	2k	4k	8k
Activity A – Enabling Works (access fencing drainage) and site preparation												
Tractor/Front shovel & Backhoe	C.4 74	108	2 x	80	90	83	73	73	70	69	61	56
360 Excavator (med)	C.2 5	104	2 x	80	75	67	69	65	64	63	70	62
HRA Paver	C.5 32	112	2 x	60	83	80	77	76	75	72	70	61
Tandem Roller	C.2 37	107	2 x	30	65	68	74	71	67	63	56	48
Tractor/Front shovel & Backhoe	C.4 74	108	2 x	60	89	82	72	72	69	68	60	55
Bulldozer (200 bhp)	C.2 10	108	2 x	50	84	85	76	68	69	65	63	59
Activity B – Trenched excavation works												
6 T Dumper	C.4 6	107	1 x	80	83	80	71	68	66	66	60	56
Cable drum delivery (Lorry 44t)	C.11 4	111	1 x	40	73	71	69	66	67	69	66	60
360 Excavator (med)	C.2 5	104	2 x	80	75	67	69	65	64	63	70	62
Tractor	C.4 75	107	1 x	80	87	80	70	70	67	66	58	53
Roller	C.2 37	107	1 x	80	66	69	75	72	68	64	57	49

Activity name	Source (BS 5228 Table)	Sound power dBL _{WA}	Num.	On- time (%)	Sound power level per frequency band (Hz)							
					63	125	250	500	1k	2k	4k	8k
Diesel generator	C.4 96	105	1 x	80	61	74	68	66	66	66	62	55
Hand tools	Estimat ed from typical	94	1 x	80	78	64	54	47	42	39	36	34
Dozer	C.8 6	106	2 x	80	78	77	72	74	71	66	60	55
Activity C - Horizontal Directional Drilling (HDD) activities												
Tractor/Front shovel & Backhoe	C.4 74	108	1 x	80	87	80	70	70	67	66	58	53
HDD Drill Rig	PBU and Riggall report	101	1 x	40	82	68	58	51	46	43	40	38
Water Pump	C.2 45	93	1 x	80	67	62	56	56	55	50	47	35
Diesel generator	C.4 96	105	2 x	80	64	77	71	69	69	69	65	58
360 Excavator (med)	C.2 5	104	1 x	80	72	64	66	62	61	60	67	59
Hand tools	Estimat ed from typical	94	1 x	80	78	64	54	47	42	39	36	34
Activity D - Cable installation												
Cable drum installation	C.4 75	107	1 x	80	87	80	70	70	67	66	58	53

Activity name	Source (BS 5228 Table)	Sound power dBL _{WA}	Num.	On- time (%)	Sound power level per frequency band (Hz)							
					63	125	250	500	1k	2k	4k	8k
Excavator	C.2 5	104	2 x	80	75	67	69	65	64	63	70	62
Tipper	D.3 112	113	1 x	80	97	83	73	66	61	58	55	53
Hand tools	Estimat ed from typical	94	1 x	80	78	64	54	47	42	39	36	34
Diesel generator	C.4 96	105	1 x	80	61	74	68	66	66	66	62	55
Concrete mixer truck	C.4 20	108	1 x	80	77	68	60	63	64	72	54	49
Concrete pump	C.4 28	103	1 x	80	73	74	67	66	63	62	53	47
Tractor	C.4 75	107	1 x	80	87	80	70	70	67	66	58	53
Activity E - Demobilisation works												
Tractor/Front shovel & Backhoe	C.4 74	108	2 x	60	89	82	72	72	69	68	60	55
Tipper	D.3 112	113	2 x	30	96	82	72	64	60	57	54	52
Bulldozer (200 bhp)	C.2 10	108	1 x	80	83	84	75	67	68	64	62	58
Tractor/Front shovel & Backhoe	C.4 74	108	1 x	80	87	80	70	70	67	66	58	53
Hand tools	Estimat ed from typical	94	1 x	80	78	64	54	47	42	39	36	34

Activity name	Source (BS 5228 Table)	Sound power dBL _{WA}	Num.	On- time (%)	Sound power level per frequency band (Hz)							
					63	125	250	500	1k	2k	4k	8k
Dumper (10 T)	C.4 4	104	1 x	80	76	70	69	68	62	62	58	49
360 Excavator (med)	C.2 5	104	2 x	80	75	67	69	65	64	63	70	62
Activity F - Compound construction and demobilisation												
Tractor/Front shovel & Backhoe	C.4 74	108	1 x	60	86	79	69	69	66	65	57	52
Hand tools	Estimat ed from typical	94	1 x	30	74	60	50	42	38	35	32	30
Dumper (10 T)	C.4 4	104	1 x	80	76	70	69	68	62	62	58	49
HRA Paver	C.5 32	112	1 x	40	78	75	72	71	70	67	65	56
Tandem Roller	C.2 37	107	1 x	80	66	69	75	72	68	64	57	49
Bulldozer (200 bhp)	C.2 10	108	2 x	40	83	84	75	67	68	64	62	58
360 Excavator (med)	C.2 5	104	2 x	80	75	67	69	65	64	63	70	62
Tipper	D.3 112	113	3 x	40	99	85	75	67	63	60	57	55
Activity G - Converter Station construction works												
AIL - Transformer delivery	C.11 4	111	1 x	60	75	73	71	68	69	71	68	62
360 excavator	C.2 5	104	1 x	40	69	61	63	60	58	57	64	56
360 excavator (idling)	C.2 6	91	1 x	40	55	53	55	53	47	44	38	30

Activity name	Source (BS 5228 Table)	Sound power dBL _{WA}	Num.	On- time (%)	Sound power level per frequency band (Hz)							
					63	125	250	500	1k	2k	4k	8k
Bulldozer	C.2 10	108	1 x	80	83	84	75	67	68	64	62	58
Dumper trucks	C.4 4	104	1 x	80	76	70	69	68	62	62	58	49
Dumper trucks (idling)	C.4 5	91	1 x	80	67	58	49	49	54	50	44	37
Smooth roller compacting plant	C.5 19	108	1 x	80	81	79	69	67	69	67	63	57
Ready mix delivery (discharging)	C.4 18	103	1 x	80	74	63	60	64	65	63	58	52
Ready mix delivery (idling)	C.4 19	99	1 x	80	71	65	59	59	60	60	54	45
Telehandler	C.4 54	107	1 x	80	73	67	60	59	72	60	48	41
Hydrovac	C.11 4	111	1 x	30	72	70	68	65	66	68	65	59
Hydraulic hammer rig	C.3.2	115	2 x	50	75	82	83	79	78	73	69	60
Large crane 200-250 tonne crane	C.4 38	106	1 x	10	70	69	63	64	63	63	54	45
Activity H - Proposed full build out of Kiln Lane scenario construction, demolition, and modification of pylons												
AIL - Transformer delivery	C.11 4	111	1 x	60	75	73	71	68	69	71	68	62
360 excavator	C.2 5	104	1 x	40	69	61	63	60	58	57	64	56
360 excavator (idling)	C.2 6	91	1 x	40	55	53	55	53	47	44	38	30

Activity name	Source (BS 5228 Table)	Sound power dBL _{WA}	Num.	On- time (%)	Sound power level per frequency band (Hz)							
					63	125	250	500	1k	2k	4k	8k
Bulldozer	C.2 10	108	1 x	80	83	84	75	67	68	64	62	58
Dumper trucks	C.4 4	104	1 x	80	76	70	69	68	62	62	58	49
Dumper trucks (idling)	C.4 5	91	1 x	80	67	58	49	49	54	50	44	37
Smooth roller compacting plant	C.5 19	108	1 x	80	81	79	69	67	69	67	63	57
Ready mix delivery (discharging)	C.4 18	103	1 x	80	74	63	60	64	65	63	58	52
Ready mix delivery (idling)	C.4 19	99	1 x	80	71	65	59	59	60	60	54	45
Telehandler	C.4 54	107	1 x	80	73	67	60	59	72	60	48	41
Hydrovac	C.11 4	111	1 x	30	72	70	68	65	66	68	65	59
Hydraulic hammer rig	C.3.2	115	2 x	50	75	82	83	79	78	73	69	60
Medium low loader	C.11 4	111	2 x	10	75	73	71	68	69	71	68	62
Ready mix delivery (discharging for pylons)	C.4 18	103	2 x	25	77	66	63	67	68	66	61	55
Ready mix delivery (idling for pylons)	C.4 19	99	2 x	50	77	71	65	65	66	66	60	51
Articulated lorry	C.11 4	111	2 x	10	75	73	71	68	69	71	68	62
Large crane 200-250 tonne crane	C.4 38	106	1 x	10	70	69	63	64	63	63	54	45

Activity name	Source (BS 5228 Table)	Sound power dBL _{WA}	Num.	On- time (%)	Sound power level per frequency band (Hz)							
					63	125	250	500	1k	2k	4k	8k
Med crane 100 tonne crane	C.4 41	99	1 x	25	67	65	62	64	60	57	48	43
Tele handler (for pylons)	C.4 55	98	2 x	50	82	72	63	65	67	64	56	49
Compressor	C.5.5	93	1 x	50	81	70	61	56	54	52	55	44
Activity I - Landfall construction works												
Diesel generator	C.4 96	104	1 x	100	95	81	71	64	59	56	53	51
360 Excavator (med)	C.2 5	101	1 x	100	94	80	70	63	58	55	52	50
360 Excavator (med)	C.2 5	101	1 x	100	94	80	70	63	58	55	52	50
360 Excavator (med)	C.2 5	101	1 x	100	94	80	70	63	58	55	52	50
Dozer	C.8 6	106	1 x	100	96	82	72	65	60	57	54	52
Roller	C.2 37	107	1 x	100	97	83	73	66	61	58	55	53
Diesel generator	C.4 96	93	1 x	100	95	81	71	64	59	56	53	51
Concrete mixer truck	C.4 20	108	1 x	100	98	84	74	67	62	59	56	54
Diesel generator	C.4 96	101	1 x	100	95	81	71	64	59	56	53	51
Diesel generator	C.4 96	101	1 x	100	95	81	71	64	59	56	53	51
Activity J – Haul roads												
Lorry 32T*	C.11 10	105.0	N/A	N/A	86	74	72	74	66	64	59	56

Activity name	Source (BS 5228 Table)	Sound power dBL _{WA}	Num.	On- time (%)	Sound power level per frequency band (Hz)							
					63	125	250	500	1k	2k	4k	8k
Activity K – Bridge erection												
360 Excavator (idling)	C.2 6	91	2 x	10	52	50	52	50	44	41	35	27
Dumper trucks	C.4 4	104	2 x	65	78	72	71	70	64	64	60	51
Dumper trucks (idling)	C.4 5	91	2 x	65	69	60	51	51	56	52	46	39
Ready mix delivery (discharging)	C.4 18	103	2 x	90	78	67	64	68	69	67	62	56
Ready mix delivery (idling)	C.4 19	99	2 x	10	65	59	53	53	54	54	48	39
Telehandler	C.4 54	107	2 x	100	77	71	64	63	76	64	52	45
Hydrovac	C.11 4	111	1 x	100	77	75	73	70	71	73	70	64
Hydraulic hammer rig	C.3.2	115	2 x	50	75	82	83	79	78	73	69	60
Vibration compaction plant	C.5.29	110	1 x	50	68	70	66	69	69	69	65	62
Compressor	C.5.5	93	1 x	10	69	58	49	44	42	40	43	32

*Haul roads sound pressure levels are calculated with the BS5228 equation $L_{Aeq,T} = L_{WA} - 33 + 10\log_{10} Q - 10\log_{10} V - 10\log_{10} d$ where:

$L_{Aeq,T}$ is the A-weighted equivalent continuous sound level measured over a specified period of time (16 hours)

L_{WA} is the A-weighted sound power level

Q is the number of vehicle movements over the specified time period

V is the approximate speed of the vehicles in kph

d is the perpendicular horizontal distance away from the road

1.3 Haul roads

- 1.3.1 For the assessment of haul roads within the Draft Order Limits, it is assumed that the maximum construction traffic during the busiest construction year will be 1,674 vehicles per week, equivalent to 335 movements per day (based on a 5-day working week). The average number of vehicle movements per day is estimated to be about 79. A vehicle speed of 20kph has been assumed, and the sound pressure level was calculated at a reference distance of 10m from the haul road. These inputs result in a predicted noise level of approximately 74dB_{L_{Aeq,T}} for the maximum number of movements and 68dB_{L_{Aeq,T}} for the average number of movements, which has been used in the noise model developed for the assessment of construction noise.

1.4 Vibration assumptions

- 1.4.1 The construction vibration assumptions used for the main noise and vibration chapter are presented below. The assumptions are based on the information presented in BS5228. In the absence of detail information, conservative assumptions are made by choosing the parameters that would yield the high end of vibration predictions.

Table 1.2: Vibration calculation assumptions

Assumptions			
Vibratory compaction - steady state	k_t	Scaling factor	75
	N_d	Number of vibrating drums	1
	A	Max amplitude of drum vibration (mm)	1.72
	L_d	Vibrating roller width (range in m)	2.2
Vibratory compaction - start-up/run-down	k_t	Scaling factor	65
	N_d	Number of vibrating drums	1
	A	Max amplitude of drum vibration (mm)	1.72
	L_d	Vibrating roller width (range in m)	2.2
Percussive piling	K_p	All piles being driven to refusal	5
	W	Nominal hammer energy, in kilojoules (kJ)	85
	r	Distance to pile toe cap	Based on distance measurements from source to receptor

2 Construction noise assessment results

2.1 Overview

- 2.1.1 The construction noise assessment present in this section show the predicted A-weighted sound pressure level at each of the listed receptors over each quarter of the construction programme. The sound pressure levels have been calculated in $\text{dBL}_{\text{Aeq,T}}$ form. These noise levels are presented as free-field level and are representative of receptors associated with the ALID.
- 2.1.2 Where the predicted construction noise level exceed the relevant ABC Category, the results in the table are shown in **bold** font.

2.2 Proposed Full Build Out of Kiln Lane Substation scenario + HVAC Southern Route Option

Table 2.1: Full Build Out of Kiln Lane Substation scenario + HVAC Southern Route Option construction noise predictions

Receptor	ABC Category	2028				2029				2030				2031				2032			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALID_1	65	12	51	51	51	51	56	56	56	56	56	56	56	56	56	56	56	51	51	51	51
ALID_2	65	12	53	53	53	53	56	56	56	56	56	56	56	56	56	56	56	53	53	53	53
ALID_3	65	12	57	57	57	57	59	59	59	59	59	59	59	59	59	59	59	57	57	57	57
ALID_4	65	12	60	60	60	60	60	60	60	60	60	60	60	60	60	60	59	59	59	59	59
ALID_5	65	12	51	51	51	51	60	60	60	60	60	60	60	60	60	60	60	51	51	51	51
ALID_6	65	12	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
ALID_7	65	12	46	46	46	46	67	67	67	67	67	67	67	67	67	67	66	47	47	46	46
ALID_10	65	12	51	51	51	51	63	63	63	63	63	63	63	63	63	63	63	51	51	51	51
ALID_11	65	12	58	58	58	58	63	63	63	63	63	63	63	63	63	63	63	58	58	58	58

Receptor	ABC Category	2028				2029				2030				2031				2032			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALID_12	65	12	60	60	60	60	62	62	62	62	62	62	62	62	62	62	62	60	60	60	60
ALID_14	65	12	58	58	58	58	59	59	59	59	59	59	59	59	59	59	59	58	58	58	58

2.3 Proposed Full Build Out of Kiln Lane Substation scenario + HVAC Northern Route Option

Table 2.2: Full Build Out of Kiln Lane Substation scenario + HVAC Northern Route Option construction noise predictions

Receptor	ABC Category	2028				2029				2030				2031				2032			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALID_1	65	12	51	51	51	51	56	56	56	56	56	56	56	56	56	56	55	51	51	51	51
ALID_2	65	12	52	52	52	52	56	56	56	56	56	56	56	56	56	56	55	52	52	52	52
ALID_3	65	12	57	57	57	57	59	59	59	59	59	59	59	59	59	59	59	57	57	57	57
ALID_4	65	12	59	59	59	59	60	60	60	59	59	59	59	59	59	59	59	59	59	59	59
ALID_5	65	12	51	51	51	51	60	60	60	60	60	60	60	60	60	60	60	51	51	51	51

Receptor	ABC Category	2028				2029				2030				2031				2032			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALID_6	65	12	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
ALID_7	65	12	47	47	47	47	67	67	67	67	67	67	67	67	67	67	66	47	47	47	47
ALID_10	65	12	51	51	51	51	63	63	63	63	63	63	63	63	63	63	63	51	51	51	51
ALID_11	65	12	61	61	61	61	64	64	64	64	64	64	64	64	64	64	64	61	61	61	61
ALID_12	65	12	61	61	61	61	63	63	63	63	63	63	63	63	63	63	63	61	61	61	61
ALID_14	65	12	61	61	61	61	62	62	62	62	62	62	62	62	62	62	62	61	61	61	61

2.4 Proposed Underground HVAC Cable Corridor – Southern Route Option

Table 2.3: HVAC Southern Route Option construction noise predictions

Receptor	ABC Category	2028				2029				2030				2031				2032			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALID_8	65	12	54	54	54	54	55	55	55	55	55	55	55	55	55	55	54	54	54	54	54

Receptor	ABC Category	2028				2029				2030				2031				2032			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALID_9	65	12	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47
ALID_15	65	12	56	56	56	56	57	57	57	57	57	57	57	57	57	57	56	56	56	56	56
ALID_16	65	12	53	53	53	53	53	53	53	53	53	53	53	53	53	53	52	53	53	53	53
ALID_17	65	12	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59

2.5 Proposed Underground HVAC Cable Corridor – Northern Route Option

Table 2.4: HVAC Northern Route Option construction noise predictions

Receptor	ABC Category	2028				2029				2030				2031				2032			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALID_20	65	12	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
ALID_23	65	12	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64

Receptor	ABC Category	2028				2029				2030				2031				2032			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALID_24	65	12	58	58	58	58	59	59	59	59	59	59	59	59	59	59	58	58	58	58	58

2.6 Proposed Converter Station

Table 2.5: Proposed Converter Station construction noise predictions

Receptor	ABC Category	2028				2029				2030				2031				2032			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALID_13	65	12	55	55	55	55	55	55	55	55	55	55	55	54	54	54	54	54	54	54	54
ALID_18	65	12	54	54	54	54	54	54	54	53	53	53	53	53	53	53	53	53	53	53	53
ALID_19	65	12	53	53	53	53	54	54	54	53	53	53	53	53	53	53	52	53	53	53	53
ALID_21	65	12	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
ALID_22	65	12	60	60	60	60	61	61	61	60	60	60	60	60	60	60	60	60	60	60	60

Receptor	ABC Category	2028				2029				2030				2031				2032			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALID_25	65	12	52	52	52	52	53	53	53	53	53	53	53	53	53	53	52	53	53	52	52
ALID_27	65	12	54	54	54	54	54	54	54	54	54	54	54	54	54	54	53	54	54	53	53

2.7 Proposed Underground HVDC Cable Corridor

Table 2.6: Proposed Underground HVDC Cable Corridor - construction noise predictions

Receptor	ABC Category	2028				2029				2030				2031				2032			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALID_26	65	12	61	61	61	61	65	65	65	64	64	64	64	64	64	64	61	61	61	60	60
ALID_28	65	12	53	53	53	53	60	60	60	60	60	60	60	60	60	60	54	55	55	52	52
ALID_29	65	12	51	51	51	51	56	56	56	56	56	56	56	56	56	56	51	52	52	51	51
ALID_30	65	12	55	55	55	55	60	60	60	59	59	59	59	59	59	59	55	56	56	54	54

Receptor	ABC Category	2028				2029				2030				2031				2032			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALID_31	65	12	52	52	52	52	57	57	57	57	57	57	57	57	57	57	52	53	53	52	52
ALID_32	65	12	59	59	59	59	64	64	64	63	63	63	63	63	63	63	59	60	60	58	58
ALID_33	65	12	52	52	52	52	59	59	59	59	59	59	59	59	59	59	53	54	54	51	51
ALID_34	65	12	46	46	46	46	59	59	59	59	59	59	59	59	59	59	52	52	52	47	47
ALID_35	65	12	43	43	43	43	52	52	52	51	51	51	51	51	51	51	45	46	46	44	44
ALID_36	65	12	49	49	49	49	58	58	58	58	58	58	58	58	58	58	51	52	52	49	49
ALID_37	65	12	50	50	50	50	55	55	55	55	55	55	55	55	55	55	50	51	51	49	49
ALID_38	65	12	49	49	49	49	57	57	57	56	56	56	56	56	56	56	51	52	52	49	49
ALID_39	65	12	52	52	52	52	59	59	59	58	58	58	58	58	58	58	52	54	54	52	52
ALID_40	65	12	59	59	59	59	63	63	63	63	63	63	63	63	63	63	59	58	58	57	57
ALID_41	65	12	49	49	49	49	57	57	57	57	57	57	57	57	57	57	49	51	51	50	50

Receptor	ABC Category	2028				2029				2030				2031				2032			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALID_42	65	12	51	51	51	51	57	57	57	56	56	56	56	56	56	56	51	52	52	50	50
ALID_43	65	12	53	53	53	53	58	58	58	58	58	58	58	58	58	58	53	54	54	52	52
ALID_44	65	12	58	58	58	58	75	75	75	74	74	74	74	74	74	74	57	58	58	56	56
ALID_45	65	12	52	52	52	52	59	59	59	58	58	58	58	58	58	58	53	54	54	52	52
ALID_46	65	12	54	54	54	54	59	59	59	59	59	59	59	59	59	59	54	54	54	53	53
ALID_47	65	12	50	50	50	50	55	55	55	55	55	55	55	55	55	55	50	51	51	50	50
ALID_48	65	12	58	58	58	58	62	62	62	61	61	61	61	61	61	61	59	59	59	57	57
ALID_49	65	12	62	62	62	62	66	66	66	65	65	65	65	65	65	65	63	63	63	61	61
ALID_50	65	12	63	63	63	63	65	65	65	64	64	64	64	64	64	64	62	62	62	61	61
ALID_51	65	12	64	64	64	64	66	66	66	65	65	65	65	65	65	65	63	62	62	62	62
ALID_52	65	12	62	62	62	62	66	66	66	65	65	65	65	65	65	65	62	62	62	61	61

Receptor	ABC Category	2028				2029				2030				2031				2032			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALID_53	65	12	54	54	54	54	60	60	60	59	59	59	59	59	59	59	53	54	54	54	54
ALID_54	65	12	60	60	60	60	65	65	65	64	64	64	64	64	64	64	59	59	59	59	59
ALID_55	65	12	51	51	51	51	57	57	57	56	56	56	56	56	56	56	52	53	53	51	51
ALID_56	65	12	52	52	52	52	58	58	58	58	58	58	58	58	58	58	54	55	55	52	52
ALID_57	65	12	54	54	54	54	59	59	59	58	58	58	58	58	58	58	54	55	55	53	53
ALID_58	65	12	60	60	60	60	64	64	64	64	64	64	64	64	64	64	60	60	60	59	59
ALID_59	65	12	57	57	57	57	61	61	61	60	60	60	60	60	60	60	57	58	58	56	56
ALID_60	65	12	52	52	52	52	59	59	59	59	59	59	59	59	59	59	52	53	53	51	51
ALID_61	65	12	54	54	54	54	61	61	61	60	60	60	60	60	60	60	54	55	55	53	53
ALID_62	65	12	57	57	57	57	62	62	62	61	61	61	61	61	61	61	57	57	57	55	55
ALID_63	65	12	57	57	57	57	62	62	62	62	62	62	62	62	62	62	57	58	58	56	56

Receptor	ABC Category	2028				2029				2030				2031				2032			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALID_64	65	12	56	56	56	56	62	62	62	61	61	61	61	61	61	61	55	56	56	55	55
ALID_65	65	12	53	53	53	53	72	72	72	72	72	72	72	72	72	72	54	55	55	53	53
ALID_66	65	12	63	63	63	63	69	69	69	69	69	69	69	69	69	69	62	62	62	62	62
ALID_67	65	12	54	54	54	54	61	61	61	61	61	61	61	61	61	61	57	57	57	53	53
ALID_68	65	12	49	49	49	49	59	59	59	59	59	59	59	59	59	59	53	53	53	49	49
ALID_69	65	12	55	55	55	55	62	62	62	62	62	62	62	62	62	62	54	55	55	54	54
ALID_70	65	12	43	43	43	43	55	55	55	55	55	55	55	55	55	55	46	47	47	45	45
ALID_71	65	12	52	52	52	52	60	60	60	60	60	60	60	60	60	60	52	53	53	50	50
ALID_72	65	12	62	62	62	62	66	66	66	65	65	65	65	65	65	65	62	62	62	62	62
ALID_73	65	12	57	57	57	57	61	61	61	61	61	61	61	61	61	61	57	57	57	57	57
ALID_74	65	12	58	58	58	58	66	66	66	66	66	66	66	66	66	66	62	62	62	57	57

Receptor	ABC Category	2028				2029				2030				2031				2032			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALID_77	65	12	59	59	59	59	63	63	63	62	62	62	62	62	62	62	58	58	58	58	58
ALID_82	65	12	53	53	53	53	59	59	59	59	59	59	59	59	59	59	55	55	55	52	52

2.8 Proposed Landfall - daytime

2.8.1 **Table 2.7** presents the construction noise predictions for the proposed Landfall during the daytime. The construction plant items assumed for the daytime are those presented as Activity I - Landfall construction works of Table 1.1, and it also includes construction noise emissions from the proposed Underground HVDC Cable Corridor section immediately west of the proposed Landfall Site. It is noted that the dominant sources below, are associated with the enabling works, joint bays and trench works of the proposed Underground HVDC Cable Corridor. The proposed Landfall construction works are not anticipated to be the noisiest activity for the daytime.

Table 2.7: Proposed Landfall daytime construction noise predictions – 3m barrier

Receptor	ABC Category	2028				2029				2030				2031				2032			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALID_75	65	12	67	67	67	67	70	70	70	69	69	69	69	69	69	69	67	67	67	65	65
ALID_76	65	12	64	64	64	64	68	68	68	68	68	68	68	68	68	68	67	67	67	63	63

Receptor	ABC Category	2028				2029				2030				2031				2032			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALID_78	65	12	52	52	52	52	55	55	55	57	57	57	57	57	55	55	53	53	53	52	52
ALID_79	65	12	46	46	46	46	51	51	51	51	51	51	51	51	50	50	47	48	48	46	46
ALID_80	65	12	55	55	55	55	58	58	58	59	59	59	59	59	58	58	56	57	57	55	55
ALID_81	65	12	49	49	49	49	52	52	52	54	54	54	54	54	52	52	50	50	50	49	49

2.9 Proposed Landfall - nighttime

2.9.1 **Table 2.9** presents the construction noise predictions for the proposed Landfall during the nighttime. At this stage of the design of the Proposed Scheme, details about the plant anticipated to be on during the night are unknown. As a realistic worst-case scenario the following plant is assumed only for the nighttime proposed Landfall works:

Table 2.8: Proposed Landfall – nighttime Construction noise assumptions

Activity name	Source (BS 5228 Table)	Sound power dBL _{WA}	Num.	On- time (%)	Sound power level per frequency band (Hz)							
					63	125	250	500	1k	2k	4k	8k
Activity J – Landfall works during the night-time												
Landfall HDD Drill Rig	LionLink SSSI HDD PBU report (Ref 1)	100	x3	100	119	108	100	94	91	88	86	84

Activity name	Source (BS 5228 Table)	Sound power dBL _{WA}	Num.	On- time (%)	Sound power level per frequency band (Hz)							
					63	125	250	500	1k	2k	4k	8k
Diesel Generator	C.4 96	105	1	100	95	108	102	100	100	100	96	89
HDD mount supports	C.4 92	115	X3	100	133	119	109	102	97	94	91	89
360 Excavator	C.4 92	115	1	80	128	114	104	96	92	89	86	84

Table 2.9: Proposed Landfall night-time construction noise predictions - 3m and 5m - Night-time

Receptor	ABC Category	Predicted sound pressure level at receptor dBL _{Aeq,T}	
		3 m barrier	5 m barrier
ALID_75	45	62	59
ALID_76	45	64	59
ALID_77	45	47	46
ALID_78	45	55	49
ALID_79	45	40	41
ALID_80	45	60	57
ALID_81	45	46	46

References

- Ref 1 Feasibility Study LionLink SSSI HDD. BakerHicks C3036. Submitted by PBU (UK) Ltd. August 2024.

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