SOLAR WATER PUMPING SYSTEM FOR BONSA

Item	Description	Unit	Quantity	Unit Cost (GMD)	Total Cost (GMD)
1	**Solar Modules**				
	The following solar modules in weather proof glass enclosure rated between 200 - 300Wp inclined at 15% to the horizontal incorporating water proof connection boxes and connecting cable glands erected on an in-situ concrete floor slab with concrete columns mounting with anti -theft fixings and the whole assembly able to withstand wind speed of 150km/hr and with easy access for maintenanance and all sites as detailed in drawings and specifications.				
	Array of solar modules capable of pumping:				
A	15 m3/hr at 35 m head to be installed in Bonsa	No	1		
2	**Module Support Structures**				
	Install solar panel support structures as per technical specifications including all excavation work reinforecement and formwork required. In addition underneath the module arrays and up to 1 meter around the array surface, a 5 cm thick floor to be constructed. The panels can optionally be attached to the tank support structure in:				
A	Bonsa	No	1		
3	**Junction boxes**				
	The following in easy mounted readily accessible array junction box to satisfy the functions of decoupling , parallelling , protection and isolating complete with weather proof plastic casing and mounted in the shade of the modules with anti- theft fittings as per specifications				
	Array Junction box for Solar powered system in				
A	Bonsa	No	1		

4	**Pump Inverter**				
	The following in easily accessible and mounted pump inverter fixed on on supports structure with minimum ground clearance of 600mm and enclosed in a sealed weather and tamper proof housing and providing for roto complete with built-in MPPT, self regulation, cooling,protection				
	Pump inverter for pumping system delivering:				
A	15 m3/hr at 35 m head to be installed in Bonsa	No	1		
5	**Submersible Pump**				
	Directly coupled submersible centrifugal or helical rotor pump to fit 6" cased borehole and constructed in stainless steel with non return valve pressure of 2 bars fitted with easily removable riser pipe with portable water grade internal surface connected with useable stainless steel, borehole head and the whole secured with stainless steel cable aspvc or HDPE fittings at pump outlet and per specifications.				
	Rotor pump to match array and pump inverter for pumping system:				
A	15 m3/hr at 35 m head to be installed in Bonsa	No	1		
6	**Wellhead and Surface Pipeworks**				
	Borehole-head arrangement, (wellhead) to which both the riser pipe and surface pipe work are to be connected. It should be constructed of solid galvanised steel and provided with two monitoring holes with screwed caps. Plus headwork arrangement complete with stainless steel pipe-work, cumulative water meter, valve and threaded manometer socket, etc				
	Well head and headwork arrangements to be installed in:				
A	Bonsa	No	1		
7	**Enclosure**				

	Fence of galvanised wire mesh of minimum diameter of 3mm and supporting wire of minimum diameter 6mm to be constructed around the pumping system in:				
A	Bonsa	No	1		
8	**Auxillary Equipments**				
	Auxillary Equipments comprising of cables, system protections, alluminium identification panels depicting the system parameters and anti theft screws to be installed in:				
A	Bonsa	No	1		
9	**After Sales Services**				
	Long-term arrangement for maintenance and repair facilities in-country during the first five years of operation of the solar water pumping system. During this period, the supplier will repair any fault and replace faulty components at no cost within 72 hours of notification of such fault in:				
A	Bonsa	No	1		
10	**Transportation and Installation of all Facilities in:**				
A	Bonsa	No	1		
	TOTAL				