Project Implementation Unit (PIU)
Khyber Pakhtunkhwa Rural Investment and Institutional Support Project (KP-RIISP)
Public Health Engineering Department (PHED)
Government of Khyber Pakhtunkhwa (GOKP)

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES IN DISTRICT KHYBER

(RFB No. KH-SW-R-01)

BILL OF QUANTITIES (BOQ)

OCTOBER 2026

BILL OF QUANTITIES

Preamble

1. The Bill of Quantities shall be read in conjunction with the Conditions of Contract, Specifications and Drawings.

2. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work executed and measured by the Contractor and verified by the Engineer and valued at the rates and prices as given in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix as per the Contract.

3. The rates and prices as given in the priced Bill of Quantities shall, except insofar as it is otherwise provided under the Contract include all costs of Contractor's plant, labour, supervision, materials, execution, insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract. Furthermore, all duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date 28 days prior to deadline for submission of Bids, shall be included in the rates and prices and the total Bid Price submitted by the Bidder.

4. A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of items against which the Contractor will have failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.

5. The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Bill of Quantities, and where no items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related items of the Works, or the same shall be determined by the Engineer in accordance with Conditions of Contract.

6. General directions and description of work and materials are not necessarily repeated nor summarized in the Bill of Quantities. References to the relevant sections of the Bidding Documents shall be made before entering prices against each item in the Bill of Quantities.

7. Rates and prices for solar-related equipment shall include the complete cost of new, genuine and fully compliant equipment obtained through a traceable supply channel, together with technical submissions, type-test and conformity certificates, warranties, supply-chain and authenticity records, serial-number documentation, inspection, testing, commissioning and all approvals required by the Technical Specifications. No separate payment shall be made for these requirements.

8. The following abbreviations for units have been used in Bill of Quantities:

Units		**Abbreviations**
Cubic Meter	=	Cum
Square Meter	=	Sqm
Meter	=	Mtr

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : RFB-KH-SW-R-01

BILL OF QUANTITIES

SUMMARY OF COST

Bill No.	Name of Scheme	Amount (Rs.)
1	DWSS Hissara Shalobar Bara	
2	DWSS Hakim Khan Killi Meri Khel Aka Khel Bara	
3	DWSS Bara Tehsil	
4	DWSS Malik Doran Gul Fort Slop MDK	
5	DWSS Sam Baba Zone - A (Spin Dand)	
6	DWSS Sam Baba Zone - B	
7	DWSS Haji Abdul Qayum Toot Dand BQK	
8	DWSS Nowgazi Baba Remaining Area	
9	DWSS Janis Tawas Khan Killi BQK	
10	DWSS Ghulam Sakhi Arjali Nadi	
11	DWSS Fazal Malik Killi Shalobar	
12	DWSS Malik Jan Killi BQK Bara (Faresh Kallay)	
13	DWSS Gundi Sher Khan Khel	
14	DWSS Malak SadUllah Khan	
15	DWSS TD Bazar Jamrud Wali Bagh	
16	DWSS Jamal Khel	
17	DWSS H.Hayat Khan Niki Khel	
18	DWSS Wali Khel Gul Wali	
19	DWSS Kam Shalman	
20	DWSS Lowera Maina	
21	E&S Compliance	
	Total Amount	

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : RFB-KH-SW-R-01

BILL OF QUANTITIES

Bill No: 1. DWSS Hissara Shalobar Bara (Upgradation of Solar System)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Required Discharge (IGPH)	**4000**					
Total Dynamic Head (Feet)	**480**					
Pump Setting Depth (Feet)	**380**					
1.1	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge greater than 3000 iGPH and output capacity greater than 6 WHP and upto 10 WHP (As per Approved Technical Specifications)	WHP	9.70			
1.2	Supply and Erection of A-Grade Solar PV Modules containing N Type Mono-crystalline silicon A-Grade solar cells, As per approved specifications.	Watt	8190			
1.3	Supply and Installation of DC Circuit breaker 2P - MCB Type	No	1.00			
1.4	Supply and installation of Submersible Flat Cable made of 99.9% copper, coated with double PVC as per BSS Standards, 4x16 mm2	Meter	115.00			
1.5	Supply & Erection of elevated structure of hot dipped (80 microns Average) G.I Sheet Channel, angle as per design. including Stainless Steel Nuts & Bolts/washers	Kg	285.00			
1.6	Supply and Erection 1x6 sq.mm single core (XPLE/XPLO insulated/PCV sheathed) flexible copper cable	Meter	180.00			
1.7	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	Cum	0.76			
1.8	Supply and Erection of 3 phase 380V Solar Pump inverter (MPPT) 15 KW	No	1.00			
			Total Amount			

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : RFB-KH-SW-R-01

BILL OF QUANTITIES

Bill No: 2. DWSS Hakim Khan Killi Meri Khel Aka Khel Bara (Installation of Solar System)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Required Discharge (IGPH)	**5500**					
Total Dynamic Head (Feet)	**710**					
Pump Setting Depth (Feet)	**625**					
Solar Panel with Allied Accessories						
2.1	Supply and Erection of A-Grade Solar PV Modules containing N-Type Mono-crystalline silicon A-Grade solar cells, As per approved specifications.	Watt	49043			
2.2	Supply & Erection of elevated structure of hot dipped (80 microns Average) G.I Sheet Channel, angle as per design. including Stainless Steel Nuts & Bolts/washers	Kg	1610			
2.3	Supply and Installation of DC Circuit breaker 2P - MCB Type	No	5.00			
2.4	Supply and Installation of AC Circuit Breaker 4P - MCB Type	No	1.00			
2.5	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (75 mm dia) PN-8	Meter	91.44			
2.6	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	19.11			
2.7	Supply and Erection 1x6 sq.mm single core (XPLE/XPLO insulated/PCV sheathed) flexible copper cable	Meter	360.00			
2.8	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	Cum	13.00			
Solar Pumping Inverter with Allied Accessories						
2.9	Supply and Erection of 3 phase 380V Solar Pump inverter (MPPT) 30 KW	No	1.00			
2.10	Supply and Erection of dV /dT or Sine Filter or dV/dT filter 22 KW to 45 KW	Each	1.00			
Solar Pumping Macinery with Allied Accessories						
2.11	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge greater than 3000 iGPH and output capacity greater than 15 WHP and upto 20 WHP (As per Approved Technical Specifications)	WHP	19.72			
2.12	Supply and Fixing MS Column pipe with flanges for sub,erssible pump : 3" (75 mm) Nominal Pipe Size (NPS), 3/16" thick, 10' length	Meter	140.20			
2.13	Supply and installation of Submersible Flat Cable made of 99.9% copper, coated with double PVC as per BSS Standards, 4x25mm2	Meter	203.25			
2.14	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (20mm dia) PN-10	Meter	158.49			

2.15	Providing and fixing sluice valve of BSS quality (BS 5163) and weight Class 'B' for Cast Iron & AC pipe line (including cost of jointing material): a) 3" (75 mm) dia of Valve	Each	2.00			
2.16	Providing and Fixing of Reflux valves/Non return valve (NRV) of BSS quality (BS 5163) for GI, PVC, MS , HDPE and also for all type of pipes i/c rubber sheet , jointing material complete in all respect 3" (75 mm) dia of Valve	Each	1.00			
Solar Lightening System						
2.17	Supply and Erection of Solar PV Module (Solar Panel) Mono-crystalline A-Grade with 25 Years Power Output Warranty Lates IEC 2016 Codes, (per Watt) (As per Approved Specifications)	Watt	600.00			
2.18	Supply and Erection of hot dipped (80 microns Average) galvanized steel of minimum thickness of 12 SWG / 2.64 mm Channel / Pipe or 8 SWG / 4.06 mm Angle	per kg	36.00			
2.19	Supply and Erection of BOX / STAND for Batteries SHS Inverter & Charge Controller	Watt	600.00			
2.20	Supply and Installation of SOLAR MPPT CHARGE CONTROLLER (FOR SOLAR DC SYSTEM, 45A (12V/24V)	No	1.00			
2.21	Supply and Erection 1x2.5 sq.mm flexible copper cable	Meter	54.86			
2.22	Supply and Erection PVC flexible pipe : 1" i/d	Meter	7.62			
2.23	Supply and Erection of DC CEILING FANS 48 inch 30-36 W	No	1.00			
2.24	Supply and Erection Lithium LiFeP04 battery 100 AH 12V 6000 cycles	AH	2.00			
Earthing/Grounding with Allied Accesories						
2.25	Supply and Installation of Copper Rod/ Plate with copper clamps	Kg	3.00			
2.26	Supply and Installation of Earthing Chemical	Kg	14.00			
2.27	Supply and Installation of DC surge protection device 2P 1000VDC, In = 20kA & Imax = 40kA	No	3.00			
2.28	Supply and Erection of Copper Conductor of 10 AWG	Meter	45.00			
2.29	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	1.36			
2.30	Providing and Fixing of MS Bend Pipe along with Top set contain MS pipe for testing and fixing of Psi Guage, 02 Nos Sluice valves & 01 No NRV Valve complete in all respects 3 Inch " (75") dia	Each	1.00			
2.31	Supply, Installation, Testing and Commissioning of DC Flood Lighting 30W, 12V/24V, IP 65	Each	1.00			
2.32	Supply, Installation, Testing and Commissioning of DC Phone charger and 02 Nos LED Lights 10W	Each	1.00			
2.33	Combiner Box Hot Dipped Galvanized avg 80 Micron 18 SWG 12"x18 " with bus bar for earthing connectivity complete in all respects	Each	1.00			
			Total Amount			

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

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BILL OF QUANTITIES

Bill No: 3. DWSS Bara Tehsil (Upgradation of Solar System)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Required Discharge (IGPH)	**3500**					
Total Dynamic Head (Feet)	**500**					
Pump Setting Depth (Feet)	**360**					
3.1	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge greater 3000 iGPH and output capacity greater than 6 WHP and upto 10 WHP (As per ApprovedTechnical Specifications)	WHP	8.84			
3.2	Supply and Erection of A-Grade Solar PV Modules containing N-Type Mono-crystalline silicon A-Grade solar cells, As per approved specifications.	P.Watt	13920			
3.3	Supply and Installation of DC Circuit breaker 2P - MCB Type	No	2.00			
3.4	Supply and Erection 1x6 sq.mm single core (XPLE/XPLO insulated/PCV sheathed) flexible copper cable	Meter	180.00			
3.5	Supply and Erection 1x10 sq.mm flexible copper cable	Meter	10.67			
3.6	Supply and Erection MC4 Branch connector	Pair	2.00			
3.7	Supply and Erection of 3 phase 380V Solar Pump inverter (MPPT) 15 KW	No	1.00			
3.8	Supply & Erection of elevated structure of hot dipped (80 microns Average) G.I Sheet Channel, angle as per design. including Stainless Steel Nuts & Bolts/washers	Kg	460.00			
3.9	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	Cum	1.27			
3.10	Supply and Fixing MS Column pipe with flanges for submerssible pump : 2.5" (63 mm) Nominal Pipe Size (NPS), 3/16" thick, 10' length	Meter	3.05			
3.11	Providing and fixing sluice valve of BSS quality (BS 5163) and weight Class 'B' for Cast Iron & AC pipe line (including cost of jointing material):- a) 2.5" (63 mm) dia of Valve	Each	2.00			
3.12	Supply and installation of Submersible Flat Cable made of 99.9% copper, coated with double PVC as per BSS Standards, 4x10 mm2	Meter	142.28			
3.13	Providing and Fixing of Reflux valves/Non return valve (NRV) of BSS quality (BS 5163) for GI, PVC, MS , HDPE and also for all type of pipes i/c rubber sheet , jointing material complete in all respect 2.5" (63 mm) dia of Valve	Each	1.00			
3.14	Providing and Fixing of MS Bend Pipe along with Top set contain MS pipe for testing and fixing of Psi Guage, 02 Nos Sluice valves & 01 No NRV Valve complete in all respects 2.5 Inch " (63") dia	Each	1.00			
			Total Amount			

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : RFB-KH-SW-R-01

BILL OF QUANTITIES

Bill No: 4. DWSS Malik Doran Gul Fort Slop MDK (Installation of Solar System)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Required Discharge (IGPH)	**3000**					
Total Dynamic Head (Feet)	**550**					
Pump Setting Depth (Feet)	**350**					
Solar Panel with Allied Accessories						
4.1	Supply and Erection of A-Grade Solar PV Modules containing N-Type Mono-crystalline silicon A-Grade solar cells, As per approved specifications.	Watt	20772			
4.2	Supply & Erection of elevated structure of hot dipped (80 microns Average) G.I Sheet Channel, angle as per design. including Stainless Steel Nuts & Bolts/washers	Kg	650			
4.3	Supply and Installation of DC Circuit breaker 2P - MCB Type	No	2.00			
4.4	Supply and Installation of AC Circuit Breaker 4P - MCB Type	No	1.00			
4.5	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (75 mm dia) PN-8	Meter	91.44			
4.6	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	19.11			
4.7	Supply and Erection 1x6 sq.mm single core (XPLE/XPLO insulated/PCV sheathed) flexible copper cable	Meter	180			
4.8	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	Cum	5.35			
Solar Pumping Inverter with Allied Accessories						
4.9	Supply and Erection of 3 phase 380V Solar Pump inverter (MPPT) 15 KW	No	1.00			
4.10	Supply and Erection of dV /dT or Sine Filters 11 KW to 18.5 KW	Each	1.00			
Solar Pumping Macinery with Allied Accessories						
4.11	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge less than or equal to 3000 iGPH and output capacity greater than 6 WHP and upto 10 WHP (As per ApprovedTechnical Specifications)	WHP	8.33			
4.12	Supply and Fixing MS Column pipe with flanges for sub,erssible pump : 2.5" (63 mm) Nominal Pipe Size (NPS), 3/16" thick, 10' length	Meter	109.76			
4.13	Supply and installation of Submersible Flat Cable made of 99.9% copper, coated with double PVC as per BSS Standards, 4x10 mm2	Meter	142.28			
4.14	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (20mm dia) PN-10	Meter	112.77			

4.15	Providing and fixing sluice valve of BSS quality (BS 5163) and weight Class 'B' for Cast Iron & AC pipe line (including cost of jointing material):- a) 2.5" (63 mm) dia of Valve	Each	2.00			
Solar Lightening System						
4.16	Supply and Erection of Solar PV Module (Solar Panel) Mono-crystalline A-Grade with 25 Years Power Output Warranty Lates IEC 2016 Codes, (per Watt) (As per Approved Specifications)	Watt	600.00			
4.17	Supply and Erection of hot dipped (80 microns Average) galvanized steel of minimum thickness of 12 SWG / 2.64 mm Channel / Pipe or 8 SWG / 4.06 mm Angle	per kg	36.00			
4.18	Supply and Erection of BOX / STAND for Batteries SHS Inverter & Charge Controller	Watt	600.00			
4.19	Supply and Installation of SOLAR MPPT CHARGE CONTROLLER (FOR SOLAR DC SYSTEM, 45A (12V/24V)	No	1.00			
4.20	Supply and Erection 1x2.5 sq.mm flexible copper cable	Meter	54.86			
4.21	Supply and Erection PVC flexible pipe : 1" i/d	Meter	7.62			
4.22	Supply and Erection of DC CEILING FANS 48 inch 30-36 W	No	1.00			
4.23	Supply and Erection Lithium LiFeP04 battery 100 AH 12V 6000 cycles	AH	2.00			
Earthing/Grounding with Allied Accesories						
4.24	Supply and Installation of Copper Rod/ Plate with copper clamps	Kg	3.00			
4.25	Supply and Installation of Earthing Chemical	Kg	14.00			
4.26	Supply and Installation of DC surge protection device 2P 1000VDC, In = 20kA & Imax = 40kA	No	3.00			
4.27	Supply and Erection of Copper Conductor of 10 AWG	Meter	45.00			
4.28	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	1.36			
4.29	Providing and Fixing of Reflux valves/Non return valve (NRV) of BSS quality (BS 5163) for GI, PVC, MS , HDPE and also for all type of pipes i/c rubber sheet , jointing material complete in all respect 2.5" (63 mm) dia of Valve	Each	1.00			
4.30	Providing and Fixing of MS Bend Pipe along with Top set contain MS pipe for testing and fixing of Psi Guage, 02 Nos Sluice valves & 01 No NRV Valve complete in all respects 2.5 Inch " (63") dia	Each	1.00			
4.31	Supply, Installation, Testing and Commissioning of DC Flood Lighting 30W, 12V/24V, IP 65	Each	1.00			
4.32	Supply, Installation, Testing and Commissioning of DC Phone charger and 02 Nos LED Lights 10W	Each	1.00			
4.33	Combiner Box Hot Dipped Galvanized avg 80 Micron 18 SWG 12"x18 " with bus bar for earthing connectivity complete in all respects	Each	1.00			
			Total Amount			

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : RFB-KH-SW-R-01

BILL OF QUANTITIES

Bill No: 5. DWSS Sam Baba Zone - A (Installation of Solar System)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Required Discharge (IGPH)	**4500**					
Total Dynamic Head (Feet)	**460**					
Pump Setting Depth (Feet)	**380**					
Solar Panel with Allied Accessories						
5.1	Supply and Erection of A-Grade Solar PV Modules containing N-Type Mono-crystalline silicon A-Grade solar cells, As per approved specifications.	Watt	25997			
5.2	Supply & Erection of elevated structure of hot dipped (80 microns Average) G.I Sheet Channel, angle as per design. including Stainless Steel Nuts & Bolts/washers	Kg	855			
5.3	Supply and Installation of DC Circuit breaker 2P - MCB Type	No	3.00			
5.4	Supply and Installation of AC Circuit Breaker 4P - MCB Type	No	1.00			
5.5	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (75 mm dia) PN-8	Meter	91.44			
5.6	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	19.11			
5.7	Supply and Erection 1x6 sq.mm single core (XPLE/XPLO insulated/PCV sheathed) flexible copper cable	Meter	360.0			
5.8	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	Cum	6.88			
Solar Pumping Inverter with Allied Accessories						
5.9	Supply and Erection of 3 phase 380V Solar Pump inverter (MPPT) 18.5 KW	No	1.00			
5.10	Supply and Erection of dV /dT or Sine Filters 11 KW to 18.5 KW	Each	1.00			
Solar Pumping Macinery with Allied Accessories						
5.11	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge greater than 3000 iGPH and output capacity greater than 10 WHP and upto 15 WHP (As per Approved Technical Specifications)	WHP	10.45			
5.12	Supply and Fixing MS Column pipe with flanges for sub,erssible pump : 2.5" (63 mm) Nominal Pipe Size (NPS), 3/16" thick, 10' length	Meter	118.90			
5.13	Supply and installation of Submersible Flat Cable made of 99.9% copper, coated with double PVC as per BSS Standards, 4x10mm2	Meter	154.47			
5.14	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (20mm dia) PN-10	Meter	121.91			

5.15	Providing and fixing sluice valve of BSS quality (BS 5163) and weight Class 'B' for Cast Iron & AC pipe line (including cost of jointing material):- a) 2.5" (63 mm) dia of Valve	Each	2.00			
Solar Lightening System						
5.16	Supply and Erection of Solar PV Module (Solar Panel) Mono-crystalline A-Grade with 25 Years Power Output Warranty Lates IEC 2016 Codes, (per Watt) (As per Approved Specifications)	Watt	600.00			
5.17	Supply and Erection of hot dipped (80 microns Average) galvanized steel of minimum thickness of 12 SWG / 2.64 mm Channel / Pipe or 8 SWG / 4.06 mm Angle	per kg	36.00			
5.18	Supply and Erection of BOX / STAND for Batteries SHS Inverter & Charge Controller	Watt	600.00			
5.19	Supply and Installation of SOLAR MPPT CHARGE CONTROLLER (FOR SOLAR DC SYSTEM, 45A (12V/24V)	No	1.00			
5.20	Supply and Erection 1x2.5 sq.mm flexible copper cable	Meter	54.86			
5.21	Supply and Erection PVC flexible pipe : 1" i/d	Meter	7.62			
5.22	Supply and Erection of DC CEILING FANS 48 inch 30-36 W	No	1.00			
5.23	Supply and Erection Lithium LiFeP04 battery 100 AH 12V 6000 cycles	AH	2.00			
Earthing/Grounding with Allied Accesories						
5.24	Supply and Installation of Copper Rod/ Plate with copper clamps	Kg	3.00			
5.25	Supply and Installation of Earthing Chemical	Kg	14.00			
5.26	Supply and Installation of DC surge protection device 2P 1000VDC, In = 20kA & Imax = 40kA	No	3.00			
5.27	Supply and Erection of Copper Conductor of 10 AWG	Meter	45.00			
5.28	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	1.36			
5.29	Providing and Fixing of Reflux valves/Non return valve (NRV) of BSS quality (BS 5163) for GI, PVC, MS , HDPE and also for all type of pipes i/c rubber sheet , jointing material complete in all respect 2.5" (63 mm) dia of Valve	Each	1.00			
5.30	Providing and Fixing of MS Bend Pipe along with Top set contain MS pipe for testing and fixing of Psi Guage, 02 Nos Sluice valves & 01 No NRV Valve complete in all respects 2.5 Inch " (63") dia	Each	1.00			
5.31	Supply, Installation, Testing and Commissioning of DC Flood Lighting 30W, 12V/24V, IP 65	Each	1.00			
5.32	Supply, Installation, Testing and Commissioning of DC Phone charger and 02 Nos LED Lights 10W	Each	1.00			
5.33	Combiner Box Hot Dipped Galvanized avg 80 Micron 18 SWG 12"x18 " with bus bar for earthing connectivity complete in all respects	Each	1.00			
			Total Amount			

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : RFB-KH-SW-R-01

BILL OF QUANTITIES

Bill No: 6. DWSS Sam Baba Zone - B (Installation of Solar System)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Required Discharge (IGPH)	**4500**					
Total Dynamic Head (Feet)	**480**					
Pump Setting Depth (Feet)	**380**					
Solar Panel with Allied Accessories						
6.1	Supply and Erection of A-Grade Solar PV Modules containing N-Type Mono-crystalline silicon A-Grade solar cells, As per approved specifications.	Watt	27127			
6.2	Supply & Erection of elevated structure of hot dipped (80 microns Average) G.I Sheet Channel, angle as per design. including Stainless Steel Nuts & Bolts/washers	Kg	912			
6.3	Supply and Installation of DC Circuit breaker 2P - MCB Type	No	3.00			
6.4	Supply and Installation of AC Circuit Breaker 4P - MCB Type	No	1.00			
6.5	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (75 mm dia) PN-8	Meter	91.44			
6.6	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	19.11			
6.7	Supply and Erection 1x6 sq.mm single core (XPLE/XPLO insulated/PCV sheathed) flexible copper cable	Meter	360.00			
6.8	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	Cum	7.64			
Solar Pumping Inverter with Allied Accessories						
6.9	Supply and Erection of 3 phase 380V Solar Pump inverter (MPPT) 18.5 KW	No	1.00			
6.10	Supply and Erection of dV /dT or Sine Filters 11 KW to 18.5 KW	Each	1.00			
Solar Pumping Macinery with Allied Accessories						
6.11	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge greater than 3000 iGPH and output capacity greater than 10 WHP and upto 15 WHP (As per Approved Technical Specifications)	WHP	10.91			
6.12	Supply and Fixing MS Column pipe with flanges for submerssible pump : 2.5" (63 mm) Nominal Pipe Size (NPS), 3/16" thick, 10' length	Meter	118.90			
6.13	Supply and installation of Submersible Flat Cable made of 99.9% copper, coated with double PVC as per BSS Standards, 4x10mm2	Meter	154.47			
6.14	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (20mm dia) PN-10	Meter	121.91			

6.15	Providing and fixing sluice valve of BSS quality (BS 5163) and weight Class 'B' for Cast Iron & AC pipe line (including cost of jointing material):- a) 2.5" (63 mm) dia of Valve	Each	2.00			
Solar Lightening System						
6.16	Supply and Erection of Solar PV Module (Solar Panel) Mono-crystalline A-Grade with 25 Years Power Output Warranty Lates IEC 2016 Codes, (per Watt) (As per Approved Specifications)	Watt	600.00			
6.17	Supply and Erection of hot dipped (80 microns Average) galvanized steel of minimum thickness of 12 SWG / 2.64 mm Channel / Pipe or 8 SWG / 4.06 mm Angle	per kg	36.00			
6.18	Supply and Erection of BOX / STAND for Batteries SHS Inverter & Charge Controller	Watt	600.00			
6.19	Supply and Installation of SOLAR MPPT CHARGE CONTROLLER (FOR SOLAR DC SYSTEM, 45A (12V/24V)	No	1.00			
6.20	Supply and Erection 1x2.5 sq.mm flexible copper cable	Meter	54.86			
6.21	Supply and Erection PVC flexible pipe : 1" i/d	Meter	7.62			
6.22	Supply and Erection of DC CEILING FANS 48 inch 30-36 W	No	1.00			
6.23	Supply and Erection Lithium LiFeP04 battery 100 AH 12V 6000 cycles	AH	2.00			
Earthing/Grounding with Allied Accesories						
6.24	Supply and Installation of Copper Rod/ Plate with copper clamps	Kg	3.00			
6.25	Supply and Installation of Earthing Chemical	Kg	14.00			
6.26	Supply and Installation of DC surge protection device 2P 1000VDC, In = 20kA & Imax = 40kA	No	3.00			
6.27	Supply and Erection of Copper Conductor of 10 AWG	Meter	45.00			
6.28	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	1.36			
6.29	Providing and Fixing of Reflux valves/Non return valve (NRV) of BSS quality (BS 5163) for GI, PVC, MS , HDPE and also for all type of pipes i/c rubber sheet , jointing material complete in all respect 2.5" (63 mm) dia of Valve	Each	1.00			
6.30	Providing and Fixing of MS Bend Pipe along with Top set contain MS pipe for testing and fixing of Psi Guage, 02 Nos Sluice valves & 01 No NRV Valve complete in all respects 2.5 Inch " (63") dia	Each	1.00			
6.31	Supply, Installation, Testing and Commissioning of DC Flood Lighting 30W, 12V/24V, IP 65	Each	1.00			
6.32	Supply, Installation, Testing and Commissioning of DC Phone charger and 02 Nos LED Lights 10W	Each	1.00			
6.33	Combiner Box Hot Dipped Galvanized avg 80 Micron 18 SWG 12"x18 " with bus bar for earthing connectivity complete in all respects	Each	1.00			
			Total Amount			

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : KH-SW-R-01

BILL OF QUANTITIES

Bill No: 7. DWSS Haji Abdul Qayum Toot Dand (Installation of Solar System)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Required Discharge (IGPH)	**3500**					
Total Dynamic Head (Feet)	**490**					
Pump Setting Depth (Feet)	**330**					
Solar Panel with Allied Accessories						
7.1	Supply and Erection of A-Grade Solar PV Modules containing N-Type Mono-crystalline silicon A-Grade solar cells, As per approved specifications.	Watt	12961			
7.2	Supply & Erection of elevated structure of hot dipped (80 microns Average) G.I Sheet Channel, angle as per design. including Stainless Steel Nuts & Bolts/washers	Kg	680			
7.3	Supply and Installation of DC Circuit breaker 2P - MCB Type	No	2.00			
7.4	Supply and Installation of AC Circuit Breaker 4P - MCB Type	No	1.00			
7.5	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (75 mm dia) PN-8	Meter	60.96			
7.6	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	19.11			
7.7	Supply and Erection 1x6 sq.mm single core (XPLE/XPLO insulated/PCV sheathed) flexible copper cable	Meter	180.00			
7.8	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	Cum	5.35			
Solar Pumping Inverter with Allied Accessories						
7.9	Supply and Erection of 3 phase 380V Solar Pump inverter (MPPT) 15 KW	No	1.00			
7.10	Supply and Erection of dV /dT or Sine Filters 11 KW to 18.5 KW	Each	1.00			
Solar Pumping Macinery with Allied Accessories						
7.11	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge greater than 3000 iGPH and output capacity greater than 6 WHP and upto 10 WHP (As per Approved Technical Specifications)	WHP	8.66			
7.12	Supply and Fixing MS Column pipe with flanges for sub,erssible pump : 2.5" (63 mm) Nominal Pipe Size (NPS), 3/16" thick, 10' length	Meter	103.66			
7.13	Supply and installation of Submersible Flat Cable made of 99.9% copper, coated with double PVC as per BSS Standards, 4x10mm2	Meter	134.15			
7.14	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (20mm dia) PN-10	Meter	106.67			
7.15	Providing and fixing sluice valve of BSS quality (BS 5163) and weight Class 'B' for Cast Iron & AC pipe line (including cost of jointing material):- a) 2.5" (63 mm) dia of Valve	Each	2.00			

Solar Lightening System						
7.16	Supply and Erection of Solar PV Module (Solar Panel) Mono-crystalline A-Grade with 25 Years Power Output Warranty Lates IEC 2016 Codes, (per Watt) (As per Approved Specifications)	Watt	600.00			
7.17	Supply and Erection of hot dipped (80 microns Average) galvanized steel of minimum thickness of 12 SWG / 2.64 mm Channel / Pipe or 8 SWG / 4.06 mm Angle	per kg	36.00			
7.18	Supply and Erection of BOX / STAND for Batteries SHS Inverter & Charge Controller	Watt	600.00			
7.19	Supply and Installation of SOLAR MPPT CHARGE CONTROLLER (FOR SOLAR DC SYSTEM, 45A (12V/24V)	No	1.00			
7.2	Supply and Erection 1x2.5 sq.mm flexible copper cable	Meter	54.86			
7.21	Supply and Erection PVC flexible pipe : 1" i/d	Meter	7.62			
7.22	Supply and Erection of DC CEILING FANS 48 inch 30-36 W	No	1.00			
7.23	Supply and Erection Lithium LiFeP04 battery 100 AH 12V 6000 cycles	AH	2.00			
Earthing/Grounding with Allied Accesories						
7.24	Supply and Installation of Copper Rod/ Plate with copper clamps	Kg	3.00			
7.25	Supply and Installation of Earthing Chemical	Kg	14.00			
7.26	Supply and Installation of DC surge protection device 2P 1000VDC, In = 20kA & Imax = 40kA	No	3.00			
7.27	Supply and Erection of Copper Conductor of 10 AWG	Meter	45.00			
7.28	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	1.36			
7.29	Providing and Fixing of Reflux valves/Non return valve (NRV) of BSS quality (BS 5163) for GI, PVC, MS , HDPE and also for all type of pipes i/c rubber sheet , jointing material complete in all respect 2.5" (63 mm) dia of Valve	Each	1.00			
7.3	Providing and Fixing of MS Bend Pipe along with Top set contain MS pipe for testing and fixing of Psi Guage, 02 Nos Sluice valves & 01 No NRV Valve complete in all respects 2.5 Inch " (63") dia	Each	1.00			
7.31	Supply, Installation, Testing and Commissioning of DC Flood Lighting 30W, 12V/24V, IP 65	Each	1.00			
7.32	Supply, Installation, Testing and Commissioning of DC Phone charger and 02 Nos LED Lights 10W	Each	1.00			
7.33	Combiner Box Hot Dipped Galvanized avg 80 Micron 18 SWG 12"x18 " with bus bar for earthing connectivity complete in all respects	Each	1.00			
			Total Amount			

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : RFB-KH-SW-R-01

BILL OF QUANTITIES

Bill No: 8. DWSS Nowgazi Baba (Replacement of Pumping Machinery)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Required Discharge (IGPH)	**2500**					
Total Dynamic Head (Feet)	**460**					
Pump Setting Depth (Feet)	**320**					
8.1	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge less than or equal to 3000 iGPH and output capacity greater than 3 WHP and upto 6 WHP (As per Approved Technical Specifications)	WHP	5.81			
			Total Amount			

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : RFB-KH-SW-R-01

BILL OF QUANTITIES

Bill No: 9. DWSS Janis Tawas Khan Killi (Installation of Solar System)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Required Discharge (IGPH)	**3500**					
Total Dynamic Head (Feet)	**470**					
Pump Setting Depth (Feet)	**330**					
Solar Panel with Allied Accessories						
9.1	Supply and Erection of A-Grade Solar PV Modules containing N-Type Mono-crystalline silicon A-Grade solar cells, As per approved specifications.	Watt	20659			
9.2	Supply & Erection of elevated structure of hot dipped (80 microns Average) G.I Sheet Channel, angle as per design. including Stainless Steel Nuts & Bolts/washers	Kg	650			
9.3	Supply and Installation of DC Circuit breaker 2P - MCB Type	No	2.00			
9.4	Supply and Installation of AC Circuit Breaker 4P - MCB Type	No	1.00			
9.5	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (75 mm dia) PN-8	Meter	60.96			
9.6	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	19.11			
9.7	Supply and Erection 1x6 sq.mm single core (XPLE/XPLO insulated/PCV sheathed) flexible copper cable	Meter	180.00			
9.8	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	Cum	5.35			
Solar Pumping Inverter with Allied Accessories						
9.9	Supply and Erection of 3 phase 380V Solar Pump inverter (MPPT) 15 KW	No	1.00			
9.10	Supply and Erection of dV /dT or Sine Filters 11 KW to 18.5 KW	Each	1.00			
Solar Pumping Macinery with Allied Accessories						
9.11	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge greater than 3000 iGPH and output capacity greater than 6 WHP and upto 10 WHP (As per Approved Technical Specifications)	WHP	8.31			
9.12	Supply and Fixing MS Column pipe with flanges for submerssible pump : 2.5" (63 mm) Nominal Pipe Size (NPS), 3/16" thick, 10' length	Meter	103.66			
9.13	Supply and installation of Submersible Flat Cable made of 99.9% copper, coated with double PVC as per BSS Standards, 4x10mm2	Meter	134.15			
9.14	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (20mm dia) PN-10	Meter	106.67			

9.15	Providing and fixing sluice valve of BSS quality (BS 5163) and weight Class 'B' for Cast Iron & AC pipe line (including cost of jointing material):- a) 2.5" (63 mm) dia of Valve	Each	2.00			
Solar Lightening System						
9.16	Supply and Erection of Solar PV Module (Solar Panel) Mono-crystalline A-Grade with 25 Years Power Output Warranty Lates IEC 2016 Codes, (per Watt) (As per Approved Specifications)	Watt	600.00			
9.17	Supply and Erection of hot dipped (80 microns Average) galvanized steel of minimum thickness of 12 SWG / 2.64 mm Channel / Pipe or 8 SWG / 4.06 mm Angle	per kg	36.00			
9.18	Supply and Erection of BOX / STAND for Batteries SHS Inverter & Charge Controller	Watt	600.00			
9.19	Supply and Installation of SOLAR MPPT CHARGE CONTROLLER (FOR SOLAR DC SYSTEM, 45A (12V/24V)	No	1.00			
9.2	Supply and Erection 1x2.5 sq.mm flexible copper cable	Meter	54.86			
9.21	Supply and Erection PVC flexible pipe : 1" i/d	Meter	7.62			
9.22	Supply and Erection of DC CEILING FANS 48 inch 30-36 W	No	1.00			
9.23	Supply and Erection Lithium LiFeP04 battery 100 AH 12V 6000 cycles	AH	2.00			
Earthing/Grounding with Allied Accesories						
9.24	Supply and Installation of Copper Rod/ Plate with copper clamps	Kg	3.00			
9.25	Supply and Installation of Earthing Chemical	Kg	14.00			
9.26	Supply and Installation of DC surge protection device 2P 1000VDC, In = 20kA & Imax = 40kA	No	3.00			
9.27	Supply and Erection of Copper Conductor of 10 AWG	Meter	45.00			
9.28	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	1.36			
9.29	Providing and Fixing of Reflux valves/Non return valve (NRV) of BSS quality (BS 5163) for GI, PVC, MS , HDPE and also for all type of pipes i/c rubber sheet , jointing material complete in all respect 2.5" (63 mm) dia of Valve	Each	1.00			
9.30	Providing and Fixing of MS Bend Pipe along with Top set contain MS pipe for testing and fixing of Psi Guage, 02 Nos Sluice valves & 01 No NRV Valve complete in all respects 2.5 Inch " (63") dia	Each	1.00			
9.31	DC Flood Lighting 30W, 12V/24V, IP 65	Job	2.00			
9.32	DC phone charger and 02 Nos LED Lights 10W	Job	1.00			
9.33	Combiner Box Hot Dipped Galvanized avg 80 Micron 18 SWG 12"x18 " with bus bar for earthing connectivity complete in all respects	Job	1.00			
			Total Amount			

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : RFB-KH-SW-R-01

BILL OF QUANTITIES

Bill No: 10. DWSS Ghulam Sakhi Arjali Nadi (Installation of Solar System)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Required Discharge (IGPH)	**3000**					
Total Dynamic Head (Feet)	**625**					
Pump Setting Depth (Feet)	**500**					
Solar Panel with Allied Accessories						
10.1	Supply and Erection of A-Grade Solar PV Modules containing N-Type Mono-crystalline silicon A-Grade solar cells, As per approved specifications.	Watt	23548			
10.2	Supply & Erection of elevated structure of hot dipped (80 microns Average) G.I Sheet Channel, angle as per design. including Stainless Steel Nuts & Bolts/washers	Kg	745			
10.3	Supply and Installation of DC Circuit breaker 2P - MCB Type	No	3.00			
10.4	Supply and Installation of AC Circuit Breaker 4P - MCB Type	No	1.00			
10.5	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (75 mm dia) PN-8	Meter	91.44			
10.6	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	19.11			
10.7	Supply and Erection 1x6 sq.mm single core (XPLE/XPLO insulated/PCV sheathed) flexible copper cable	Meter	360.00			
10.8	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	Cum	6.12			
Solar Pumping Inverter with Allied Accessories						
10.9	Supply and Erection of 3 phase 380V Solar Pump inverter (MPPT) 15 KW	No	1.00			
10.10	Supply and Erection of dV /dT or Sine Filters 11 KW to 18.5 KW	Each	1.00			
Solar Pumping Macinery with Allied Accessories						
10.11	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge less than or equal to 3000 iGPH and output capacity greater than 6 WHP and upto 10 WHP (As per ApprovedTechnical Specifications)	WHP	9.47			
10.12	Supply and Fixing MS Column pipe with flanges for sub,erssible pump : 2.5" (63 mm) Nominal Pipe Size (NPS), 3/16" thick, 10' length	Meter	155.49			
10.13	Supply and installation of Submersible Flat Cable made of 99.9% copper, coated with double PVC as per BSS Standards, 4x16 mm2	Meter	203.25			
10.14	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (20mm dia) PN-10	Meter	158.49			
10.15	Providing and fixing sluice valve of BSS quality (BS 5163) and weight Class 'B' for Cast Iron & AC pipe line (including cost of jointing material):- a) 2.5" (63 mm) dia of Valve	Each	2.00			

Solar Lightening System						
10.16	Supply and Erection of Solar PV Module (Solar Panel) Mono-crystalline A-Grade with 25 Years Power Output Warranty Lates IEC 2016 Codes, (per Watt) (As per Approved Specifications)	Watt	600.00			
10.17	Supply and Erection of hot dipped (80 microns Average) galvanized steel of minimum thickness of 12 SWG / 2.64 mm Channel / Pipe or 8 SWG / 4.06 mm Angle	per kg	36.00			
10.18	Supply and Erection of BOX / STAND for Batteries SHS Inverter & Charge Controller	Watt	600.00			
10.19	Supply and Installation of SOLAR MPPT CHARGE CONTROLLER (FOR SOLAR DC SYSTEM, 45A (12V/24V)	No	1.00			
10.2	Supply and Erection 1x2.5 sq.mm flexible copper cable	Meter	54.86			
10.21	Supply and Erection PVC flexible pipe : 1" i/d	Meter	7.62			
10.22	Supply and Erection of DC CEILING FANS 48 inch 30-36 W	No	1.00			
10.23	Supply and Erection Lithium LiFeP04 battery 100 AH 12V 6000 cycles	AH	2.00			
Earthing/Grounding with Allied Accesories						
10.24	Supply and Installation of Copper Rod/ Plate with copper clamps	Kg	3.00			
10.25	Supply and Installation of Earthing Chemical	Kg	14.00			
10.26	Supply and Installation of DC surge protection device 2P 1000VDC, In = 20kA & Imax = 40kA	No	3.00			
10.27	Supply and Erection of Copper Conductor of 10 AWG	Meter	45.00			
10.28	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	1.36			
10.29	Providing and Fixing of Reflux valves/Non return valve (NRV) of BSS quality (BS 5163) for GI, PVC, MS , HDPE and also for all type of pipes i/c rubber sheet , jointing material complete in all respect 2.5" (63 mm) dia of Valve	Each	1.00			
10.3	Providing and Fixing of MS Bend Pipe along with Top set contain MS pipe for testing and fixing of Psi Guage, 02 Nos Sluice valves & 01 No NRV Valve complete in all respects 2.5 Inch " (63") dia	Each	1.00			
10.31	Supply, Installation, Testing and Commissioning of DC Flood Lighting 30W, 12V/24V, IP 65	Each	1.00			
10.32	Supply, Installation, Testing and Commissioning of DC Phone charger and 02 Nos LED Lights 10W	Each	1.00			
10.33	Combiner Box Hot Dipped Galvanized avg 80 Micron 18 SWG 12"x18 " with bus bar for earthing connectivity complete in all respects	Each	1.00			
			Total Amount			

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : RFB-KH-SW-R-01

BILL OF QUANTITIES

Bill No: 11. DWSS Fazal Malik Killi Shalobar (Replacement of Pumping Machinery)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Required Discharge (IGPH)	**3500**					
Total Dynamic Head (Feet)	**350**					
Pump Setting Depth (Feet)	**280**					
11.1	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge less than or equal to 3000 iGPH and output capacity greater than 3 WHP and upto 6 WHP (As per Approved Technical Specifications)	WHP	5.30			
			Total Amount			

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : KH-SW-R-01

BILL OF QUANTITIES

Bill No: 12. DWSS Malik Jan Killi BQK Bara (Installation of Solar System)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Required Discharge (IGPH)	**4000**					
Total Dynamic Head (Feet)	**475**					
Pump Setting Depth (Feet)	**360**					
Solar Panel with Allied Accessories						
12.1	Supply and Erection of A-Grade Solar PV Modules containing N-Type Mono-crystalline silicon A-Grade solar cells, As per approved specifications.	Watt	21099			
12.2	Supply & Erection of elevated structure of hot dipped (80 microns Average) G.I Sheet Channel, angle as per design. including Stainless Steel Nuts & Bolts/washers	Kg	680			
12.3	Supply and Installation of DC Circuit breaker 2P - MCB Type	No	2.00			
12.4	Supply and Installation of AC Circuit Breaker 4P - MCB Type	No	1.00			
12.5	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (75 mm dia) PN-8	Meter	91.44			
12.6	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	19.11			
12.7	Supply and Erection 1x6 sq.mm single core (XPLE/XPLO insulated/PCV sheathed) flexible copper cable	Meter	180.00			
12.8	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	Cum	5.35			
Solar Pumping Inverter with Allied Accessories						
12.9	Supply and Erection of 3 phase 380V Solar Pump inverter (MPPT) 15 KW	No	1.00			
12.10	Supply and Erection of dV /dT or Sine Filters 11 KW to 18.5 KW	Each	1.00			
Solar Pumping Macinery with Allied Accessories						
12.11	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge greater than 3000 iGPH and output capacity greater than 6 WHP and upto 10 WHP (As per Approved Technical Specifications)	WHP	8.39			
12.12	Supply and Fixing MS Column pipe with flanges for sub,erssible pump : 2.5" (63 mm) Nominal Pipe Size (NPS), 3/16" thick, 10' length	Meter	94.51			
12.13	Supply and installation of Submersible Flat Cable made of 99.9% copper, coated with double PVC as per BSS Standards, 4x10mm2	Meter	121.95			
12.14	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (20mm dia) PN-10	Meter	97.53			
12.15	Providing and fixing sluice valve of BSS quality (BS 5163) and weight Class 'B' for Cast Iron & AC pipe line (including cost of jointing material):- a) 2.5" (63 mm) dia of Valve	Each	2.00			

Solar Lightening System						
12.16	Supply and Erection of Solar PV Module (Solar Panel) Mono-crystalline A-Grade with 25 Years Power Output Warranty Lates IEC 2016 Codes, (per Watt) (As per Approved Specifications)	Watt	600.00			
12.17	Supply and Erection of hot dipped (80 microns Average) galvanized steel of minimum thickness of 12 SWG / 2.64 mm Channel / Pipe or 8 SWG / 4.06 mm Angle	per kg	36.00			
12.18	Supply and Erection of BOX / STAND for Batteries SHS Inverter & Charge Controller	Watt	600.00			
12.19	Supply and Installation of SOLAR MPPT CHARGE CONTROLLER (FOR SOLAR DC SYSTEM, 45A (12V/24V)	No	1.00			
12.2	Supply and Erection 1x2.5 sq.mm flexible copper cable	Meter	54.86			
12.21	Supply and Erection PVC flexible pipe : 1" i/d	Meter	7.62			
12.22	Supply and Erection of DC CEILING FANS 48 inch 30-36 W	No	1.00			
12.23	Supply and Erection Lithium LiFeP04 battery 100 AH 12V 6000 cycles	AH	2.00			
Earthing/Grounding with Allied Accesories						
12.24	Supply and Installation of Copper Rod/ Plate with copper clamps	Kg	3.00			
12.25	Supply and Installation of Earthing Chemical	Kg	14.00			
12.26	Supply and Installation of DC surge protection device 2P 1000VDC, In = 20kA & Imax = 40kA	No	3.00			
12.27	Supply and Erection of Copper Conductor of 10 AWG	Meter	45.00			
12.28	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	1.36			
12.29	Providing and Fixing of Reflux valves/Non return valve (NRV) of BSS quality (BS 5163) for GI, PVC, MS , HDPE and also for all type of pipes i/c rubber sheet , jointing material complete in all respect 2.5" (63 mm) dia of Valve	Each	1.00			
12.3	Providing and Fixing of MS Bend Pipe along with Top set contain MS pipe for testing and fixing of Psi Guage, 02 Nos Sluice valves & 01 No NRV Valve complete in all respects 2.5 Inch " (63") dia	Each	1.00			
12.31	Supply, Installation, Testing and Commissioning of DC Flood Lighting 30W, 12V/24V, IP 65	Each	1.00			
12.32	Supply, Installation, Testing and Commissioning of DC Phone charger and 02 Nos LED Lights 10W	Each	1.00			
12.33	Combiner Box Hot Dipped Galvanized avg 80 Micron 18 SWG 12"x18 " with bus bar for earthing connectivity complete in all respects	Each	1.00			
			Total Amount			

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : RFB-KH-SW-R-01

BILL OF QUANTITIES

Bill No: 13. DWSS Gundi Sher Khan Khel (Installation of Solar System)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Required Discharge (IGPH)	**4000**					
Total Dynamic Head (Feet)	**475**					
Pump Setting Depth (Feet)	**300**					
Solar Panel with Allied Accessories						
13.1	Supply and Erection of A-Grade Solar PV Modules containing N-Type Mono-crystalline silicon A-Grade solar cells, As per approved specifications.	Watt	23862			
13.2	Supply & Erection of elevated structure of hot dipped (80 microns Average) G.I Sheet Channel, angle as per design. including Stainless Steel Nuts & Bolts/washers	Kg	790			
13.3	Supply and Installation of DC Circuit breaker 2P - MCB Type	No	3.00			
13.4	Supply and Installation of AC Circuit Breaker 4P - MCB Type	No	1.00			
13.5	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (75 mm dia) PN-8	Meter	91.44			
13.6	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	19.11			
13.7	Supply and Erection 1x6 sq.mm single core (XPLE/XPLO insulated/PCV sheathed) flexible copper cable	Meter	360.00			
13.8	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	Cum	6.12			
Solar Pumping Inverter with Allied Accessories						
13.9	Supply and Erection of 3 phase 380V Solar Pump inverter (MPPT) 15 KW	No	1.00			
13.10	Supply and Erection of dV /dT or Sine Filters 11 KW to 18.5 KW	Each	1.00			
Solar Pumping Macinery with Allied Accessories						
13.11	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge greater than 3000 iGPH and output capacity greater than 6 WHP and upto 10 WHP (As per Approved Technical Specifications)	WHP	9.60			
13.12	Supply and Fixing MS Column pipe with flanges for sub,erssible pump : 2.5" (63 mm) Nominal Pipe Size (NPS), 3/16" thick, 10' length	Meter	94.51			
13.13	Supply and installation of Submersible Flat Cable made of 99.9% copper, coated with double PVC as per BSS Standards, 4x10mm2	Meter	121.95			
13.14	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (20mm dia) PN-10	Meter	97.53			
13.15	Providing and fixing sluice valve of BSS quality (BS 5163) and weight Class 'B' for Cast Iron & AC pipe line (including cost of jointing material):- a) 2.5" (63 mm) dia of Valve	Each	2.00			

Solar Lightening System						
13.16	Supply and Erection of Solar PV Module (Solar Panel) Mono-crystalline A-Grade with 25 Years Power Output Warranty Lates IEC 2016 Codes, (per Watt) (As per Approved Specifications)	Watt	600.00			
13.17	Supply and Erection of hot dipped (80 microns Average) galvanized steel of minimum thickness of 12 SWG / 2.64 mm Channel / Pipe or 8 SWG / 4.06 mm Angle	per kg	36.00			
13.18	Supply and Erection of BOX / STAND for Batteries SHS Inverter & Charge Controller	Watt	600.00			
13.19	Supply and Installation of SOLAR MPPT CHARGE CONTROLLER (FOR SOLAR DC SYSTEM, 45A (12V/24V)	No	1.00			
13.20	Supply and Erection 1x2.5 sq.mm flexible copper cable	Meter	54.86			
13.21	Supply and Erection PVC flexible pipe : 1" i/d	Meter	7.62			
13.22	Supply and Erection of DC CEILING FANS 48 inch 30-36 W	No	1.00			
13.23	Supply and Erection Lithium LiFeP04 battery 100 AH 12V 6000 cycles	AH	2.00			
Earthing/Grounding with Allied Accesories						
13.24	Supply and Installation of Copper Rod/ Plate with copper clamps	Kg	3.00			
13.25	Supply and Installation of Earthing Chemical	Kg	14.00			
13.26	Supply and Installation of DC surge protection device 2P 1000VDC, In = 20kA & Imax = 40kA	No	3.00			
13.27	Supply and Erection of Copper Conductor of 10 AWG	Meter	45.00			
13.28	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	1.36			
13.29	Providing and Fixing of Reflux valves/Non return valve (NRV) of BSS quality (BS 5163) for GI, PVC, MS , HDPE and also for all type of pipes i/c rubber sheet , jointing material complete in all respect 2.5" (63 mm) dia of Valve	Each	1.00			
13.30	Providing and Fixing of MS Bend Pipe along with Top set contain MS pipe for testing and fixing of Psi Guage, 02 Nos Sluice valves & 01 No NRV Valve complete in all respects 2.5 Inch " (63") dia	Each	1.00			
13.31	Supply, Installation, Testing and Commissioning of DC Flood Lighting 30W, 12V/24V, IP 65	Each	1.00			
13.32	Supply, Installation, Testing and Commissioning of DC Phone charger and 02 Nos LED Lights 10W	Each	1.00			
13.33	Combiner Box Hot Dipped Galvanized avg 80 Micron 18 SWG 12"x18 " with bus bar for earthing connectivity complete in all respects	Each	1.00			
			Total Amount			

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : RFB-KH-SW-R-01

BILL OF QUANTITIES

Bill No: 14. DWSS Malak Sadullah Khan (Replacement of Pumping Machinery)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Required Discharge (IGPH)	**3500**					
Total Dynamic Head (Feet)	**470**					
Pump Setting Depth (Feet)	**350**					
14.1	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge greater 3000 iGPH and output capacity greater than 6 WHP and upto 10 WHP (As per ApprovedTechnical Specifications)	WHP	4.60			
14.2	Supply and Erection of 3 phase 380V Solar Pump inverter (MPPT) 7.5 KW	No	1			
Total Amount						

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : RFB-KH-SW-R-01

BILL OF QUANTITIES

Bill No. 15: DWSS TD Bazar Jamrud Wali Bagh (Upgradation of Solar System)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Required Discharge (IGPH)	**3000**					
Total Dynamic Head (Feet)	**590**					
Pump Setting Depth (Feet)	**450**					
15.1	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge less than or equal to 3000 iGPH and output capacity greater than 6 WHP and upto 10 WHP (As per ApprovedTechnical Specifications)	WHP	8.94			
15.2	Supply and Erection of A-Grade Solar PV Modules containing N-Type Mono-crystalline silicon A-Grade solar cells, As per approved specifications.	P.Watt	8850			
15.3	Supply and Installation of DC Circuit breaker 2P - MCB Type	No	2.00			
15.4	Supply and Erection 1x6 sq.mm single core (XPLE/XPLO insulated/PCV sheathed) flexible copper cable	Meter	180.00			
15.5	Supply and Erection 1x10 sq.mm flexible copper cable	Meter	10.67			
15.6	Supply and Erection MC4 Branch connector	Pair	2.00			
15.7	Supply and Erection of 3 phase 380V Solar Pump inverter (MPPT) 13 KW	No	1.00			
15.8	Supply and Erection of dV /dT or Sine Filters 11 KW to 18.5 KW	Each	1.00			
15.9	Supply & Erection of elevated structure of hot dipped (80 microns Average) G.I Sheet Channel, angle as per design. including Stainless Steel Nuts & Bolts/washers	Kg	285.00			
15.10	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	Cum	2.29			
15.11	Providing and fixing sluice valve of BSS quality (BS 5163) and weight Class 'B' for Cast Iron & AC pipe line (including cost of jointing material):- a) 2.5" (63 mm) dia of Valve	Each	2.00			
15.12	Supply and installation of Submersible Flat Cable made of 99.9% copper, coated with double PVC as per BSS Standards, 4x10 mm2	Meter	142.28			
15.13	Providing and Fixing of Reflux valves/Non return valve (NRV) of BSS quality (BS 5163) for GI, PVC, MS , HDPE and also for all type of pipes i/c rubber sheet , jointing material complete in all respect 2.5" (63 mm) dia of Valve	Each	1.00			
15.14	Providing and Fixing of MS Bend Pipe along with Top set contain MS pipe for testing and fixing of Psi Guage, 02 Nos Sluice valves & 01 No NRV Valve complete in all respects 2.5 Inch " (63") dia	Each	1.00			
15.15	Providing and Fixing of MS Bend Pipe along with Top set contain MS pipe for testing and fixing of Psi Guage, 02 Nos Sluice valves & 01 No NRV Valve complete in all respects 3 Inch " (75") dia	Each	1.00			
			Total Amount			

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : RFB-KH-SW-R-01

BILL OF QUANTITIES

Bill No: 16. DWSS Jamal Khel (Installation of Solar System)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Required Discharge (IGPH)	**3500**					
Total Dynamic Head (Feet)	**600**					
Pump Setting Depth (Feet)	**330**					
Solar Panel with Allied Accessories						
16.1	Supply and Erection of A-Grade Solar PV Modules containing N-Type Mono-crystalline silicon A-Grade solar cells, As per approved specifications.	Watt	26374			
16.2	Supply & Erection of elevated structure of hot dipped (80 microns Average) G.I Sheet Channel, angle as per design. including Stainless Steel Nuts & Bolts/washers	Kg	825			
16.3	Supply and Installation of DC Circuit breaker 2P - MCB Type	No	3.00			
16.4	Supply and Installation of AC Circuit Breaker 4P - MCB Type	No	1.00			
16.5	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (75 mm dia) PN-8	Meter	91.44			
16.6	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	19.11			
16.7	Supply and Erection 1x6 sq.mm single core (XPLE/XPLO insulated/PCV sheathed) flexible copper cable	Meter	360			
16.8	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	Cum	4.59			
Solar Pumping Inverter with Allied Accessories						
16.9	Supply and Erection of 3 phase 380V Solar Pump inverter (MPPT) 18.5 KW	No	1.00			
16.10	Supply and Erection of dV /dT or Sine Filters 11 KW to 18.5 KW	Each	1.00			
Solar Pumping Macinery with Allied Accessories						
16.11	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge greater than 3000 iGPH and output capacity greater than 10 WHP and upto 15 WHP (As per ApprovedTechnical Specifications)	WHP	10.61			
16.12	Supply and Fixing MS Column pipe with flanges for sub,erssible pump : 2.5" (63 mm) Nominal Pipe Size (NPS), 3/16" thick, 10' length	Meter	103.66			
16.13	Supply and installation of Submersible Flat Cable made of 99.9% copper, coated with double PVC as per BSS Standards, 4x16 mm2	Meter	134.15			
16.14	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (20mm dia) PN-10	Meter	106.67			
16.15	Providing and fixing sluice valve of BSS quality (BS 5163) and weight Class 'B' for Cast Iron & AC pipe line (including cost of jointing material):- a) 2.5" (63 mm) dia of Valve	Each	2.00			

Solar Lightening System						
16.16	Supply and Erection of Solar PV Module (Solar Panel) Mono-crystalline A-Grade with 25 Years Power Output Warranty Lates IEC 2016 Codes, (per Watt) (As per Approved Specifications)	Watt	600.00			
16.17	Supply and Erection of hot dipped (80 microns Average) galvanized steel of minimum thickness of 12 SWG / 2.64 mm Channel / Pipe or 8 SWG / 4.06 mm Angle	per kg	36.00			
16.18	Supply and Erection of BOX / STAND for Batteries SHS Inverter & Charge Controller	Watt	600.00			
16.19	Supply and Installation of SOLAR MPPT CHARGE CONTROLLER (FOR SOLAR DC SYSTEM, 45A (12V/24V)	No	1.00			
16.2	Supply and Erection 1x2.5 sq.mm flexible copper cable	Meter	54.86			
16.21	Supply and Erection PVC flexible pipe : 1" i/d	Meter	7.62			
16.22	Supply and Erection of DC CEILING FANS 48 inch 30-36 W	No	1.00			
16.23	Supply and Erection Lithium LiFeP04 battery 100 AH 12V 6000 cycles	AH	2.00			
Earthing/Grounding with Allied Accesories						
16.24	Supply and Installation of Copper Rod/ Plate with copper clamps	Kg	3.00			
16.25	Supply and Installation of Earthing Chemical	Kg	14.00			
16.26	Supply and Installation of DC surge protection device 2P 1000VDC, In = 20kA & Imax = 40kA	No	3.00			
16.27	Supply and Erection of Copper Conductor of 10 AWG	Meter	45.00			
16.28	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	1.36			
16.29	Providing and Fixing of Reflux valves/Non return valve (NRV) of BSS quality (BS 5163) for GI, PVC, MS , HDPE and also for all type of pipes i/c rubber sheet , jointing material complete in all respect 2.5" (63 mm) dia of Valve	Each	1.00			
16.30	Providing and Fixing of MS Bend Pipe along with Top set contain MS pipe for testing and fixing of Psi Guage, 02 Nos Sluice valves & 01 No NRV Valve complete in all respects 2.5 Inch " (63") dia	Each	1.00			
16.31	Supply, Installation, Testing and Commissioning of DC Flood Lighting 30W, 12V/24V, IP 65	Each	1.00			
16.32	Supply, Installation, Testing and Commissioning of DC Phone charger and 02 Nos LED Lights 10W	Each	1.00			
16.33	Combiner Box Hot Dipped Galvanized avg 80 Micron 18 SWG 12"x18 " with bus bar for earthing connectivity complete in all respects	Each	1.00			
			Total Amount			

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : RFB-KH-SW-R-01

BILL OF QUANTITIES

Bill No: 17. DWSS H.Hayat Khan Niki Khel (Installation of Solar System)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Required Discharge (IGPH)	**6000**					
Total Dynamic Head (Feet)	**470**					
Pump Setting Depth (Feet)	**15**					
Solar Panel with Allied Accessories						
17.1	Supply and Erection of A-Grade Solar PV Modules containing N-Type Mono-crystalline silicon A-Grade solar cells, As per approved specifications.	Watt	35416			
17.2	Supply & Erection of elevated structure of hot dipped (80 microns Average) G.I Sheet Channel, angle as per design. including Stainless Steel Nuts & Bolts/washers	Kg	1140			
17.3	Supply and Installation of DC Circuit breaker 2P - MCB Type	No	4			
17.4	Supply and Installation of AC Circuit Breaker 4P - MCB Type	No	1			
17.5	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (75 mm dia) PN-8	Meter	91.436			
17.6	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	19.11			
17.7	Supply and Erection 1x6 sq.mm single core (XPLE/XPLO insulated/PCV sheathed) flexible copper cable	Meter	360			
17.8	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	Cum	9.17			
Solar Pumping Inverter with Allied Accessories						
17.9	Supply and Erection of 3 phase 380V Solar Pump inverter (MPPT) 30 KW	No	1			
17.10	Supply and Erection of dV /dT or Sine Filter or dV/dT filter 22 KW to 45 KW	Each	1			
Solar Pumping Macinery with Allied Accessories						
17.11	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge greater than 3000 iGPH and output capacity greater than 15 WHP and upto 20 WHP (As per Approved Technical Specifications)	WHP	14.24			
17.12	Supply and Fixing MS Column pipe with flanges for sub,erssible pump : 3" (75 mm) Nominal Pipe Size (NPS), 3/16" thick, 10' length	Meter	140.20			
17.13	Supply and installation of Submersible Flat Cable made of 99.9% copper, coated with double PVC as per BSS Standards, 4x25mm2	Meter	12			
17.14	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (20mm dia) PN-10	Meter	15.24			
17.15	Providing and fixing sluice valve of BSS quality (BS 5163) and weight Class 'B' for Cast Iron & AC pipe line (including cost of jointing material): a) 3" (75 mm) dia of Valve	Each	2.00			
17.16	Providing and Fixing of Reflux valves/Non return valve (NRV) of BSS quality (BS 5163) for GI, PVC, MS , HDPE and also for all type of pipes i/c rubber sheet , jointing material complete in all respect 3" (75 mm) dia of Valve	Each	1.00			

Solar Lightening System						
17.17	Supply and Erection of Solar PV Module (Solar Panel) Mono-crystalline A-Grade with 25 Years Power Output Warranty Lates IEC 2016 Codes, (per Watt) (As per Approved Specifications)	Watt	600.00			
17.18	Supply and Erection of hot dipped (80 microns Average) galvanized steel of minimum thickness of 12 SWG / 2.64 mm Channel / Pipe or 8 SWG / 4.06 mm Angle	per kg	36.00			
17.19	Supply and Erection of BOX / STAND for Batteries SHS Inverter & Charge Controller	Watt	600.00			
17.20	Supply and Installation of SOLAR MPPT CHARGE CONTROLLER (FOR SOLAR DC SYSTEM, 45A (12V/24V)	No	1			
17.21	Supply and Erection 1x2.5 sq.mm flexible copper cable	Meter	54.86			
17.22	Supply and Erection PVC flexible pipe : 1" i/d	Meter	7.62			
17.23	Supply and Erection of DC CEILING FANS 48 inch 30-36 W	No	1			
17.24	Supply and Erection Lithium LiFeP04 battery 100 AH 12V 6000 cycles	AH	2			
Earthing/Grounding with Allied Accesories						
17.25	Supply and Installation of Copper Rod/ Plate with copper clamps	Kg	3.00			
17.26	Supply and Installation of Earthing Chemical	Kg	14.00			
17.27	Supply and Installation of DC surge protection device 2P 1000VDC, In = 20kA & Imax = 40kA	No	3			
17.28	Supply and Erection of Copper Conductor of 10 AWG	Meter	45.00			
17.29	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	1.36			
17.30	Providing and Fixing of MS Bend Pipe along with Top set contain MS pipe for testing and fixing of Psi Guage, 02 Nos Sluice valves & 01 No NRV Valve complete in all respects 3 Inch " (75") dia	Each	1.00			
17.31	Supply, Installation, Testing and Commissioning of DC Flood Lighting 30W, 12V/24V, IP 65	Each	1.00			
17.32	Supply, Installation, Testing and Commissioning of DC Phone charger and 02 Nos LED Lights 10W	Each	1.00			
17.33	Combiner Box Hot Dipped Galvanized avg 80 Micron 18 SWG 12"x18 " with bus bar for earthing connectivity complete in all respects	Each	1.00			
			Total Amount			

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : RFB-KH-SW-R-01

BILL OF QUANTITIES

Bill No: 18. DWSS Wali Khel Gul Wali (Installation of Solar System)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Required Discharge (IGPH)	**6000**					
Total Dynamic Head (Feet)	**790**					
Pump Setting Depth (Feet)	**330**					
Solar Panel with Allied Accessories						
18.1	Supply and Erection of A-Grade Solar PV Modules containing N-Type Mono-crystalline silicon A-Grade solar cells, As per approved specifications.	Watt	59529			
18.2	Supply & Erection of elevated structure of hot dipped (80 microns Average) G.I Sheet Channel, angle as per design. including Stainless Steel Nuts & Bolts/washers	Kg	1862			
18.3	Supply and Installation of DC Circuit breaker 2P - MCB Type	No	7.00			
18.4	Supply and Installation of AC Circuit Breaker 4P - MCB Type	No	1.00			
18.5	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (75 mm dia) PN-8	Meter	91.44			
18.6	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	19.11			
18.7	Supply and Erection 1x6 sq.mm single core (XPLE/XPLO insulated/PCV sheathed) flexible copper cable	Meter	270			
18.8	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	Cum	15.29			
Solar Pumping Inverter with Allied Accessories						
18.9	Supply and Erection of 3 phase 380V Solar Pump inverter (MPPT) 37 KW	No	1.00			
18.10	Supply and Erection of dV /dT or Sine Filter or dV/dT filter 22 KW to 45 KW	Each	1.00			
Solar Pumping Macinery with Allied Accessories						
18.11	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge greater than 3000 iGPH and output capacity greater than 20 WHP and upto 30 WHP (As per Approved Technical Specifications)	WHP	23.94			
18.12	Supply and Fixing MS Column pipe with flanges for sub,erssible pump : 2.5" (63 mm) Nominal Pipe Size (NPS), 3/16" thick, 10' length	Meter	103.66			
18.13	Supply and installation of Submersible Flat Cable made of 99.9% copper, coated with double PVC as per BSS Standards, 4x25 mm2	Meter	134.15			
18.14	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE) Din-8074/Din-8075/ISO-4427 in trenches, complete in all respects except excavation. (20mm dia) PN-10	Meter	106.66			
18.15	Providing and fixing sluice valve of BSS quality (BS 5163) and weight Class 'B' for Cast Iron & AC pipe line (including cost of jointing material): a) 3" (75 mm) dia of Valve	Each	2.00			
18.16	Providing and Fixing of Reflux valves/Non return valve (NRV) of BSS quality (BS 5163) for GI, PVC, MS , HDPE and also for all type of pipes i/c rubber sheet , jointing material complete in all respect 3" (75 mm) dia of Valve	Each	1.00			

Solar Lightening System						
18.17	Supply and Erection of Solar PV Module (Solar Panel) Mono-crystalline A-Grade with 25 Years Power Output Warranty Lates IEC 2016 Codes, (per Watt) (As per Approved Specifications)	Watt	600.00			
18.18	Supply and Erection of hot dipped (80 microns Average) galvanized steel of minimum thickness of 12 SWG / 2.64 mm Channel / Pipe or 8 SWG / 4.06 mm Angle	per kg	36.00			
18.19	Supply and Erection of BOX / STAND for Batteries SHS Inverter & Charge Controller	Watt	600.00			
18.20	Supply and Installation of SOLAR MPPT CHARGE CONTROLLER (FOR SOLAR DC SYSTEM, 45A (12V/24V)	No	1.00			
18.21	Supply and Erection 1x2.5 sq.mm flexible copper cable	Meter	54.86			
18.22	Supply and Erection PVC flexible pipe : 1" i/d	Meter	7.62			
18.23	Supply and Erection of DC CEILING FANS 48 inch 30-36 W	No	1.00			
18.24	Supply and Erection Lithium LiFeP04 battery 100 AH 12V 6000 cycles	AH	2.00			
Earthing/Grounding with Allied Accesories						
18.25	Supply and Installation of Copper Rod/ Plate with copper clamps	Kg	3.00			
18.26	Supply and Installation of Earthing Chemical	Kg	14.00			
18.27	Supply and Installation of DC surge protection device 2P 1000VDC, In = 20kA & Imax = 40kA	No	3.00			
18.28	Supply and Erection of Copper Conductor of 10 AWG	Meter	45.00			
18.29	Earth excavation in open cut upto 3 m depth for drains, pipes etc & disposal : in Hard Soil	Cum	1.36			
18.30	Providing and Fixing of MS Bend Pipe along with Top set contain MS pipe for testing and fixing of Psi Guage, 02 Nos Sluice valves & 01 No NRV Valve complete in all respects 3 Inch " (75") dia	Each	1.00			
18.31	Supply, Installation, Testing and Commissioning of DC Flood Lighting 30W, 12V/24V, IP 65	Each	2.00			
18.32	Supply, Installation, Testing and Commissioning of DC Phone charger and 02 Nos LED Lights 10W	Each	1.00			
18.33	Combiner Box Hot Dipped Galvanized avg 80 Micron 18 SWG 12"x18 " with bus bar for earthing connectivity complete in all respects	Each	1.00			
			Total Amount			

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : RFB-KH-SW-R-01

BILL OF QUANTITIES

Bill No: 19. DWSS Kam Shalman (Upgradation of Solar System)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Required Discharge (IGPH)	**5500**					
Total Dynamic Head (Feet)	**320**					
Pump Setting Depth (Feet)	**200**					
19.1	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge greater 3000 iGPH and output capacity greater than 6 WHP and upto 10 WHP (As per ApprovedTechnical Specifications)	WHP	8.89			
19.2	Supply and Erection of A-Grade Solar PV Modules containing N-Type Mono-crystalline silicon A-Grade solar cells, As per approved specifications.	P.Watt	17700			
19.3	Supply and Installation of DC Circuit breaker 2P - MCB Type	No	2.00			
19.4	Supply and Erection 1x6 sq.mm single core (XPLE/XPLO insulated/PCV sheathed) flexible copper cable	Meter	180.00			
19.5	Supply and Erection 1x10 sq.mm flexible copper cable	Meter	10.67			
19.6	Supply and Erection MC4 Branch connector	Pair	2.00			
19.7	Supply and Erection of 3 phase 380V Solar Pump inverter (MPPT) 15 KW	No	1.00			
19.8	Supply & Erection of elevated structure of hot dipped (80 microns Average) G.I Sheet Channel, angle as per design. including Stainless Steel Nuts & Bolts/washers	Kg	570.00			
19.9	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	Cum	1.53			
19.10	Supply and Fixing MS Column pipe with flanges for sub,erssible pump : 2.5" (63 mm) Nominal Pipe Size (NPS), 3/16" thick, 10' length	Meter	3.05			
19.11	Providing and fixing sluice valve of BSS quality (BS 5163) and weight Class 'B' for Cast Iron & AC pipe line (including cost of jointing material):- a) 2.5" (63 mm) dia of Valve	Each	2.00			
19.12	Supply and installation of Submersible Flat Cable made of 99.9% copper, coated with double PVC as per BSS Standards, 4x10 mm2	Meter	142.28			
19.13	Providing and Fixing of Reflux valves/Non return valve (NRV) of BSS quality (BS 5163) for GI, PVC, MS , HDPE and also for all type of pipes i/c rubber sheet , jointing material complete in all respect 2.5" (63 mm) dia of Valve	Each	1.00			
19.14	Providing and Fixing of MS Bend Pipe along with Top set contain MS pipe for testing and fixing of Psi Guage, 02 Nos Sluice valves & 01 No NRV Valve complete in all respects 2.5 Inch " (63") dia	Each	1.00			
			Total Amount			

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : RFB-KH-SW-R-01

BILL OF QUANTITIES

Bill No: 20. DWSS Lowera Maina (Installation of New Pumping Set)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
Pump Design Data						
Discharge (IGPH)	**6000**					
Head (Feet)	**1650**					
Pump Setting (Feet)	**12**					
20.1	Providing and fixing of air valve of BSS quality and weight BS 1074 complete with jointing material double air valve 4" (100 mm) dia	Each	4.00			
20.2	Supply & Installation, testing and commissioning of Submersible Pump (ISO - 9906 Certified) coupled with Submersible rewind-able Electric Motor with AC winding for discharge less than or equal to 3000 iGPH and output capacity greater than 6 WHP and upto 10 WHP (As per Approved Technical Specifications)	WHP	8.00			
20.3	Supply, Installation, Testing and Commissioning of Multistage Centrifugal Pump Set: Complete Horizontal Multistage Centrifugal Pump **(130 HP)** Coupled with a Three-Phase 415 V, 50 HZ Electric Motor, Suitable for Drinking-Water Supply, with a Rated Discharge Capacity of **100 IGPM** against a total Dynamic Head of **500 Metres**. The Pump Shall be Complete with base frame, flexible coupling and guard, mechanical seal, standard accessories and all necessary fittings including MCU, Column Pipe, Bends, Cables etc. Motor rating shall be selected and confirmed against the manufacturer's certified performance curve. Rate shall include transportation, installation, testing, commissioning and all applicable taxes, complete in all respect.	Each	1.00			
			Total Amount			

SOLARIZATION OF EXISTING DRINKING WATER SUPPLY SCHEMES, DISTRICT KHYBER

Contract Package : RFB-KH-SW-R-01

BILL OF QUANTITIES

Bill No: 21. E&S COMPLIANCE (Solar Works)

BOQ Item	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figure	In Words	
21.1	Provision of green cloth, 4 colour waste bins (240 Liters), signages, warning tape, necessary plastic and tarpulin sheet for covering of construction raw material on site and during transportation to the site	Each Site	15			
21.2	Handling of solid waste (storage, collection, transportation, treatment, utilization, processing, and final disposal of solid wastes)	Each Site	15			
21.3	DCP Fire extinguishers (6 kg) in case of fire (The material of the cylinder is steel. The extinguishing agent is mono ammonium phosphate and ammonium sulfate powder and the discharge time of the agent is 13 seconds). Including the refilling of used chemical and replacement of expired chemical.	Each Site	15			
21.4	Fire alarm (Signal Transmission: Wired Alarm, Working Principle: Manual Alarm Button)	Each Site	3			
21.5	Safety Helmets (PE shell with vents Lining; material: Plastic Chin strap included; Adjust head size by ratchet knob)	Each	150			
21.6	Safety Shoes (Renowned Brand)	Each	90			
21.7	Protective goggles (Anti-fog, Anti scratch, Poly-carbonate Scratch and impact resistant, side protection sheet)	Each	150			
21.8	Gloves (made up of nylon, polyurethane with ironclad) and safety Vest	Each	150			
21.9	Dust Mask	Each	833			
21.10	First Aid Kit (pain killers, eyewash solution, antibiotic ointment, thermometer, plasters, sterile gauze dressings, sterile eye dressings, triangular bandages, crepe rolled bandages, safety pins, disposable sterile gloves and tweezers). Including the refilling of used contents and replacement of expired content.	Each Site	15			
21.11	Safety Sign Boards/Warning Signs for each construction site including signs for, Grievance Rederess Mechanism (GRM) details, Emergency Contact Numbers, PPE's requirements, First Aid / Fire Extinguishers placement, Emergency Exists, Procedure of use of Fire Extinguishers & other construction related safety / warning signs	Each	42			
			Total Amount			