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Solar a Storio Ynni

Preliminary Environmental Information Report

Volume III

Appendix 5-1: Project Parameters and Offsets

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Table 1-1 Project Parameters

Component	Parameters
PV	
Indicative Module Type	Bifacial, mono-crystalline subject to latest techno-economic & production advances
Module colour	PV Modules are likely to be either black or dark blue.
PV Arrays	PV Arrays could be either Fixed South Facing (FSF) or Single Axis Trackers (SAT).
Maximum and Minimum Height of PV Array	The PV Arrays will have a maximum height of 3.5m above ground level (AGL) at the rear, regardless of tilt angle, and between 0.5 to 1m clearance at the front.
Indicative FSF Tilt of PV Arrays from the horizontal and range of motion of SAT	FSF: Between 15 – 25 degrees facing south SAT: between 60 degrees (facing east in morning) and 60 degrees (facing west in evening).
Pitch between PV Tables	The minimum pitch between consecutive rows of PV Tables will be: 6.5m for FSF 4.5m for SAT
Interrow Spacing	The minimum interrow spacing between consecutive rows of PV Tables will be 2m.
PV Table Material	The PV Tables would likely be made of either anodised aluminium alloy or galvanised steel subject to ground conditions and geotechnical analysis.
Foundation Type	Direct ramming, predrill, concrete pile/ballast and screw pile options, depending on ground conditions, geotechnical and other environmental constraints
Maximum Depth of Piles	Typically maximum depth of 2.5m, subject to ground conditions, geotechnical analysis and archaeological constraints.
Dimensions of String Inverter	String Inverters are small enough to be mounted underneath the modules. String Inverters are typically 1.5m in length by 0.5m in depth by 1m in height.
Dimensions of Central Inverter	Central Inverters would typically be mounted on an area of hardstanding and typically be housed within a container measuring approximately 8.5m x 2.5m and 3m in height.

Component	Parameters
400kV Substation	
Project Substation Compound	The maximum size of the Project Substation compound is 200m x 200m, with the maximum height of 15m that allows for the substation and associated electrical control buildings and office/warehouse buildings.
Dimensions of 400kV Transformer	Maximum footprint of Transformer 15m x 8m x 11m (h) located within the 400kV Project Substation compound.
Switch room	Maximum area required is 60m x 8m x 4m (h) located within the 400kV Project Substation compound.
Switchgear	Air Insulated Switchgear (AIS)
Parcel Substations	
33kV Substation	The compound will be a container or brick building at a maximum size of 13m x 4m with a height of 4m. The container would be mounted on hard standing. No fencing around the compound is required.
132kV Substation	The maximum dimensions typically are 30m x 40m with a height of 7m to accommodate 132kV Switchgear, 132/33kV Transformers, and a 33kV Switch Room. The compound will be enclosed by a palisade fence. A maximum of 10 x 132kV substations (1 serving the BESS) across the Solar PV Site.
BESS	
Indicative Dimensions of each Battery Container	Maximum battery container dimensions will be 15m (L) x 4m (W) x 4m (H) subject to detailed cut and fill and drainage designs and will be single stacked only
Twin MV Skid	BESS Twin MV Skid would have maximum dimensions of 12 m (L) x 7 m (W) x 4.5 m (H)
Welfare and storage building(s) for operation and maintenance of PV and BESS	Assumed to be within the BESS Compound 150 x 150m
Other	

Component	Parameters
Low Voltage Distribution Cabling	Up to 1.5m depth and up to 1.5 m width subject to detailed design.
Cable Route Corridor	The dimensions of trenching will vary subject to underground cabling and the associated number of ducts they contain but will typically be up to 2.5m wide with a maximum depth of 1.8m for each trench and will be dependent on the method of installation and ground conditions. The construction works would have a working width of 5m.
Grid Connection Corridor	The Grid Connection Corridor will comprise 400kV cables within a trench, up to 2.5m in depth. The Grid Connection Corridor would have a working width of 20m.
Jointing Pits	Dimensions of joint pits for 6 cables 3m (d) x 12m (l) x 5m (w). This is assuming a twin circuit, could be smaller with a single circuit.
Height of PV Fencing and CCTV Camera Poles	The fence for the operational phase is likely to be a 'deer fence' (wooden or metal) and approximately 2m in height for the Solar PV Site. Pole mounted internal facing closed circuit television (CCTV) systems installed at a height of up to 3.5m are also likely to be deployed around the perimeter of the operational areas. Access gates will be of similar construction and height as the perimeter fencing. Clearances above ground or mammal gates will be included permit the passage of wildlife.
Palisade Fencing and CCTV Camera Poles	A palisade fence will enclose the operational areas of the Project Substation and BESS. The fence will be approximately 3.5m in height. Pole mounted internal facing closed circuit television (CCTV) systems installed at a height of up to 3.5m are also likely to be deployed around the perimeter of the operational areas. Access gates will be of similar construction and height as the perimeter fencing. Clearances above ground or mammal gates will be included permit the passage of wildlife.
Width of internal access tracks	It is anticipated that onsite Access Tracks will follow the alignment of the existing agricultural tracks, where possible. New internal Access Tracks will be up to 4.5m wide, passing bays will be provided along the internal Access Tracks. The internal Access Tracks will be

Component	Parameters
	constructed of compacted stone or tarmac with excavation kept to a minimum. The alignment of the internal Access Tracks will largely follow the existing agricultural tracks, where possible.
Main Accesses	The main access junctions will be a minimum of 6m wide to facilitate access for construction vehicles. The internal Access Tracks will likely be constructed of compacted stone or tarmac with excavation kept to a minimum. The access leading up to the BESS project will be suitable for the lifting crane, trucks, and fire engine.
Construction Compounds	There will be one Primary Construction Compound and up to 7 secondary temporary Construction Compounds. The temporary Construction Compound areas will take up approximately 100m x 100m each and the tallest point would be the height of a double stacked 20ft container (office use). Primary compound located at the Former Oil Depot will be 250 x 250m including welfare facilities.

Table 1-2 Project Offsets

Receptor / Feature	Offset from fence line unless specified otherwise
Ancient Woodland	20m
Woodland	15m
Veteran Trees	15x stem diameter
Hedgerows, Cloddiau, Dry-Stone Walls	10m
Rocky outcrops	Avoid
Main River	10m from fence line or from solar PV infrastructure if within site
Watercourse (Standing and Running)	10m from fence line or from solar PV infrastructure if within site
Dry Ditches	6m from boundary fence or from solar PV infrastructure if within site
Flood zone 2	Avoid solar PV infrastructure
Flood zone 3	Avoid solar PV infrastructure

Receptor / Feature	Offset from fence line unless specified otherwise
Ponds	10m + Bespoke
Llyn Alaw Reservoir Edge	50m + Bespoke
Protected Species	Bespoke
Statutory and Local Wildlife Site	20m
Special Landscape Areas	Avoid + Bespoke
Historic Assets	15m + Bespoke
Maen Hir/ Standing Stone	20m + Bespoke
Agricultural Buildings	15m + Bespoke
Residential Properties	15m + Bespoke
Prominent Drumlin Tops	Bespoke with minimum 5m elevation from drumlin highpoint
PRoW	15m
PRoW (Bridleway)	15m
Railway (disused)	5m
Roads	6m
Tracks	4m
Wind Turbine	60m Llyn Alaw Windfarm, 22m all other turbines
OHL 132-400kv	13.5m
OHL 25-33kv	7.5m
Proposed Access Tracks	1.5m
Proposed Permissive Footpaths	10m + Bespoke