500kW Solar PV system questionnaire		
	Questions	**Answers**
1	Roof mounting? Angle or Flat	Preferably roof mounting, roofs are approx 15deg (see attached picture) so consider incidence and solar irradiation (W/m2) since resource is high in this area
2	Roof covering type?	Old IBR (see attached roof picture)
3	Angle of incidence from sun to roof?	approx 75deg
4	Fencing Required?	Primate concerns: fencing on a ground mount would be required, cladding and protection on the roof is required
5	Distance from array/s to inverter station? Inverter station requires safe position for 12m container.	All roof square meterage (as shown on diagram - North Facing) is available for use. Consider at least 2 containers due to attached layout configuration. Distance to buildings is within 7m
6	Slabs required?	if you are considering to place containers then, yes
7	The load historical consumption data. Are there high impendence startups (electric motors, compressors, heating element)	Yes a significant aircons load (approx. 230kW)
8	How is the system to be backed up?	battery back up is required on PV system, there are onsite generators and entire site is eskom served
9	Is the system to be grid tied, if so is the connection permits etc in our scope?	site is not disconnecting from grid, but not feeding in, if it has a cost implication then no, do not include permits
10	Distance from inverter station to MDB/Eskom connection point?	There are 2 Eskom connection points feeding to different buildings (see diagram (not to scale) larger point is 50m and smaller points is 2m from nearest served buildings
11	Supply cable Underground or Overhead?	preferably underground because of environmental conditions, only cut into tar roads if necessary and must be repaired
12	Any drawings or details of the downstream electrical layout? Only single line diagram, would be useful	see attached diagram indicating DB boxes in buildings, all are 3 phase
13	What is the inductive load aspect (kVar) on the inverter?	standing under correction, formula calculates kVAR at 857 for entire system
12	How far away is the main transformer supply away from the buildings ?	1.6 km away is main large transformer, distributing to the 2 smaller transformers at 50m and 2m (above Q10)
14	Kindly advise on the distance from where the batteries / inverters will be located to the building where solar will be mounted. (for cabling)	if a container is to be considered, cost implications may be prohibative, see diagram. Alternatively each building could have collectors on roof and a battery and inverter room per building allocated
15	Are we allowed to trench between the buildings?	yes with minimal impact
16	What type of a roof is it please?	IBR as per Q2
17	Battery system back up for how many hours?	8-10hours
18	Do you have a Location (co-ordinates), where the Solar Plant will be installed? Will it be Rooftop, Ground mount, Carports or combination?	Answered above, no coordinates will be supplied, site is within 7km radius of Phalaborwa Town and easily accessed by tar roads
19	What is the roof load bearing capacity?	roof can take load as per recent structural evaluation
20	is there a load profile for the system? Must we design based on 500kW AC?	there is no load profile available but esentially 80kW would be required 24/7, office hours (07:00-17:00) load will be higher and full 500kW should be available
21	roof layout or address of installation to estimate cables	see the diagram provided, there will be no address or coordinates provided see Q18 above
22	type of roof to identify mounting structure	as per pictures and Q2
23	Is a fire suppression system required?	Yes (consider alarms and Lithium ion fire extiguisher etc.)

Roof pitch and Material