

# ADDENDUM TO RFP

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**CONTRACT FOR SUPPLY / INSTALLATION / REPLACEMENT /  
MAINTENANCE OF ELECTRICAL AND MECHANICAL SYSTEM /  
EQUIPMENT(S) FROM SHAHD RATO GAJJU MATTA AT DESIGNATED  
PLACES IN LAHORE METROBUS SYSTEM**

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**THE PUNJAB METROBUS AUTHORITY**  
**Government of the Punjab**  
5<sup>th</sup> Floor, Arfa Software Technology Park (ASTP)  
346-B, Main Ferozpur Road, Lahore, Pakistan.  
Phone: +92 42 3588 0136 Fax: +92 42 9923 2541  
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# The Punjab Masstransit Authority

## Record of Meeting

Agenda	<b>TENDER “CONTRACT FOR SUPPLY / INSTALLATION / REPLACEMENT / MAINTENANCE OF ELECTRICAL AND MECHANICAL SYSTEM / EQUIPMENT(S) FROM SHAHDRATO GAJJU MATTA AT DESIGNATED PLACES IN LAHORE METROBUS SYSTEM”</b>		
Date:	24-10-2019 & 25-10.2019		
Venue	Committee Room, Punjab Metrobus Authority	Chair:	Mr. Rizwan Aziz, Manager Operations (Technical), PMA

### **List of Participants Dated : 24-10-2019**

1. Manager Operation Technical, PMA.
2. Assistant Manager Electrical, PMA.
3. Assistant Manager Mechanical, PMA.
4. Ather Mehmood, M/s Greaves Pakistan Ltd.
5. Engr. Hafiz Usman, M/s Sunrise Engineers.
6. Ali Ahmed, M/s LEC Pvt. LTD.
7. Tayyeb Shair/ Shahid Gulzar, M/s STZ Engineers.
8. H.M Owais, M/s A.K Engineering.
9. Farooq, M/s Mefcon Ltd.
10. Ahmed Raza, M/s CMC Engineering.
11. Ameer Hamza, M/s Al Asif Traders.
12. Ayaz AAIshar, M/s ISSPAK JV MAZLOORP Corporations Pvt LTD.
13. Arslan Zahoor, Ali Raza, M/s MESI Enterprises.
14. Muhammad Arshad, M/s BRACO Engineering.
15. Musharaf Javid, M/s BRACO Engineering.
16. Amir Naveed, M/s Subhan Constructin Company.
17. Adeel, M/s Uni Serve.

### **List of Participants Dated : 25-10-2019**

1. Rizwan Aziz, Manager Operation Technical, PMA.
2. Asrar Mahboob, Assistant Manager Electrical, PMA.
3. Noor Elahi, Assistant Manager Mechanical, PMA.
4. Shaukat Ali, M/s MESI Enterprises.
5. Farooq, M/s Mefcon.
6. H.M Owais, M/s A.K Engineering
7. Ayaz Ishaq, M/s ISSPAK JV MAZLOORP Corporations Pvt LTD.
8. Ameer Hamza, M/s Al Asif Traders.
9. Ali Ahmed, M/s LEC Pvt. LTD.
10. Ahmed Raza, M/s CMC Engineering.
11. Ather Mehmood, M/s Greaves Pakistan Ltd.
12. Engr. Hafiz Usman, M/s Sunrise Engineers.
13. Hassan Ali, M/s Filgree Enterprises.

## **DECISIONS / DISCUSSIONS**

The meeting started at 1100 hours. Manager Operation technical, PMA formally welcomed the participants and started the meeting. Question and Answer session was conducted afterwards. The meeting was adjourned at 1230 hours and resumed next day at 1000 hours. The meeting ended at 1200 Hours with a note of "Thanks". Detailed Minutes of Meeting are attached as **Annex A**. The list of participants is attached as **Annex B**.

**Annex-A**

Sr. No	QUERIES / COMMENTS	PMA'S RESPONSE
1.	It is suggested that the financial statements as required in the Request for Proposal (RFP) should be audited as these are more reliable. (M/s STZ Engineers)	The requirement to submit Financial Statement which is audited is not compulsory. The information in the unaudited financial statements about revenue and net worth as required for technical evaluation can be relied upon after its verification from the Income Tax returns.
2.	Is it compulsory to have Registration with Security Exchange Commission of Pakistan (SECP) ? (M/s STZ Engineers).	Registration with SECP is not compulsory; however a company shall earn extra marks in the Technical Evaluation Criteria if its registered with SECP.
3.	Which type of Documents Required for Technical Evaluation reference clause 16.5.10.4 as evidence of project execution (M/s Greaves Pakistan).	Evidences of project executed are Completion Certificate / Certificate of Payment/ any other valid evidence that must substantiate project worth, project status as completed, Client and Contractor (Bidder in this case).
4.	Please explain the requirement of company's registration with Pakistan Engineering Council (PEC) (M/s Greaves Pakistan).	Please refer to Clause 11.3 of RFP.
5.	Civil works digging item should be included in the Price Table as it is essential to locate underground fault. (M/s Greaves Pakistan).	Item for Digging to locate underground fault will be added in Price Table. <b>It is also reflected in the Addendum to RFP.</b>
6.	It is suggested that requirement of minimum inventory to be maintained should not be compulsory as it will add to the bid price. (M/s Greaves Pakistan).	Agreed. The requirement of minimum inventory is excluded from the scope of work. <b>The modification is reflected in the Addendum to RFP.</b>
7.	Due to excess corrective maintenance, it is difficult to perform preventive maintenance at all 27 MBS stations in one month so how penalties will be applied? (M/s MEFCON).	Please refer to Annex-A of the RFP. Penalty on non-performance related to a particular station or particular stretch of the corridor shall not be imposed until finishing of its first complete preventive and corrective maintenance. The maximum time limit for the first complete preventive and corrective maintenance for each station and stretch shall be decided by the Client based on the resources available and prevalent site conditions.
9.	What will be the completion time for Corrective Maintenance Work order? (M/s MEFCON).	Please refer to Annex-A of RFP. In case of faults requiring supply of new items through issuance of work order from PMA, an appropriate resolution time along with fault category will be mentioned on work order.
10.	It is suggested that brand of equipment should be mentioned in items of Price Table. (M/s ISSPAK).	Disagreed. The required specifications are already mentioned in the items of Price Table for bidder to comply with. It is also highlighted here that PMA will ask for copper test certificate from PMA approved Lab if required at the time of invoice. <b>Please refer to the Addendum to RFP.</b>
11.	It is assumed that initially requirement of corrective maintenance will be large as no proper preventive maintenance has been done before. Due to this, penalties should be relaxed. (M/s MEFCON).	Please refer to the answer of the query at Serial No 7.
12.	Describe Contract Clause: 10.2.6.7, All the payments will be made as per actual work performed by the Contractor. (M/s MEFCON).	For payment of services, deductions will be made on prorata basis in case of absence of minimum number of staff required in RFP. For payment of items of Price Table (Form Fin-3), quantities considered shall be those which are

		executed on site and duly verified by PMA.
13.	In human resource requirements, reliever should be added. (M/s Greaves Pakistan Ltd).	PMA has mentioned only minimum staff presence at corridor to comply with the scope of work. Any other staff requirements such as relievers or backup staff (if any) is solely on part of Contractor.
14.	If the removal of fault need LESCO involvement then how the down time to resolve the complaint will be calculated? (M/s MEFCON).	In case the delay occurs on LESCO side, the down time will start after LESCO has completed its work.
15.	Will PMA facilitate the service provider to travel free through metro bus? (M/s MEFCON).	No. All transportation will be borne by the Contractor
16.	Who will cover the cost of tagging of equipment? (M/s MEFCON).	All tagging cost will be borne by the Contractor
17.	Fitting of Circuit breaker is different from each other so brand should be mentioned. (M/s MESI Enterprises).	Please refer to the answer to query at Serial No 10.. Bidders are also encouraged to visit the Metro stations at their own cost for more clarity.
18.	Who is responsible for safety of workers and passengers? (M/s MEFCON).	Contractor is responsible for safety of its workers and passengers related to its work.
19.	Steel cage dimension is not complete in price table (item # 70). (M/s MEFCON).	Complete dimension is already provided. This cage is used for electric motor.
20.	Elaborate Price table item # 49. (M/s MEFCON).	This job is for dismantling and reinstallation of pump.
21.	Other cleaning staff would help for cleaning of earth pits and fans at station? (M/s MEFCON)	No. Cleaning of earth pits and fans is sole responsibility of Contractor.
22.	Reference Annex-B: Technical evaluation criteria: Is it compulsory to get non-zero marks in B -1 and B-2 ? (M/s MEFCON).	Yes
23.	How PMA will deal if it is found during the currency of the contract that the quantities for corrective maintenance are exceeding the estimated ones. (M/s MEFCON).	Contractor cannot execute quantities more than the estimated ones in the price table. In such cases as indicated in the query, it will be PMA's responsibility as to how the exceeded work is managed.
24.	New item for Paint, Welding work, Underground fault locator should be added in price Table. (M/s MEFCON)	PMA will include separate items for digging, cable trench, paint, welding work and underground cable fault locator. <b>The changes are reflected in the addendum to RFP.</b>

## ATTENDANCE SHEET

TENDER FOR SUPPLY / INSTALLATION / REPLACEMENT / MAINTENANCE OF ELECTRICAL AND MECHANICAL SYSTEM / EQUIPMENT FROM SHAHDRATO GAJU MATTA AT DESIGNATED PLACES IN LAHORE METROBUS SYSTEM.

Time 11:00 AM

Date: 24/10/2019

Place: Committee Room, PMA Office, 5th floor,  
Arfa Software Technology Park, Lhr

## ATTENDANCE SHEET

Sr. No.	Name of Organization	Name of JV Partner (if any)	Representative's Name & Designation	Contact No.	Email Address	Signature
1	Greaves Pakistan	Ather Mahmood	Dg M. Greaves - Senior Mgr	0345-8230024	ather.mahmood@gr.com.pk	
2	Sunrise Engineers		Eng. Hafiz Usman Manager Operations	0345-4227072	usman.engr@gmail.com	
3	LEC Pvt. Ltd	Ah Ahmed	CEO	0321-4211237	admin@lec.pvt.com	
4	STR Engineers		Tayyab Sha / Gulzar	0301-7252588	tayyab_sherif@gmail.com	
5	A.K Engineering		H.M. Owais	0346-2654129	hafiz.owais@ak-engineer.com	
6	Mefcon		Farooq OLM	0311492111	farooq_hme@gmail.com	
7	CMC Engineering		Ahmed Raza	0309-948017	087814010@gmail.com	
8	All Asif Traders		Ameez Hamza	03034992925	E-mail: alasif.traders@ya100.com	
9	ISSPAK JV MAXCORP CONSTRUCTION PVT LTD	MAXCORP	Ayaz Ishaq	03808000382	ayaz@isspak.com	

ATTENDANCE SHEET

TENDER FOR SUPPLY / INSTALLATION / REPLACEMENT / MAINTENANCE OF ELECTRICAL AND MECHANICAL SYSTEM / EQUIPMENT FROM SHAHRATO GAJU MATTA AT DESIGNATED PLACES IN LAHORE METROBUS SYSTEM.

Place: Committee Room, PMA Office, 5th floor,  
Aria Software Technology Park, Lhr

Date: 24/10/2019

Time: 11:00 AM

ATTENDANCE SHEET

Sr. No.	Name of Organization	Name of JV Partner (if any)	Representative's Name & Designation	Contact No.	Email Address	Signature
10	MESI Enterprises	N/A	Arslan Zahoor (P.E) Ali Raza (P.E)	0340-0004887 0300-0336686	arslan@mesigroup.com	
11	BRACO ENGINEERING	N/A	MUHAMMAD ARSHAD	0300-8846610	braco09 bracoengg@outlook.com	
12	BRACO ENGINEERING	N/A	MUSHTARIK JAVID	0302 4435428	braco09	
13	Subhan Constn. Company	N/A	Amir Naveed	0304-600743	bracoengg@outlook.com subhance2009@gmail.com	
14	Uni Setive	N/A	Adeel	0300 4466448	adeel@unisetive.pk	
15						
16						
17						
18						

## ATTENDANCE SHEET

TENDER FOR SUPPLY / INSTALLATION / REPLACEMENT / MAINTENANCE OF ELECTRICAL AND MECHANICAL SYSTEM / EQUIPMENT FROM SHAHDRATO GAJU MATTA AT DESIGNATED PLACES IN LAHORE METROBUS SYSTEM.

## ATTENDANCE SHEET

Date: 25/10/2019 Time: 10:00 AM

Place: Committee Room, PMA Office, 5th floor,  
Arfa Software Technology Park, Lhr

Sr. No.	Name of Organization	Name of JV Partner (if any)	Representative's Name & Designation	Contact No.	Email Address	Signature
1	MESI Enterprises		Shaukat Ali	0300-0336690	shaukat@mesigroup.com	
2	Mefcon		Farooq	03111492111	farooq@mecon.com	
3	A.K Engineering		H. Owais	0346-2654124	hafiz.owais@ak-engineering.com	
4	ISSPAK corporation (PVT) LTD	MAXCORP Engineering	Ayaz Ishaq Director	03208000806	ayaz@isspak.com	
5	AlAsif Traders	Ameex Hamza	Ali Ahmed CEO	0303-4999885	Alasif.traders@yahoo.com	
6	LEC, PVT LTD	Ali Ahmed		0321 4211237	admin@lec.pvt.com	
7	C.M.C Engineering		Ahmed Raza	0304 9480117	0887814614 gmail.com	
8	Greene Pakistan Pvt/Ltd		M. Athar	0345-85566 45	mohammed.athar@ggf.com.pk	
9	SunRise Engineers		Engr. Hafiz Usman Partner	0514-4288997	wafizusman@sunrise.com	

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ATTENDANCE SHEET

TENDER FOR SUPPLY / INSTALLATION / REPLACEMENT / MAINTENANCE OF ELECTRICAL AND MECHANICAL SYSTEM / EQUIPMENT FROM SHAHRATO GAJU MATTI AT DESIGNATED PLACES IN LAHORE METROBUS SYSTEM.

ATTENDANCE SHEET

Place: Committee Room, PMA Office, 5th floor, Arfa Software Technology Park, Lhr Date: 25/10/2019 Time: 10:00 AM

Sr. No.	Name of Organization	Name of JV Partner (if any)	Representative's Name & Designation	Contact No.	Email Address	Signature
10	Filigrac Enterprises		Hassan Ali	032288060000	filigrac-enterprises@live.com	
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# **ADDENDUM TO RFP**

Due to some clarifications required in the RFP document, the following addendum is hereby issued; which shall form a part and parcel of the original document titled

"SUPPLY/ INSTALLATION/ REPLACEMENT / MAINTENANCE OF ELECTRICAL AND MECHANICAL SYSTEM/ EQUIPMENT FROM SHAHDRA TO GAJJU MATTA AT DESIGNATED PLACES IN LAHORE"

advertised on October 13, 2019. The contents of this addendum with highlighted portions representing the change, shall supersede/replace pages 6,11,13,14,15,16,17,23 and FORM FIN-3 (Breakup of Price Table for 'B') of the original RFP document, and shall be read as part of the RFP document uploaded on the following website:

[www.pma.punjab.gov.pk](http://www.pma.punjab.gov.pk)

[www.ppra.punjab.gov.pk](http://www.ppra.punjab.gov.pk)

## 1 Bidding Details (Instruction to Bidders)

All bids must be accompanied by a Demand Draft / Pay Order/ Bank Guarantee of **PKR 100,000/- One Hundred Thousand (See Price Schedule of General Condition of Contract) as bid security in favor of “Punjab Masstransit Authority”** issued by a scheduled bank allowed carrying financial transactions in PAKISTAN. *Clause 18 gives details on Tender Security.* **Technical bids will be accompanied by copy of the bid security while Financial bids will be accompanied by original bid security.**

The bids along with the Demand Draft / Pay Order/ Bank Guarantee, Tender Forms, Affidavits, etc., must be dropped in Tender Box placed at the Office of the Punjab Masstransit Authority, 5th Floor, Arfa Software Technology Park (ASTP), Lahore, PAKISTAN, on or before **1100 hours on 31<sup>st</sup> October, 14<sup>th</sup> November 2019.** The Technical bids will be publicly opened in the Committee Room of the Punjab Masstransit Authority, 5th Floor, Arfa Software Technology Park (ASTP), at **1130 hours on 31<sup>st</sup> October, 14<sup>th</sup> November, 2019.**

The Punjab Masstransit Authority shall hold a clarification meeting at 1100 hours on 24<sup>th</sup> October, 2019; at the Committee Room, 100r, Punjab Masstransit Authority, 5th Floor, Arfa Software Technology Park (ASTP), Lahore, PAKISTAN. Bidders in case of any queries for seeking clarifications regarding the specifications of the services may send their queries in writing at the office of Punjab Masstransit Authority, 5th Floor, Arfa Software Technology Park (ASTP), Lahore, PAKISTAN, or email to the designated address on or before 23<sup>rd</sup> October, 2019 or raise them during the Clarification Meeting. All queries shall be responded to within due time. No query shall be responded if received after the Clarification Meeting.

The bidder must submit bids on the basis of complete fulfillment of requirements. Failure to meet this condition will cause disqualification of the bidder. The bidder shall submit bids which comply with the Bidding Document. Alternative bids will not be considered. The attention of bidders is drawn to the provisions of Clause on “**Determination of Responsiveness of Bid**” regarding the rejection of Bids, which are not substantially responsive to the requirements of the Bidding Document.

The contact detail for all correspondence in relation to this bid is as follows:

**Email:** [asrar.mahboob@pma.punjab.gov.pk](mailto:asrar.mahboob@pma.punjab.gov.pk)

**Punjab Masstransit Authority Authority**

5th Floor,

Arfa Software Technology Park (ASTP),

Lahore, PAKISTAN

Bidders are also required to state, in their proposals, the name, title, fax number and e-mail address of the bidder’s authorized representative through whom all communications shall be directed until the process has been completed or terminated. Client will not be responsible for any costs or expenses incurred by bidders in connection with the preparation or delivery of bids. As authority competent to accept the tender, Client reserves the right to cancel the tender, or reject all bids prior to acceptance of bid as per PPRA Rule 35

- 10.2.1.5 Locate and rectify all emergency faults in electrical system including but not limited to short circuit, open circuit and earth faults.
- 10.2.1.6 Service Provider will provide a complete inventory list of all Lights, Fans, Electrical Distribution Panels, Pole lights, Under Bridge Flood Lights and mechanical equipments installed at one station/corridor after complete maintenance of each station.
- 10.2.1.7 Penalty on non-performance related to a particular station or particular stretch of the corridor shall not be imposed until first complete preventive and corrective maintenance of that station / stretch is not completed. The time limit for the first complete preventive and corrective maintenance for each station and stretch shall be decided by the Client based on the resources available and site conditions.
- 10.2.1.8 Identify / mark/tag all replaced / existing items/ equipment/ earthing pits as per directions by PMA for evaluation of defect liability/warranty period.
- 10.2.1.9 All corrective and preventive maintenance including installation, testing, commissioning and maintenance of equipment(s) / part(s) where required shall be carried out through the workforce to be provided by the Contractor as specified in Clause 10.2.5. Supply of equipment(s) / part(s) and some special services included in the Price Table shall be dealt in accordance with Clause 10.2.2.

10.2.2 **SUPPLY OF EQUIPMENT(S) / PART(S) REQUIRED FOR PREVENTIVE AND CORRECTIVE MAINTENANCE**

These services shall include supply of equipment(s) / part(s) limited to the items mentioned in the Price Table. These will be supplied if and when required after issuance of Work Order from the Client clearly stating Price Table Items to be executed, Quantity, Prices and execution time. In case where the required equipment(s) / part(s) is not covered in the Price Table items, it will be the responsibility of the Client to provide such equipment(s) / part(s) to the Contractor until or unless specified else wise. The Contractor / Successful Bidder shall:-

- 10.2.2.1 Ensure that all replaced equipment / parts should meet the specifications mentioned in price table. Where specifications of equipment / parts are not mentioned in the price table, Contractor shall meet or exceed the specifications / design/ rating/ quality of same equipment / parts which are already installed in the system.
- 10.2.2.2 ~~Submit all data sheets, specifications and brochures from manufacturer/dealer of cable with bidding documents and comply during the course of this Contract. PMA will ask for copper test certificate from PMA approved Lab if required at the time of invoice.~~
- 10.2.2.1 Ensure that all replacement parts required under this contract are genuine, brand new, non-refurbished, un-altered in any way, of the most recent or current model. Furthermore the Contractor shall also ensure that all replacement parts have no defects arising from design, materials, workmanship or from any act or omission of the Contractor that may develop under normal use of the supplied goods. Non-compliance to this clause may result in deductions in payments of relevant items as per Client's decision. Provide certificate for all replaced new parts as genuine from dealer of goods where required by the Client.

- 10.2.3.4 All **relevant minor** civil works to locate underground HT/LT faults, cleaning of manholes, Generator area cable trenches and installation of underground cable/conduit will be done by the contractor.
- 10.2.3.5 Coordinate with Lahore Electric Supply Company (L.E.S.C.O) to locate/rectify faults (under/over voltage, Connect/disconnect pole 11KV supply as required).
- 10.2.3.6 Checking/Verification/Connect/Disconnect 11KV pole connection, Transformer fuse/isolating rods/links with the consent of relevant LESCO office.
- 10.2.3.7 Immediately complaint to LESCO if Main/Grid supply is not available at MBS stations. Coordinate with LESCO officials to resolve all types of HT and LT faults.
- 10.2.3.8 Rectify all wiring faults like short circuit, phase sequence error, open circuit, leakage current, improper earthing and earth fault current at MBS stations.

#### **ELECTRICAL DISTRIBUTION PANELS**

- 10.2.3.9 Installation, maintenance, Inspection, testing, fixing, tagging/marking, dismantling and commissioning for each electrical distribution Panel components like Circuit Breaker, Magnetic contactors, Timers, Relays, Panel light with limit switch, Push button, Line up connectors and PVC connectors.
- 10.2.3.10 Maintenance for each electrical distribution panel consists of cleaning of inside panels, proper tagging/marking of each connection/component, checking/fixing of panel grouting, check complete operating mechanism/connection/continuity for each panel component (Circuit breaker, Magnetic contactors, Timers, Relays, Push button, Panel light with limit switch, Line up connectors with end stopper, PVC connectors).

#### **EARTHING SYSTEM**

- 10.2.3.11 Provide complete maintenance for Bore type Earthing system for protection of station Structure/ Generators/ Escalators/ Transformers/ Generator area electrical panels as per attached Log sheet/Format.
- 10.2.3.12 Maintenance for each earth pit consists of checking of earth connection/continuity from goods end to earth pit end, fixing of earth plate, measuring of earth resistance with the help of standard earth resistance test meter. Proper cleaning of earth pit, perform civil work to make proper edges of manhole for fixing of manhole cover, complete cleaning of pits from mud/soil, fixing of lid and proper tagging/marking of each earth pit connection/component. Maintain standard earth resistance by providing standard moisture level deep inside earth pit.

#### **JUNCTION BOXES/CONNECTIONS FOR CORRIDOR POLE LIGHT/ UNDER FLYOVER FLOOD LIGHTS**

- 10.2.3.13 Installation, maintenance of (3-phase/1-Phase) Electric Supply underground/ over ground wiring/cabling Circuit, Circuit breaker, Line up connector, pipes/conduits (end to end) starting from main LCP (Light Control Panel) to all junction boxes/ corridor pole lights/ under bridge flood lights to make them operational in all aspects.

- 10.2.3.14 Maintenance of complete connections of junction boxes for corridor pole lights circuit consists of proper cable connections, testing, fixing, tagging/marking, dismantling, and cleaning of pole junction box and its components. It includes checking of circuit breaker/ proper fitting and cable termination at line up connectors.
- 10.2.3.15 Maintenance, checking, testing, fixing, tagging/marking, shifting, dismantling, proper supply connections termination, inside/outside cleaning for each corridor LED pole light and Under flyover flood light.
- 10.2.3.16 Complete checking of bolt/nuts and foundation of corridor steel structure poles and tight these bolts if required.

**FANS, AIR CONDITIONING UNITS AND OTHER MECHANICAL EQUIPMENT**

- 10.2.3.17 Installation, maintenance, testing, checking, fixing/fitting of fans/ spare parts/components, tagging/marking of fans, shifting, dismantling, inside outside cleaning of parts, greasing, shaft alignment of each station fan (Circomatic / wall bracket 18"/exhaust fans 12") as per attached format.
- 10.2.3.18 Check/verify copper winding and fan rotation by providing/fixing of all missing parts/accessories like nut, bolt, gears excluding item mentioned in price table.
- 10.2.3.19 Preventive and Corrective maintenance of Air conditioning units as per schedule provided by client.
- 10.2.3.20 Preventive and Corrective maintenance of mechanical equipments(s) including but not limited to tube well motors, pressure pumps, submersible pumps, water coolers, water dispensers, water storage tanks, floating valves, sensors, water filters, pipelines, station fans, electrical etc. and allied components as per schedule provided by client.

**STATION LIGHTS**

- 10.2.3.21 Installation, maintenance, checking, testing, fixing, tagging/marking, shifting, dismantling, proper supply connections termination, inside/outside cleaning for each station light (Philips TBS, TCW, TMS, and Contempo) as per attached format.
- 10.2.3.22 Check/verify lights by providing/fixing of all missing parts/accessories like nut bolt excluding items mentioned in price table for Goods/Material.

**SUBMISSION OF REPORTS**

- 10.2.3.23 Submit up to 20 reports as per format and timelines desired by the Client in hard and soft forms. The sample reports may be seen as attachments to the RFP.

**~~10.2.4 MAINTAIN MINIMUM INVENTORY~~**

~~The service provider will maintain following minimum inventory at its designated store.~~

### Minimum Inventory

Item No	Items / Goods	Unit	Quantity
1	Panel Lock for Electrical distribution panel.	No	27
2	Transformer fuse link for 400 kVA, 11/0.415 kV pad mounted (PEL) transformer with following specification or equivalent : — Teilbereichsicherung EFEN Back-up fuse link VDE 0670/4 — IEC 60282-1 67220.0403 freiluft/outdoor Un: 6/12 KV In : 40A I <sub>1</sub> =63 kA — I <sub>3</sub> =125 A	No	3
3	HT Outdoor 120mm <sup>2</sup> 3-core, 11KV, XLPE, heat shrink straight through joint Kit complete in all respect as required.	No	2
4	HT Indoor 120mm <sup>2</sup> 3-core, 11KV, XLPE, heat shrink termination Kit complete in all respect as required.	No	2
5	HT outdoor 120mm <sup>2</sup> 3-core, 11KV, XLPE, heat shrink termination Kit complete in all respect as required.	No	2
6	Heat shrink water proof LT joint Kit for 1-core 500 mm <sup>2</sup> with all accessories complete in all respect as required.	No	4
7	Indoor/outdoor termination Kit for 1-core 500 mm <sup>2</sup> with all accessories complete in all respect as required.	No	4
8	<b>EARTH PIT MATERIAL</b>	!	!
9	Tinned-earth test link in earthing pit consisting of copper plate (12"x2"x1/2") including brass-nuts, bolts-washers lugs-etc. complete in all respect.	No	5
10	<b>Cables &amp; Conduits</b>	!	!
i	Low Voltage grade 600/1000V PVC/PVC unarmoured Cu. Conductor cable of following size :	!	!
ii	4-core 16 mm <sup>2</sup>	Rm	180
iii	1-core 500 mm <sup>2</sup>	Rm	30
11	Low Voltage grade 450/750V PVC Cu. conductor cable (green/yellow) of following sizes:	!	!
i	1-core 16 mm <sup>2</sup>	Rm.	180
ii	1-core 95 mm <sup>2</sup>	Rm.	180
12	4-core 4mm <sup>2</sup> (7/0.036") CU/PVC/PVC insulated cables.	Rm	180
13	1-core 4mm <sup>2</sup> copper cables for ECC (Earth Continuity Conductor).	Rm	180
14	1-core 1.5mm <sup>2</sup> (3/0.029") Cu/PVC insulated cable	Rm	180
15	<b>G.I CONDUIT / PIPES</b>	!	!
i	G.I pipe / conduit with all fitting accessories (bends, saddles, nut, bolt, washers, nipples and check nuts ) of following sizes:	!	!
i	1" (Inch)	ft	10
ii	2" (Inch)	ft	50

16	<b>GI Flexible pipe</b>	!	!
!	<b>G.I Flexible pipe / conduit (PVC coated) of following sizes:</b>	!	!
i	1" (Inch)	ft	10
ii	2" (Inch)	ft	50
17	<b>U-PVC CONDUITS</b>	!	!
!	<b>U-PVC pipe/conduit of following sizes:</b>	!	!
i	2" (Inch) Class D	ft	50
18	<b>TERMINAL BLOCK WITH END STOPPER</b>	!	!
!	<b>PVC Terminal block with end stopper installed in PVC/Pole junction box.</b>	!	!
i	4 mm <sup>2</sup> Terminal block (for lights)	No.	50
ii	6 mm <sup>2</sup> Terminal block	No.	50
iii	10 mm <sup>2</sup> Terminal block	No.	50
iv	16 mm <sup>2</sup> Terminal block	No.	50
19	<b>Corridor Pole/Road Lights</b>	!	!
i	Surge Protection Device (SPD)	No.	10
ii	Electronic Driver Circuit Module for pole lights.	No.	4
20	<b>Station Lights</b>	!	!
i	Flourescent Light Fixture Model <b>TCW 097/236</b> complete with Electronic Ballast (EBC 236) & TLD 36W/84 or Model TORNADO 240 c/w 2x36W Colour 84 or <b>equivalent</b> . Including Tube Rods, Ballast, Starters & Capacitor shall be from the reputed european manufacturers	No.	5
ii	Flourescent Light Fixture Model <b>TBS 300E/240</b> complete with Electronic Ballast (EBC 236) or make (Sunlight):Model ALPHA Aerofoil 240 or <b>equivalent</b> . Tube Rods, Ballast, Starters & Capacitor shall be from the reputed european manufacturers.	No.	5
iii	Flourescent lamp fittings with electronic control gear and complete with all components including P.F. correction capacitors, specifications should meet the ambient conditions at site.	!	!
iv	a) 1x36W type <b>TMS 015/136</b> (without cover) or equivalent.	No	5
v	b) 1x36W with diffuser type <b>GMP-015/136</b> (with cover) or equivalent.	No	5
vi	<b>Tube Rod TLD 36W</b> Philips or equivalent and Compatible with (Flourescent Light Fixture Model TCW 097/236 and TBS 300E/240).	No	50
vii	<b>Electronic ballast/Chowk</b> Philips Model or Equivalent compatible with (Flourescent Light Fixture Model TCW 097/236 and TBS 300E/240).	No	50
21	<b>Station Fans</b>	!	!
i	Fan cover compatible with (Circumatic/ Wall Bracket fan 18") existing specification or equivalent.	No	10
ii	Capacitor ( <b>2.5 uF FUJI or Equivalent</b> ) for Circumatic/ Wall Bracket Fan (18"). Compatible with (Circumatic/ Wall Bracket fan 18") existing specification.	No	10

iii	Capacitor (1.2 uF FUJI or Equivalent) for Exhaust Fan (12"). Compatible with existing specification.	No	10
iv	Motor <b>Bearing</b> for Circumatic / Wall Bracket (18"). Compatible with (Circumatic/ Wall Bracket fan 18") existing specification.	No	30
22	<b>Electrical Distribution Panel Goods/Material</b>	-	-
-	<b>Circuit Breakers</b>	-	-
i	630 Amp 4 pole change Over Switch (MCO) (with all accessories like handles, extension, auxiliary switches etc.)	No	2
ii	800 Amps TP (adj.) MCCB RC=50kA	No	4
iii	630 Amps MCCB TP (Adj.) RC=50kA	No	4
iv	100 Amps MCCB TP (Adj.) RC=25kA	No	5
v	50 Amps MCCB TP RC:25KA	No	5
vi	50 Amp MCB Single Pole RC:10KA	No	5
vii	32 Amps MCCB TP (Adj.) RC=25kA	No	5
viii	16 Amp MCB, SP, RC=10 kA	No	10
ix	16 Amp MCB, 2 Pole, RC=10 kA	No	10
x	6 Amp MCB, SP, RC=10 kA	No	10
xi	2 Amp MCB, SP, RC=10 kA	No	10
xii	06 Amp MCB, SP, RC=6KA	No	10
xiii	<b>Magnetic Contactors</b>	-	-
xiv	Magnetic Contactor Triple Pole (AC-3) 45A, 25KW.	No	5
xv	Magnetic Contactor Triple Pole (AC-3) 32A, 15KW.	No	5
23	<b>Current Transformers</b>	-	-
i	800/5 Amps Current Transformers	No	2
24	<b>Volt Meters &amp; Amp Meters</b>	-	-
i	0-800 Amps AC DIGITAL Ammeter	No	2
25	<b>Selector switch</b>	-	-
i	20A Volt Selector Switch (07 Position)	No	5
ii	20A Ampere Selector Switch 04 position (R-Y-B-OFF)	No	5
iii	Selector Switch (manual, photo cell and off)	No	5
26	<b>Indication Lights</b>	-	-
i	Indication Light 22mm RYB Led	No	5
ii	Panel light with limit switch 220VAC	No	5
iii	220 VAC RYB LED indication lights	No	5
iv	Push Button (On, Off) 220V AC.	No	10
27	<b>Cable Tie Tag</b>	-	-
i	Cable Tie Tag (4")	No	10
ii	Cable Tie Tag (12")	No	10

- 16.5.8.10 PEC registration and Appointment Letter of each engineer quoted in Form Tech-2B
  - 16.5.8.11 Diploma and Appointment Letter of each diploma engineer quoted in Form Tech-2B
  - 16.5.8.12 Financial statements for the last three years to establish annual turnover.
  - 16.5.9 FORM TECH-3: Project Details (To be filled for each project separately in electrical and mechanical categories)
  - 16.5.10 FORM TECH-4: Human resource details (To be filled for each engineer and diploma holder separately)
  - 16.5.11 FORM TECH-5: Financial strength
  - 16.5.12 FORM TECH-6: Power of Attorney (In case of JV, to be declared by each bidder separately on Stamp Paper)
  - 16.5.13 FORM TECH-7: Undertaking
  - 16.5.14 FORM TECH-8: Affidavit - Integrity Pact
- 16.6 The Financial Proposal shall comprise the following:
- 16.6.1 FORM FIN-1: Financial Proposal Submission Form (Annexure-K)
  - 16.6.2 FORM FIN-2: Price Table
  - 16.6.3 FORM FIN-3: Breakup of Price Table for 'B'
  - 16.6.4 Original Bid Security.- (Annex-I)
- 16.7 The Bidder shall follow the instructions laid down as under:
- 16.7.1 The Bidder shall seal the Original Technical Proposal in an envelope duly marked as under:  
  
Envelope No. 1A: Original Technical Proposal for  
Tender Name. [Name of Tender]  
  
[Name of the Client]  
[Address of the Client]  
  
[Name of the Bidder]  
[Address of the Bidder]  
[Phone No. of the Bidder]
  - 16.7.2 The Bidder shall seal the Duplicate Technical Tender in an envelope duly marked as under:  
  
Envelope No. – 1B: Duplicate Technical Proposal for  
Tender Name. [Name of Tender]  
  
[Name of the Client]  
[Address of the Client]  
  
[Name of the Bidder]  
[Address of the Bidder]  
[Phone No. of the Bidder]
  - 16.7.3 The Bidder shall seal the Original Financial Proposal in an envelope duly marked as under:

**PMA Estimate of B (Price Table A)**  
**Price Table for Supply of Electrical Goods/Items**

Item No	Description	Unit	Qty	Rate (PKR)	Amount (PKR)
	Supply of the following goods/items of work (unless specifically stated otherwise) including all material, accessories, etc., required for proper completion of each item as per specifications, drawings and as directed by engineer. Warranty period is one year.				
	<b>Work Order Items</b>				
1	Panel Lock for Electrical distribution panel.	No	300		
2	Supply of transformer fuse link for 400 kVA, 11/0.415 kV pad mounted (PEL) transformer with following specification or equivalent :- Teilbereichsicherung EFEN Back-up fuse link VDE 0670/4 IEC 60282-1 67220.0403 freiluft/outdoor Un: 6/12 KV In : 40A I <sub>1</sub> =63 kA I <sub>3</sub> =125 A	No	3		
3	Supply of <b>outdoor 120mm<sup>2</sup> 3-core, 11KV, XLPE, heat shrink straight through joint Kit</b> complete in all respect as required.	No	2		
4	Supply of <b>indoor 120mm<sup>2</sup> 3-core, 11KV, XLPE, heat shrink termination Kit</b> complete in all respect as required.	No	2		
5	Supply of <b>outdoor 120mm<sup>2</sup> 3-core, 11KV, XLPE, heat shrink termination Kit</b> complete in all respect as required.	No	2		
6	Supply of heat shrink water proof <b>LT joint Kit for 1 core- 500 mm<sup>2</sup></b> with all accessories complete in all respect as required.	No	8		
7	Supply of <b>indoor/outdoor termination Kit for 1 core- 500 mm<sup>2</sup></b> with all accessories complete in all respect as required.	No	8		
8	Supply of tinned earth test link in earthing pit consisting of copper plate (12"x2"x1/2") with fixing arrangement on the wall of man hole including brass nuts, bolts washers lugs etc. complete in all respect.	No	10		
9	RCC <b>6"</b> thick cover with lifting hooks for earthing pit (manhole) of internal size 18"x18"x <b>24"</b> deep including all accessories complete in all respect .	No	10		
10	Construction of earthing pit (manhole) of internal size 18"x18"x24" deep with 9" thick brick wall with cement mortar, internal plaster 1:4, RCC 4" thick cover with lifting hooks including all accessories complete in all respect.	Job	10		
11	Use/Arrange of crane for maintenace/dismantle of pole lights/ under bridge flood lights. Height upto 15 meters. Job duration is 08 hours. Only crane rent is included and excluding Lights maintenance.	Job	30		

12	Civil works required to cover the U-PVC/GI conduit with cement mortar along surface edge of jersey barrier of corridor.	Meter	250		
13	<b>Cables &amp; Conduits</b>				
	Supply of Low Voltage grade 600/1000V PVC/PVC unarmoured Cu. Conductor cable with cable glands and lugs including all installation and operational accessories as required for proper completion, as per technical specifications, drawings and as directed by the Engineer of following size :				
i	4 core 10 mm <sup>2</sup>	Meter	180		
ii	4 core 16 mm <sup>2</sup>	Meter	1,500		
iii	4 core 25 mm <sup>2</sup>	Meter	90		
iv	1 core 185 mm <sup>2</sup>	Meter	90		
v	1 core 300 mm <sup>2</sup>	Meter	90		
vi	1 core 500 mm <sup>2</sup>	Meter	45		
14	3-core 2.5 mm <sup>2</sup> PVC insulated and PVC overall sheathed 450/750 Volt grade copper cable (stranded conductor).	Meter	450		
15	Supply of Low Voltage grade 450/750V PVC Cu. conductor cable (green/yellow) with cable glands and lugs on pre-laid PVC conduits or direct laid/underground including all installation and operational accessories as required for proper completion, as per technical specifications and as directed by the engineer of following sizes:				
i	1 core 16 mm <sup>2</sup>	Meter	2,500		
ii	1 core 95 mm <sup>2</sup>	Meter	500		
16	<b>4-core 4mm<sup>2</sup> (7/0.036")</b> CU/PVC/PVC insulated cables.	Meter	1,500		
17	<b>1-core 4mm<sup>2</sup></b> copper cables for ECC (Earth Continuity Conductor).	Meter	1,500		
18	<b>1- core 1.5mm<sup>2</sup> (3/0.029")</b> Cu/PVC insulated cable	Meter	2,000		
19	<b>1- Core 2.5 mm<sup>2</sup> (7/0.029")</b> PVC insulated cable.	Meter	540		
20	<b>1- core 6 mm<sup>2</sup></b> Cu/PVC insulated cable	Meter	540		
21	<b>G.I CONDUIT / PIPES</b>				
	Supply of G.I pipe / conduit with all accessories (Pull Box, Inspections Box, bends, saddles, nut ,bolt , washers, welding of sockets, nipples and check nuts ) for underground/ at surface/horizontal / vertical run of cable including all installation and operational accessories as required for proper completion, as per technical specifications and as directed by the engineer of following sizes:				
i	1" (Inch)	ft	100		
ii	2" (Inch)	ft	500		
22	<b>GI Flexible pipe with PVC Coating</b>				
	Supply of <b>G.I Flexible pipe / conduit (pvc coated)</b> with all accessories (Pull Box, Inspections Box, bends, saddles, nut ,bolt , washers, welding of sockets, nipples and check nuts ) for underground/ at surface/horizontal / vertical run of cable including all installation and operational accessories as required for proper completion, as per technical specifications and as directed by the engineer of following sizes:				

i	1" (Inch)	ft	250		
ii	2" (Inch)	ft	1,000		
23	<b>U-PVC CONDUITS</b>				
	Supply of U-PVC pipe/conduit at surface level /under ground with clamping and hanging arrangement with all accessories including bends, nut, bolts and washers for horizontal / vertical run of cable along wall, structure, trenches, floor etc, suitable for laying multi-core cables.				
i	1" (Inch) Class E	ft	500		
ii	2" (Inch) Class D	ft	1,000		
iii	6" (Inch) Class D	ft	100		
iv	12" (Inch) Class D	ft	100		
24	<b>TERMINAL BLOCK / LINE UP CONNECTOR WITH END STOPPER</b>				
	Supply Of PVC Terminal block with end stopper installed in PVC/Pole junction box.				
i	4 mm <sup>2</sup> Terminal block (for lights)	No.	1,500		
ii	6 mm <sup>2</sup> Terminal block	No.	300		
iii	10 mm <sup>2</sup> Terminal block	No.	100		
iv	16 mm <sup>2</sup> Terminal block	No.	500		
25	<b>Corridor Pole/Road Lights</b>				
i	Supply of <b>Road Lighting LED Luminaries Green Vision Xceed BRP310 LED77/CW 95W MB</b> , Luma Lite 2 60xR2 9750 NW 90.0W Led-White (Make Indal), R2000LED 220/90W.NM (Make Thorn) or <b>equivalent</b> suitable for M-2 & M-3 roads of wattage suitable for the project requirements, fully IP 66 with corrosion resistant die cast aluminum housing, silicon gas kit, thermally hardened glass complete with LED drivers, surge protection and all accessories/ components required for the proper operation of the system. The luminaries shall be fully flexible for future upgrades and easy replacements for maintenance purposes. Contractor to submit lighting design calculation to determine the adequacy of the wattage and should adjust the number of LEDs/wattage as per project lighting requirements. <b>Including 01 year warranty and excluding crane charges.</b>				
		No.	2		
ii	<b>Supply of Road Lighting LED Luminaries Green Vision Xceed BRP310 LED107/CW 130W MB</b> , Luma Lite 2 60xR2 12150 NW 121W Led-White (Make Indal), R2000LED 220/135W.NM (Make Thorn) or <b>equivalent</b> suitable for M-2 & M-3 roads of wattage suitable for the project requirements, fully IP 66 with corrosion resistant die cast aluminum housing, silicon gas kit, thermally hardened glass complete with LED drivers, surge protection and all accessories/ components required for the proper operation of the system. The luminaries shall be fully flexible for future upgrades and easy replacements for maintenance purposes. Contractor to submit lighting design calculation to determine the adequacy of the wattage and should adjust the number of LEDs/wattage as per project lighting requirements.				
		No.	2		

iii	<p><b>Supply of Road Lighting LED Luminaries Green Vision Xceed BRP362 LED165/CW 180W</b>, Luma Lite 3 PTL62 REBes NW 100CL1, 199W Led-White (Make Indal), R2000LED 220/180W.NM (Make Thorn) or equivalent suitable for M-2 &amp; M-3 roads of wattage suitable for the project requirements, fully IP 66 with corrosion resistant die cast aluminum housing, silicon gas kit, thermally hardened glass complete with LED drivers, surge protection and all accessories/ components required for the proper operation of the system. The luminaries shall be fully flexible for future upgrades and easy replacements for maintenance purposes. Contractor to submit lighting design calculation to determine the adequacy of the wattage and should adjust the number of LEDs/wattage as per project lighting requirements.</p>	No.	2		
iv	<p><b>Supply of Road Lighting LED Luminaries Green Vision Xceed BRP362 LED204/CW 225W MB</b>, Luma Lite 3 PTL62 REBes NW 120CL1, 240W Led-White (Make Indal), Trimph-220 Watts (Make Thorn) or equivalent suitable for M-2 &amp; M-3 roads of wattage suitable for the project requirements, fully IP 66 with corrosion resistant die cast aluminum housing, silicon gas kit, thermally hardened glass complete with LED drivers, surge protection and all accessories/ components required for the proper operation of the system. The luminaries shall be fully flexible for future upgrades and easy replacements for maintenance purposes. Contractor to submit lighting design calculation to determine the adequacy of the wattage and should adjust the number of LEDs/wattage as per project lighting requirements.</p>	No.	2		
v	<p><b>Supply of Road Lighting LED Luminaries Flood lights contempo BVP260 LED102/CW 108W</b>, Izeta IZQ-LED 90W (Make Indal), Gothard LED 100-120 Watts (Make Thorn) or equivalent suitable for M-2 &amp; M-3 roads of wattage suitable for the project requirements, fully IP 66 with corrosion resistant die cast aluminum housing, silicon gas kit, thermally hardened glass complete with LED drivers, surge protection and all accessories/ components required for the proper operation of the system. The luminaries shall be fully flexible for future upgrades and easy replacements for maintenance purposes. Contractor to submit lighting design calculation to determine the adequacy of the wattage and should adjust the number of LEDs/wattage as per project lighting requirements.</p>	No.	2		
vi	<p>Supply of Surge Protection Device (SPD) for pole lights. Compatible with all MBS road/pole and flood lights (LED Luminaries Green Vision Xceed BRP310 95W, 130W, 180W, 225W, 108W).</p>	No.	300		
vii	<p>Supply of Electronic Driver Circuit Module for pole lights. Compatible with all MBS road/pole and flood lights (LED Luminaries Green Vision Xceed BRP310/362 95W, 130W, 180W, 225W, 108W).</p>	No.	60		
26	<b>Station Lights</b>				

i	Supply of Fluorescent Light Fixture Model <b>TCW 097/236</b> complete with Electronic Ballast (EBC-236) & TLD 36W/84 or Model TORNADO-240 c/w 2x36W Colour 84 or <b>equivalent</b> . Tube Rods, Ballast, Starters & Capacitor shall be from the reputed european manufacturers <b>with 1 year warranty</b> .	No.	30		
ii	Supply of Fluorescent Light Fixture Model <b>TBS 300E/240</b> complete with Electronic Ballast (EBC-236) or make (Sunlight): Model ALPHA Aerofoil 240 or <b>equivalent</b> . Tube Rods, Ballast, Starters & Capacitor shall be from the reputed european manufacturers.	No.	30		
iii	Supply of Fluorescent lamp fittings with electronic control gear and complete with all components including P.F. correction capacitors, specifications should meet the ambient conditions at site. a) 1x36W type <b>TMS 015/136</b> (without cover) or equivalent with minimum 1 year warranty	No	25		
iv	Supply of Fluorescent lamp fittings with electronic control gear and complete with all components including P.F. correction capacitors, specifications should meet the ambient conditions at site. b) 1x36W with diffuser type <b>GMP-015/136</b> (with cover) or equivalent (above mirrors in toilets) with minimum 1 year warranty.	No	25		
v	Supply of <b>Tube Rod TLD 36W</b> Philips or equivalent and Compatible with (Flourescent Light Fixture Model TCW 097/236 and TBS 300E/240). 01 Year warranty period.	No	5,000		
vi	Supply of <b>Electronic ballast/Chowk</b> Philips Model or Equivalent compatible with (Flourescent Light Fixture Model TCW 097/236 and TBS 300E/240. Including 01 year warranty period.	No	1,000		
<b>27</b>	<b>Station Fans</b>				
i	Supply of Circomatic fan 18" Fan (Copper winding) with all accessories and copper winding including 1 year warranty.	No	40		
ii	Supply of Wall Bracket fan 18" Fan (Copper winding) with all accessories and copper winding including 1 year warranty.	No	40		
iii	Supply of Exhaust fan 12" (Copper winding) Plastic body Fan with all accessories and copper winding including 1 year warranty.	No	20		
iv	Supply of new fan cover compatible with (Circomatic/ Wall Bracket fan 18") existing specification or equivalent. Including 1 year warranty.	No	10		
v	Rewinding of fan motor with copper wire for Circumatic/ Wall Bracket (18") fan. Compatible with (Circomatic/ Wall Bracket fan 18") existing specification. Including 1 year warranty.	Job	150		
vi	Rewinding of fan motor with copper wire for Exhaust (12") fan. Compatible with existing specification. Including 1 year warranty.	No	40		
vii	Supply of Capacitor ( <b>2.5 uF FUJI or Equivalent</b> ) for Circumatic/ Wall Bracket Fan (18"). Compatible with (Circomatic/ Wall Bracket fan 18") existing specification. Including 1 year warranty.	No	800		
viii	Supply of Capacitor (1.2 uF FUJI or Equivalent) for Exhaust Fan (12"). Compatible with existing specification.	No	70		

	Including 1 year warranty.				
ix	Supply of Motor <b>Bearing</b> for Circumatic / Wall Bracket (18"). Compatible with (Circomatic/ Wall Bracket fan 18") existing specification. Including 1 year warranty.	No	1,000		
28	<b>Electrical Distribution Panel Goods/Material (Circuit Breakers)</b>				
i	630 Amp 4 pole change Over Switch (MCO) (with all accessories like handles, extension, auxiliary switches etc.)	No	3		
ii	630 A Load Breaker Switch Triple Pole	No	3		
iii	400 A Load Breaker Switch Triple Pole	No	3		
iv	800 Amps TP (adj.) MCCB RC=50kA	No	2		
v	630 Amps MCCB TP (Adj.) RC=50kA	No	1		
vi	400 Amps TP (adj.) MCCB RC=50kA	No	1		
vii	320 Amps TP (adj.) MCCB RC=50kA	No	1		
viii	160 Amps MCCB TP RC:50KA,	No	5		
x	100 Amps MCCB TP (Adj.) RC=25kA	No	30		
xi	50 Amps MCCB TP RC:25KA	No	30		
xii	50 Amp MCB Single Pole RC:10KA	No	5		
xiii	40 Amp MCCB TP, (Adj.) RC=25 kA	No	30		
xiv	32 Amps MCCB TP (Adj.) RC=25kA	No	5		
xv	32 Amps 1-pole RC=10KA	No	5		
xvi	30 Amps MCCB TP RC=36kA	No	5		
xvii	20 Amp.(adjust.) TP MCCBs, 30 kA	No	5		
xix	20 Amp MCB, SP, RC=10 kA	No	5		
xx	16 Amp MCB, SP, RC=10 kA	No	5		
xxi	16 Amp MCB, 2 Pole, RC=10 kA	No	5		
xxii	10 Amp MCB, SP, RC=10 kA	No	5		
xxiii	6 Amp MCB, SP, RC=10 kA	No	5		
xxiv	2 Amp MCB, SP, RC=10 kA	No	5		
xxv	06 Amp MCB, SP, RC=6KA	No	500		
29	<b>Magnetic Contactors</b>				
i	Magnetic Contactor TP (AC-3) 24A, 11KW	No	5		
ii	Magnetic Contactor TP (AC-3) 47A, 22KW	No	5		
iii	Magnetic Contactor 16 Amp, Single Phase, 7.5KW	No	5		
iv	Magnetic Contactor 30 Amp TP	No	5		
v	Magnetic Contactor Triple Pole (AC-3) 45A, 25KW.	No	100		
vi	Magnetic Contactor Triple Pole (AC - 3) 32A, 15KW.	No	100		
30	<b>Current Transformers</b>				
i	800/5 Amps Current Transformers	No	5		
ii	630/5 Amps Currunt Transformer	No	5		
iii	400/5 Amps Currunt Transformer	No	5		
iv	200/5 Amp Current Transformer	No	5		
v	150/5 Amps Current Transformer	No	5		
vi	100/5 Amps Current Transformers	No	5		
31	<b>Volt Meters &amp; Amp Meters</b>				

i	0-600 Volts DIGITAL Voltmeter (SIZE 96*96 mm)	No	25		
ii	Digital Ampere Meter 1A to 10,000/5A (Size 96*96mm)	No	25		
iii	0-600 Volts AC DIGITAL Voltmeter	No	25		
iv	0-800 Amps AC DIGITAL Ammeter	No	25		
<b>32</b>	<b>Selector switch</b>				
i	20A Volt Selector Switch (07 Position)	No	500		
ii	20A Ampere Selector Switch 04 position (R-Y-B-OFF)	No	500		
iii	Selector Switch (manual, photo cell and off)	No	500		
<b>33</b>	<b>Indication Lights</b>				
i	Panel light with limit switch 220VAC	No	100		
ii	220 VAC RYB LED indication lights	No	300		
iii	Push Button (On, Off) 220V AC.	No	750		
<b>34</b>	<b>Cable Tie Tag</b>				
i	Cable Tie Tag (4 ") per packet	No	20		
ii	Cable Tie Tag (12 ") per packet	No	20		
<b>35</b>	Complete Civil works required in the form of digging, back filling, breaking of bricks, and soil for laying of HT/LT cables/conduits and to locate underground faults. Digging Dimension (Depth upto 1.5 meter, width upto 01 meter).	Rm	200		
<b>36</b>	Making cable trench with bricks, concrete, Cement, cover slabs (4 inch thickness), soil and sand cushion for laying of Cable/Conduit with digging, excavation, backfilling complete in all respect. (Depth upto 1 meter, width upto 1 meter).	Rm	100		
<b>37</b>	Making cable trench with bricks, concrete, Cement, cover slabs (4 inch thickness), soil and sand cushion for laying of Cable/Conduit with digging, excavation, backfilling complete in all respect. (Depth upto 1 meter, width upto 02 ft).	Rm	100		
<b>38</b>	Provide and use of Underground cable fault locator (12KV) for 100 meter underground cable.	Job	5		
<b>39</b>	Remove the rust and prepare the surface of electrical panel and then apply enamel paint (color RAL 7032) including all necessary chemicals complete in all respect.	Square foot (ft2)	3,000		
<b>40</b>	Repair the single panel door with required welding works.	Job	70		
	<b>Mechanical Goods/Items</b>				
<b>41</b>	Supply, Dismantling, Installation, transportation ,Repairing and Maintenance of <b>Automatic electric water cooler</b> (45 Liters) inner tank and outer cabinet, Cooling system, Taps and Drainage system, thermostat complete in all respect	No	6		
<b>42</b>	Supply and Installation of Water Cooler <b>Compressor 1/3 tone cooling capacity single phase</b> including Refrigeration Gas filling, wiring complete in all respect.	No	40		
<b>43</b>	Refilling of <b>Refrigeration gas</b> in water cooler compressor.	No	40		
<b>44</b>	Supply and Installation of Water Cooler <b>condenser for having</b> copper piping complete in all respect.	No	10		
<b>45</b>	Supply and installation of <b>cooling Fan with motor</b> 10 - 45 watt for 35 to 50 gallon water cooler complete in all respect.	No	10		

46	Repairing/Maintaining of existing Water Cooler <b>Drain system</b> including drain cup, flexible outlet pipe and steel drain pipe from drain cup to cooler outlet complete in all respect.	No	50		
47	Repairing/rewinding of electric motor Single phase pressure pump (1) HP	No	5		
48	Repairing/ rewinding of electric motor Single phase pressure pump (2 HP)	No	9		
49	Repairing/ rewinding of electric motor Single phase pressure pump (2.5 HP)	No	1		
50	Repairing/ rewinding of electric motor Single phase Submersible pump for under passes (3~3.5HP),	No	2		
51	dismantling, installation and transportation charges of Pressure pump complete in all respect (single phase)	No	5		
52	Repairing/ rewinding of electric motor Repairing/rewinding of Single Phase Tube well pump (02HP)	No	9		
53	Dismantling, installation and transportation charges of existing tubewell pump complete in all respect (single phase)	No	14		
54	Repairing/rewinding of Three phase tube well pump (5,7.5,10,15 HP ) ,380~440V	No	10		
55	Dismantling, installation and transportation, Connection with DB items charges of existing tubewell pump complete in all respect (three phase with GI underground pipe)	No	24		
56	Capacitor for single phase pump (30-35 ) $\mu$ F 220V	No	10		
57	Pressure switch single phase 200 - 230 V ( ESPA Kit Pressure Controllers 1-4 bar starting pressure.)	No	5		
58	Wide angle Float Switch for tubewell pumps for single and three phase motors, ball type installed in water tank.	No	10		
59	Thermal overload Relay Adjustable (5-70)Amp	No	5		
60	Water Supply pipe (GI)2" and 3" $\phi$ plumbing accessories, from underground tubewell pump to water tank and at platform for Three phase Tubewell pump.	ft	300		
61	Handle/Gate Valve type (1",1.5")	No	10		
62	Handle/Gate Valve type (2",2.5")	No	10		
63	Handle/Gate Valve type (3")	No	10		
64	Magnetic Contactor 3-Pole 32 Amp	No	10		
65	Magnetic Contactor 4-Pole 32 Amp	No	10		
66	Three Phase Failure switch lower(320-415V)higher(415-515V)	No	10		
67	0-500 Volts AC DIGITAL Voltmeter	No	5		
68	0-50 Amps AC DIGITAL Ammeter	No	5		
69	Push Button (On, Off) 220V AC.	No	1		
70	Circuit Breaker 16 amp	No	1		
71	Circuit Breaker 20 amp	No	10		
72	Circuit Breaker 10 amp	No	10		
73	Supply and installation of DB .Dimension:- 18'x12'x6' (LxWxH)	No	6		
74	Supply, installation, testing, commissioning of new pressure pump, tubewell pump and				

	submersible pump.				
A	Single phase pressure pump (1 HP)	No	1		
B	Single phase pressure pump (2 HP)	No	6		
C	Single phase pressure pump (2.5 HP) ,200~230V	No	1		
D	Single phase Submersible pump for under passes (3HP),	No	2		
E	Single Phase Tubewell pump (02 HP)	No	2		
F	Three phase tube well pump (3HP )	No	1		
G	Three phase tube well pump (7.5HP )	No	1		
H	Three phase tube well pump (10HP )	No	1		
I	Three phase tube well pump (15 HP )	No	2		
75	make <b>new bore</b> for tubewell pumps <b>4 inch</b> or as per existing bore size at station including casing pipe,installation and dismantling of tubewell pump complete in all respect.	No	2		
76	Supply and installation of <b>Steel cage</b> of 4'x3'x3' with main frame of 25x25x5 mm angle and solid steel bar of 10 mm which can be open from top side and front including 1.5mm steel sheet on top side painted with Redoxide with locking arrangement.	No	4		
77	make <b>new bore</b> for tubewell pumps <b>8 inch</b> or as per existing bore size at station including casing pipe,installation and dismantling of tubewell pump complete in all respect.	No	1		
78	Supply,installation,testing,commissioning of <b>50</b> Gallons double ply vertical plastic type with top cover/lid having food grade quality complete in all respect	No.	1		
79	Supply,installation,testing,commissioning of <b>100</b> Gallons double ply vertical plastic type with top cover/lid having food grade quality complete in all respect	No.	1		
80	Supply,installation,testing,commissioning of <b>250</b> Gallons double ply vertical plastic type with top cover/lid having food grade quality complete in all respect	No.	1		
81	Supply,installation,testing,commissioning of <b>500</b> Gallons double ply vertical plastic type with top cover/lid having food grade quality	No.	1		
82	Supply,installation,testing,commissioning of <b>100,250 and 500</b> Gallons double ply vertical plastic type with top cover/lid having food grade quality	No.	1		
83	Supply,installation,testing,commissioning of <b>1000</b> Gallons double ply vertical plastic type with top cover/lid having food grade quality complete in all respect	No.	1		
84	Supply,installation,testing,commissioning of <b>1500</b> Gallons double ply vertical plastic type with top cover/lid having food grade quality complete in all respect	No.	1		
85	Repair/Maintain the Leaked/faulty,broken, damage water tank complete in all respect	No.	10		

<b>86</b>	supply,installation of Water Supply pipe (PPRC)Poly propylene Random Co Polymer Pipes including all plumbing works.				
A	32mm	ft	200		
B	40mm	ft	400		
C	50mm	ft	100		
D	75mm	ft	100		
<b>87</b>	supply,installation of Water Supply pipe (GI) including all plumbing works.				
A	32mm	ft	200		
B	40mm	ft	400		
C	50mm	ft	100		
D	75mm	ft	100		
<b>88</b>	Repair/Replace the faulty pipeline accessories e.g. union, socket, elbow, reducers,.3/4",1",2.5",3".	No.	20		
<b>89</b>	Supply, Installation, testing and commissioning of Water Filter (20" housing) three stage filtration system slim size set including filter cartridge and in/out pipe assembly with already installed water coolers at PMA stations complete in all respect.	No	1		
<b>90</b>	Supply installation, testing and commissioning of one activated <b>carbon filter</b> cartridge of 2.0"x 20" size including rubber gasket complete in all respect	No	2		
<b>91</b>	Supply installation, testing and commissioning of two <b>sediment filter</b> cartridge of 2.0"x20" having 5 micrones size including rubber gasket complete in all respect	No	2		
<b>92</b>	Supply and installation, testing and commissioning of <b>high quality connecting pipes</b> of water filter complete in all respect.	No	2		
<b>93</b>	Supply, installation, testing and commissioning of Water Dispenser Electrical voltage 220-240v~ 50hz, 1ph capacity cool tank storage capacity 3.5 l min 2l/hr hot tank storage capacity 1 l min 5l/hr features function hot/normal/cold compressor cooling yes warranty 1 year compressor warranty 3 year r134a gas 1 year Automatic Thermostat and a stainless-steel water tank without Fridge with Plastick	No	5		
<b>94</b>	Supply, installation and commissioning of 19 L water storage Bottle compliance with Dispenser having food grade material.	No	10		
<b>95</b>	Supply of Split Air Conditioning 1.5 ton (18000 BTU) 220 - 240 V, 50 Hertz with outdoor Unit (for cooling only) at data cabin roof with MS bracket / clamps / grouting including all installation, Fixing and operational accessories as required for proper completion, as per technical specification, drawings.	No	27		
	<b>Electrical and Mechanical goods/items Grand Total (PKR)</b>				