

ANNEX IV: Itemized Quotation Form

#	Description	Unit	Qty	Unit Price IQD	Total Price IQD
1	Supply and install Solar Panel Steel structure Supply and install solar panel steel structure a set of racks using galvanized hollow sections (41x41mm, not less than 2 mm thick) or other section design for solar panels with thickness of minimum 2mm, assembled by bolts and nuts the rack should be fit for the PV panels with dimensions (113x227cm) and provides the tilt angle (adjustable 25-35 degree) to achieve the best performance for the solar system, The structure should be capable of withstanding a wind load of 120 km/hr. and a snow load of 1.6KN/m ² . The steel structure materials should be hot-dip galvanized (thickness not less than 180 µm), Also the contractor should provide a PV steel clamp with thickness of 3mm. and 13mm bolt with length of 4 inches to fix the panel on the steel structure Note: A- The contractor might provide a different design for the racks taking into consideration the general requirements for the rack, the design should be submitted for review and approval prior to manufacturing. B- All iron section used in the structure must be Galvanized type, minimum 2 mm in thickness, and supported with test certificate. C- The number of racks depends on the design and the arrangement of the PV panels fields and strings, overall the racks should be suitable for mounting the proposed number of PV modules for solar packages. D- The distance between the legs line of the steel frame should not more than 175 cm	PCS	1		
2	Concrete foundation for Solar racks Supply tools materials and manpower and cast a concrete bases in the site (in the farm) as a foundation for panel steel structure with dimension of (40X40X30cm), by using plywood smooth mold for it, curing the concrete blocks with water for 3 days, the foundation should be places 20cm under the natural ground level of the farm, and 10cm over the natural ground level.	PCS	1		
3	Supply and install photovoltaic (PV) Supply tools, materials, manpower, and install photovoltaic (PV), the modules must meet the following specifications: Class (A) modules, mono-crystalline type, positive power, N-type, Topcon, HJT preferably, suitable for desert conditions, minimum 16 busbar with a power output of (585- 615 watt). The	PCS	1		

	electrical characteristics should adhere to Standard Test Conditions (STC) with an irradiance of 1000W/m2. Additionally, the PV modules must possess a flash tests, PID and LID Free Certificate, minimum 21% efficiency, Power temperature coefficient below (Pmax) -0.3 %/°C and international certification from TUV Rheinland, complying with ISO, BS, and UV standards. They should also come with a product warranty of 12 years and a performance warranty of 25 years, ensuring a minimum efficiency of 87% by year 25. A Certificate of Origin (COO) is required. The quoted price should include all necessary connection cables and connectors (MC4).				
4	Hybrid Pump Inverter 7.5KW Supply tools materials and manpower and install Hybrid Pump Inverter with capacity of 7.5 kW, 3 Phase 400Vac ,250-900 Vdc hybrid and controller system Similar to VEICHI (consisting smart inverter, built in MPPT monitoring with 98% efficiency, pump controller, frequency drive, dry running sensor filter/sine wave filter, circuit breakers , surge protection & protection system including Overvoltage, Undervoltage, Phase lose, Reverse Polarity Protection, SPD protection as well as Soft-Start Function and Dry running Protection. The scope includes all required cable sizes for connection purposes ,inverter rack and with all other fittings, accessories and required works. The inverter should be internationally certified by TUV Rheinland, and has min 3 years warranty. Circuit breakers, and cable size shall be according to approved design. - The Installation shall be conducted in an outdoor environments under a canopy for better heat transfer and direct sun rays.- Operating temperature: -10~+50C°- IP65 certified preferably or IP21 if inside canopy/room The price should cover any other fittings and accessories required for installation and function the system. All works should be according to (Annex 1 and Compliance sheet).	PCS	1		
5	Hybrid Pump Inverter 15 KW Supply tools materials and manpower and install Hybrid Pump Inverter with capacity of 15 kW, 3 Phase 400Vac ,250-900 Vdc hybrid and controller system (consisting smart inverter, built in MPPT monitoring with 98% efficiency, pump controller, frequency drive, dry running sensor filter/sine wave filter, circuit breakers , surge protection & protection system including Overvoltage, Undervoltage, Phase lose, Reverse Polarity Protection, SPD protection as well as Soft-Start Function and Dry running Protection. The scope includes all required cable sizes for connection purposes ,inverter rack and with all other fittings, accessories and required works. The inverter should be internationally certified by TUV Rheinland, and has min 3 years warranty. Circuit breakers, and cable size shall be according to approved design. - The Installation shall be conducted in an outdoor environments under a canopy for better heat transfer and direct sun rays.- Operating temperature: -10~+50C°- IP65 certified preferably or IP21 if inside canopy/room The price should cover any other fittings and accessories required for installation and function the system. All works should be according to (Annex 1 and Compliance sheet).	PCS	1		
6	DC combiner box (one series) Supply and install (DC Combiner) rated for 1000VDC, IP 65, the box should be sized according to item	No.	1		

	requirement inside it. The box should be suitable for operational environment temperature: -20°C up to +55°C, IP 65 or higher, the box should have two DC fuse -holders, two DC fuses (1000V, 20A), 1 SPD 20KV, one PV circuit breaker (1000V, 20A), 1 MCB 3 pole 25A, 450V				
	Solar Panel Cable Supply and install Solar panel Wire for the system with thickness of (1*6 mm) for direct current that can withstand Rated Voltage 1500 volts and is resistant to ultraviolet rays, Class 5 (flexible) tinned copper, Max. Service Temperature: 125°C, Max. Short-circuit Temperature: 250°C (max.5s), Estimated Lifetime: 30 years Standard: EN 50618 / 2PfG 1169, Approvals: TUV, IEC, CCC Note: the price include installing the cable inside flexible tray cable, 25mm, gray color and supply and install MC4 connector	ML	1		
7	DC combiner box (two series) Supply and install (DC Combiner) rated for 1000VDC, IP 65, the box should be sized according to item requirement inside it. The box should be suitable for operational environment temperature: -20°C up to +55°C, IP 65 or higher, the box should have four DC fuse -holders, four DC fuses (1000V, 20A), 2 SPD 20KV, two PV circuit breaker (1000V, 20A), 1 MCB 3 pole 25A, 450V	No.	1		
8	Steel electric box Supply and install steel electric box IP65 with minimum dimension of 50x70 cm (and minimum 1.4 mm thickness, the size of the box should fit for the used inverter Note: the pump inverter should fixed inside the steel box	No.	1		
	Hand changeover Supply and install and operate electric hand change over 3 phases with capacity of 250A, copper with guaranty of 1 year	No.	1		
9	Earthing system Supply and install all required materials for making earthing system . The system should connect with solar panels, panel holding structures, combiner box, and inverter with all required accessories to complete the work, the system should use the followings 1-16mm ² copper grounding cable. 2-Handhole (40x40x100) cm filled with coal and salt 3- PVC manhole cover 20x20x20cm. 4-16mm ² copper grounding rod with length of 1.2m.	No.	1		

10	submersible water pump for borehole 7.5 HP Supply, install, and operate a good quality of submersible water pump for borehole (Electric motor with its pump and accessory) with the following specifications:- 1- Three phase electric motor 380V, 7.5 HP, 50 Hz 2- Electric starter for the submersible pump with electric PVC board.	No.	1		
11	submersible water pump for borehole 15 HP Supply, install, and operate a good quality of submersible water pump for borehole (Electric motor with its pump and accessory) with the following specifications:- 1- Three phase electric motor 380V, 15 HP, 50 Hz 2- Electric starter for the submersible pump with electric PVC board.	No.	1		
12	Surface water pump 7.5 HP Supply, install, and operate a good quality of surface water pump with the following specifications:- 1- Three phase electric motor 380V, 7.5 HP, 50 Hz 2- Four inches diameter for the Inlet and outlet of the pump	No.	1		
13	Surface water pump 15 HP Supply, install, and operate a good quality of surface water pump with the following specifications:- 1- Three phase electric motor 380V, 15 HP, 50 Hz 2- Four inches diameter for the Inlet and outlet of the pump	No.	1		
14	Tank submersible water pump 7.5 HP Supply, install, and operate a good quality of Tank submersible water pump suitable for lakes and concrete water tanks with the following specifications:- 1- Three phase electric motor 380V, 7.5 HP, 50 Hz 2- Four inches diameter for the Inlet and outlet of the pump	No.	1		
15	Tank submersible water pump 15 HP Supply, install, and operate a good quality of Tank submersible water pump suitable for lakes and concrete water tanks with the following specifications:- 1- Three phase electric motor 380V, 15 HP, 50 Hz 2- Four inches diameter for the Inlet and outlet of the pump	No.	1		
	PVC plastic pipe 2 inches Supply and install and connecting a PVC plastic pipe for borehole submersible pump with 2 inches diameter and 5mm thickness	M.L	1		

16	PVC plastic pipe 2.5 inches Supply and install and connecting a PVC plastic pipe for borehole submersible pump with 2.5 inches dimeter and 5mm thickness	M.L	1		
17	PVC plastic pipe 3 inches Supply and install and connecting a PVC plastic pipe for borehole submersible pump with 3 inches dimeter and 5mm thickness	M.L	1		
18	PVC reenforced plastic pipe 4 inches Supply and install and connecting a PVC reenforced plastic pipe used for connecting the surface pump with the pipe of the Borehole pump with 4 inches dimeter and 5mm thickness	M.L	1		
19	Copper cable (3X4mm) Supply, install, and connecting a copper cable with size of (3X4mm) designed for submersible pump, Note: the price include installing the cable inside flexible tray cable, 25mm, gray color	M.L	1		
20	Copper cable (3X6mm) Supply, install, and connecting a copper cable with size of (3X6mm) designed for submersible pump, Note: the price include installing the cable inside flexible tray cable, 25mm, gray color	M.L	1		
21	Copper cable (3X10mm) Supply, install, and connecting a copper cable with size of (3X10mm) designed for submersible pump, Note: the price include installing the cable inside flexible tray cable, 25mm, gray color	M.L	1		
22	Supply tools, materials and man power to supply and install BRC fence with concrete column, the BRC steel fence with 5x5 cm opening, 180cm Hight, 4mm thickness, with three line of tension wire, digging hole with dimntion of 30x30x60 for the column and cast it with concrete and use reenforced concrete column each 3 meters	M.L	1		
23	Supply tools, materials and man power to supply and install BRC fence door with dimension of 1 meter width and 1.8 meter Hight, with two hinge point and one lock with all need to complete the work	Pcs	1		
24	Supply and distribute gravel with thickness of 7 cm to cover the land that the solar panel with install on it, the gravel should be with size from 2.5 cm to .5 cm	M3	1		

Please note: The unit price you quote must include all costs related to transportation, loading, and unloading of the goods to the WHH warehouse in Tikrit

The offer will remain valid for the duration of 4 weeks after submission of the offer

I, undersigned agree, these prices are for the goods meeting the requirements as indicated in Annex II of this tender and delivery, payment and other conditions mentioned in this tender.

Note: *Any discrepancies from the given technical requirements or other discrepancies need to be explicitly mentioned*

Name and Date

Signature and Stamp