



**UNITED NATIONS DEVELOPMENT PROGRAMME**

**ITB 2017-075**

## **Bill of Quantities**

**Project name:** Package 1: Transformer Rooms

**PAL10-00099398 / Rehabilitate GIE Infrastructure**



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Rehabilitation and Consolidation  
of the Gaza Industrial Estate (RCGIE)



Funded By: European Union

Rehabilitate GIE Infrastructure / Transformer Rooms					
ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
<b>B1 - EARTH WORKS</b>					
*	<p><b>Notes:</b></p> <p>Contractor shall take into consideration that all – direct and indirect works and expenses required for the completion of Earth works items' Prices. Excavation item shall include the removal of any buried structure not to be part of the proposed construction, including transport of excavated, surplus material and buried structure (not to be part of the proposed construction) to a location approved by the engineer or his representative outside the site, workmanship and any where else, needed, all according to drawings, specifications, conditions and directed instructions by the Engineer. the following will be in the items prices but not limited to:</p> <p>Contractor shall take into consideration that all – direct and indirect works and their relevant expenses required for proper implementation of the project including temporary facilities, fencing, securing utilities (water, wastewater, telephone and electricity systems) as well as making access to project implementation location such that the industrial area is running safely without disturbance. The contractor will be accountable for all necessary equipment, materials and activities to assure the safety of people within the Transformer Rooms buildings and vicinity, where an approved safety plan will be prerequisite to initiating activities along with installing all required components and materials necessary for safety of workers, project team as well as people at the desalination plant. All relevant costs are deemed to be included in the unit price in addition to the required re-instatement works needed to bring the original facilities to its original status before addition of temporary works.</p> <ol style="list-style-type: none"> <li>1. Shore up the sides of excavation and take all precautions to keep the adjacent buildings and existing infrastructure utilities (sewage, water, electricity, telecommunication and pavement works) safe. And repair any damage that may occur in the site.</li> <li>2. The cadastral survey and leveling of existing status at grids not exceeding 5 m in both directions. And the contractor should get Approval of Bench mark and leveling network before excavation works.</li> <li>3. Safety precautions to protect neighbor utilities and persons.</li> <li>4. All required Tests should be accommodated by an approved lab.</li> <li>5. Laying out the buildings coordinates to be carried out by professional surveyor using total station device.</li> <li>6. Price includes leveling and backfilling from imported clean sand (Safia) to make up level around buildings up to the top of external ground beams levels.</li> <li>7. All the above mentioned and following specifications is part of the contractor obligations.</li> <li>8. Quantities of Excavation shall be measured according to the elements' dimensions mentioned in the drawings</li> <li>9. The Price for excavation includes Cleaning the site and demolishing and removal of any existing structures. Debris material shall be disposed off to approved site as directed by the Engineer.</li> <li>10. Back-filling item should be in layers (25cm max. each &amp; compaction test 97%). Prices shall include supply, water, compaction, transporting, testing and any needed workmanship and material, all according to drawings, specifications, conditions and as directed by the Engineer.</li> <li>11. The contractor will expect that more than one contractor will be carrying out works in the desalination plant at the same time, the Contractor is presumed to make all necessary coordination and facilitate accessibility to and other work-related issues</li> </ol>				



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	<i>12.All works and installations listed here below should be carried out, tested and commissioned by specialized responsible skilled labors in full coordination with supervisor Engineer, all in accordance with drawings, specifications and relevant standards, and the instruction of the Engineer. The Engineer has the right to reject any component of the work not complying with the specifications and the terms of the contract.</i> <i>13. Cleaning the site and removing all debris, surplus unwanted materials and rubbles to approved dump site.</i> <i>14.All existing Material dismantled must be transferred to places as specified by the supervisor Engineer</i>				
1.1	Excavation of any soil type according to the elements' dimensions and levels as per drawings with all required works. <b>(Engineering Measurements)</b>	M <sup>3</sup>	100		
1.2	Backfilling works using imported and approved Clean Sand Material (Safia) as shown in the drawing . This item includes the backfilling to maintain the required levels of the building as shown in the drawings, specifications and as directed by the Engineer, (25cm max. each & compaction test 98% ) according to Eng. instructions and specifications. <b>(Engineering Measurements)</b>	M <sup>3</sup>	60		
TOTAL OF BILL B1 (EARTH WORKS) - US\$					

Rehabilitate GIE Infrastructure / Transformer Rooms					
ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
<b>B2 - CONCRETE WORKS</b>					
*	<p><b>Notes:</b></p> <p>Prices for all concrete items shall include shuttering, steel reinforcement, testing for steel reinforcement and concrete, supply and placing of concrete, Mix Design, vibrating, curing, striking, polyethylene sheet (for any concrete in contact with the soil), painting with approved type hot bitumen (one coat of primer &amp; min. 2-coats of hot bitumen) underground concrete for external surfaces, workmanship, all ducts, sleeves, concrete surface shall be finished with mechanical steel trowel . to obtain smooth fair surface. all according to drawings, specifications, and s directed by the Engineer. the following will be in the items prices but not limited to:</p> <ol style="list-style-type: none"> <li>1. All wooden form works and shuttering shall be new wooden forms painted by special oil and shall be in any form, shape and size . Works include allowing for and making grooves and sleeves and using Tie Rods (Batant) for concrete walls; removal of form works, and cleaning of all exposed tie wires and rods. and filling the cavities with special approved maeruals. Steel forms must be used in shuttering the external decorations if needed.</li> <li>2. Fuel or burned oil is not accepted to be used for painting the wooden forms before use the form.</li> <li>3. Supplying, Casting, vibrating and curing concrete as per specifications.</li> <li>4. Supplying and using Approved additives and admixtures.</li> <li>5. Incurred costs on New Concrete Job Mix Designs, Sampling , testing and providing test results certificates, storing and saving of samples.</li> <li>6. Painting of exposed surfaces of underground reinforced concrete elements with one coat of approved primer and minimum two coats of hot bituminous paint (75/25), the strokes of each layer to be opposite to each other.</li> <li>7. Preliminary installations for Electrical, plumbing and floor drainage in floor slabs including final floor slab.</li> <li>8. Compaction and testing under the foundation, ground beams, and ground slabs, the compaction should not be less than 97% of MDD.</li> <li>9. The Price for any concrete contact with soil includes laid polythene sheet with 200 micron thickness.</li> <li>10. Supply, fabricate and fix reinforcement steel (<math>f_y = 410 \text{ N/mm}^2</math>) for all the structural elements according to drawings and engineer's instructions for any grade, size and length as detailed in the drawings, storing on site including cutting, bending and fixing in position and providing all tying wires, spacers, shop drawings, testing and bar bending schedules. All works according to specifications , drawings and supervisor engineer instructions</li> </ol>				
2.1	Supply and cast Plain concrete B 200 below foundations , supports, anchor blocks, benching, slopes or like with all required works as per specifications and drawings and supervisor Engineer instructions	M <sup>3</sup>	10		
2.2	Supply and cast ready mix reinforced concrete B (250) kg/cm <sup>2</sup> for foundation .	M <sup>3</sup>	25		
<b>TOTAL OF PAGE 1 -BILL B2 (CONCRETE WORKS) - US\$</b>					



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ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
2.3	Supply and cast ready mix reinforced concrete B (300) kg/cm <sup>2</sup> for columns and column necks .	M <sup>3</sup>	25		
2.4	Ditto but for ground beams electrical wall trenches with all required works	M <sup>3</sup>	75		
2.5	Ditto but B (250) kg/cm <sup>2</sup> for ground slab (10cm - under tiles or without tiles) including reinforcement (1T8mm @ 20cm in both directions), leveling, and compacting the soil beneath the slab to 97% of MDD of sub-grade with all required works including supplying and laying polythene sheets with 200 micron thickness under the slab.	M <sup>2</sup>	200		
2.6	Ditto but for Ribbed Slabs 25cm thick. Price includes supply and lay hollow Blocks (40x25x17), drop and inverted beams, drainage, electrical, air conditioning, mechanical ducts & workmanship with all required works as per Engineer instructions.	M <sup>2</sup>	320		
2.7	Ditto but B (250) kg/cm <sup>2</sup> for window sills, lintels, coping, posts, parapets, arches, decoration, external steps of stairs , edge beam for interlocking tiles and other like works with all required works	M <sup>3</sup>	8		
TOTAL OF PAGE 2 -BILL B2 (CONCRETE WORKS) - US\$					
TOTAL OF BILL B2 (CONCRETE WORKS) - US\$					

Rehabilitate GIE Infrastructure / Transformer Rooms					
ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
<b>B3 - BLOCK, PLASTERING &amp; PAINTING WORKS</b>					
*	<p><b>Notes:</b></p> <p>The price for Block works shall include supplying hollow or solid cement block from good and approved factory in perfect dimension and build it in good manner with a compressive strength 35 kg/cm<sup>2</sup> for hollow block and 60 kg/cm<sup>2</sup> for solid block. This item will include cement mortars, reinforced concrete infill (B250) between columns &amp; block walls (10-20 cm wide) with 1Ø8mm/40cm horizontally and 2Ø8mm vertically according to drawings, pipes encasement, and bituminous paper between block work and drop beams &amp; all requirements needed to finish the works according to the drawings, specification and to the Engineer instructions. the price shall include curing and Providing samples for approval and all the required tests.</p> <p>Prices of plastering works shall include supply of all materials, galvanized angles (for exposed edges), galvanized mesh (between block wall and concrete), mixing, scaffolding, curing, workmanship &amp; tools, needed, all according to drawings, specifications, and as directed by the Engineer. Trimming of concrete chippings, removing the wires, and cleaning of existing surfaces to be ready for plastering.</p> <p>Preparation works by covering all conduits of electricity, water supplies, etc, with a galvanized wire mesh at least 20cm width coated by mortar (1:1) cement : sand and the work includes removal of wires and nails and cleaning of surfaces to be ready for plastering and curing as per Engineer instructions.</p> <p>Prices for Painting works shall include All the painting materials used should be approved and tested by approved local laboratory and have the final approved from the supervisor engineer. The surface must be dry and clean before painting. Smoothen surfaces of existing plastering before the Commencement paint. All painting works should provide the required coverage. All paint works must be according to specifications, drawings and as per Engineer instructions. Contractor shall take into consideration that all – direct and indirect works and expenses required for the completion of the below items are included in the unit rates. Providing scaffolding to carry out the external painting.</p>				
3.1	Supply and build hollow cement block 40x20x20cm	M <sup>2</sup>	420		
3.2	Ditto but 40x20x 10 cm.	M <sup>2</sup>	160		
3.3	Supply and install internal plastering 13 mm thick for ceiling, walls and soffits. The work includes rough nail rendering to form a key with (mix 1:1) cement sand, : second coat, Base-Coat "Rendering" with (1:3:0.25) cement: sand mortar: lime and third layer: Finishing Coat with (1:4:0.5) cement: sand mortar: lime. Works include all materials needed to finish the works according to specifications, drawings and Engineer's instructions	M <sup>2</sup>	1100		
<b>TOTAL OF PAGE 1 - BILL B3 (BLOCK, PLASTERING &amp; PAINTING WORKS) - US\$</b>					



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ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
3.4	Supply and install external plastering 20mm thick to walls with four faces : the first is the rough nail rendering (mix 1:1) cement sand; the second is 5mm thick mortar (mix 1: 2) cement:sand, the third is the undercoat 13mm (mix 1: 3 :0.25) cement:sand:lime, the forth is two coats of Tyrolean finish ( mix 1: 3) white cement to fine aggregate (Quartz) and all is according to specifications , drawings and Engineer's instructions	M <sup>2</sup>	650		
3.5	Supply and Paint, internal walls with one coat of primer and at least two coats of supercrylic paint or equal approved as specification and drawings	M <sup>2</sup>	850		
3.6	Supply and Paint the ceiling with at least two coats (Poliside) approved as specifications , drawings and Engineer's instructions	M <sup>2</sup>	250		
3.7	Supply and Paint, external elevations with one coat of primer and at least two coats of External quality of colored emulsion to all surfaces (Weather Shield) or equivalent approved as specification and drawings and Engineer's approval.	M <sup>2</sup>	650		
TOTAL OF PAGE 2 - BILL B3 (BLOCK, PLASTERING & PAINTING WORKS) - US\$					
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ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
<b>B4 - METAL WORKS</b>					
*	<p><b>Notes:</b></p> <p>All works must be according to drawings, specification and engineer instructions. Rates shall include but not limited to:</p> <p>1. Submitting samples for approval of: material, ironmongery, accerrories, color, and method of fixation.</p> <p>2. All metal works include the fixation for frames and leaves and all required accessories according to the engineer's instructions.</p> <p>3. Price of Galvanized Steel works includes supplying, workmanship, oil painting (base coat &amp; min. 2-coats of oil painting), fixation (all galvanized steel frames should be filled with the fine aggregate rich mortar concrete), hinges, , handles and all ironmongary needed to complete the works.</p> <p>4. Price of doors or windows (Galvanized steel or others) include supplying, workmanship, painting, oil painting, fixation. lock type is Wally or equivalent, handles, latches (horizontal and vertical) and/or all ironmingary necessary parts, latches, stoppers to complete the works.</p> <p>5. Painting after smoothing and filling all the voids with putty, primer coat, undercoat and two oil coats and in case of galvanized steel the primer should be poly zinc.</p>				
4.1	Supply and install Galvanized Steel Louver Door D1 - 3.00x2.00m clear opening two leaves with all required works complete with frame 2mm thick, ironmongery, hardware and oil painting, and all requirement as latches, locks...etc as per specifications , drawings and supervisor engineer instructions	No.	24		
4.2	Supply and install Galvanized Steel Louvered Window W1 - 1.80x1.00m one leaf with all required works	No.	8		
4.4	Supply and install Galvanized Steel Ladder with the necessary fixation and all required works	L.M	40		
<b>TOTAL OF BILL B4 - (METAL WORKS) - US\$</b>					





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ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
<b>B5 - INSULATION WORKS</b>					
*	<b>Notes:</b> <i>All the following items shall be completed according to drawings, specifications, and Engineer's instructions. The price shall include supplying, installation, workmanship, prime coat, bituminous membrane, overlapping and water testing for the roof after completing the works with all required works. measurements only for horizontal rflat areas without considering overlappings or vertical insulation.</i>				
5.1	Supply and cast foam concrete with fine aggregates for roof with thickness ranging from 4 to 15 cm and cement-sand screed angle fillets size 5cmx5cm as per specifications, approved shopdrawings for slopes asper Engineer's instructions.	M <sup>2</sup>	320		
5.2	Supply and lay one layer of plasticized bitumen roofing membrane with chipping 4mm thick, including priming concrete surface prior to laying, dressing into rain water outlets to form water proofing seal, cover the ngle fillets and vertical upstands. The rate includes Gavlanized steel cover for water drains, All as per specifications, drawings and the Engineer's instructions.	M <sup>2</sup>	320		
<b>TOTAL OF BILL B5 (INSULATION WORKS) - US\$</b>					



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ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
<b>B6 - MECHANICAL WORKS</b>					
<b>B6.1 - PLUMBING WORKS</b>					
	<i>All the plumbing units should be from the best quality. The cost shall include Submitting shop drawing, method statements, and samples of materials for approval prior to commencement of the work.</i>				
6.1.1	Supply and install 3" UPVC pipe drainage pipes for roof of main building including all necessary bends and connections, and Galvanized steel sheets with painting and fixation with all required works	L.M	40		
<b>B6.2 - FIRE FITTING SYSTEM</b>					
6.2.1	Supply and install Manual (CO2 Gas) wall mounted Fire extinguisher (6kg) all according to drawings, specifications, Engineer's instructions.	No.	8		
6.2.2	Ditto but for Manual (Dry Powder) Fire extinguisher (6kg).	No.	8		
<b>GRAND TOTAL FOR MECHANICAL WORKS - US\$</b>					



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ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
<b>General</b>					
	<p>* All Materials and Installation works must be according to Technical Specifications, drawings, and Engineer's instruction.</p> <p>The Price of the following items shall include but not limited to the following :</p> <p>1- The costs of sampling and testing as required and according to technical specifications and work requirement.</p> <p>2- All equipments, machines, Cranes ... etc. needed for proper execution and completion of work activities.</p> <p>3- Encasing all water, sewage pipes or any other pipes which intersect with the concrete foundations of the steel poles with UPVC SN8 pipes of diameters 2" larger than the existing pipes. In case of important facilities such as pressure lines, the encasement must be steel sheets of 2 mm thick <math>\Omega</math>-shape over the existing facilities as per supervisor instruction.</p> <p>4- Dismantling, and reinstating the existing pavement layers (Interlock, cement tiles, asphalt, ...etc.) as well as the soil layers at the places of excavation of cables, new or removed wooden or steel poles. The price also includes supplying and replacing the damaged interlock tiles, asphalt, basecourse, .. etc by new materials to match the existing one such that minimum basecourse layer at least 20cm thick. as per Engineer's instruction.</p> <p>5- The exact quantities of all materials will be determined during the implementation of the Works.</p> <p>6- Preparation of proper access to the work site as may deemed necessary.</p> <p>7- Protection of the existing facilities during implementation, in case of damages, the price shall include the full cost for repair or replacement according to the technical specification and the Engineer's instructions.</p> <p>8- Dismantling and removal of any damaged external Lantern, poles, wires, surplus materials,... etc or any equipment or material such as MV Disconnectors, RMU, transformer, then transport to locations nominated by engineer.</p> <p>9- The price shall include obtaining GEDCO approval on all materials and works that must be according to GEDCO specifications, where, obtaining approval of GEDCO is pre-requisite to starting any activity.</p> <p>10- The price also include dismantling any existing materials such as MV disconnector, CTC, CTCC, and reinstall it in the proposed pole or room as per Engineer's instructions.</p> <p>11- The contractor should include in the price an inspection visit for the manufacturing factories and carry on the tests for the unit before delivery to Gaza, the cost will cover all travelling, visas, transportation and other logistics for three persons. In case of the traveling is impossible, the contractor shall include in his price the cost of recruiting the expert third party for inspection and cover all travelling, visas, transportation and other logistics for one UNDP engineer to witness and certify the tests.</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 Engineer's approval and instructions.</p> <p>13- The price should include commissioning works for electricity network system and operating all the new and the existing networks to complete the job 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>				



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ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
7	Electrical works for transformer rooms				
7.1	<p>For Electrical Transformer room .</p> <p>-The specification of room is as the attached data sheet.</p> <p>-supply and install electrical network for lighting and power socket .The price includes supply and install electrical board size of 12 c.b. and all needed circuit breakers with all needed pvc pipes, boxes and wires .</p> <p>3 no. of waterproof fluorescent lighting fixture 2x36W Gaa'sh Type.</p> <p>2 no. of power socket 16 A GEWISS Type.</p> <p>3 no. of one way switch 13 A GEWISS Type.</p> <p>Fire Extinguisher , Emergency lighting Gaash type &amp; all needed steel wire mesh protection to isolate the doors and windows in the room.</p> <p>and any additional materials as per GEDCO specifications.</p> <p>* Also the price includes supply and install complete earthing system for LV and MV equipments with all needed manholes , copper wires, electrodes , Galvanized steel strip 30x3mm weleded with ground beam steel reinforcement,etc. the earth resistance must be less than 5 ohm.</p> <p>The price includes all needed materials and workmanship to complete the job</p> <p>All works and materials must be according to Engineer's instructions, drawing , and approval from UNDP.</p>	Set	8		
Total of Page 1 US\$					

Rehabilitation of GIE Infrastructure / Transformer Rooms					
ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
7.2	Supply and install inspection manhole Ø100 cm for the electrical room ,with cast iron cover (8 ton capacity) including excavation and backfilling, gravel, and all necessary fittings, testings, works and materials to complete the work.	No.	8		
8	<b>Installation of 1600KV transformers</b>				
8.1	Supply , Install, test and operate 22/0.4 KV Low Losses , 3 phase , Indoor Distribution Transformer 1600 KVA Rating with all needed to Fixing & Connection . (The supply and installation shall be according to GEDCo specifications and Instructions) including of all needed materials and equipment. The item includes all needed Bushings and Arms for Fixing the Cable beside the Transformer from L.V side and M.V side with cable ladder. <b>(The supply of materials will be according to the Transformers General Specifications and Technical Guarantees No. IDT_1600)</b>	No.	8		
9	<b>Installation of MV Switchgear</b>				
9.1	Supply , Install, test and operate 24 kV , 630 A Switchgear, and 20 kA Short Circuit Current Ring Main Unit SF6 , Two Incoming Switch Disconnectors, One Transformer Protection Fuse Switch combination (CTC) with all workmanship and materials needed to Fixing, Connection, testing and Opertaion . <b>, (The supply of materials will be according to the Ring Main Unit General Specifications and Technical Guarantees No.RMU_1T2C)</b>	No.	5		
9.2	Supply , Install, test and operate 24 kV , 630 A Switchgear, and 20 kA Short Circuit Current Ring Main Unit SF6 , Three Incoming Switch Disconnectors, One Transformer Protection Fuse Switch combination (CTCC) with all workmanship and materials needed to Fixing, Connection, testing and Opertaion . <b>, (The supply of materials will be according to the Ring Main Unit General Specifications and Technical Guarantees No.RMU_1T3C)</b>	No.	3		
9.3	Supply , Install, test and operate 24 kV , 630 A Switchgear, and 20 kA Short Circuit Current Ring Main Unit SF6 , Three Incoming Switch Disconnectors (CCCCC) with all workmanship and materials needed to Fixing, Connection, testing and Opertaion . <b>, (The supply of materials will be according to the Ring Main Unit General Specifications and Technical Guarantees No.RMU_5C)</b>	No.	1		
9.4	Supply , Install, test and operate Metal Clad 24 kV Switchgear 630A, and 25 kA Short Circuit Current , Withdrawable vacuum circuit breaker , with all workmanship and materials needed to Fixing, Connection, testing and Opertaion . <b>, (The supply of materials will be according to the Metal Clad General Specifications and Technical Guarantees )</b>	No.	1		
9.5	Carefully Dismantling, Re-install and connect Existing RMU with all Accessories. (The works shall be according to GEDCo Instructions) with all workmanship and materials needed to Fixing, Connection, testing and Opertaion.	No.	1		
10	<b>Installation of LV electrical boards</b>				
10.1	Supply , Install, test and operate L.V Distribution Board 2500A with Main CB IZM 2500A- (8 Feeders) , with all workmanship and materials needed to Fixing, Connection, testing and Opertaion . <b>, (The supply of materials will be according to Low Voltage Distribution Board General Specifications and Drawing)</b>	No.	8		
Total of Page 2 US\$					

Rehabilitation of GIE Infrastructure / Transformer Rooms					
ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
11	<b>Installation of MV&amp;LV Cables with its accessories</b>				
11.1	Supply,insall,connect, test and operate 18/30 kV 3-Single Core Cable with XLPE Insulation and Cupper Circular Stranded Conductor <b>3*(1x150/25)</b> mm2 Cu ,According to GEDCo Specifications. The work also includes all needed civil works like excavation trench in any type of soil with 100 x 115 cm ,backfilling with safia sand , first layers 50cm deep , then supply & install 45x45x5cm concrete slabs with flexural strength (5 Mpa), along with 5 cm thick safia sand topped with warning tape. then backfilling with safia sand upto the pavement layers. The work includes watering & compaction to 100% each layer with maximum 25cm depth .. , (The supply of materials will be according to M.V Cables General Specifications and Technical Guarantees No. XLPEC_150)	L.M	1200		
11.2	Supply,insall,connect, test and operate 12/20 kV 3-Single Core Cable with XLPE Insulation and Aluminum Circular Stranded Conductor <b>3*( 1x400/25)</b> mm2 AL ,According to GEDCo Specifications. The work also includes all needed civil works like excavation trench in any type of soil with 80 x 115 cm ,backfilling with safia sand , first layers 50cm deep , then supply & install 45x45x5cm concrete slabs with flexural strength (5 Mpa), along with 5 cm thick safia sand topped with warning tape. then backfilling with safia sand upto the pavement layers. The work includes watering & compaction to 100% each layer with maximum 25cm depth . , (The supply of materials will be according to M.V Cables General Specifications and Technical Guarantees No. XLPEA_400)	L.M	660		
11.3	Supply,insall,connect, test and operate 12/20 kV Single Core Cable with XLPE Insulation and Copper Circular Stranded Conductor <b>(1x50/16)</b> mm2 CU with all needed to Fixing 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	300		
11.4	Supply,insall,connect, test and operate 0.6/1 Kv Single Core Cable with XLPE Insulation and Stranded Copper Conductor, <b>(1x240) mm2</b> , to connect LV Pilar to transformer .The Item Include Supplying and Install all needed connector ends and Indoor Screened Separable Elbow Termination Kits for transformer side and LV panel side , to Connect and Operate (The supply and installation shall be according to GEDCo specifications and Instructions) , (The supply of materials will be according to Cables General Specifications and Technical Guarantees No. LV1C_240)	L.M	1000		
11.5	Supply & Install 250A , 24 kv Indoor Screened Separable Elbow Termination Kit for 12/20 kv XLPE Cable 1x50/16 mm2 , for transformer side or CTC side , (Set for one Phase) , (The supply of materials will be according to M.V Cables General Specifications and Technical Guarantees No. IT24_50)	No.	54		
11.6	Supply & Install 630A , 24 kv Indoor Screened Separable Termination Kit for 12/20 kv XLPE Cable 1x400/35 mm2 , (Set for one Phase) with all needed to Fixing & Connection , (The supply of materials will be according to M.V Cables General Specifications and Technical Guarantees No. IT24_400)	No.	6		
Total of Page 3 US\$					

Rehabilitation of GIE Infrastructure / Transformer Rooms					
ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
11.7	Supply & Install 630A , 24 kv Indoor Screened Separable Termination Kit for 12/20 kv XLPE Cable 1x150/25 mm <sup>2</sup> , (Set for one Phase) with all needed to Fixing & Connection <b>(The supply of materials will be according to M.V Cables General Specifications and Technical Guarantees No. IT24_240)</b>	No.	72		
11.8	Supply & Install 36 Kv Heat Shrinkable Outdoor Termination Kit for XLPE Cable 1x400 mm <sup>2</sup> (Set for one Phase) with Mechanical Lug Steel Bolts , Nuts & Washers and all needed to Fixing & Connection <b>(The supply of materials will be according to M.V Cables Fittings General Specifications and Technical Guarantees No.OT36_400)</b>	No.	6		
11.9	Supply & Install 36 Kv Heat Shrinkable Straight Joint for XLPE Cable 1x150/25 mm <sup>2</sup> , (Set for one Phase) the item includes Bimetallic Mechanical Joints with all needed for Fixing & Connection . The work also includes exploratory excavation pits to locate the existing cables and reinstatement to the original status. Price includes all needed materials and workmanship. <b>, (The supply of materials will be according to M.V Cables Fittings General Specifications and Technical Guarantees )</b>	No.	30		
11.10	Removing and dismantling then lay and reconnect the existing MV cables to proposed electrical room with full protection of cables, the price also includes excavation carefully to dismantling the 3-ph cables and install them in the new path including new excavation with standard B250 concrete slab for protection of cables and warning tape as well as other activities and materials needed to complete the work. (the price is per meter for 3 phase cable). All works must be according to engineer instructions and GEDCO specifications	L.M	200		
11.11	Supply & Install 24 Kv Heat Shrinkable Straight Joint for XLPE Cable 1x400/25 mm <sup>2</sup> , (Set for one Phase) the Item Include Bimetallic Mechanical Joints with all needed for Fixing & Connection, <b>(The supply of materials will be according to M.V Cables Fittings General Specifications and Technical Guarantees No.SJ24_400)</b>	No.	2		
11.12	Supply & lay (two) UPVC pipe (SN8- 8") at cross road trenches. The work includes excavation and backfilling as supervisor instruction as per drawing and Engineer instruction	L.M	30		
11.13	Supply & lay (one ) UPVC pipe (SN8- 8") at cross road trenches. The work includes excavation and backfilling as supervisor instruction as per drawing and Engineer instruction	L.M	30		
11.14	Supply & lay (two) UPVC pipe (SN8-8") at cross road trenches. The work includes supplying and casting concrete B250 around the pipe as per drawing and Engineer instruction & the concrete width dim. 80cm on width & 60cm on depth laying cables inside the pipes	L.M	30		
11.15	Supply & lay (two) UPVC pipe (SN8-8") at cross road trenches. The work includes supplying and casting concrete B250 around the pipe as per drawing and Engineer instruction & the concrete width dim. 100cm on width & 60cm on depth laying cables inside the pipes	L.M	30		
Total of Page 4 US\$					
Total of Installation of MV&LV Cables with its accessories Works US\$					



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Rehabilitation of GIE Infrastructure / Transformer Rooms					
ITEM No	DESCRIPTION	UNIT	QTY.	RATE (US\$)	AMOUNT (US\$)
Summary					
Item	Description	Amount (US\$)			
1	Total of EARTH WORKS - US\$				
2	Total of CONCRETE WORKS - US\$				
3	Total of BLOCK, PLASTERING & PAINTING WORKS - US\$				
4	Total of METAL WORKS - US\$				
5	Total of INSULATION WORKS - US\$				
6	Total of MECHANICAL WORKS - US\$				
7	Total of ELECTRICAL WORKS - US\$				
	Total of Works Rehabilitation of GIE Infrastructure / Transformer Rooms				
	Discount Rate (    %)				
	Discount Amount				
	Net Total				

NET TOTAL SUM (in words):

SIGNED AND SEALED :

AUTHORIZED :

TITLE :

SIGNATURE :

DATE :