

Outer Dowsing Offshore Wind Preliminary Environmental Information Report Volume 2, Appendix 26.3: Construction Plant List

Date: June 2023

Outer Dowsing Document No: 6.2.26.3

Internal Reference: PP1-ODOW-DEV-CS-REP-0072

Rev: V1.0

OUTER DOWSING OFFSHORE WIND PRELIMINARY ENVIRONMENTAL INFORMATION REPORT

VOLUME 2, APPENDIX 26.3: CONSTRUCTION PLANT LIST

SLR Ref: 410.V05356.00013
Version No: V1.0
June 2023



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CONTENTS

1.0 CONSTRUCTION PLANT SOUND LEVELS	3
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DOCUMENT REFERENCES

TABLES

Table 1-1 Plant utilised in construction phase – Establish Access and Temporary Construction Compound (including Trenchless Drilling compounds)	3
Table 1-2 Plant utilised in construction phase – Site Preparation, Including Fencing, Haul Road Construction and Topsoil Strip	4
Table 1-3 Plant utilised in construction phase – Transition Joint Bay Excavation.....	5
Table 1-4 Plant utilised in construction phase – Transition Bay Wall and Base Construction.....	5
Table 1-5 Plant utilised in construction phase – Connection of Cables in Transition Bays	6
Table 1-6 Plant utilised in construction phase – Roof and Backfill over Transition Joint Bay	7
Table 1-7 Plant utilised in construction phase – Trench Excavation and Duct Installation.....	8
Table 1-8 Plant utilised in construction phase – Trench Backfill.....	9
Table 1-9 Plant utilised in construction phase – Joint Bay Excavation.....	10
Table 1-10 Plant utilised in construction phase – Jointing Bay Base Construction	10
Table 1-11 Plant utilised in construction phase – Pulling and Connection of Cables	11
Table 1-12 Plant utilised in construction phase – Backfill over Jointing Bay	11
Table 1-13 Plant utilised in construction phase – Trench Route Reinstatement / Topsoil Reinstatement	12
Table 1-14 Plant utilised in construction phase – Haul Road Removal and Removal of fencing and Reinstatement.....	13
Table 1-15 Plant utilised in construction phase – Temporary Construction Compound and Access Road Removal (including Trenchless Drilling compounds)	14
Table 1-16 Plant utilised in construction phase – Landfall Operations.....	14
Table 1-18 Plant utilised in construction phase – Temporary Construction Compound Operations.	15
Table 1-19 Plant utilised in Trenchless Crossing Compound Operations – Daytime.....	15
Table 1-20 Plant utilised in Trenchless Crossing Compound Operations –Night-Time (where applicable)	15
Table 1-21 Plant utilised in substation construction phase – Groundworks	16
Table 1-22 Plant utilised in substation construction phase – Building foundation works	16
Table 1-23 Plant utilised in substation construction phase – Access road and car parking works road works	17

Table 1-24 Plant utilised in substation construction phase – Building fabrication and HV Plant Installation
..... 17

1.0 Construction Plant Sound Levels

Presented below are the indicative sound power levels for the construction plant required in each construction phase, the indicative number required and the estimated percentage the plant will be operating during the activity. Sound power levels were determined using the A-weighted sound pressure level (dB) at 10m from Table C of BS 5228-1:2009+A1:2014. The resultant level was then derived from the estimated percentage of operational time.

Table 1-1
Plant utilised in construction phase – Establish Access and Temporary Construction Compound (including Trenchless Drilling compounds)

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
D6 Dozer	109	1	100	109
30T excavator	103	2	100	106
20T Dumper	109	3	100	114
Smooth Drum vibro road roller	103	1	100	103
21T excavator	106	1	100	106
5T Forward Tipping Dumper	106	1	100	106
Loading shovel	108	1	100	108
Tractor & fencing kit	108	1	100	108
Tractor & trailer	107	1	70	105
Tractor & Fuel bowser (or self-propelled)	117	1	10	107
Tractor & Water bowser (for dust suppression)	111	1	25	105
Grader	114	1	100	114
Telehandler	107	1	70	105
Mobile self-contained welfare unit	94	1	25	88
Mobile generator	102	2	25	99
Temporary lighting	93	6	50	98
Road surface paver & roller	112	1	25	106
Logarithmic sum				120

Table 1-2
Plant utilised in construction phase – Site Preparation, Including Fencing, Haul Road Construction and Topsoil Strip

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
D6 Dozer	109	1	100	109
30T excavator	103	2	100	106
20T Dumper	109	3	100	114
Smooth Drum vibro road roller	103	1	100	103
21T excavator	106	1	100	106
5T Forward Tipping Dumper	106	1	100	106
Loading shovel	108	1	100	108
Tractor & fencing kit	108	1	100	108
Tractor & trailer	107	1	70	105
Tractor & Fuel bowser (or self-propelled)	117	1	10	107
Tractor & Water bowser (for dust suppression)	111	1	25	105
Grader	114	1	100	114
Telehandler	107	1	70	105
Mobile self-contained welfare unit	94	1	25	88
Mobile generator	102	2	25	99
Temporary lighting	93	12	25	98
Logarithmic sum				120

Table 1-3
Plant utilised in construction phase – Transition Joint Bay Excavation

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
30T excavator	103	1	100	103
20T Dumper	109	2	100	112
Smooth Drum vibro roller	103	1	10	93
21T excavator	106	1	50	103
5T Forward Tipping Dumper	106	1	50	103
Tractor & Fuel bowser (or self-propelled)	117	1	10	107
Tractor & Water bowser (for dust suppression)	111	1	25	105
Mobile self-contained welfare unit	94	1	25	88
Mobile generator	102	2	25	99
Temporary lighting	93	4	25	93
Pump	106	2	100	109
Piling Rig	116	1	10	106
Logarithmic sum				116

Table 1-4
Plant utilised in construction phase – Transition Bay Wall and Base Construction

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
Tractor & trailer	107	1	50	104
Tractor & Fuel bowser (or self-propelled)	117	1	10	107
Tractor & Water bowser (for dust suppression)	111	1	25	105
Mobile concrete pump / concrete mixer truck	108	1	50	105
Telehandler	107	1	50	104
Mobile self-contained welfare unit	94	1	25	88
Mobile generator	102	2	50	102
Temporary lighting	93	4	25	93
Pump	106	2	100	109
Logarithmic sum				114

Table 1-5
Plant utilised in construction phase – Connection of Cables in Transition Bays

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
Tractor & trailer	107	1	50	104
Tractor & Fuel bowser (or self-propelled)	117	1	10	107
Tractor & Water bowser (for dust suppression)	111	1	25	105
Mobile crane	110	1	25	104
Cable laying tracked crane	103	1	25	97
Telehandler	107	1	50	104
Mobile self-contained welfare unit	94	1	20	87
Crawler Crane	103	1	25	97
Mobile generator	102	2	100	105
Temporary lighting	93	4	50	96
Pump	106	2	100	109
Logarithmic sum				115

Table 1-6
Plant utilised in construction phase – Roof and Backfill over Transition Joint Bay

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
D6 Dozer	109	1	100	109
30T excavator	103	1	100	103
20T Dumper	109	2	100	112
21T excavator	106	1	100	106
5T Forward Tipping Dumper	106	1	100	106
Loading shovel	108	1	100	108
Trench Roller	101	1	75	100
Tractor & trailer	107	1	25	101
Tractor & Fuel bowser (or self-propelled)	117	1	10	107
Tractor & Water bowser (for dust suppression)	111	1	25	105
Cement mixer	89	1	25	83
Mobile crane	110	1	25	104
Pre-cast concrete truck	111	1	5	98
Telehandler	107	1	25	101
Mobile self-contained welfare unit	94	1	25	88
Mobile generator	102	2	25	99
Temporary lighting	93	4	25	93
Pump	106	2	100	109
Logarithmic sum				118

Table 1-7
Plant utilised in construction phase – Trench Excavation and Duct Installation

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
30T excavator	103	2	100	106
20T Dumper	109	2	100	112
21T excavator	106	2	100	109
5T Forward Tipping Dumper	106	2	100	109
Loading shovel	108	2	50	108
Trench Roller	101	2	50	101
Tractor & trailer	107	1	50	104
Tractor & Fuel bowser (or self-propelled)	117	1	10	107
Tractor & Water bowser (for dust suppression)	111	1	25	105
Telehandler	107	1	50	104
Mobile self-contained welfare unit	94	1	25	88
Crawler Crane	103	1	10	93
Mobile generator	102	2	25	99
Temporary lighting	93	8	25	96
Pump	106	2	100	109
Logarithmic sum				118

Table 1-8
Plant utilised in construction phase – Trench Backfill

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
30T excavator	103	2	100	106
20T Dumper	109	2	100	112
21T excavator	106	2	100	109
5T Forward Tipping Dumper	106	2	100	109
Loading shovel	108	2	100	111
Trench Roller	101	2	75	103
Tractor & trailer	107	1	25	101
Tractor & Fuel bowser (or self-propelled)	117	1	10	107
Tractor & Water bowser (for dust suppression)	111	1	25	105
Telehandler	107	1	25	101
Mobile self-contained welfare unit	94	1	25	88
Mobile generator	102	2	25	99
Temporary lighting	93	8	25	96
Pump	106	2	100	109
Logarithmic sum				119

Table 1-9
Plant utilised in construction phase – Joint Bay Excavation

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
30T excavator	103	2	100	106
20T Dumper	109	2	100	112
Smooth drum vibro roller	103	1	10	93
21T excavator	106	1	50	103
5T Forward Tipping Dumper	106	1	50	103
Tractor & Fuel bowser (or self-propelled)	117	1	10	107
Tractor & Water bowser (for dust suppression)	111	1	25	105
Mobile self-contained welfare unit	94	1	25	88
Mobile generator	102	2	25	99
Temporary lighting	93	4	25	93
Pump	106	2	100	109
Logarithmic sum				116

Table 1-10
Plant utilised in construction phase – Jointing Bay Base Construction

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
Tractor & trailer	107	1	50	104
Tractor & Fuel bowser (or self-propelled)	117	1	10	107
Tractor & Water bowser (for dust suppression)	111	1	25	105
Mobile concrete pump / cement mixer truck	108	1	50	105
Telehandler	107	1	50	104
Mobile self-contained welfare unit	94	1	25	88
Mobile generator	102	2	50	102
Temporary lighting	93	4	25	93
Pump	106	2	100	109
Logarithmic sum				114

Table 1-11
Plant utilised in construction phase – Pulling and Connection of Cables

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
Tractor & Fuel bowser (or self-propelled)	117	1	10	107
Tractor & cable drum trailer	108	1	50	105
Cable winch	111	1	50	108
Mobile self-contained welfare unit	94	1	25	88
Mobile generator	102	2	25	99
Temporary lighting	93	4	25	93
Pump	106	2	100	109
Logarithmic sum				114

Table 1-12
Plant utilised in construction phase – Backfill over Jointing Bay

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
D6 Dozer	109	2	100	112
30T excavator	103	2	100	106
20T Dumper	109	2	100	112
21T excavator	106	1	100	106
5T Forward Tipping Dumper	106	1	100	106
Loading shovel	108	1	100	108
Trench Roller	101	1	75	100
Tractor & Fuel bowser (or self-propelled)	117	1	10	107
Tractor & Water bowser (for dust suppression)	111	1	25	105
Mobile self-contained welfare unit	94	1	25	88
Mobile generator	102	2	25	99
Temporary lighting	93	4	25	93
Pump	106	2	100	109
Logarithmic sum				118

Table 1-13
Plant utilised in construction phase – Trench Route Reinstatement / Topsoil Reinstatement

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
D6 Dozer	109	2	100	112
30T excavator	103	2	100	106
20T Dumper	109	2	100	112
Smooth Drum vibro roller	103	1	50	100
21T excavator	106	1	100	106
5T Forward Tipping Dumper	106	1	100	106
Loading shovel	108	2	100	111
Tractor & Fuel bowser (or self-propelled)	117	1	10	107
Tractor & Water bowser (for dust suppression)	111	1	25	105
Mobile self-contained welfare unit	94	1	25	88
Mobile generator	102	2	25	99
Temporary lighting	93	8	25	96
Logarithmic sum				118

Table 1-14
Plant utilised in construction phase – Haul Road Removal and Removal of fencing and Reinstatement

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
D6 Dozer	109	2	100	112
30T excavator	103	2	100	106
20T Dumper	109	2	100	112
Smooth Drum vibro roller	103	1	50	100
21T excavator	106	1	100	106
5T Forward Tipping Dumper	106	1	100	106
Loading shovel	108	2	100	111
Tractor & fencing kit	108	1	50	105
Tractor & trailer	107	1	50	104
Tractor & Fuel bowser (or self-propelled)	117	1	10	107
Tractor & Water bowser (for dust suppression)	111	1	25	105
Tractor & soil tiller, roller, seeder	108	1	25	102
Mobile self-contained welfare unit	94	2	25	91
Mobile generator	102	2	25	99
Temporary lighting	93	12	25	98
Logarithmic sum				119

Table 1-15
Plant utilised in construction phase – Temporary Construction Compound and Access Road Removal
(including Trenchless Drilling compounds)

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
D6 Dozer	109	2	100	112
30T excavator	103	2	100	106
20T Dumper	109	2	100	112
Smooth Drum vibro roller	103	1	50	100
21T excavator	106	1	100	106
5T Forward Tipping Dumper	106	1	100	106
Loading shovel	108	2	100	111
Tractor & fencing kit	108	1	50	105
Tractor & trailer	107	1	50	104
Tractor & Fuel bowser (or self-propelled)	117	1	10	107
Tractor & Water bowser (for dust suppression)	111	1	25	105
Tractor & soil tiller, roller, seeder	108	1	25	102
Mobile self-contained welfare unit	94	2	25	91
Mobile generator	102	2	25	99
Temporary lighting	93	6	25	95
Logarithmic sum				119

Table 1-16
Plant utilised in construction phase – Landfall Operations

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
21T excavator	106	1	10	96
Cable winch	111	1	10	101
Temporary lighting	93	4	25	93
Pump	106	2	50	106
Logarithmic sum				108

Table 1-17
Plant utilised in construction phase – Temporary Construction Compound Operations

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
Generator	102	2	100	105
Telehandler	107	1	75	106
Road Sweeper	104	1	10	94
Logarithmic sum				109

Table 1-18
Plant utilised in Trenchless Crossing Compound Operations – Daytime

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
Generator	102	1	100	102
Telehandler	107	2	75	109
Vibratory Piling Rig	116	1	10	106
Directional Drill Generator	105	1	100	105
Mounting supports for directional drill (hydraulic hammer)	115	1	25	109
Mud Pump	108	1	100	108
Mixing Tank	103	1	100	103
Cuttings / Recycling Tank	108	1	100	108
Logarithmic sum				116

Table 1-19
Plant utilised in Trenchless Crossing Compound Operations –Night-Time (where applicable)

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
Generator	102	1	100	102
Telehandler	107	2	75	109
Directional Drill Generator	105	1	100	105
Mud Pump	108	1	100	108
Mixing Tank	103	1	100	103
Cuttings / Recycling Tank	108	1	100	108
Logarithmic sum				114

Table 1-20
Plant utilised in substation construction phase – Groundworks

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
Excavator (earthworks)	102	6	100	110
Excavator (hydraulic breaker)	113	4	100	119
Dozer	107	4	75	112
Air compressor	100	4	100	106
Dump truck	105	8	70	112
Generator	100	2	100	103
Crusher	116	2	80	118
Logarithmic sum				123

Table 1-21
Plant utilised in substation construction phase – Building foundation works

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
Percussive piling rig	116	1	100	116
Tracked drilling rig with hydraulic drifter	82	1	100	82
Crane mounted auger	79	1	100	79
Mini piling rig	76	2	100	79
Compressor for mini piling	75	1	100	75
Dump truck	105	4	50	108
Truck mixer with pump	103	2	10	96
Excavator (earthworks)	102	3	80	106
Grinder	108	5	50	112
Compressor	100	2	100	103
Generator	100	2	100	103
Logarithmic sum				119

Table 1-22
Plant utilised in substation construction phase – Access road and car parking works road works

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
Excavator	102	2	100	105
Dump truck	105	4	70	109
Asphalt spreader with support lorry	106	1	100	106
Vibratory roller	106	2	70	107
Grader	112	1	100	112
Logarithmic sum				116

Table 1-23
Plant utilised in substation construction phase – Building fabrication and HV Plant Installation

Vehicle / Equipment	Sound Power Level, dB(A)	Indicative Number	Estimated Percentage of Operation During Activity	Resultant Sound Power Level, dB(A)
Mobile crane	102	1	50	99
Lorry	103	3	25	102
MEWP	78	2	75	80
Dump truck	105	4	10	101
Compressor	100	1	100	100
Forklift truck	105	2	50	105
Grinder	108	5	50	112
Pneumatic chipper/drill	114	3	50	116
Scaffolding	100	1	25	94
Logarithmic sum				118

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