GivEnergy Commercial system installation itemised

None containerised solution

Item	Description	Additional required materials or equipment	Documentation	Responsible party
Unloading / delivery	Delivery will be made by default on a lorry, it should be assumed that a tail lift is not accessible due to weight constraints. All items are to be positioned into the appropriate installation location as per below and **prior** to GivEnergy's commissioning visit.	Forklift/Telehandler	Packing list	Client
PCS	The PCS can be very heavy, ranging from 600 – 2500kg. Consideration needs to be made as to how this unit is manoeuvred into its installation location. The PCS will normally be delivered in a wooden box and bolted to the pallet, this will all need to be removed. The PCS must be installed on a solid, level surface and in the agreed position. Fixing points in the feet are provided and can be used if required.	Forklift / pallet truck, fixings if required	System layout	Client
	Ventilation arrangements for the exhaust of the PCS are to be connected as appropriate, if prior arrangements are not on place these may need to be installed before positioning the PCS. (Some units vent out of the rear, some out of the top)	Ducting / grills as appropriate	PCS ventilation	Client
	AC connection are to be installed and tested up to the isolation switch within the PCS – This includes both AC in and EPS out as required **prior** to GivEnergy's commissioning visit.	AC Cable / Glands / Containment as appropriate	PCS connections	Client
	Data connections between the PCS and the EMS.	Materials provided		GivEnergy
	DC connection between battery racking and DC cabinet / HV box. Client to install but GivEnergy will check connections prior to energisation.			Client / GivEnergy
	Lower trim around the base of the PCS should be installed once initial testing is completed.		-	Client
Battery racking	Battery racking dimensions will vary depending on the project, see layout plan for further info. All battery racking must be installed to a solid flat surface and fixed down in at least the 4 corners **prior** to GivEnergy's commissioning visit.	Fixings appropriate for surface	System layout	Client
	Each battery rack must be earthed, the earth cable can be ran to the PCS, DC Cabinet (if fitted), PCS or distribution system. Sizing should be based upon BS7671 but a minimum of half the size of the AC supply conductors.	Suitably sized earth cable and ring terminals	-	Client

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DC Cabinet	For installations with more than one battery rack a DC Cabinet is provided. The DC Cabinet is installed between the battery racking and the PCS. Connections in and out of the DC Cabinet must be made **before** any connections between battery packs. Client to install but GivEnergy will check connections prior to energisation.	Provided	Battery connections	Client / GivEnergy
High voltage box	Every battery rack will contain a high voltage BMS box, the location of this within the battery rack is pre-defined. Outputs from the HV box to the DC Cabinet / PCS must be made **before** connections between battery packs.	Provided	Battery pack layout	Client
Battery packs	Battery packs will be palletised with 4 per pallet. Each unit weighs approximately 90kg, it is recommended that the pallet is taken into the area of installation to reduce manual handling. Each battery pack is identified with a number and it is important that it is inserted into the correct position within the racking system. Each battery pack needs to be bolted into the racking.	Provided	Battery pack layout	Client
	Each battery pack must be tested for voltage and polarity and results recorded.	Voltage meter	Commissioning checklist	Client / GivEnergy
	DC and data cabling is to installed between the battery packs and high voltage box of each rack. DC connections from HV box to the DC Cabinet / PCS must be made **before** connections between battery packs.	Provided	Battery connections	GivEnergy
Metering	In almost all circumstances at least one meter will need to be installed at the point of incoming supply to the site. GivEnergy will need information (Size and number of cables per phase) on the incoming supply to ensure the correct metering and CT clamps are delivered with your system – We can potentially work with 3rd party clamps also.	Provided	Commercial Metering	Client
	The meter will need installed within a suitable enclosure and this should be close to the main incoming supply (ID1) and generation supply (ID2)	Enclosure (Existing or new)	-	Client
	The meter will need a voltage reference point (3 phase and Neutral supply) and then CT clamps around each line phase of the incoming supply (and generation if applicable).	-	-	Client
	A data cable is required between each meter and the EMS	Belden cable	Commercial Metering	Client
Waste	Packaging should be recycled where possible, GivEnergy cannot take any waste away from site	-	-	Client