



NO.MO(I&S)/BWN/ 168
MUNICIPAL COMMITTEE
BAHAWALNAGAR
Dated 16-03-2024
Phone No.063-9240252
Email: MCBWN2017@gmail.com

To,

AE Power SSC 3P JV,
SF.10 DG Commercial Arcade, Divine Garden, New Airport Road,
Lahore.
0321-4176685

Subject: **WORK ORDER.**

Name of Work **SOLARIZATION OF WATER WORKS AND DISPOSAL STATIONS IN BAHAWALNAGAR CITY**

Rupees only) **Rs. 126048543/-** (Twelve Crore Sixty Lack Forty Eight Thousand Five Hundred forty three

Reference: Your tender dated 16-01-2024 for the work cited above being lowest is approved at a cost of Rs. 126048543/- (Twelve Crore Sixty Lack Forty Eight Thousand Five Hundred forty three Rupees only) with completion period of 16-06-2024 (03-Months) commencing from the dated issuance of this letter on following rates, terms and conditions subject to strict financial regularities and codal formalities.

Disposal Works at Islam Nagar (85Kw)					
Sr.No	Item Description	M/s AE 3P SSC JV			
		Quantity	Unit	Unit Price	Total Price
1	PV Modules & Power Generation System				
1.1	Solar Modules	85,000	Wp	85	7,225,000
1.2	Inverter (Grid-Tied) 85 KW	1	Set	1,550,000	1,550,000
1.3	PV-Genset Controller	1	Job	250,000	250,000
1.4	Cable for Interconnection (DC)(UV Protected XLPE)	1	Job	400,000	400,000
1.5	PV Combiner Boxes with DC Breakers / Fuses , SPD's etc. for string protections	1	Job	450,000	450,000
2	AC Termination & Accessories				
2.1	LT Termination				
2.1.1	Secondary Comprehensive Protection Cabinet	1	Set	150,000	150,000
2.1.2	Low Voltage Switchgear Cabinet	1	Set	150,000	150,000
2.1.3	AC Combiner Breakers for MCCB	1	Set	150,000	150,000
2.1.4	AC Combiner Breakers for ACB	1	Set	150,000	150,000
3	Fabricated Items				

(1)

3.1	Mounting Structure	148	Job	16,000	2,368,000
3.2	Cable Tray	1	Job	200,000	200,000
3.3	Distribution Boxes	1	Job	250,000	250,000
4	Cable & Accessories				
4.1	AC Cables for Inverter Interconnection xx sqmm,4 core, Armored	1	Set	200,000	200,000
4.2	AC Cable for Combined Output xx sqmm,4 Core, Armored	1	Set	200,000	200,000
4.3	Installation Material (cable Ducts etc.)	1	Set	200,000	200,000
5	Earthing/ Grounding System / ATS Panels				
5.1	Earthing for PV Solar System complete independent earthing system for PV solar system, must be separated of the main earthing system to obtain 2-ohm max resistance the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 25 mm ² flexible earthing copper wires and cables (Yellow/Green) from the PV system components to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150,000	150,000
5.2	Earthing System For Inverter / WAPDA / Generator Set Neutral Complete independent earthing system for Inverter / WAPDA / Generator Set Neutral must be separated of the main earthing system to obtain 2-ohm max resistance. the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 50 mm ² flexible earthing copper wires and cables from the Neutral bus bar in the Main Distribution box to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150,000	150,000
5.3	Surge protection device of appropriate short circuit capacity to secure the overall AC system (data and power) against lightnings and surges strikes, including connecting the device to earthing system and all needed accessories	12	Set	15,000	180,000
5.4	Grounding Flat Iron, Grounding Network for the plant Area, Power distribution Room, HV power Distribution room	1	Job	150,000	150,000
5.5	Automatic Transfer Switch (ATS) 3 phase system. The ATS consist of two 4 poles contactors of appropriate capacity complete with (Mechanical & electrical Interlock) all needed ACU control fittings such timers, relays, undervoltage. with all needed fittings and accessories to get job ready.	1	Job	100,000	100,000
5.6	Phase Failure Protection 3ph. Failure, loss of phase, under voltage, over voltage and phase sequence relay (LRST), adjustable type with four poles contactor 4*100A and all needed protection devices, control devices and accessories	1	Job	450,000	450,000
6	Remote Monitoring & Data Acquisition System				
6.1	Contractor Shall Provide the access of Remote Monitoring Mobile App and Server from the Inverter Manufacturer for real time monitoring,	1	Job	50,000	50,000

	Data Logging				
7	Services				
7.1	Project Design & Execution	1	Job	300,000	300,000
7.2	Erecting of Mechanical Mounting Structure	1	Job	300,000	300,000
7.3	Installation, testing and Commissioning of Solar System	1	Job	150,000	150,000
7.4	Operations and Maintenance "O&M" Services (1 Year)	1	Job	250,000	250,000
7.5	Load Flow Study (Required for Net- Metering)	1	Job	50,000	50,000
7.6	Net-Metering Process (Including Equipment, Fee, Approvals, Documentation, Inspection)	1	Job	250,000	250,000
Amount of PV system complete in all respect Sub total A					16,423,000
8	Fencing				
26/46	Providing and fixing anti climb high security galvanized razor cut wire having double sharp four U-shaped pointed 0.5 mm thick (22mmx15 mm barbs) spaced @ 33 mm c/c clad over 2.5 mm dia high tensile Core wire making coil fencing of specified diameter @ 4" c/c fixed on 2'-3" high M/S angle iron post 1½"x1½"x3/16" embedded in base of PCC (1:2:4) (4"x4"x9") @ 4' apart i/c the cost of 2 No. bars 3/8" dia welded horizontally with angle iron posts , binding wire, painting of posts, etc. complete in all respects as approved and directed by the Engineer incharge. (ii) 18 " diameter	350	Per Rft	591.15	206,903
26/47	Providing and fixing hot dipped Galvanized Iron chain link mesh/fence of 2"x2" mesh made of wire of specified gauge, with the help of 1"x1/8" GI patti, GI. Clamps and screws, i/c the cost of 3 nos 8 SWG GI tie wires penetrated through mesh at top, middle and bottom, fixed on vertical posts of 2" diameter GI pipes (medium quality) erected @ 8 ft C/C duly embedded in PCC(1:2:4) etc. complete in all respect as approved and directed by the Engineer Incharge (i) 8 SWG	2800	Per Sft	487.30	1,364,440
Sub Total (B)					1,571,343
Total (A+B)					17,994,343

Disposal Works at Model Town (15Kw)

Sr.No	Item Description	M/s AE 3P SSC JV			
		Quantity	Unit	Unit Price	Total Price
1	PV Modules & Power Generation System				
1.1	Solar Modules	15,000	Wp	90	1,350,000
1.2	Inverter (Grid-Tied) 15 KW	1	Set	350000	350,000

1.3	PV-Genset Controller	1	Job	150000	150,000
1.4	Cable for Interconnection (DC)(UV Protected XLPE)	1	Job	40000	40,000
1.5	PV Combiner Boxes with DC Breakers / Fuses , SPD's etc. for string protections	1	Job	100000	100,000
2	AC Termination & Accessories				
2.1	LT Termination				
2.1.1	Secondary Comprehensive Protection Cabinet	1	Set	25000	25,000
2.1.2	Low Voltage Switchgear Cabinet	1	Set	25000	25,000
2.1.3	AC Combiner Breakers for MCCB	1	Set	20000	20,000
2.1.4	AC Combiner Breakers for ACB	1	Set	20000	20,000
3	Fabricated Items				
3.1	Mounting Structure	27	Job	16000	432,000
3.2	Cable Tray	1	Job	40000	40,000
3.3	Distribution Boxes	1	Job	40000	40,000
4	Cable & Accessories				
4.1	AC Cables for Inverter Interconnection xx sqmm,4 core, Armored	1	Set	15000	15,000
4.2	AC Cable for Combined Output xx sqmm,4 Core, Armored	1	Set	15000	15,000
4.3	Installation Material (cable Ducts etc.)	1	Set	15000	15,000
5	Earthing/ Grounding System / ATS Panels				
5.1	Earthing for PV Solar System complete independent earthing system for PV solar system, must be separated of the main earthing system to obtain 2-ohm max resistance the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 25 mm ² flexible earthing copper wires and cables (Yellow/Green) from the PV system components to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000
5.2	Earthing System For Inverter / WAPDA / Generator Set Neutral Complete independent earthing system for Inverter / WAPDA / Generator Set Neutral must be separated of the main earthing system to obtain 2-ohm max resistance. the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 50 mm ² flexible earthing copper wires and cables from the Neutral bus bar in the Main Distribution box to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000

5.3	Surge protection device of appropriate short circuit capacity to secure the overall AC system (data and power) against lightnings and surges strikes including connecting the device to earthing system and all needed accessories	2	Set	15000	30,000
5.4	Grounding Flat Iron, Grounding Network for the plant Area, Power distribution Room, HV power Distribution room	1	Job	50000	50,000
5.5	Automatic Transfer Switch (ATS) 3 phase system. The ATS consist of two 4 poles contactors of appropriate capacity complete with (Mechanical & electrical Interlock) all needed ACU control fittings such timers, relays, undervoltage with all needed fittings and accessories to get job ready	1	Job	50000	50,000
5.6	Phase Failure Protection 3ph. Failure, loss of phase, under voltage, over voltage and phase sequence relay (LRST) adjustable type with four poles contactor 4*100A and all needed protection devices, control devices and accessories	1	Job	100000	100,000
6	Remote Monitoring & Data Acquisition System				
6.1	Contractor Shall Provide the access of Remote Monitoring Mobile App and Server from the Inverter Manufacturer for real time monitoring, Data Logging	1	Job	30000	30,000
7	Services				
7.1	Project Design & Execution	1	Job	50000	50,000
7.2	Erecting of Mechanical Mounting Structure	1	Job	40000	40,000
7.3	Installation, testing and Commissioning of Solar System	1	Job	40000	40,000
7.4	Operations and Maintenance "O&M" Services (1 Year)	1	Job	300000	300,000
7.5	Load Flow Study (Required for Net-Metering)	1	Job	50000	50,000
7.6	Net-Metering Process (Including Equipment, Fee, Approvals, Documentation, Inspection)	1	Job	150000	150,000
Amount of PV system complete in all respect Sub total A					3,827,000

8	Fencing				
MRS Ref	Description	Quantity	Unit		
26.46	Providing and fixing anti climb high security galvanized razor cut wire having double sharp four U-shaped pointed 0.5 mm thick (22mmx15 mm barbs) spaced @ 33 mm c/c clad over 2.5 mm dia high tensile Core wire making coil fencing of specified diameter @ 4" c/c fixed on 2' 3" high M.S angle iron post 1 1/2"x1 1/2"x3 1/8" embedded in base of P.C.C (1:2:4) (4"x4"x9") @ 4' apart @ the cost of 2 No. bars 3/8" dia welded horizontally with angle iron posts, binding wire, painting of posts, etc. complete in all respects as approved and directed by the Engineer incharge (u) 18" diameter	350	Per Rft	591.15	206,903

26/47	Providing and fixing hot dipped Galvanized Iron chain link mesh/fence of 2"x2" mesh made of wire of specified gauge, with the help of 1"x1/8" GI patti, GI. Clamps and screws, i/c the cost of 3 nos 8 SWG GI tie wires penetrated through mesh at top, middle and bottom, fixed on vertical posts of 2" diameter GI pipes (medium quality) erected @ 8 ft C/C duly embedded in PCC(1:2:4) etc. complete in all respect as approved and directed by the Engineer Incharge (i) 8 SWG	2800	Per Sft	487.30	1,364,440
Sub Total (B)					1,571,343
Total (A+B)					5,398,343

Disposal Works at Hussainabad (50Kw)					
Sr.No	Item Description	M/s AE 3P SSC JV			
		Quantity	Unit	Unit Price	Total Price
1	PV Modules & Power Generation System				
1.1	Solar Modules	50,000	Set	85	4,250,000
1.2	Inverter (Grid-Tied) 50 KW	1	Set	1000000	1,000,000
1.3	PV-Genset Controller	1	Job	350000	350,000
1.4	Cable for Interconnection (DC)(UV Protected XLPE)	1	Job	200000	200,000
1.5	PV Combiner Boxes with DC Breakers / Fuses , SPD's etc. for string protections	1	Job	200000	200,000
2	AC Termination & Accessories				
2.1	LT Termination				
2.1.1	Secondary Comprehensive Protection Cabinet	1	Set	125000	125,000
2.1.2	Low Voltage Switchgear Cabinet	1	Set	125000	125,000
2.1.3	AC Combiner Breakers for MCCB	1	Set	125000	125,000
2.1.4	AC Combiner Breakers for ACB	1	Set	125000	125,000
3	Fabricated Items				
3.1	Mounting Structure	87	Job	16000	1,392,000
3.2	Cable Tray	1	Job	115000	115,000
3.3	Distribution Boxes	1	Job	115000	115,000
4	Cable & Accessories				
4.1	AC Cables for Inverter Interconnection xx sqmm,4 core, Armored	1	Set	115000	115,000
4.2	AC Cable for Combined Output xx sqmm,4 Core, Armored	1	Set	115000	115,000
4.3	Installation Material (cable Ducts etc.)	1	Set	70000	70,000
5	Earthing/ Grounding System / ATS Panels				

5.1	Earthing for PV Solar System complete independent earthing system for PV solar system, must be separated of the main earthing system to obtain 2-ohm max resistance the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 25 mm ² flexible earthing copper wires and cables (Yellow/Green) from the PV system components to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000
5.2	Earthing System For Inverter / WAPDA / Generator Set Neutral Complete independent earthing system for Inverter / WAPDA / Generator Set Neutral must be separated of the main earthing system to obtain 2-ohm max resistance. the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 50 mm ² flexible earthing copper wires and cables from the Neutral bus bar in the Main Distribution box to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000
5.3	Surge protection device of appropriate short circuit capacity to secure the overall AC system (data and power) against lightnings and surges strikes, including connecting the device to earthing system and all needed accessories	10	Set	15000	150,000
5.4	Grounding Flat Iron, Grounding Network for the plant Area, Power distribution Room, HV power Distribution room	1	Job	250000	250,000
5.5	Automatic Transfer Switch (ATS) 3 phase system. The ATS consist of two 4 poles contactors of appropriate capacity complete with (Mechanical & electrical Interlock) all needed ACU control fittings such timers, relays, undervoltage. with all needed fittings and accessories to get job ready.	1	Job	250000	250,000
5.6	Phase Failure Protection 3ph. Failure, loss of phase, under voltage, over voltage and phase sequence relay (LRST), adjustable type with four poles contactor 4*100A and all needed protection devices, control devices and accessories	1	Job	325000	325,000
6	Remote Monitoring & Data Acquisition System				
6.1	Contractor Shall Provide the access of Remote Monitoring Mobile App and Server from the Inverter Manufacturer for real time monitoring, Data Logging	1	Job	50000	50,000
7	Services				
7.1	Project Design & Execution	1	Job	100000	100,000
7.2	Erecting of Mechanical Mounting Structure	1	Job	150000	150,000
7.3	Installation, testing and Commissioning of Solar System	1	Job	100000	100,000
7.4	Operations and Maintenance "O&M" Services (1 Year)	1	Job	700000	700,000
7.5	Load Flow Study (Required for Net- Metering)	1	Job	200000	200,000
7.6	Net-Metering Process (Including Equipment, Fee, Approvals, Documentation, Inspection)	1	Job	400000	400,000

Amount of PV system complete in all respect Sub total A				11,397,000	
8	Fencing				
MRS Ref	Description	Quantity	Unit		
26/46	Providing and fixing anti climb high security galvanized razor cut wire having double sharp four U-shaped pointed 0.5 mm thick (22mmx15 mm barbs) spaced @ 33 mm c/c eladded over 2.5 mm dia high tensile Core wire making coil fencing of specified diameter @ 4" c/c fixed on 2'-3" high M/S angle iron post 1½"x1½"x3/16" embedded in base of PCC (1:2:4) (4"x4"x9") @ 4' apart i/c the cost of 2 No. bars 3/8" dia welded horizontally with angle iron posts , binding wire, painting of posts, etc. complete in all respects as approved and directed by the Engineer incharge. (ii) 18 " diameter	350	Per Rft	591.15	206,903
26/47	Providing and fixing hot dipped Galvanized Iron chain link mesh/fence of 2"x2"mesh made of wire of specified gauge, with the help of 1"x1/8" GI patti, GI. Clamps and screws, i/c the cost of 3 nos 8 SWG GI tie wires penetrated through mesh at top, middle and bottom, fixed on vertical posts of 2" diameter GI pipes (medium quality) erected @ 8 ft C/C duly embedded in PCC(1:2:4) etc. complete in all respect as approved and directed by the Engineer Incharge (i) 8 SWG	2800	Per Sft	487.30	1,364,440
Sub Total (B)					1,571,343
Total (A+B)					12,968,343

Disposal Works at Karmanwala (20Kw)					
Sr.No	Item Description	M/s AE 3P SSC JV			
		Quantity	Unit	Unit Price	Total Price
1	PV Modules & Power Generation System				
1.1	Solar Modules	20,000	Wp	90	1,800,000
1.2	Inverter (Grid-Tied) 20 KW	1	Set	450000	450,000
1.3	PV-Genset Controller	1	Job	200000	200,000
1.4	Cable for Interconnection (DC)(UV Protected XLPE)	1	Job	100000	100,000
1.5	PV Combiner Boxes with DC Breakers / Fuses , SPD's etc. for string protections	1	Job	100000	100,000
2	AC Termination & Accessories				
2.1	LT Termination				
2.1.1	Secondary Comprehensive Protection Cabinet	1	Set	25000	25,000
2.1.2	Low Voltage Switchgear Cabinet	1	Set	25000	25,000

2.1.3	AC Combiner Breakers for MCCB	1	Set	20000	20,000
2.1.4	AC Combiner Breakers for ACB	1	Set	20000	20,000
3	Fabricated Items				
3.1	Mounting Structure	35	Job	16000	560,000
3.2	Cable Tray	1	Job	40000	40,000
3.3	Distribution Boxes	1	Job	40000	40,000
4	Cable & Accessories				
4.1	AC Cables for Inverter Interconnection xx sqmm,4 core, Armored	1	Set	15000	15,000
4.2	AC Cable for Combined Output xx sqmm,4 Core, Armored	1	Set	15000	15,000
4.3	Installation Material (cable Ducts etc.)	1	Set	15000	15,000
5	Earthing/ Grounding System / ATS Panels				
5.1	Earthing for PV Solar System complete independent earthing system for PV solar system, must be separated of the main earthing system to obtain 2-ohm max resistance the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 25 mm ² flexible earthing copper wires and cables (Yellow/Green) from the PV system components to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000
5.2	Earthing System For Inverter / WAPDA / Generator Set Neutral Complete independent earthing system for Inverter / WAPDA / Generator Set Neutral must be separated of the main earthing system to obtain 2-ohm max resistance. the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 50 mm ² flexible earthing copper wires and cables from the Neutral bus bar in the Main Distribution box to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000
5.3	Surge protection device of appropriate short circuit capacity to secure the overall AC system (data and power) against lightnings and surges strikes, including connecting the device to earthing system and all needed accessories	4	Set	15000	60,000
5.4	Grounding Flat Iron, Grounding Network for the plant Area, Power distribution Room, HV power Distribution room	1	Job	50000	50,000
5.5	Automatic Transfer Switch (ATS) 3 phase system. The ATS consist of two 4 poles contactors of appropriate capacity complete with (Mechanical & electrical Interlock) all needed ACU control fittings such timers, relays, undervoltage. with all needed fittings and accessories to get job ready.	1	Job	25000	25,000

5.6	Phase Failure Protection 3ph. Failure, loss of phase, under voltage, over voltage and phase sequence relay (LRST), adjustable type with four poles contactor 1*100A and all needed protection devices, control devices and accessories	1	Job	100000	100,000
6	Remote Monitoring & Data Acquisition System				
6.1	Contractor Shall Provide the access of Remote Monitoring Mobile App and Server from the Inverter Manufacturer for real time monitoring, Data Logging	1	Job	25000	25,000
7	Services				
7.1	Project Design & Execution	1	Job	25000	25,000
7.2	Erecting of Mechanical Mounting Structure	1	Job	25000	25,000
7.3	Installation, testing and Commissioning of Solar System	1	Job	25000	25,000
7.4	Operations and Maintenance "O&M" Services (1 Year)	1	Job	80000	80,000
7.5	Load Flow Study (Required for Net- Metering)	1	Job	25000	25,000
7.6	Net-Metering Process (Including Equipment, Fee, Approvals, Documentation, Inspection)	1	Job	125000	125,000
Amount of PV system complete in all respect Sub total A					4,290,000
8	Fencing				
MRS Ref	Description	Quantity	Unit		
26/46	Providing and fixing anti climb high security galvanized razor cut wire having double sharp four U-shaped pointed 0.5 mm thick (22mmx15 mm barbs) spaced @ 33 mm c/c clad over 2.5 mm dia high tensile Core wire making coil fencing of specified diameter @ 4" c/c fixed on 2'-3" high M/S angle iron post 1½"x1½"x3/16" embedded in base of PCC (1:2:4) (4"x4"x9") @ 4' apart i/c the cost of 2 No. bars 3/8" dia welded horizontally with angle iron posts , binding wire, painting of posts, etc. complete in all respects as approved and directed by the Engineer incharge. (ii) 18 " diameter	350	Per Rft	591.15	206,903
26/47	Providing and fixing hot dipped Galvanized Iron chain link mesh/fence of 2"x2" mesh made of wire of specified gauge, with the help of 1"x1/8" GI patti, GI. Clamps and screws, i/c the cost of 3 nos 8 SWG GI tie wires penetrated through mesh at top, middle and bottom, fixed on vertical posts of 2" diameter GI pipes (medium quality) erected @ 8 ft C/C duly embedded in PCC(1:2:4) etc. complete in all respect as approved and directed by the Engineer Incharge (i) 8 SWG	2800	Per Sft	487.30	1,364,440
Sub Total (B)					1,571,343
Total (A+B)					5,861,343

Disposal Works at Fordwah (15Kw)

Sr.No	Item Description	M/s AE 3P SSC JV			
		Quantity	Unit	Unit Price	Total Price
1	PV Modules & Power Generation System				
1.1	Solar Modules	15,000	Wp	90	1,350,000
1.2	Inverter (Grid-Tied) 15 KW	1	Set	350000	350,000
1.3	PV-Genset Controller	1	Job	150000	150,000
1.4	Cable for Interconnection (DC)(UV Protected XLPE)	1	Job	40000	40,000
1.5	PV Combiner Boxes with DC Breakers / Fuses , SPD's etc. for string protections	1	Job	100000	100,000
2	AC Termination & Accessories				
2.1	LT Termination				
2.1.1	Secondary Comprehensive Protection Cabinet	1	Set	25000	25,000
2.1.2	Low Voltage Switchgear Cabinet	1	Set	25000	25,000
2.1.3	AC Combiner Breakers for MCCB	1	Set	20000	20,000
2.1.4	AC Combiner Breakers for ACB	1	Set	20000	20,000
3	Fabricated Items				-
3.1	Mounting Structure	27	Job	16000	432,000
3.2	Cable Tray	1	Job	40000	40,000
3.3	Distribution Boxes	1	Job	40000	40,000
4	Cable & Accessories				
4.1	AC Cables for Inverter Interconnection xx sqmm,4 core, Armored	1	Set	15000	15,000
4.2	AC Cable for Combined Output xx sqmm,4 Core, Armored	1	Set	15000	15,000
4.3	Installation Material (cable Ducts etc.)	1	Set	15000	15,000
5	Earthing/ Grounding System / ATS Panels				
5.1	Earthing for PV Solar System complete independent earthing system for PV solar system, must be separated of the main earthing system to obtain 2-ohm max resistance the item includes (2 copper electrodes 15mm2 driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 25 mm2 flexible earthing copper wires and cables (Yellow/Green) from the PV system components to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000

5.2	Earthing System For Inverter / WAPDA / Generator Set Neutral Complete independent earthing system for Inverter / WAPDA / Generator Set Neutral must be separated of the main earthing system to obtain 2-ohm max resistance, the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 50 mm ² flexible earthing copper wires and cables from the Neutral bus bar in the Main Distribution box to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000
5.3	Surge protection device of appropriate short circuit capacity to secure the overall AC system (data and power) against lightnings and surges strikes, including connecting the device to earthing system and all needed accessories	2	Set	12000	24,000
5.4	Grounding Flat Iron, Grounding Network for the plant Area, Power distribution Room, HV power Distribution room	1	Job	50000	50,000
5.5	Automatic Transfer Switch (ATS) 3 phase system. The ATS consist of two 4 poles contactors of appropriate capacity complete with (Mechanical & electrical Interlock) all needed ACU control fittings such timers, relays, undervoltage. with all needed fittings and accessories to get job ready.	1	Job	25000	25,000
5.6	Phase Failure Protection 3ph. Failure, loss of phase, under voltage, over voltage and phase sequence relay (LRST), adjustable type with four poles contactor 4*100A and all needed protection devices, control devices and accessories	1	Job	100000	100,000
6	Remote Monitoring & Data Acquisition System				-
6.1	Contractor Shall Provide the access of Remote Monitoring Mobile App and Server from the Inverter Manufacturer for real time monitoring, Data Logging	1	Job	25000	25,000
7	Services				-
7.1	Project Design & Execution	1	Job	25000	25,000
7.2	Erecting of Mechanical Mounting Structure	1	Job	25000	25,000
7.3	Installation, testing and Commissioning of Solar System	1	Job	25000	25,000
7.4	Operations and Maintenance "O&M" Services (1 Year)	1	Job	300000	300,000
7.5	Load Flow Study (Required for Net- Metering)	1	Job	25000	25,000
7.6	Net-Metering Process (Including Equipment, Fee, Approvals, Documentation, Inspection)	1	Job	110000	110,000
Amount of PV system complete in all respect Sub total A					3,671,000
8	Fencing				
MRS Ref	Description	Quantity	Unit		

5.2	Earthing System For Inverter / WAPDA / Generator Set Neutral Complete independent earthing system for Inverter / WAPDA / Generator Set Neutral must be separated of the main earthing system to obtain 2-ohm max resistance, the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 50 mm ² flexible earthing copper wires and cables from the Neutral bus bar in the Main Distribution box to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000
5.3	Surge protection device of appropriate short circuit capacity to secure the overall AC system (data and power) against lightnings and surges strikes, including connecting the device to earthing system and all needed accessories	2	Set	12000	24,000
5.4	Grounding Flat Iron, Grounding Network for the plant Area, Power distribution Room, HV power Distribution room	1	Job	50000	50,000
5.5	Automatic Transfer Switch (ATS) 3 phase system. The ATS consist of two 4 poles contactors of appropriate capacity complete with (Mechanical & electrical Interlock) all needed ACU control fittings such timers, relays, undervoltage, with all needed fittings and accessories to get job ready.	1	Job	25000	25,000
5.6	Phase Failure Protection 3ph. Failure, loss of phase, under voltage, over voltage and phase sequence relay (LRST), adjustable type with four poles contactor 4*100A and all needed protection devices, control devices and accessories	1	Job	100000	100,000
6	Remote Monitoring & Data Acquisition System				-
6.1	Contractor Shall Provide the access of Remote Monitoring Mobile App and Server from the Inverter Manufacturer for real time monitoring, Data Logging	1	Job	25000	25,000
7	Services				-
7.1	Project Design & Execution	1	Job	25000	25,000
7.2	Erecting of Mechanical Mounting Structure	1	Job	25000	25,000
7.3	Installation, testing and Commissioning of Solar System	1	Job	25000	25,000
7.4	Operations and Maintenance "O&M" Services (1 Year)	1	Job	300000	300,000
7.5	Load Flow Study (Required for Net- Metering)	1	Job	25000	25,000
7.6	Net-Metering Process (Including Equipment, Fee, Approvals, Documentation, Inspection)	1	Job	110000	110,000
Amount of PV system complete in all respect Sub total A					3,671,000
8	Fencing				
MRS Ref	Description	Quantity	Unit		

26/46	Providing and fixing anti climb high security galvanized razor cut wire having double sharp four U-shaped pointed 0.5 mm thick (22mmx15 mm barbs) spaced @ 33 mm c/c clad over 2.5 mm dia high tensile Core wire making coil fencing of specified diameter @ 4" c/c fixed on 2'-3" high M/S angle iron post 1½"x1½"x3/16" embedded in base of PCC (1:2:4) (4"x4"x9") @ 4' apart i/c the cost of 2 No. bars 3/8" dia welded horizontally with angle iron posts, binding wire, painting of posts, etc. complete in all respects as approved and directed by the Engineer incharge. (ii) 18 " diameter	350	Per Rft	591.15	206,903
26/47	Providing and fixing hot dipped Galvanized Iron chain link mesh/fence of 2"x2" mesh made of wire of specified gauge, with the help of 1"x1/8" GI patti, GI. Clamps and screws, i/c the cost of 3 nos 8 SWG GI tie wires penetrated through mesh at top, middle and bottom, fixed on vertical posts of 2" diameter GI pipes (medium quality) erected @ 8 ft C/C duly embedded in PCC(1:2:4) etc. complete in all respect as approved and directed by the Engineer Incharge (i) 8 SWG	2800	Per Sft	487.30	1,364,440
Sub Total (B)					1,571,343
Total (A+B)					5,242,343

Disposal Works at Madni Colony (65Kw)					
Sr.No	Item Description	M/s AE 3P SSC JV			
		Quantity	Unit	Unit Price	Total Price
1	PV Modules & Power Generation System				
1.1	Solar Modules	65,000	Set	85	5,525,000
1.2	Inverter (Grid-Tied) 65 KW	1	Set	1250000	1,250,000
1.3	PV-Genset Controller	1	Job	400000	400,000
1.4	Cable for Interconnection (DC)(UV Protected XLPE)	1	Job	250000	250,000
1.5	PV Combiner Boxes with DC Breakers / Fuses, SPD's etc. for string protections	1	Job	250000	250,000
2	AC Termination & Accessories				
2.1	LT Termination				
2.1.1	Secondary Comprehensive Protection Cabinet	1	Set	150000	150,000
2.1.2	Low Voltage Switchgear Cabinet	1	Set	150000	150,000
2.1.3	AC Combiner Breakers for MCCB	1	Set	150000	150,000
2.1.4	AC Combiner Breakers for ACB	1	Set	150000	150,000
3	Fabricated Items				
3.1	Mounting Structure	114	Job	16000	1,824,000
3.2	Cable Tray	1	Job	150000	150,000

3.3	Distribution Boxes	1	Job	150000	150,000
4	Cable & Accessories				
4.1	AC Cables for Inverter Interconnection xx sqmm, 4 core, Armored	1	Set	150000	150,000
4.2	AC Cable for Combined Output xx sqmm, 4 Core, Armored	1	Set	150000	150,000
4.3	Installation Material (cable Ducts etc.)	1	Set	100000	100,000
5	Earthing/ Grounding System / ATS Panels				
5.1	Earthing for PV Solar System complete independent earthing system for PV solar system, must be separated of the main earthing system to obtain 2-ohm max resistance the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 25 mm ² flexible earthing copper wires and cables (Yellow/Green) from the PV system components to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000
5.2	Earthing System For Inverter / WAPDA / Generator Set Neutral Complete independent earthing system for Inverter / WAPDA / Generator Set Neutral must be separated of the main earthing system to obtain 2-ohm max resistance. the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 50 mm ² flexible earthing copper wires and cables from the Neutral bus bar in the Main Distribution box to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000
5.3	Surge protection device of appropriate short circuit capacity to secure the overall AC system (data and power) against lightnings and surges strikes, including connecting the device to earthing system and all needed accessories	10	Set	15000	150,000
5.4	Grounding Flat Iron, Grounding Network for the plant Area, Power distribution Room, HV power Distribution room	1	Job	300000	300,000
5.5	Automatic Transfer Switch (ATS) 3 phase system. The ATS consist of two 4 poles contactors of appropriate capacity complete with (Mechanical & electrical Interlock) all needed ACU control fittings such timers, relays, undervoltage. with all needed fittings and accessories to get job ready.	1	Job	325000	325,000
5.6	Phase Failure Protection 3ph. Failure, loss of phase, under voltage, over voltage and phase sequence relay (LRST), adjustable type with four poles contactor 4*100A and all needed protection devices, control devices and accessories	1	Job	325000	325,000
6	Remote Monitoring & Data Acquisition System				
6.1	Contractor Shall Provide the access of Remote Monitoring Mobile App and Server from the Inverter Manufacturer for real time monitoring, Data Logging	1	Job	50000	50,000
7	Services				

7.1	Project Design & Execution	1	Job	250000	250,000
7.2	Erecting of Mechanical Mounting Structure	1	Job	300000	300,000
7.3	Installation, testing and Commissioning of Solar System	1	Job	250000	250,000
7.4	Operations and Maintenance "O&M" Services (1 Year)	1	Job	800000	800,000
7.5	Load Flow Study (Required for Net- Metering)	1	Job	290000	290,000
7.6	Net-Metering Process (Including Equipment, Fee, Approvals, Documentation, Inspection)	1	Job	600000	600,000
Amount of PV system complete in all respect Sub total A					14,739,000
8	Fencing				
MRS Ref	Description	Quantity	Unit		
26/46	Providing and fixing anti climb high security galvanized razor cut wire having double sharp four U-shaped pointed 0.5 mm thick (22mmx15 mm bars) spaced @ 33 mm c/c clad over 2.5 mm dia high tensile Core wire making coil fencing of specified diameter @ 4" c/c fixed on 2'-3" high M/S angle iron post 1½"x1½"x3/16" embedded in base of PCC (1:2:4) (4"x4"x9") @ 4' apart i/c the cost of 2 No. bars 3/8" dia welded horizontally with angle iron posts , binding wire, painting of posts, etc. complete in all respects as approved and directed by the Engineer incharge. (ii) 18 " diameter	350	Per Rft	591.15	206,903
26/47	Providing and fixing hot dipped Galvanized Iron chain link mesh/fence of 2"x2"mesh made of wire of specified gauge, with the help of 1"x1/8" GI patti, GI. Clamps and screws, i/c the cost of 3 nos 8 SWG GI tie wires penetrated through mesh at top, middle and bottom, fixed on vertical posts of 2" diameter GI pipes (medium quality) erected @ 8 ft C/C duly embedded in PCC(1:2:4) etc. complete in all respect as approved and directed by the Engineer Incharge (i) 8 SWG	2800	Per Sft	487.30	1,364,440
Sub Total (B)					1,571,343
Total (A+B)					16,310,343

Detailed Cost Estimate of Disposal Works at Madina Town (75Kw)					
Sr.No	Item Description	M/s AE 3P SSC JV			
		Quantity	Unit	Unit Price	Total Price
1	PV Modules & Power Generation System				
1.1	Solar Modules	75,000	Wp	85	6,375,000
1.2	Inverter (Grid-Tied) 75 KW	1	Set	1300000	1,300,000

(15)

1.3	PV-Genset Controller	1	Job	450000	450,000
1.4	Cable for Interconnection (DC)(UV Protected XLPE)	1	Job	300000	300,000
1.5	PV Combiner Boxes with DC Breakers / Fuses , SPD's etc. for string protections	1	Job	300000	300,000
2	AC Termination & Accessories				
2.1	LT Termination				
2.1.1	Secondary Comprehensive Protection Cabinet	1	Set	150000	150,000
2.1.2	Low Voltage Switchgear Cabinet	1	Set	150000	150,000
2.1.3	AC Combiner Breakers for MCCB	1	Set	150000	150,000
2.1.4	AC Combiner Breakers for ACB	1	Set	150000	150,000
3	Fabricated Items				
3.1	Mounting Structure	131	Job	16000	2,096,000
3.2	Cable Tray	1	Job	200000	200,000
3.3	Distribution Boxes	1	Job	200000	200,000
4	Cable & Accessories				
4.1	AC Cables for Inverter Interconnection xx sqmm,4 core, Armored	1	Set	150000	150,000
4.2	AC Cable for Combined Output xx sqmm,4 Core, Armored	1	Set	150000	150,000
4.3	Installation Material (cable Ducts etc.)	1	Set	100000	100,000
5	Earthing/ Grounding System / ATS Panels				
5.1	Earthing for PV Solar System complete independent earthing system for PV solar system, must be separated of the main earthing system to obtain 2-ohm max resistance the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 25 mm ² flexible earthing copper wires and cables (Yellow/Green) from the PV system components to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000
5.2	Earthing System For Inverter / WAPDA / Generator Set Neutral Complete independent earthing system for Inverter / WAPDA / Generator Set Neutral must be separated of the main earthing system to obtain 2-ohm max resistance. the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 50 mm ² flexible earthing copper wires and cables from the Neutral bus bar in the Main Distribution box to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000

5.3	Surge protection device of appropriate short circuit capacity to secure the overall AC system (data and power) against lightnings and surges strikes, including connecting the device to earthing system and all needed accessories	10	Set	15000	150,000
5.4	Grounding Flat Iron, Grounding Network for the plant Area, Power distribution Room, HV power Distribution room	1	Job	300000	300,000
5.5	Automatic Transfer Switch (ATS) 3 phase system. The ATS consist of two 4 poles contactors of appropriate capacity complete with (Mechanical & electrical Interlock) all needed ACU control fittings such timers, relays, undervoltage. with all needed fittings and accessories to get job ready.	1	Job	325000	325,000
5.6	Phase Failure Protection 3ph. Failure, loss of phase, under voltage, over voltage and phase sequence relay (LRST), adjustable type with four poles contactor 4*100A and all needed protection devices, control devices and accessories	1	Job	325000	325,000
6	Remote Monitoring & Data Acquisition System				
6.1	Contractor Shall Provide the access of Remote Monitoring Mobile App and Server from the Inverter Manufacturer for real time monitoring, Data Logging	1	Job	50000	50,000
7	Services				
7.1	Project Design & Execution	1	Job	350000	350,000
7.2	Erecting of Mechanical Mounting Structure	1	Job	350000	350,000
7.3	Installation, testing and Commissioning of Solar System	1	Job	250000	250,000
7.4	Operations and Maintenance "O&M" Services (1 Year)	1	Job	1000000	1,000,000
7.5	Load Flow Study (Required for Net- Metering)	1	Job	3500000	3,500,000
7.6	Net-Metering Process (Including Equipment, Fee, Approvals, Documentation, Inspection)	1	Job	800000	800,000
Amount of PV system complete in all respect Sub total A					19,921,000
8	Fencing				
MRS Ref	Description	Quantity	Unit		
26/46	Providing and fixing anti climb high security galvanized razor cut wire having double sharp four U-shaped pointed 0.5 mm thick (22mmx15 mm barbs) spaced @ 33 mm c/c clad over 2.5 mm dia high tensile Core wire making coil fencing of specified diameter @ 4" c/c fixed on 2'-3" high M/S angle iron post 1½"x1½"x3/16" embedded in base of PCC (1:2:4) (4"x4"x9") @ 4' apart i/c the cost of 2 No. bars 3/8" dia welded horizontally with angle iron posts , binding wire, painting of posts, etc. complete in all respects as approved and directed by the Engineer incharge. (ii) 18 " diameter	350	Per Rft	591.15	206,903

26/47	Providing and fixing hot dipped Galvanized Iron chain link mesh/fence of 2"x2" mesh made of wire of specified gauge, with the help of 1"x1/8" GI patti, GI Clamps and screws, i/c the cost of 3 nos 8 SWG GI tie wires penetrated through mesh at top, middle and bottom, fixed on vertical posts of 2" diameter GI pipes (medium quality) erected @ 8 ft C/C duly embedded in PCC(1:2:4) etc. complete in all respect as approved and directed by the Engineer Incharge (i) 8 SWG	2800	Per Sft	487.30	1,364,440
Sub Total (B)					1,571,343
Total (A+B)					21,492,343

Water Works at Model Town Sadaqia (95Kw)					
Sr.No	Item Description	M/s AE 3P SSC JV			
		Quantity	Unit	Unit Price	Total Price
1	PV Modules & Power Generation System				
1.1	Solar Modules	95,000	Wp	85	8,075,000
1.2	Inverter (Grid-Tied) 95 KW	1	Set	1550000	1,550,000
1.3	PV-Genset Controller	1	Job	750000	750,000
1.4	Cable for Interconnection (DC)(UV Protected XLPE)	1	Job	400000	400,000
1.5	PV Combiner Boxes with DC Breakers / Fuses , SPD's etc. for string protections	1	Job	350000	350,000
2	AC Termination & Accessories				
2.1	LT Termination				
2.1.1	Secondary Comprehensive Protection Cabinet	1	Set	150000	150,000
2.1.2	Low Voltage Switchgear Cabinet	1	Set	150000	150,000
2.1.3	AC Combiner Breakers for MCCB	1	Set	150000	150,000
2.1.4	AC Combiner Breakers for ACB	1	Set	150000	150,000
3	Fabricated Items				
3.1	Mounting Structure	166	Job	16000	2,656,000
3.2	Cable Tray	1	Job	200000	200,000
3.3	Distribution Boxes	1	Job	250000	250,000
4	Cable & Accessories				
4.1	AC Cables for Inverter Interconnection xx sqmm,4 core, Armored	1	Set	200000	200,000
4.2	AC Cable for Combined Output xx sqmm,4 Core, Armored	1	Set	200000	200,000
4.3	Installation Material (cable Ducts etc.)	1	Set	200000	200,000
5	Earthing/ Grounding System / ATS Panels				

5.1	Earthing for PV Solar System complete independent earthing system for PV solar system, must be separated of the main earthing system to obtain 2-ohm max resistance the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 25 mm ² flexible earthing copper wires and cables (Yellow/Green) from the PV system components to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000
5.2	Earthing System For Inverter / WAPDA / Generator Set Neutral Complete independent earthing system for Inverter / WAPDA / Generator Set Neutral must be separated of the main earthing system to obtain 2-ohm max resistance. the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 50 mm ² flexible earthing copper wires and cables from the Neutral bus bar in the Main Distribution box to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000
5.3	Surge protection device of appropriate short circuit capacity to secure the overall AC system (data and power) against lightnings and surges strikes, including connecting the device to earthing system and all needed accessories	12	Set	15000	180,000
5.4	Grounding Flat Iron, Grounding Network for the plant Area, Power distribution Room, HV power Distribution room	1	Job	350000	350,000
5.5	Automatic Transfer Switch (ATS) 3 phase system. The ATS consist of two 4 poles contactors of appropriate capacity complete with (Mechanical & electrical Interlock) all needed ACU control fittings such timers, relays, undervoltage. with all needed fittings and accessories to get job ready.	1	Job	450000	450,000
5.6	Phase Failure Protection 3ph. Failure, loss of phase, under voltage, over voltage and phase sequence relay (LRST), adjustable type with four poles contactor 4*100A and all needed protection devices, control devices and accessories	1	Job	450000	450,000
6	Remote Monitoring & Data Acquisition System				
6.1	Contractor Shall Provide the access of Remote Monitoring Mobile App and Server from the Inverter Manufacturer for real time monitoring, Data Logging	1	Job	50000	50,000
7	Services				
7.1	Project Design & Execution	1	Job	400000	400,000
7.2	Erecting of Mechanical Mounting Structure	1	Job	400000	400,000
7.3	Installation, testing and Commissioning of Solar System	1	Job	400000	400,000
7.4	Operations and Maintenance "O&M" Services (1 Year)	1	Job	1200000	1,200,000
7.5	Load Flow Study (Required for Net- Metering)	1	Job	3500000	3,500,000
7.6	Net-Metering Process (Including Equipment, Fee, Approvals, Documentation, Inspection)	1	Job	1000000	1,000,000

Amount of PV system complete in all respect Sub total A					24,111,000
8	Fencing				
MRS Ref	Description	Quantity	Unit		
26/46	Providing and fixing anti climb high security galvanized razor cut wire having double sharp four U-shaped pointed 0.5 mm thick (22mmx15 mm barbs) spaced @ 33 mm c/c clad over 2.5 mm dia high tensile Core wire making coil fencing of specified diameter @ 4" c/c fixed on 2'-3" high M/S angle iron post 1½"x1½"x3/16" embedded in base of PCC (1:2:4) (4"x4"x9") @ 4' apart i/c the cost of 2 No. bars 3/8" dia welded horizontally with angle iron posts , binding wire, painting of posts, etc. complete in all respects as approved and directed by the Engineer incharge. (ii) 18 " diameter	460	Per Rft	591.15	271,929
26/47	Providing and fixing hot dipped Galvanized Iron chain link mesh/fence of 2"x2" mesh made of wire of specified gauge, with the help of 1"x1/8" GI patti, GI. Clamps and screws, i/c the cost of 3 nos 8 SWG GI tie wires penetrated through mesh at top, middle and bottom. fixed on vertical posts of 2" diameter GI pipes (medium quality) erected @ 8 ft C/C duly embedded in PCC(1:2:4) etc. complete in all respect as approved and directed by the Engineer Incharge (i) 8 SWG	3680	Per Sft	487.30	1,793,264
Sub Total (B)					2,065,193
Total (A+B)					26,176,193

Water Works at Model Town Old (35Kw)					
Sr.No	Item Description	M/s AE 3P SSC JV			
		Quantity	Unit	Unit Price	Total Price
1	PV Modules & Power Generation System				
1.1	Solar Modules	35,000	Wp	85	2,975,000
1.2	Inverter (Grid-Tied) 35 KW	1	Set	750000	750,000
1.3	PV-Genset Controller	1	Job	450000	450,000
1.4	Cable for Interconnection (DC)(UV Protected XLPE)	1	Job	100000	100,000
1.5	PV Combiner Boxes with DC Breakers / Fuses , SPD's etc. for string protections	1	Job	300000	300,000
2	AC Termination & Accessories				
2.1	LT Termination				
2.1.1	Secondary Comprehensive Protection Cabinet	1	Set	50000	50,000
2.1.2	Low Voltage Switchgear Cabinet	1	Set	50000	50,000
2.1.3	AC Combiner Breakers for MCCB	1	Set	50000	50,000
2.1.4	AC Combiner Breakers for ACB	1	Set	50000	50,000
3	Fabricated Items				

3.1	Mounting Structure	61	Job	16000	976,000
3.2	Cable Tray	1	Job	50000	50,000
3.3	Distribution Boxes	1	Job	50000	50,000
4	Cable & Accessories				
4.1	AC Cables for Inverter Interconnection xx sqmm,4 core, Armored	1	Set	50000	50,000
4.2	AC Cable for Combined Output xx sqmm,4 Core, Armored	1	Set	50000	50,000
4.3	Installation Material (cable Ducts etc.)	1	Set	50000	50,000
5	Earthing/ Grounding System / ATS Panels				
5.1	Earthing for PV Solar System complete independent earthing system for PV solar system, must be separated of the main earthing system to obtain 2-ohm max resistance the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 25 mm ² flexible earthing copper wires and cables (Yellow/Green) from the PV system components to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000
5.2	Earthing System For Inverter / WAPDA / Generator Set Neutral Complete independent earthing system for Inverter / WAPDA / Generator Set Neutral must be separated of the main earthing system to obtain 2-ohm max resistance. the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 50 mm ² flexible earthing copper wires and cables from the Neutral bus bar in the Main Distribution box to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000
5.3	Surge protection device of appropriate short circuit capacity to secure the overall AC system (data and power) against lightnings and surges strikes, including connecting the device to earthing system and all needed accessories	1	Set	12000	12,000
5.4	Grounding Flat Iron, Grounding Network for the plant Area, Power distribution Room, HV power Distribution room	1	Job	50000	50,000
5.5	Automatic Transfer Switch (ATS) 3 phase system. The ATS consist of two 4 poles contactors of appropriate capacity complete with (Mechanical & electrical Interlock) all needed ACU control fittings such timers, relays, undervoltage. with all needed fittings and accessories to get job ready.	1	Job	200000	200,000
5.6	Phase Failure Protection 3ph. Failure, loss of phase, under voltage, over voltage and phase sequence relay (LRST), adjustable type with four poles contactor 4*100A and all needed protection devices, control devices and accessories	1	Job	150000	150,000
6	Remote Monitoring & Data Acquisition System				
6.1	Contractor Shall Provide the access of Remote Monitoring Mobile App and Server from the	1	Job	50000	50,000

	Inverter Manufacturer for real time monitoring, Data Logging				
7	Services				
7.1	Project Design & Execution	1	Job	150000	150,000
7.2	Erecting of Mechanical Mounting Structure	1	Job	150000	150,000
7.3	Installation, testing and Commissioning of Solar System	1	Job	150000	150,000
7.4	Operations and Maintenance "O&M" Services (1 Year)	1	Job	600000	600,000
7.5	Load Flow Study (Required for Net- Metering)	1	Job	290000	290,000
7.6	Net-Metering Process (Including Equipment, Fee, Approvals, Documentation, Inspection)	1	Job	300000	300,000
Amount of PV system complete in all respect Sub total A					8,403,000
8	Fencing				
MRS Ref	Description	Quantity	Unit		
26/46	Providing and fixing anti climb high security galvanized razor cut wire having double sharp four U-shaped pointed 0.5 mm thick (22mmx15 mm barbs) spaced @ 33 mm c/c clad over 2.5 mm dia high tensile Core wire making coil fencing of specified diameter @ 4" c/c fixed on 2'-3" high M/S angle iron post 1½"x1½"x3/16" embedded in base of PCC (1:2:4) (4"x4"x9") @ 4' apart i/c the cost of 2 No. bars 3/8" dia welded horizontally with angle iron posts , binding wire, painting of posts, etc. complete in all respects as approved and directed by the Engineer incharge. (ii) 18 " diameter	400	Per Rft	591.15	236,460
26/47	Providing and fixing hot dipped Galvanized Iron chain link mesh/fence of 2"x2" mesh made of wire of specified gauge, with the help of 1"x1/8" GI patti, GI. Clamps and screws, i/c the cost of 3 nos 8 SWG GI tie wires penetrated through mesh at top, middle and bottom, fixed on vertical posts of 2" diameter GI pipes (medium quality) erected @ 8 ft C/C duly embedded in PCC(1:2:4) etc. complete in all respect as approved and directed by the Engineer Incharge (i) 8 SWG	3200	Per Sft	487.30	1,559,360
Sub Total (B)					1,795,820
Total (A+B)					10,198,820

Water Works at Qureish Colony (25Kw)					
Sr.No	Item Description	M/s AE 3P SSC JV			
		Quantity	Unit	Unit Price	Total Price
1	PV Modules & Power Generation System				
1.1	Solar Modules	25,000	Wp	85	2,125,000
1.2	Inverter (Grid-Tied) 25 KW	1	Set	500000	500,000
1.3	PV-Genset Controller	1	Job	350000	350,000

1.4	Cable for Interconnection (DC)(UV Protected XLPE)	1	Job	50000	50,000
1.5	PV Combiner Boxes with DC Breakers / Fuses , SPD's etc. for string protections	1	Job	200000	200,000
2	AC Termination & Accessories				
2.1	LT Termination				
2.1.1	Secondary Comprehensive Protection Cabinet	1	Set	25000	25,000
2.1.2	Low Voltage Switchgear Cabinet	1	Set	25000	25,000
2.1.3	AC Combiner Breakers for MCCB	1	Set	20000	20,000
2.1.4	AC Combiner Breakers for ACB	1	Set	20000	20,000
3	Fabricated Items				
3.1	Mounting Structure	44	Job	16000	704,000
3.2	Cable Tray	1	Job	50000	50,000
3.3	Distribution Boxes	1	Job	50000	50,000
4	Cable & Accessories				
4.1	AC Cables for Inverter Interconnection xx sqmm,4 core, Armored	1	Set	50000	50,000
4.2	AC Cable for Combined Output xx sqmm,4 Core, Armored	1	Set	50000	50,000
4.3	Installation Material (cable Ducts etc.)	1	Set	50000	50,000
5	Earthing/ Grounding System / ATS Panels				
5.1	Earthing for PV Solar System complete independent earthing system for PV solar system, must be separated of the main earthing system to obtain 2-ohm max resistance the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 25 mm ² flexible earthing copper wires and cables (Yellow/Green) from the PV system components to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000
5.2	Earthing System For Inverter / WAPDA / Generator Set Neutral Complete independent earthing system for Inverter / WAPDA / Generator Set Neutral must be separated of the main earthing system to obtain 2-ohm max resistance. the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 50 mm ² flexible earthing copper wires and cables from the Neutral bus bar in the Main Distribution box to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000
5.3	Surge protection device of appropriate short circuit capacity to secure the overall AC system (data and power) against lightnings and surges strikes, including connecting the device to earthing system and all needed accessories	2	Set	12000	24,000

5.4	Grounding Flat Iron, Grounding Network for the plant Area, Power distribution Room, HV power Distribution room	1	Job	50000	50,000
5.5	Automatic Transfer Switch (ATS) 3 phase system. The ATS consist of two 4 poles contactors of appropriate capacity complete with (Mechanical & electrical Interlock) all needed ACU control fittings such timers, relays, undervoltage. with all needed fittings and accessories to get job ready.	1	Job	200000	200,000
5.6	Phase Failure Protection 3ph. Failure, loss of phase, under voltage, over voltage and phase sequence relay (LRST), adjustable type with four poles contactor 4*100A and all needed protection devices, control devices and accessories	1	Job	100000	100,000
6	Remote Monitoring & Data Acquisition System				
6.1	Contractor Shall Provide the access of Remote Monitoring Mobile App and Server from the Inverter Manufacturer for real time monitoring, Data Logging	1	Job	50000	50,000
7	Services				
7.1	Project Design & Execution	1	Job	100000	100,000
7.2	Erecting of Mechanical Mounting Structure	1	Job	50000	50,000
7.3	Installation, testing and Commissioning of Solar System	1	Job	100000	100,000
7.4	Operations and Maintenance "O&M" Services (1 Year)	1	Job	600000	600,000
7.5	Load Flow Study (Required for Net- Metering)	1	Job	200000	200,000
7.6	Net-Metering Process (Including Equipment, Fee, Approvals, Documentation, Inspection)	1	Job	200000	200,000
Amount of PV system complete in all respect Sub total A					6,243,000
8	Fencing				
MRS Ref	Description	Quantity	Unit		
26/46	Providing and fixing anti climb high security galvanized razor cut wire having double sharp four U-shaped pointed 0.5 mm thick (22mmx15 mm barbs) spaced @ 33 mm c/c clad over 2.5 mm dia high tensile Core wire making coil fencing of specified diameter @ 4" c/c fixed on 2'-3" high M/S angle iron post 1½"x1½"x3/16" embedded in base of PCC (1:2:4) (4"x4"x9") @ 4' apart i/c the cost of 2 No. bars 3/8" dia welded horizontally with angle iron posts , binding wire, painting of posts, etc. complete in all respects as approved and directed by the Engineer incharge. (ii) 18 " diameter	400	Per Rft	591.15	236,460
26/47	Providing and fixing hot dipped Galvanized Iron chain link mesh/fence of 2"x2" mesh made of wire of specified gauge, with the help of 1"x1/8" GI patti, GI. Clamps and screws, i/c the cost of 3 nos 8 SWG GI tie wires penetrated through mesh at top, middle and bottom, fixed on vertical posts of 2" diameter GI pipes (medium quality) erected @ 8 ft C/C duly embedded in PCC(1:2:4) etc. complete in all respect as approved and directed by the Engineer Incharge (i) 8 SWG	3200	Per Sft	487.30	1,559,360

Sub Total (B)	1,795,820
Total (A+B)	8,038,820

Water Works at Boys Degree College (35Kw)					
Sr.No	Item Description	M/s AE 3P SSC JV			
		Quantity	Unit	Unit Price	Total Price
1	PV Modules & Power Generation System				
1.1	Solar Modules	35,000	Wp	85	2,975,000
1.2	Inverter (Grid-Tied) 35 KW	1	Set	750000	750,000
1.3	PV-Genset Controller	1	Job	450000	450,000
1.4	Cable for Interconnection (DC)(UV Protected XLPE)	1	Job	100000	100,000
1.5	PV Combiner Boxes with DC Breakers / Fuses , SPD's etc. for string protections	1	Job	300000	300,000
2	AC Termination & Accessories				
2.1	LT Termination				
2.1.1	Secondary Comprehensive Protection Cabinet	1	Set	50000	50,000
2.1.2	Low Voltage Switchgear Cabinet	1	Set	50000	50,000
2.1.3	AC Combiner Breakers for MCCB	1	Set	50000	50,000
2.1.4	AC Combiner Breakers for ACB	1	Set	50000	50,000
3	Fabricated Items				
3.1	Mounting Structure	61	Job	16000	976,000
3.2	Cable Tray	1	Job	50000	50,000
3.3	Distribution Boxes	1	Job	50000	50,000
4	Cable & Accessories				
4.1	AC Cables for Inverter Interconnection xx sqmm,4 core, Armored	1	Set	50000	50,000
4.2	AC Cable for Combined Output xx sqmm,4 Core, Armored	1	Set	50000	50,000
4.3	Installation Material (cable Ducts etc.)	1	Set	50000	50,000
5	Earthing/ Grounding System / ATS Panels				
5.1	Earthing for PV Solar System complete independent earthing system for PV solar system, must be separated of the main earthing system to obtain 2-ohm max resistance the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 25 mm ² flexible earthing copper wires and cables (Yellow/Green) from the PV system components to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000

(25)

5.2	Earthing System For Inverter / WAPDA / Generator Set Neutral Complete independent earthing system for Inverter / WAPDA / Generator Set Neutral must be separated of the main earthing system to obtain 2-ohm max resistance. the item includes (2 copper electrodes 15mm ² driven into ground, manholes with iron cover, earth joints, clamps, ducts, conduits and 50 mm ² flexible earthing copper wires and cables from the Neutral bus bar in the Main Distribution box to the electrode to complete the system as specifications and supervisor engineer instructions and approval.	1	Job	150000	150,000
5.3	Surge protection device of appropriate short circuit capacity to secure the overall AC system (data and power) against lightnings and surges strikes, including connecting the device to earthing system and all needed accessories	1	Set	12000	12,000
5.4	Grounding Flat Iron, Grounding Network for the plant Area, Power distribution Room, IIV power Distribution room	1	Job	50000	50,000
5.5	Automatic Transfer Switch (ATS) 3 phase system. The ATS consist of two 4 poles contactors of appropriate capacity complete with (Mechanical & electrical Interlock) all needed ACU control fittings such timers, relays, undervoltage. with all needed fittings and accessories to get job ready.	1	Job	200000	200,000
5.6	Phase Failure Protection 3ph. Failure, loss of phase, under voltage, over voltage and phase sequence relay (LRST), adjustable type with four poles contactor 4*100A and all needed protection devices, control devices and accessories	1	Job	150000	150,000
6	Remote Monitoring & Data Acquisition System				
6.1	Contractor Shall Provide the access of Remote Monitoring Mobile App and Server from the Inverter Manufacturer for real time monitoring, Data Logging	1	Job	50000	50,000
7	Services				
7.1	Project Design & Execution	1	Job	150000	150,000
7.2	Erecting of Mechanical Mounting Structure	1	Job	150000	150,000
7.3	Installation, testing and Commissioning of Solar System	1	Job	150000	150,000
7.4	Operations and Maintenance "O&M" Services (1 Year)	1	Job	600000	600,000
7.5	Load Flow Study (Required for Net- Metering)	1	Job	290000	290,000
7.6	Net-Metering Process (Including Equipment, Fee, Approvals, Documentation, Inspection)	1	Job	250000	250,000
Amount of PV system complete in all respect Sub total A					8,353,000

8	Fencing				
MRS Ref	Description	Quantity	Unit		
26/46	Providing and fixing anti climb high security galvanized razor cut wire having double sharp four U-shaped pointed 0.5 mm thick (22mmx15 mm barbs) spaced @ 33 mm c/c clad over 2.5 mm dia high tensile Core wire making coil fencing of specified diameter @ 4" c/c fixed on 2'-3" high M/S angle iron post 1½"x1½"x3/16" embedded in base of PCC (1:2:4) (4"x4"x9") @ 4' apart i/c the cost of 2 No. bars 3/8" dia welded horizontally with angle iron posts , binding wire, painting of posts, etc. complete in all respects as approved and directed by the Engineer incharge. (ii) 18 " diameter	430	Per Rft	591.15	254,195
26/47	Providing and fixing hot dipped Galvanized Iron chain link mesh/fence of 2"x2"mesh made of wire of specified gauge, with the help of 1"x1/8" GI patti, GI. Clamps and screws, i/c the cost of 3 nos 8 SWG GI tie wires penetrated through mesh at top, middle and bottom, fixed on vertical posts of 2" diameter GI pipes (medium quality) erected @ 8 ft C/C duly embedded in PCC(1:2:4) etc. complete in all respect as approved and directed by the Engineer Incharge (i) 8 SWG	3440	Per Sft	487.30	1,676,312
Sub Total (B)					1,930,507
Total (A+B)					10,283,507

Environmental and Social Mitigation Plan					
Sr.No	Item Description	M/s AE 3P SSC JV			
		Quantity	Unit	Unit Price	Total Price
A	PPEs for Health and Safety of Labor/Workers				
1.1	Face Masks (3 PLY) - box	8	No	300	2,400
1.2	Safety Hard Helmets	8	No	2,500	20,000
1.3	Harness belts	8	No	2,500	20,000
1.4	Safety Shoes (Steel Shoes +Long Shoes)	8	No	2,500	20,000
1.5	Hand Gloves	8	No	800	6,400
1.6	Ear Plugs	8	No	300	2,400
1.7	Reflective Safety Vest	8	No	700	5,600
1.8	Safety Goggles	8	No	300	2,400
1.9	Safety Signage	2	No	5,000	10,000
Total					89,200

Sr.No	Description	M/s AE 3P SSC JV
1	Disposal Works at Islam Nagar	17,994,343
2	Disposal Works at Model Town	5,398,343

(27)

3	Disposal Works at Hussainabad	12,968,343
4	Disposal Works at Karmanwala	5,861,343
5	Disposal Works at Fordwah	5,242,343
6	Disposal Works at Madni Colony	16,310,343
7	Disposal Works at Madina Town	21,492,343
8	Water Works at Model Town Sadaqia	26,176,193
9	Water Works at Model Town Old	10,198,820
10	Water Works at Qureish Colony	8,038,820
11	Water Works at Boys Degree College	10,283,507
12	Environmental and Social Mitigation Plan	89,200
Total		140,053,937
Discount		10%
Discount Amount		14,005,393.70
Grand Total		126,048,543
Add 5% PRA		6302427
Grand Total		132350970

TERMS AND CONDITIONS:

1. The contractor has to submit copy of memorandum / partnership deed attested by a competent authority and Power of Attorney in Original in favor of the authorized partner if any, to sign the agreement, receive the payment on your behalf and carry out instructions of the Engineer in-Charge.

The contract has to submit Performance Security 10% of contract amount on prescribed form PS-1 in shape of Bank Guarantee from any scheduled Bank in favor of Chief Officer, MC, Bahawalnagar

2. The work shall be carried out strictly according to the provision made in the technically sanctioned estimate.

3. No claim for increase or decrease in scope of work shall be entertained.

4. No claim / payment of increased in the rate of material or above in the market due to any reason will be claimed/entertained.

5. The Municipal Committee, Bahawalnagar will not accept any responsibility for loss accrued due to interruption of work as result shortage or delay in supply of material and or other input required for completion of work.

6. You will have to complete the work within time limit otherwise the penalty shall be imposed as recommended by Engineer incharge. This will however not affect the other conditions of your tender agreement.

7. No premium on Non schedule items is allowed and decision of the competent authority in this respect will be final and binding upon you.

8. If any amount remains outstanding against this work or of the other contract the same will be recovered from you through civil suit as arrears of land revenue.

9. The rates approved are for this specific project only. There are not to be applied on other work anywhere else.

10. No deviation of quantities of items to be executed by the contractor shall be made without prior approval of the competent authority.

11. It will be exclusive responsibility of the contractor to complete the work according to specifications.

12. If any recovery pointed out by audit or other agency, the contractor will be bound to refund the recovery or will be made through Revenue Department.

13. As you accept the above cost of bid according to quoted rates, terms and conditions, you should contact the concerned Sub-Engineer for getting demarcation for the commencement of work immediately.

14. You shall execute the agreement in the office of undersigned and, shall be signed by you within a week positively, failing which no payment for the work done will be made.

15. Payment will be made after clearance of the consultants as per policy in vogue and no secured advance / Advance payment will be made as per clause approved bid document.

16. The contractor is liable to submit a detailed statement showing the deployment of your supervisory staff as per condition of this contract along with CVs of the Project in-Charge of your firm.

17. The contractor is liable to keep the entire site of work clean and tidy during the execution of work to ensure intended finishing. The debris shall be removed on daily basis from the site as per instructions of the Engineer incharge.

18. You are liable to abide by all terms and condition contained in Bid/ Contract from, work rules and also / instructions issued time by time as per Local Govt. Department Govt. of the Punjab.


Municipal Officer (I&S)
Municipal Committee
Bahawalnagar

No & Date even,

A copy is forwarded for information to

1. The Administrator / ADC(R), Bahawalnagar.
2. The Project Director, PCP, PMDFC, Lahore.
3. The Chief Officer, Municipal Committee, Bahawalnagar.
4. The Municipal Officer (Finance), Municipal Committee, Bahawalnagar.
5. The Resident Deputy Director Audit, Municipal Committee, Bahawalnagar.
6. The Sub Engineer, Municipal Committee, Bahawalnagar.


Municipal Officer (I&S)
Municipal Committee
Bahawalnagar