



Galileo 03 Ltd.

Mynydd Ty-talwyn Energy Park - Environmental Statement Volume III

Appendix 9.4: Construction Phase Plant Lists and Project Assumptions

Project Reference: 663870

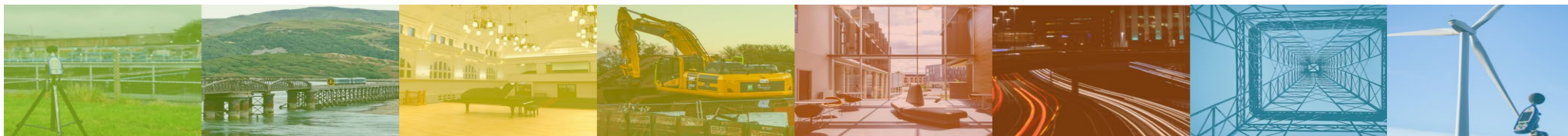
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Appendix 9.4 - Construction Phase Plant Lists and Project Assumptions





Activity	Plant	Source data ref	Quantity	Noise level at 10 m for one plant item dB(A)	% on-time	Typical L _{Aeq} at 10 m dB(A)	Total Activity Noise Level dB(A)
Site Preparation Works - Establishment	Dozer	BS 5228-1:2009+A1:2014 Table C.2:1	1	75	10 %	73	83
	Tracked excavator	BS 5228-1:2009+A1:2014 Table C.2:3	1	78	55 %	75	
	Wheeled loader	BS 5228-1:2009+A1:2014 Table C.2:26	1	79	25 %	76	
	Dump truck (tipping fill)	BS 5228-1:2009+A1:2014 Table C.2:30	1	79	50 %	75	
	Dump truck	BS 5228-1:2009+A1:2014 Table C.2:31	1	87	40 %	83	
	Roller (rolling fill)	BS 5228-1:2009+A1:2014 Table C.2:37	1	79	5 %	75	
	Roller	BS 5228-1:2009+A1:2014 Table C.2:38	1	73	40 %	69	
	Grader	BS 5228-1:2009+A1:2014 Table C.6:31	1	86	10 %	81	

Table 1 Site Preparation Works - Establishment and Hoarding

Activity	Plant	Source data ref	Quantity	Noise level at 10 m for one plant item dB(A)	% on-time	Typical L _{Aeq} at 10 m dB(A)	Total Activity Noise Level dB(A)
Access Road Construction	Bulldozer	BS 5228-1:2009+A1:2014 Table C.5:14	1	86	30 %	83	82
	Articulated dump truck	BS 5228-1:2009+A1:2014 Table C.5:16	1	81	10 %	78	
	Road roller	BS 5228-1:2009+A1:2014 Table C.5:19	1	80	10 %	79	
	Asphalt paver (+ tipper lorry)	BS 5228-1:2009+A1:2014 Table C.5:30	1	75	10 %	72	
	Vibratory roller	BS 5228-1:2009+A1:2014 Table C.5:21	1	80	50 %	77	
	Vibratory roller	BS 5228-1:2009+A1:2014 Table C.5:20	1	75	10 %	72	
	Grader	BS 5228-1:2009+A1:2014 Table C.6:31	1	86	50 %	81	

Table 2 Access Road Construction



Activity	Plant	Source data ref	Quantity	Noise level at 10 m for one plant item dB(A)	% on-time	Typical L _{Aeq} at 10 m dB(A)	Total Activity Noise Level dB(A)
Infrastructure: Installation of solar PV modules, support structures and mounting	Tracked excavator	BS 5228-1:2009+A1:2014 Table C.5 18	1	80	30 %	75	81
	Mini piling rig	BS 5228-1:2009+A1:2014 Table C.3 17	2	76	60 %	77	
	Compressor for mini piling	BS 5228-1:2009+A1:2014 Table C.3 19	2	75	60 %	76	
	Lorry	BS 5228-1:2009+A1:2014 Table C.2 34	1	80	10 %	70	
	Makita - 1.5kg Impact Wrench	Measurement	1	73	10 %	63	
	Telescopic handler	BS 5228-1:2009+A1:2014 Table C.2 35	1	71	20 %	64	

Table 3 Infrastructure: Installation of solar PV modules, support structures and mounting

Activity	Plant	Source data ref	Quantity	Noise level at 10 m for one plant item dB(A)	% on-time	Typical L _{Aeq} at 10 m dB(A)	Total Activity Noise Level dB(A)
Infrastructure: Installation of inverters, transformers, battery stations and switch gear	Tracked excavator	BS 5228-1:2009+A1:2014 Table C.5 18	1	80	30 %	75	79
	Lorry with lifting boom	BS 5228-1:2009+A1:2014 Table C.4 53	1	77	60 %	75	
	Vibratory roller	BS 5228-1:2009+A1:2014 Table C.5 20	1	75	40 %	71	
	Lorry	BS 5228-1:2009+A1:2014 Table C.2 34	1	80	10 %	78	
	Telescopic handler	BS 5228-1:2009+A1:2014 Table C.2 35	1	71	10 %	61	
	Wheeled mobile crane	BS 5228-1:2009+A1:2014 Table C.3.30	1	70	10 %	60	

Table 4 Infrastructure: Installation of inverters, transformers, battery stations and switch gear



Activity	Plant	Source data ref	Quantity	Noise level at 10 m for one plant item dB(A)	% on-time	Typical L _{Aeq} at 10 m dB(A)	Total Activity Noise Level dB(A)
Infrastructure: Construction of on-site transformers	Tracked excavator	BS 5228-1:2009+A1:2014 Table C.05 18	1	80	20 %	73	78
	Lorry with lifting boom	BS 5228-1:2009+A1:2014 Table C.04 53	1	77	30 %	72	
	Telescopic handler	BS 5228-1:2009+A1:2014 Table C.02 35	1	71	30 %	66	
	Wheeled mobile crane	BS 5228-1:2009+A1:2014 Table C.0330	1	70	30 %	65	
	Makita - 1.5kg Impact Wrench	Measurement	1	73	80 %	72	

Table 5 Infrastructure: Construction of substation transformers

Activity	Plant	Source data ref	Quantity	Noise level at 10m for one plant item dB(A)	% on-time	Typical L _{Aeq} at 10 m dB(A)	Total Activity Noise Level dB(A)
Turbine Pad and Turbine Erection	Dozer	BS 5228-1:2009+A1:2014 Table C.2:10	1	80	60 %	78	86
	Tracked excavator	BS 5228-1:2009+A1:2014 Table C.2:14	4	79	55 %	76	
	Tracked excavator (idling)	BS 5228-1:2009+A1:2014 Table C.2:20	1	68	25 %	62	
	Wheeled loader	BS 5228-1:2009+A1:2014 Table C.2:26	1	79	50 %	76	
	Cement mixer truck (discharging)	BS 5228-1:2009+A1:2014 Table C.4:18	4	75	20 %	68	
	Cement mixer truck (idling)	BS 5228-1:2009+A1:2014 Table C.4:19	1	71	40 %	67	
	Poker vibrator	BS 5228-1:2009+A1:2014 Table C.4:33	1	78	40 %	74	
	Wheeled mobile crane	BS 5228-1:2009+A1:2014 Table C.3:30	1	70	30 %	65	

Table 6 Turbine Pad and Turbine Erection



Construction Vibration Assumptions

The following assumptions relate to the construction vibration assessment:

- Scaling factor depending on probability of predicted value being exceeded for steady state vibratory rollers and compactors set to 75 for 50% and
- Vibratory roller and compactor data shown in **Table 7** below.

Plant Model	Type	No. of Drums	Drum Width (m)	High Setting		
				Amplitude of Drum Vibration (mm)	Frequency (Hz)	Centrifugal Force (kN)
Bomag BW161AD	Twin Smooth Drum roller	2	1.68	0.91	30	58

Table 7 Construction Vibration Assumptions – vibratory roller



Road Link	Link Name	18 hour AAWT (2025) (Baseline Year)			18 hour AAWT Growthed Baseline (2029) (Construction Year)			Growthed Baseline + Construction (2029) (Construction Year)		
		Total Traffic Flow	% HGV	Road Speed (kph)	Total Traffic Flow	% HGV	Road Speed (kph)	Total Traffic Flow	% HGV	Road Speed (kph)
ATC 1	A4063 between B4281 and M4	16378	2.4	45	17033	2.4	45	17216	3.0	45
ATC 2	A4063 between Bryn Road and B4281	18471	1.0	49	19209	1.0	49	19401	1.5	49
ATC 3	A4063 between Dwellwyn Road and Bryn Road	14416	0.7	29	14992	0.7	29	15184	1.3	29
ATC 4	A4063 between south of site access to Dwellwyn Road	14156	0.5	49	14781	0.7	49	14973	1.4	49
ATC 5	A4063 north of site access	16691	0.6	33	17394	0.7	33	17580	1.2	33
ATC 6	Fountain Road between New Road and Tycribwr Hill	1505	0.2	45	1568	0.2	45	1574	0.6	45
ATC 7	New Road between Fountain Road and A4063	1591	0.2	41	1709	2.2	41	1715	2.5	41
ATC 8	B4281 between Tycribwr Hill and A4063	5122	0.2	44	5337	0.2	44	5343	0.3	44

Table 8 Construction Traffic Data: AAWT = 18h 5d average



