

**UNDP/PAPP**  
**CONSTRUCTION OF MAIN ELECTRICAL POWER SUPPLY LINE TO KY WWTP - BILL OF QUANTITIES**  
**VOLUME 1 – PART 3 – SCHEDULES OF PRICES**

Preamble to the Bill of Quantities  
General Requirements

1. Metric units of measurements have been adopted.
2. General instructions and detailed descriptions of work and materials are not necessarily repeated in the Bill of Quantities. Reference should be made to the Conditions of Contract, Specification and the Drawings for this information and these documents are to be read in conjunction with the Bill of Quantities.
3. The prices and the unit rates inserted in the Bill of Quantities by the Contractor (when tendering) shall be full inclusive value of the work described under the respective items including all necessary labour, installation supply of equipment and goods, plant, materials and temporary works, and all other costs and expenses which may be required in, and for the construction of the Works described, together with all risks, liabilities and obligations set forth or implied in the Tender Documents, except only those works for which provision is made under separate items in the Bill of Quantities. Unless clearly stated otherwise in the Bill of Quantities, the unit rates entered against the various Bill items shall include for executing such items in all locations in accordance with the Contract Documents and shall include for all associated temporary works.
4. A price or unit rate should be inserted against each item in the Bill of Quantities whether quantities are stated or not. Any work which is not covered explicitly by an item in the Bill of Quantities or which is covered by an item against which no price is entered, will be deemed to be covered by the other prices and rates in the Bill and will not be measured or paid for separately, whether the stated quantity be increased or not.
5. The Contractor (when tendering) shall not enter any new items in the Bill of Quantities except as where expressly provided for.
6. The unit rates quoted by the Contractor (when tendering) shall inter alia be deemed to cover tolerances, waste, cutting to waste, working round obstructions, overbreak and for a proportion of the works being in small quantities.
- 6.1 The equipment and fittings supplied under the Contract, the unit rates shall also include for boxing out, fixing, building in, making good, and all other incidental work.
- 6.2 The quantities shown in the Bill of Quantities are approximate only and the work will be measured strictly net to the limits indicated on the Drawings or as otherwise defined.
7. Where items are provided for the removal and reinstatement of specific features the unit rates and prices shall include for the cost of removal of such features and for cleaning, storing and reinstatement on completion of the appropriate section of work.
8. The unit rates shall allow for the maintenance, temporary diversion, support and protection of existing services, sewers and the like and also for working in a manner such as to avoid causing them damage.
- 8.1 Where the Works may affect adjacent structures or services the unit rates in the Bill of Quantities shall be deemed to cover any temporary works which may be necessary to prevent damage to the structures or services during the construction of the Works including any temporary diversion of services which may be necessary.
- 8.2 The unit rates in the Bill of Quantities shall also be deemed to cover any permanent measures required to support and protect such structures and services except insofar as specific provision is made in the Contract for payment for such work.
9. The following General Directions explain and amplify the provisions of the Specification and Standard Method of Measurement with particular regard to measurement for the Contract and should be read in conjunction therewith.
10. All the equipment will be paid on the basis of a lump sum rate per unit for completion of the works, including design, manufacture, transport, installation, fixing, concrete embedding if necessary, electrical connections to distribution panels for all motorized equipment, testing, commissioning and all other contingencies to deliver the work in accordance with the technical specifications and drawings and to the satisfaction of the Engineer.
- 10.1 The unit rates and prices for values include, unless otherwise specified, all fittings and accessories, joints, nuts, flanges, adaptors, etc ...

Item No.	Description	Unit	Quantity	Unit Rate (USD)	Total Amount (USD)
	<p>* All materials and installation works must be according to the Specification, GEDCO's specifications, technical guarantees and technical study, drawings, and the Engineer's instruction.</p> <p>The unit rates of the following items must include but not limited to the following:</p> <p>1- The costs of sampling and testing as required and according to the Specification and work requirement.</p> <p>2- Paying of planning and supervision fees and cost for GEDCO as per the attached GEDCO's specifications, technical guarantees and technical study.</p> <p>3- providing and using all equipment, machines, cranes ... etc. needed for proper execution and completion of work activities.</p> <p>4- Supplying and installing UPVC SN8 pipes of 10" diameter inside each concrete foundations of the steel poles for future.</p> <p>5- Encasing all water, sewage pipes or any other pipes which intersect with the concrete foundations of the steel poles with new UPVC SN8 pipes having diameters with 2 inch larger than the existing pipes. In case of critical facilities such as pressure lines, the encasement must be steel sheets of 2 mm thick with <math>\Omega</math>-shape to be installed over the existing facilities as per the Engineer's instruction.</p> <p>6- Dismantling and reinstating the existing pavement layers (Interlock, cement tiles , asphalt, ...etc.) as well as the soil layers at the places of excavation for cables and for new or removed wooden or steel poles. The unit rates shall also include supplying and replacing the damaged interlock tiles, asphalt, basecourse, .. etc by new materials to match the existing ones with minimum basecourse layer of at least 30cm thick for asphalt and interlock roads and 15 cm for footpath and as per the drawings and Engineer's instruction.</p>				
	<p>7- Preparation of proper access to the work sites as necessary and as per the Engineer's instructions.</p> <p>8- Protection of the existing facilities during implementation and in case of damages, the unit rates shall include repairing properly or replacing these facilities according to the Specification and the Engineer's instructions.</p> <p>9- Dismantling and removal of any damaged external Lantern, poles , wires, surplus materials, etc., then transporting them to locations nominated by the Engineer.</p> <p>10- Obtaining GEDCO approval on all materials and works that must be according to GEDCO's specifications, technical guarantees and technical study ,where obtaining the approval of GEDCO is pre-requisite to starting any activity.</p> <p>11- Dismantling any existing materials in the existing networks such as MV disconnectors, steel arms, poles,...etc , and reinstall them in the proposed pole or room as per the Engineer's instructions.</p> <p>12-All needed materials, personnel and works that are deemed necessary for the safety during implementation along with all communication needed with GEDCO to coordinate for activities. Safety plan and implementation of its items will be pre-requisite to commence any relevant activities according to the Engineer's approval and instructions.</p> <p>13- Commissioning works for electricity network system and operating all the new and the existing networks complete according to the GEDCO specifications.</p>				
	<p>14- The earth resistance of total earthing system must be less than 5 <math>\Omega</math> , and the contractor must find and do the all solutions to be &lt; 5 <math>\Omega</math> according to the specifications.</p> <p>15- All necessary civil works needed for the complete and satisfactory installation of the various items of GEDCO's technical guarantees and technical study. All materials, equipment under GEDCO's technical guarantees and technical study shall be according to their specifications and requirements and shall be coordinated with and approved by GEDCO engineers.</p>				

Item No.	Description	Unit	Quantity	Unit Rate (USD)	Total Amount (USD)
<b>Steel Poles &amp; Bases</b>					
1	Supply and install complete Hot Galvanized M.V Lattice Steel Pole 70/80 12m long with Anti-Climbing Steel Arm K113/8, Steel Bolts, Nuts, Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	1		
2	Supply and install complete Hot Galvanized M.V Lattice Steel Pole 80/90 12m long with Anti-Climbing Steel Arm K113/8 , Steel Bolts, Nuts, Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	5		
3	Supply and install complete Hot Galvanized M.V Lattice Steel Pole 90/110 12m long with Anti-Climbing Steel Arm K113/8 , Steel Bolts, Nuts, Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	2		
4	Supply and install complete Hot Galvanized M.V Lattice Steel Pole 120/130 12m long with Anti-Climbing Steel Arm K113/8 , Steel Bolts, Nuts, Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	2		
5	Supply and install complete Hot Galvanized M.V Channel Steel Pole U14 12m long with Anti-Climbing Steel Arm K78/2 , Steel Bolts, Nuts, Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	24		
6	Supply and install complete Hot Galvanized M.V Lattice Steel Pole 70/80 Steel Base 2.25m long with Concrete Foundation B250 for L.S.P. Base Size (1.7*1.7*2)m , 3 each Earthing Rod with Rod Joints and all needed materials, fittings and accessories for fixing and installation. The item is including all necessary excavation, backfilling and reinstating works.(The supply and installation shall be according to GEDCO specifications and instructions)	Unit	1		
7	Supply and install complete Hot Galvanized M.V Lattice Steel Pole 80/90 Steel Base 2.25m long with Concrete Foundation B250 for L.S.P. Base Size (1.95*1.95*2)m3 , 3 each Earthing Rod with Rod Joints and all needed materials, fittings and accessories for fixing and installation. The item is including all necessary excavation, backfilling and reinstating works.(The supply and installation shall be according to GEDCO specifications and instructions)	Unit	5		
8	Supply and install complete Hot Galvanized M.V Lattice Steel Pole 90/110 Steel Base 2.25m long with Concrete Foundation B250 for L.S.P. Base Size (2.2*2.2*2)m3 , 3 each Earthing Rod with Rod Joints and all needed materials, fittings and accessories for fixing and installation. The item is including all necessary excavation, backfilling and reinstating works.(The supply and installation shall be according to GEDCO specifications and instructions)	Unit	2		
9	Supply and install complete Hot Galvanized M.V Lattice Steel Pole 120/130 Steel Base 2.25m long complete with Concrete Foundation B250 for L.S.P. Base Size (2.8*2.8*2)m3 , 3 each Earthing Rod with Rod Joints and all needed materials, fittings and accessories for fixing and installation. The item is including all necessary excavation, backfilling and reinstating works. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	2		
10	Supply and install complete Hot Galvanized M.V Channel Steel Pole U14 Steel Base 2.15m long with Concrete Foundation B250 for C.S.P. Base Size (1.4*1.4*2) m3 all needed materials, fittings and accessories for fixing and installation. The item is including all necessary excavation, backfilling and reinstating works. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	24		

Item No.	Description	Unit	Quantity	Unit Rate (USD)	Total Amount (USD)
<b>Steel Arms</b>					
11	Supply and install complete Hot Galvanized M.V C.S.P Tension Side Arm K63 complete with Steel Bolts, Nuts & Washers all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	8		
12	Supply & Install complete Hot Galvanized M.V Lattice Steel Pole Tension side Arm K64 complete with Steel Bolts, Nuts & Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	1		
13	Supply and install complete Hot Galvanized M.V Lattice Steel Pole Tension side Arm K12801 with Steel Bolts, Nuts & Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	1		
14	Supply and install complete Hot Galvanized M.V C.S.P Suspension Side Arm K7972 with Steel Bolts, Nuts & Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	1		
15	Supply and install complete Hot Galvanized M.V C.S.P Suspension Side Arm K10155 with Steel Bolts, Nuts & Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	20		
16	Supply and install complete Hot Galvanized M.V C.S.P Suspension Side Arm K10354 with Steel Bolts, Nuts & Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	4		
17	Supply and install complete Hot Galvanized Auxiliary Steel Arm for earth line K18 with Steel Bolts, Nuts & Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	25		
18	Supply and install complete Hot Galvanized Auxiliary Steel Arm K160/3-B with Steel Bolts, Nuts & Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	8		
19	Supply and install complete Hot Galvanized Auxiliary Steel Arm K166/1 with Steel Bolts, Nuts & Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	2		
20	Supply and install complete Hot Galvanized Auxiliary Steel Arm K1743 complete with Steel Bolts, Nuts & Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	1		
21	Supply and install complete Hot Galvanized Auxiliary Steel Arm K12171/2 with Steel Bolts , Nuts & Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	2		
22	Supply and install complete Hot Galvanized M.V Isolating Switch Side Arm , K1558 with Steel Bolts, Nuts & Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	3		
23	Supply and install complete Hot Galvanized M.V Isolating Switch Central Vertical Arm , K1562 with Steel Bolts, Nuts & Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	1		

Item No.	Description	Unit	Quantity	Unit Rate (USD)	Total Amount (USD)
24	Supply and install complete Hot Galvanized L.V. Network Steel Arm, 120 cm long, single with Steel Bolts, Nuts & Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	4		
25	Supply and install complete Hot Galvanized Protection Arm K81 with Steel Bolts, Nuts & Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	150		
26	Supply and install complete Hot Galvanized Protection Arm K82-A with 3m Mustache with Steel Bolts, Nuts & Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	Unit	16		
27	Supply and install complete Hot Galvanized Anti-Climbing for L.S.P, K113/8 with Steel Bolts, Nuts & Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	SET	10		
28	Supply and install complete Hot Galvanized Anti-Climbing for C.S.P, K78/2 with Steel Bolts, Nuts & Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	SET	24		
<b>M.V Insulators</b>					
29	Supply and install complete Overhead Line Pin Type Polymer Insulator with Creepage Distance 1050 mm Complete (Set for one Phase) and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	SET	105		
30	Supply and install complete M.V Tension Unit (Overhead Line Tension Polymeric Composite Insulator) with Ball and Socket and Creepage Distance 1050 mm, Fork Ball Hook, Steel Twisted Clamp, and Half Moon with Strain Clamp for ACSR Wire 150/25 mm <sup>2</sup> and with all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	SET	48		
31	Supply and install complete M.V Tension Unit ( 3 Tension Glass Disk Insulator) with Ball and Socket and Creepage Distance 320 mm, and Half Moon for transformers and with all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	SET	3		
32	Supply and install complete Low Tension Insulator Unit Complete for Earth line with Steel Bolts, Nuts & Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	SET	42		
<b>MV Switchgear and Indoor Distribution Transformers</b>					
33	Supply, install, test and operate complete 22/0.4 KV Low Losses, 3 phase, Indoor Distribution Transformer 630 KVA Rating with all needed Bushings and all needed materials, fittings and accessories for fixing and installation and all needed workmanship to complete the job. (The supply and installation shall be according to GEDCO specifications and Technical Guarantees No. IDT_630S)	Unit	1		
34	Supply, install, test and operate complete 22/0.4 KV Low Losses, 3 phase , Indoor Distribution Transformer 1600 KVA Rating with all needed Bushings and all needed materials, fittings and accessories for fixing and installation and all needed workmanship to complete the job. (The supply and installation shall be according to GEDCO specifications and Technical Guarantees No. IDT_1600S)	Unit	2		
35	Supply, install, test and operate complete 24 kV , 630 A Switchgear, and 16 kA Short Circuit Current Ring Main Unit SF6, Two Incoming Switch Disconnectors, Two Transformer Protection Fuses for Switch combination (CTTC) , m.v. fuses with all needed materials, fittings and accessories for fixing, installation, connection, testing and operation and all needed workmanship to complete the job. (The supply and installation shall be according to GEDCO specifications Technical Guarantees No.RMU_2T2C)	Unit	2		

Item No.	Description	Unit	Quantity	Unit Rate (USD)	Total Amount (USD)
<b>MV Switchgear and Switches</b>					
36	Supply, install, test and operate complete (24KV Pole Mounted Three Phase Vacuum interruption Auto-Recloser with control unit) with all needed materials, fittings and accessories for fixing, installation, connection, testing and operation and all needed workmanship to complete the job. (The supply of materials will be according to GEDCO General Specifications and Technical Guarantees No.Rec_24V). (The supply and installation shall be according to GEDCO specifications and instructions)	SET	2		
37	Supply, install, test and operate complete 3 Phase 36 kV Isolating Switch with built-in arc interrupter with Master lock key , Compression Lugs , Steel Bolts, Nuts & Washers and Earthing Cable and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	SET	2		
<b>MV Wires, MV Cables &amp; Accessories</b>					
38	Supply and install ACSR Wire ((3x150/25)+(1*50/8)) mm2 complete with all Clamps, Distribution Ties Performed, Compression Lugs, tension compression Joints and Steel Bolts and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	LM	3,000		
39	Supply, install, lay, connect, test and operate 12/20 kV 3-Single Core Cable with XLPE Insulation and Copper Circular Stranded Conductor <b>3*(1x630/35) mm2 AL</b> , according to GEDCO Specifications, with all needed materials fittings and accessories and workmanship to complete the job. The unit rate shall also include all needed civil works like excavation of trench in any type of soil with 60 x 110 cm, backfilling with clean sand, first layers with 50cm deep, then supply & install 45x45x5cm concrete slabs with flexural strength (5 Mpa), along with 5 cm thick clean sand with warning tape, then backfilling with clean sand up to the pavement layers, including watering and compaction to 100% for each layer with maximum 25cm depth, testing and all needed materials and workmanship to complete the job. The unit rate shall include dismantling of existing pavement and reinstatement for the pavement with the same type and thickness, removing all base layers (basecourse and subbase) and supplying new base-course layer if required under the new pavement with basecourse layer of at least 30cm thick for asphalt and interlock roads and 15 cm for footpath including watering, compaction, testing and all needed materials and workmanship to complete the job. If the route of cable crosses any road, the unit rate shall also include supply and install of (three in one line) -UPVC pipe dia 200 mm SN8, the work include casting concrete B250 in the trenches surrounding the pipes, and the trenches are to be implemented as per the specification and detailed drawings. (The supply of materials shall be according to M.V Cables General Specifications and Technical Guarantees <b>XLPEA_630</b> )	LM	400		
40	Supply, install, lay, connect, test and operate 12/20 kV 3-Single Core Cable with XLPE Insulation and Copper Circular Stranded Conductor <b>3*(1x240/25) mm2 AL</b> , according to GEDCO Specifications, with all needed materials fittings and accessories and workmanship to complete the job. The unit rate shall also include all needed civil works like excavation trench in any type of soil with 60 x 110 cm, backfilling with clean sand, first layers 50cm deep, then supply & install 45x45x5cm concrete slabs with flexural strength (5 Mpa), along with 5 cm thick clean sand with warning tape, then backfilling with clean sand up to the pavement layers including watering and compaction to 100% for each layer with maximum 25cm depth, testing and all needed materials and workmanship to complete the job. The unit rate shall include dismantling of existing pavement and reinstatement for the pavement with the same type and thickness, removing all base layers (basecourse and subbase) and supplying new base-course layer if required under the new pavement with basecourse layer of at least 30cm thick for asphalt and interlock roads and 15 cm for footpath including watering, compaction, testing and all needed materials and workmanship to complete the job. If the route of cable crosses any road, the unit rate shall also include supply and install of (three in one line) -UPVC pipe dia 200 mm SN8, the work include casting concrete B250 in the trenches surrounding the pipes, and the trenches are to be implemented as per the specification and detailed drawings. (The supply of materials will be according to M.V Cables General Specifications and Technical Guarantees <b>XLPEA_240</b> ).	LM	800		

Item No.	Description	Unit	Quantity	Unit Rate (USD)	Total Amount (USD)
41	Supply, install, connect, test and operate 12/20 kV Single Core Cable with XLPE Insulation and Copper Circular Stranded Conductor (1x50/16) mm <sup>2</sup> CU with all needed materials, fittings and accessories for fixing and installation on the RMU & TR. Connection. (The supply of materials will be according to M.V Cables General Specifications and Technical Guarantees No. XLPEC_50)	L.M	150		
42	Supply, install, test and operate 0.6/1 kV Single Core Cable with XLPE Insulation and Copper Circular Stranded Conductor 1x240 mm <sup>2</sup> CU with Compression Lugs, Joints, connector ends & Steel Bolts and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and instructions)	LM	1,200		
43	Supply and install complete 36 Kv Heat Shrinkable Outdoor Termination Kit for XLPE Cable 1x630/35 mm <sup>2</sup> (Set for One Phase) with Mechanical Lug, Steel Bolts, Nuts & Washers and all needed materials, fittings and accessories for fixing, installation and connection. (The supply and installation shall be according to GEDCO specifications and Technical Guarantees No.OT36_630)	Unit	12		
44	Supply and install 36 Kv Heat Shrinkable Outdoor Termination Kit for XLPE Cable 1x240/35 mm <sup>2</sup> (Set for One Phase) with Mechanical Lug, Steel Bolts , Nuts & Washers and all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications and Technical Guarantees No.OT36_240)	Unit	3		
45	Supply and install complete 630A , 24 kv Indoor Screened Separable Termination Kit for 12/20 kv XLPE Cable 1x240/25 mm <sup>2</sup> , (Set for one Phase) with all needed materials, fittings and accessories for fixing, installation and connection. (The supply and installation shall be according to GEDCO specifications and Technical Guarantees No. IT24_240)	Unit	9		
46	Supply and install 250A , 24 kv Indoor Screened Separable Elbow Termination Kit for 12/20 kv XLPE Cable 1x50/16 mm <sup>2</sup> , (Set for one Phase) with all needed materials, fittings and accessories for fixing and installation. (The supply and installation shall be according to GEDCO specifications Technical Guarantees No. IT24_50)	Unit	18		
47	Supply and install Outdoor Metal Oxide Surge Arrester M.C.O.V 19.5 KV with Ground Lead Disconnecter included Brackets and Cable (3 no. Set for three phase) with Earthing Wire PVC CU 70 mm <sup>2</sup> , Compression Lugs, Clamps and all needed materials, fittings and accessories for fixing, installation and connection. (The supply and installation shall be according to GEDCO specifications and instructions)	SET	4		

Item No.	Description	Unit	Quantity	Unit Rate (USD)	Total Amount (USD)
48	Supply and install Fittings to Protection the M.V cables on the steel poles with 2 cable Guard, 3 Steel Plates, 6 Cable Holder, Steel Bands with Buckles and all needed materials, fittings and accessories for fixing and installation on the Pole. (The supply and installation shall be according to GEDCO specifications and instructions)	SET	3		
49	Supply and install 24 Kv Heat Shrinkable Straight Joint for XLPE Cable 1x240/25 mm2, (Set for one Phase) with Bimetallic Mechanical Joints with all needed materials, fittings and accessories for fixing, installation and connection. (The supply and installation shall be according to GEDCO specifications Technical Guarantees No.SJ24_240)	Unit	1		
50	Supply and install 24 Kv Heat Shrinkable Straight Joint for XLPE Cable 1x630/35 mm2, (Set for one Phase) with Bimetallic Mechanical Joints and all needed materials, fittings and accessories for fixing and installation, and connection. (The supply and installation shall be according to GEDCO specifications and Technical Guarantees No.SJ24_630)	Unit	2		
51	<b>For Electrical Transformer room:</b> Supply and install the following components for the existing transformers rooms: - Three fire extinguishers 6 Kg (2 no. powder type and 1 no. CO2 type), Emergency lighting approved type with back up 180 minutes and all needed steel wire mesh protection to isolate the doors and windows in the room with any additional furnishing materials as per GEDCO specifications. - Hot galvanized steel Arms for Fixing the Cable beside the Transformer from L.V side and M.V side with cable ladder. The unit rate shall include all needed materials and workmanship to complete the job. All works and materials must be according to the Engineer's instructions and GEDCO specification.	Unit	2		
52	Supply, install and test complete Earthing Unit for rooms and transformers with Wire PN CU 70 mm2 PVC Yellow/Green, 3 Earth Rods of 15mm Diameter and 1.5 m Long, Earth Rod Joints of 15 mm Diameter, Earth Rod Connection Clamps and Compression Lugs , Steel Bolts and all needed materials, fittings and accessories for fixing and installation. ( The Earth Resistance should be less than 5 ohm ) (The supply and installation shall be according to GEDCO specifications and Instructions)	SET	4		
53	Arrange all papers and documentations needed by Gaza Electricity Distribution Company (GEDCO) or the Palestinian Energy Authority (PEA) to make the electrical power subscriptions required to provide the electrical power to Khan Younis Waste Water Treatment Plant site, and pay the power subscription charges to GEDCO for the following three subscriptions: 1- 3x1000A (for Transformer 1) 2- 3x2500A ( for Transformer 2) 3- 3x2500A ( for Transformer 3)	L.S	1		
<b>Fence</b>					
	A. Before starting any work, the contractor has to make and provide to the Engineer shop drawings showing the dimensions and all details needed. B. The engineer's approval of the shop drawing must be achieved before starting any work. C. The unit rates shall include all necessary tests. All works shall be carried out in accordance with the drawings, specifications and the Engineer's instructions. D. The contractor shall coordinate with the municipalities during the implementation. E. The unit rates shall include removing, dismantling all kind of obstacles, protecting any existing utilities and properties of the land owners and compensating any damages or trees lost during works as per the Engineer's instruction. F. The contractor shall make a mock-up before the implementation. G. The works will be in Sofa road, Road No.15, and any other place in Al Fukhari area as per the instructions of the Engineer.				



Item No.	Description	Unit	Quantity	Unit Rate (USD)	Total Amount (USD)
54	Supply, install and fix galvanized steel wire mesh size 50x50x2.5 mm with 2.0 m height for fence and gates including the followings: Supply and install steel triangle size 300x0.5x5x5 cm at distances of every 4 meters. Supply and install galvanized steel profile 800 x 800 x 3 mm at distances of every 32 meters and for starts, ends, corners and for gates sides. Supply and pouring concrete B200 with dimensions of 60x20x20 cm under ground around the steel triangles and the steel profiles. Supply and install a galvanized steel wire (STEEL CHAIN) 5 lines, two-way support every 32m, or when needed and according to the drawings, specifications and instructions of the Engineer. The gate is 3-4 m wide including two leaves, and the leaf frame and cross horizontal bracing is galvanized steel profile 80*40*3 mm, and the wire mesh 50*50*2.5 mm is to be fixed with leaves by using galvanized steel plates. the unit rate shall include supplying and installing hinges and steel lock. The unit rates shall include tie wires, and all needed materials, fittings, accessories and all required workmanship to complete the job as per specification and the Engineer's instructions.	LM	3,000		
<b>Road Works (Road No. 14)</b>					
	- The contractor has to submit detailed shop drawings to be approved by the Engineer before the commencement of the work. All works has to be done according to the drawings, specification and the Engineer's instructions. All required materials should be supplied as per the specification and subject to the Engineer's approval. The unit rates shall include fixing, maintaining and replacing the under ground services that may be damaged by the contractor during his work. The unit rates shall include the costs of sampling and testing as per the specification and the works' requirements. The unit rates shall include the cost of cleaning very well the existing asphalt layer by using air compressors, removing and/or relocating of all obstacles such as debris, garbage, trees, concrete beams, curb stones with all materials and requirements needed for the completion of the works according to the specification and the Engineer's instructions. The unit rate shall include preparing any holes, damages, settled trenches and damaged edges, including cutting with asphalt saw, removing all base layers (basecourse and subbase) and supplying new base-course layer if required with at least 30cm thick, filling with asphalt layer and compacting it up to the level of existing asphalt with watering, compaction, testing and all needed materials and workmanship to complete the job. The unit rates shall include adjusting the levels of existing manholes and any sewage pits (in any diameter) to suit with the level of the new asphalt layer, replacing rings, frames and covers if defected with all required materials and workmanship and all according to the Engineer's instructions. Note: the neck not to exceed 25 cm.				
55	Supply, spread and compact, above the old existing asphalt, a new layer of asphalt mix of 1/2 inch max aggregate size with minimum 5 cm thickness after compaction (Bitumen content not less than 5 %) from approved factory. The unit rates shall include supply and spread RC2 (0.5 kg/m2) at all surface of the existing asphalt and at the junctions with other existing asphalts. The asphalt shall be spread using a finisher and to be compacted by using rubber and steel compactors. The contractor shall submit a new job mix for approval before executing the works. The unit rates shall include making all the required sampling and tests and all materials, machinery and workmanship as required to complete the works according to the drawings, specification and the Engineer's instructions.	M2	14,500		
<b>Total of Bill of Quantities USD</b>					