



Great North Road Solar and Biodiversity Park

Environmental Statement

Volume 4 - Technical Appendices

Technical Appendix A14.1 - Transport Statement - Appendix F
(Construction Trip Generation Calculation)

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Procedure) Regulations 2009, APFP Regulation 5(2)(q)





A14.1.14 APPENDIX F – CONSTRUCTION TRIP GENERATION CALCULATION

Calculation Inputs & Assumptions

Item	Value	
Total area of modules & mounting structures	550 ha	5500000
Total length of access tracks (Tarmac)	3 km	3000
Total length of access tracks (Stone)	50 km	50000
Area of compound areas	2 ha each	20000
Total length of fencing	145 km	145250
Site accesses to construct	41 No.	41
Construction vehicles required per access	5 HGV	5
Solar modules size range	3 sqm	3
Solar modules per container	620 No.	620
Frames per module factor	0.1	0.1
Storage units per substation	1 each	1
Vehicles required per storage unit	300	300
Number of substations	4 No.	4
Number of battery containers	400	400
Number of passing places to construct	40 No.	40
Internal stone track width	4 m	4
Internal stone track depth	0.15 m	0.15
Internal tarmac track width	5 m	5
Internal tarmac track depth	0.02 m	0.02
Density tarmac	2.3 t/m3	2.3
Density stone	1.8 t/m3	1.8
Truck capacity	20 t	20
Compound Areas	19	19
Length of fencing per HGV load	100m	100
Number of construction workers	2000 total	2000
Number of construction workers	500 per phase	500
% of workers travelling to site by shuttle bus	50%	0.5
Number of workers per bus	20	20
Workers car share ratio	1.5	1.5
General Mitigation	100	100

Phase	% of Total Site Area
Phase 1 - South West	30.1%
Phase 2 - South East	20.6%
Phase 3 - North East	28.9%
Phase 4 - North West	20.5%

Phase / Area Summaries

Item	Phase 1 - South	Phase 2 - SouthWest	Phase 3 - NorthWest	Phase 4 - North	Phase 5	Total
No. Site Accesses	5	9	12	14	1	41
Area of Solar PV	204.92	208.37	227.14	384.64	20.69	1045.76
Percentage of Total	20%	20%	22%	38%		1
No. Compounds	3	3	5	8	0	19
Intenal Substations	1	1	1	1		4

Total and Peak Month

Phase	Activity	TOTAL HGV	PEAK MONTH HGV	
Phase One	Site access points	25	0	
	Roads and tracks	547	55	
	Construction compounds	810	486	
	Fencing and CCTV	290	14	
	Solar PV poles, modules, inverters and transformers	1068	50	
	Cabling	600	28	
	Intermediate substation	100	0	
	BESS/400 kV compound	1176	0	
	Connection to network at Staythorpe	0	0	
	Mitigation/enhancement planting	20	2	
Phase Two	Site access points	45	0	
	Roads and tracks	556	61	
	Construction compounds	810	810	
	Fencing and CCTV	295	15	
	Solar PV poles, modules, inverters and transformers	1086	55	
	Cabling	610	31	
	Intermediate substation	100	0	
	Mitigation/enhancement planting	20	2	
	Phase Three	Site access points	60	0
		Roads and tracks	606	56
Construction compounds		1350	486	
Fencing and CCTV		322	14	
Solar PV poles, modules, inverters and transformers		1184	51	
Cabling		665	29	
Intermediate substation		100	0	
Mitigation/enhancement planting		22	2	
Phase Four		Site access points	70	0
		Roads and tracks	1026	103
	Construction compounds	2160	1296	
	Fencing and CCTV	545	26	
	Solar PV poles, modules, inverters and transformers	2005	94	
	Cabling	665	31	
	Intermediate substation	100	0	
	Mitigation/enhancement planting	22	2	
	Phase Five	Battery installation	75	5
			19135	3803

Phase 1 - South

Construction Access ID	P2	P3
Area (Ha) served by access	170.6	34.3
Percentage of Total	16.6%	3.4%
Percentage of Phase	83.2%	16.8%
Construction Period (Working Days)	238	48
TOTAL HGV	528	106
Total HGV per day	22	4
2-Way Total HGV per day	44	9
TOTAL LGV / Car per day	166	33
2-Way Total LGV / Car per day	333	67
TOTAL 2-way TRAFFIC per day	377	76
Average 2-wayHourly HGV over 10hrs	4.4	0.9

Phase 3 - South West

Construction Access ID	P4	P5	P6
Area (Ha) served by access	155.9	28.3	24.1
Percentage of Total	15.2%	2.8%	2.4%
Percentage of Phase	74.8%	13.6%	11.6%
Construction Period (Working Days)	214	39	33
TOTAL HGV	729	133	113
Total HGV per day	31	6	5
2-Way Total HGV per day	61	11	9
TOTAL LGV / Car per day	150	27	23
2-Way Total LGV / Car per day	299	54	46
TOTAL 2-way TRAFFIC per day	360	65	56
Average 2-wayHourly HGV over 10hrs	6.1	1.1	0.9

Phase 2 - North West

Construction Access ID	P7	P8	P9	P10	P11
Area (Ha) served by access	62.6	25.6	27.2	61.2	50.6
Percentage of Total	6.1%	2.5%	2.7%	6.0%	4.9%
Percentage of Phase	27.6%	11.3%	12.0%	26.9%	22.3%
Construction Period (Working Days)	79	32	34	77	64
TOTAL HGV	176	72	76	172	142
Total HGV per day	7	3	3	7	6
2-Way Total HGV per day	15	6	6	14	12
TOTAL LGV / Car per day	55	23	24	54	44
2-Way Total LGV / Car per day	110	45	48	108	89
TOTAL 2-way TRAFFIC per day	125	51	54	122	101
Average 2-wayHourly HGV over 10hrs	1.5	0.6	0.6	1.4	1.2

Phase 4 - North

Construction Access ID	P12	P13	P14	P15	P16	P17
Area (Ha) served by access	69.0	113.6	28.5	35.9	32.1	105.4
Percentage of Total	6.7%	11.1%	2.8%	3.5%	3.1%	10.3%
Percentage of Phase	17.9%	29.5%	7.4%	9.3%	8.4%	27.4%
Construction Period (Working Days)	51	84	21	27	24	78
TOTAL HGV	278	458	115	145	130	425
Total HGV per day	12	19	5	6	5	18
2-Way Total HGV per day	23	38	10	12	11	36
TOTAL LGV / Car per day	36	59	15	19	17	55
2-Way Total LGV / Car per day	72	118	30	37	33	110
TOTAL 2-way TRAFFIC per day	95	156	39	50	44	145
Average 2-wayHourly HGV over 10hrs	2.3	3.8	1.0	1.2	1.1	3.6