



Awel y Môr Offshore Wind Farm

Category 6: Environmental Statement

Volume 5, Annex 10.3: Construction Plant.

Date: April 2022

Revision: A

Application Reference: 6.5.10.3

Pursuant to: APFP Regulation 5(2)(a)



REVISION	DATE	STATUS/ REASON FOR ISSUE	AUTHOR:	CHECKED BY:	APPROVED BY:
A	March 2022	ES	SLR	RWE	RWE

www.awelymor.cymru

RWE Renewables UK
Swindon Limited

Windmill Hill Business Park
Whitehill Way
Swindon
Wiltshire SN5 6PB
T +44 (0)8456 720 090
www.rwe.com

Registered office:
RWE Renewables UK
Swindon Limited
Windmill Hill Business Park
Whitehill Way
Swindon

AWEL Y MÔR OFFSHORE WIND FARM PROJECT

**Annex 10.3 of Volume 5, Chapter 10 –
Construction Plant Sound Levels**

Prepared for: RWE

Client Ref: 05356

SLR Ref: 406.05356.00009
Version No: 1
March 2022

SLR 

BASIS OF REPORT

This document has been prepared by SLR with reasonable skill, care and diligence, and taking account of the manpower, timescales and resources devoted to it by agreement with UK Energy Reserve Ltd. (the Client) as part or all of the services it has been appointed by the Client to carry out. It is subject to the terms and conditions of that appointment.

SLR shall not be liable for the use of or reliance on any information, advice, recommendations and opinions in this document for any purpose by any person other than the Client. Reliance may be granted to a third party only in the event that SLR and the third party have executed a reliance agreement or collateral warranty.

Information reported herein may be based on the interpretation of public domain data collected by SLR, and/or information supplied by the Client and/or its other advisors and associates. These data have been accepted in good faith as being accurate and valid.

The copyright and intellectual property in all drawings, reports, specifications, bills of quantities, calculations and other information set out in this report remain vested in SLR unless the terms of appointment state otherwise.

This document may contain information of a specialised and/or highly technical nature and the Client is advised to seek clarification on any elements which may be unclear to it.

Information, advice, recommendations and opinions in this document should only be relied upon in the context of the whole document and any documents referenced explicitly herein and should then only be used within the context of the appointment.

CONTENTS

1.0 CONSTRUCTION PLANT SOUND LEVELS	3
--	----------

DOCUMENT REFERENCES

TABLES

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

Table 22 Plant utilised in substation construction phase – Access road and car parking works road works	17
Table 23 Plant utilised in substation construction phase – Building fabrication and HV Plant Installation	18

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.

Table 1
Plant utilised in construction phase – Establish Access and TCC (including HDD 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	25	95
Road surface paver & roller	112	1	25	106
Logarithmic sum				120

Table 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 3
Plant utilised in construction phase – Transition 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
Logarithmic sum				116

Table 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 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 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 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 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 9
Plant utilised in construction phase – Jointing 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 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 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 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 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 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 15**Plant utilised in construction phase – TCC and Access Road Removal (including HDD 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 16**Plant utilised in construction phase – Landfall Beach 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 17
Plant utilised in construction phase – Unlicensed Works (Assumed Plant Requirements)

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	25	100
5T Forward Tipping Dumper	106	1	25	100
Trench Roller	101	1	10	91
Mobile crane	110	1	25	104
Mobile generator	102	1	25	96
Temporary lighting	93	1	25	87
Pump	106	1	25	100
Logarithmic sum				108

Table 18
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 19
Plant utilised in HDD 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 20
Plant utilised in HDD 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 21
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 22
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)
Large rotary bored piling rig	83	1	100	83
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				115

Table 23
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 24
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

EUROPEAN OFFICES

United Kingdom

AYLESBURY

T: +44 (0)1844 337380

BELFAST

belfast@slrconsulting.com

BRADFORD-ON-AVON

T: +44 (0)1225 309400

BRISTOL

T: +44 (0)117 906 4280

CARDIFF

T: +44 (0)29 2049 1010

CHELMSFORD

T: +44 (0)1245 392170

EDINBURGH

T: +44 (0)131 335 6830

EXETER

T: + 44 (0)1392 490152

GLASGOW

T: +44 (0)141 353 5037

GUILDFORD

T: +44 (0)1483 889800

LONDON

T: +44 (0)203 805 6418

MAIDSTONE

T: +44 (0)1622 609242

MANCHESTER (Denton)

T: +44 (0)161 549 8410

MANCHESTER (Media City)

T: +44 (0)161 872 7564

NEWCASTLE UPON TYNE

T: +44 (0)191 261 1966

NOTTINGHAM

T: +44 (0)115 964 7280

SHEFFIELD

T: +44 (0)114 245 5153

SHREWSBURY

T: +44 (0)1743 23 9250

STIRLING

T: +44 (0)1786 239900

WORCESTER

T: +44 (0)1905 751310

Ireland

DUBLIN

T: + 353 (0)1 296 4667

France

GRENOBLE

T: +33 (0)6 23 37 14 14



RWE Renewables UK
Swindon Limited

Windmill Hill Business Park
Whitehill Way
Swindon
Wiltshire SN5 6PB
T +44 (0)8456 720 090
www.rwe.com

Registered office:
RWE Renewables UK
Swindon Limited
Windmill Hill Business Park
Whitehill Way
Swindon