villages in partnership

Proposed design specifications and budget for subsurface Solar Irrigation System at Disi

	ITEM	SPECIFICATION	COST ESTIMATES		
			Activity/	Qty	Total
A. Site mobilization and demobilization					
1	**Site mobilization and demobilization**	**Organizing equipment**		**1**	**2,451.43**
		Sub-total for A1			**2,451.43**
1	**Surveys**	**Resistivity and Topographic surveys**	**Surveys**	**2**	**4,902.86**
		Sub-total for B1			**4,902.86**
C. Borehole drilling, pump and solar panels installation					
1	Borehole	Boreholes that will each give yield of at least 2L per second. The contractor may drill deeper (around 70-100 metres) than indicated on the hydrogeological survey where necessary	Designing	1	**4,902.86**
			Drilling & pumping test	3	**61,285.71**
2	Submersible pump	Pumps to run off grid based on the borehole yields	Grundfos pump/Lorentz pump	3	**39,222.86**
3	Automatic control float switch	Automatic water-level control that switches off the pumps when water is full in the tanks	Control unit, Switch board and accessories	3	**29,417.14**
4	Armoured ground cable 6mm 2core and 4.0mm DN ground cable	Aluminium cable 6.0mm diameter		900	**13,237.71**
5	Solar panels	Preferably from tier 1 list	300-450watts solar panels	18	**22,062.86**
6	Solar panel rack	Elect angle Iron solar rack to hold the panels high above the ground		1	**9,805.71**
7	Solar lamps	LED Lamps with a minimum of 300-400 watts for each lump, placed in 4 to 6 positions within the Irrigation scheme		6	**3,922.29**

		Sub-total for C1-C7			**183,857.14**
D. Storage tank, plumbing and associated works					
1	Tanks with a lid	6 tanks which are UV protected each 5,000L	PVC tanks	6	**14,708.57**
2	Main pipe	75mm HDPE class 16 with accessories to take water from BHs to the tank to tanks. This will be installed in the field 50 cm deep below the ground level	75mm HDPE pipe class 16, in meters	700	**10,296.00**
3	Submain pipe and hydrants(stand pipes)	50mm HDPE class 16 with accessories to take water from BHs to the tank to tanks. These hydrants will be installed in strategic points, every 50m	50mm HDPE pipe class 16, in meters	1,500	**18,385.71**
			Hydrants, 3/4inch diameter	25	**163.43**
4	Mega flex Hosepipes for irrigating crops,50m each	Flexible hosepipe with 1inch diameter	1inch diameter hosepipe, 50m length	24	**9,805.71**
5	Outlet pipe for Submersible Pump	HDPE, 40mm class 16 for BH riser with accessories	40mm HDPE pipe class 16	270	**2,647.54**
6	Gate valves, hydrants and related fittings	Galvanized or PVC ball valves to be installed in strategic point i.e. those that can offer a complete shutoff capability with minimal pressure loss when it is completely closed.		15	**3,064.29**
		Sub-total for D1-D6			**59,071.26**
E.Lightning arrestor system					
1	Lightning/electric surge arrester	Protection of the system from burn out due to lightning strikes or unwanted power surges	Lightning arrestor, earth rods and cables	3	**2,451.43**
		GRAND TOTAL			**252,734.11**

Note : This is a typical budget of the proposed Irrigation system. However contractors may propose different costs based on the system design and the prevailing foreign exchange rates at the time of implementation. The system design is yet to be done by Government Irrigation Office soon after water survey and topographic surveys are done. This budget is based on the government recommendation