



## WATER AND SANITATION AGENCY (LDA)

59-F GULSHAN-E-RAVI LAHORE

### Technical Bid

RECEIPT NO. \_\_\_\_\_

DATED \_\_\_\_\_

OPENING DATE \_\_\_\_\_

(FOR OFFICE USE ONLY)

### TENDER NO.P&S/25.01/6116 - ESTABLISHMENT OF SCADA SYSTEM AT 2 NO TUBEWELLS FOR WASA LAHORE.

NAME OF FIRM \_\_\_\_\_

ADDRESS \_\_\_\_\_

COMPLETION PERIOD 30-DAYS \_\_\_\_\_

DCR NO. \_\_\_\_\_ DATED \_\_\_\_\_ RS. \_\_\_\_\_

ISSUED BY \_\_\_\_\_ Name of Branch \_\_\_\_\_

### INSTRUCTIONS FOR BIDDERS

1. The bidder should quote rate after careful study of bid document.
2. The rates should be quoted both in figures as well as in words. Similarly the total amount of the individual items should also be mentioned both in figures as well as in words.
3. The bid must accompany NTN certificate from concerned Income Tax Office without which the bid will not be entertained.
4. Any rebate on tendered rates of item/whole bid cost shall not be accepted.
5. The bidder shall fill up the bid schedule and indicate the percentage rate above or below the schedule of rates for the "scheduled items". No percentage premium will be quoted by the bidder against "Non-scheduled items" failing which the bid may be rejected.
6. Bid will be valid for the 120 days.
7. No tender will be received telegraphically or by post.
8. Conditional tender will not be accepted.
9. The bidder must provide PRA Certificate along with bid.
10. In case the total tendered amount is less than 5% (Five) of the approved estimated (DNIT) amount, the lowest bidder shall have to deposit additional performance security from the Scheduled Bank ranging from 5.00% to 10%.

**SPECIAL CONDITIONS**

1. The bidders shall have to provide authorization letter from original Equipment manufacturer for equipment that are not manufactured by the bidder.
2. The manufacturer shall be certified as per certifications mentioned in Technical Specification.
3. Relevant certifications must be attached with the technical bid.
4. Bidder may provide equipment with better features / quality / specifications as compared to those mentioned in technical specification (page-06).
5. As-Built documentation and Operation and Maintenance (O&M) Manuals for the complete installed system shall be submitted before formal takeover.
6. As-Built Drawings (to be provided before taking-over certificate).
7. Brochures and Technical Literature shall be provided for each equipment of SCADA System.
8. The scope includes training of WASA Staff for the system operation & maintenance.
9. Surprise visits at SCADA installed / linked sites may be conducted by WASA, any negligence or short coming may result in imposition of fine / penalty.
10. Contractor shall be responsible for the complete solution, supply, installation and commissioning including operations and maintenance for 02-years.
11. On page 06 technical specifications to facilitate the bidder for the purpose of indicating minimum requirements and major items for each tubewell have been mentioned. However, the bidder shall include all such additional items in bid / proposal; whether, such items / works are mentioned or not in bidding documents which are necessary for the proper functioning of SCADA system at tubewells.
12. SCADA system shall enable CCR operators to continuously monitor flow, pressure, level, current, voltage, frequency, power factor, power consumption and the working status of all pumps installed at concerned WASA sites.
13. The CCR operator shall be able to remotely control (START/STOP) the pumps through SCADA system by manual or automatic means.
14. Contractor shall be completely responsible to supply, install and commission the RTU, Electrical components / systems (Motor Control Center), Instruments, field cables (instrument / electrical cables whether internal / external to a panel or inside / outside of a building) and associated accessories / equipment i.e, wired-up panels, flanges, installation supporting structure / material, and including all labor works such as mechanical, electrical and civil required for the project.
15. All softwares, databases, operating system and web servers must be provided with genuine licenses
16. Perform 30-days mandatory integrated system test for the complete SCADA after completion of works at all sites and CCR in accordance with

the procedure and methodology provided after approval from competent authority.

17. The Contractor shall provide WASA Lahore the necessary import documents for items / material / equipment that are sourced / bought from foreign firms at the time of delivery concerning SCADA System.
18. The Contractor shall pay all the duties, taxes and transportation charges etc by itself and provide copy to WASA
19. The Contractor shall provide shipping documents of the imported equipment / material supplied.
20. The successful bidder shall have to arrange pre-shipment inspection at manufacturer's site of work by a firm of international repute regarding their correctness and genuineness in respect of specification mentioned in the Technical Specification. The certificate so issued be provided at the time of delivery at site failing which material will not be accepted.
21. The Contractor shall attach relevant documents as a support which is required in technical evaluation criteria duly signed and stamped by bidder otherwise bidder shall not be qualified / responsive.
22. The successful bidder shall have to provide one (01) year Warranty of all components of SCADA system and shall be responsible to rectify any default including replacement with new one.
23. The decision of Technical Evaluation committee shall be final and acceptable by the bidders.
24. O&M of 02-years of all components of SCADA system shall be the responsibility of contractor and the contractor shall rectify any default including replacement with new one.
25. **Mode of Payment:** 90% of Installation and commissioning amount will be made on successful commissioning of SCADA System and 10% shall be retained by WASA as retention money which will be released 06-months after / beyond successful operation and maintenance. 50% of O&M amount will be paid at the end of each year.
26. The Contractor shall ensure by his own means and guarantee that the SCADA System in every aspect shall be in accordance with the certificates mentioned in Technical Specification.
27. If the necessitated scope of work is not achieved due to but not limited to compatibility issue, the contractor / firm shall be solely responsible and shall take proper action to ensure smooth running / working of SCADA System. The nature of SCADA system inherits different constituents and their variations, such changes shall not prevent contractor / firm from achieving the results as desired by WASA Lahore.
28. Technical bid must be accompanied by a Bid Security **63,350/- (Rupees Sixty Three Thousand Three Hundred and Fifty Only)** in the shape of **CDR** in favour of **Deputy Director Procurement** WASA which is 2% of estimated cost shall be submitted with technical bid failing which the bid may be rejected.
29. Joint Venture must comply with the following requirements:
  - a) Following are minimum requirements for Joint Venture: -
    - i) In accordance with PEC Bye Laws, Foreign Firms are required to form JVs with local Firms.

- ii) The lead partner shall meet not less than 40% percent of all qualifying criteria given in paras heretofore.
    - iii) Each of the partners shall meet not less than 25% percent of all the qualifying criteria given in paras heretofore.
    - iv) The joint venture must collectively satisfy the technical evaluation criteria. Heretofore, for which purpose the relevant figures for each of the partners shall be added together to arrive at the JV's total capacity. Individual members must satisfy each of the requirements of paras 30, 31 & 32 heretofore.
    - v) The lead partner shares shall not be less than 50% and shares of each partner of JV shall not be less than 25%.
    - vi) The JV agreement must registered with sub registrar mentioning the joint and several liabilities with respect to the contract and Joint account of the firms to whom the transactions shall be made.
  - b) Any change in a technically responsive/ qualified JV after evaluation, shall be subject to the written approval of the client such approval may be denied if: -
    - i) Partner(s) withdraw from a JV and remaining partners do not meet the qualifying / technical evaluation criteria;
    - ii) The new partners to a JV are not stand qualified/ responsive individually or as another JV; or
    - iii) In the opinion of the Client, a substantial reduction in competition would result.
    - iv) One firm shall not be partner in more than one JV.
  - c) Bid shall be signed by all members in the JV so as to legally bind all partners, jointly and severally, and any bid shall be submitted with a copy of the JV agreement dully registered with sub-registrar providing the joint and several liabilities with respect to the contract.
30. The technically evaluation of a JV does not necessarily qualify any of its partners individually or as a partner in any other JV or association. In case of dissolution of a JV, each one of the constituent firms may be declared qualified / technically responsive if they meet all the requirements as described in technical criteria and any partner of JV has requested/shall request for the same and then his qualification shall be subject to the written approval of the Client.
  31. The Bidder (including all members of a JV) must not be associated, nor have been associated in the past, with the consultants or any other entity that has prepared the design, specifications and bidding documents for the project, or was proposed as Engineer for the contract, over the last five (05) years. Any such association may result in disqualification/ non-responsiveness of the Bidder.
  32. A qualified firm/contractor/JV may participate only in one bid only for the contract. If a firm submits more than one bid, singly or as a JV, all bids including that bidder will be rejected.
  33. **Equivalent** : Equivalency of any component shall be subject to prior approval from DMD(Engg).

### **TECHNICAL EVALUATION CRITERIA**

1. Authorizations for relevant equipment as required in technical specifications from Original Equipment Manufacturer.
2. Equipment shall be certified / approved for End User and Type Test through relevant certifications (CE/FM/CSA/UL/IEC/EIA/TIA/ISO/EAC) or equivalent as mentioned in technical specifications.
3. Registration certificate / Memorandum of Association / Article of Association /Partnership deed registered with sub-registrar/ Affidavit of sole proprietorship.
4. Registration with **FBR & PRA (NTN & PNTN)**.
5. Experience of \*similar nature i.e supply and installation of SCADA system in atleast **01-No** \*similar project in last **10 years** with Governments Departments.
6. Net worth / credit facilities / liquid assets of **Rs.03-Million**.
7. Personal Capabilities having **01** No. Electrical / Mechatronics Engineer and **01** No. Computer / Electronics Engineer.
8. Audited financial reports of last three **(03)** years from reputed chartered accountant firm.
9. No Black Listing and Litigation on Judicial stamp paper of **Rs.100**.
10. The technical evaluation shall be on knockout basis. A bidder must have to fulfill all requirements as stated above.

\* Similarity shall be based on the physical size, complexity, methods/technology

**TECHNICAL SPECIFICATIONS  
ESTABLISHMENT OF SCADA SYSTEM AT 2 NO TUBEWELLS FOR  
WASA LAHORE**

<b>S/ No.</b>	<b>Description</b>	<b>Bidder to Specify</b>
<b>1</b>	<p><b>TUBEWELLS (RTU, Instrumentation, Electrical)</b></p> <p>P/I PLC System for Tubewells with RTU &amp; Battery Backup with voice service GSM/GPRS modem DL/HF (DL/PL) modem for dedicated or private lines including SMS services (bidirectional) having GPRS connection to internet with Wireless technology GSM/Edge/UMTS/HSPA+ and LED to show Mobile network status, system status etc, CPU atleast 600 MHz having minimum system &amp; program memory of 100MB , with Retention/non-volatile memory atleast 100KB and having Programming languages per IEC 61131-3, Communication with Ethernet, RS-232 serial interface and RS-485 interface and having compatibility with Environmental requirements including surrounding air (operating temperature) - 10 to 55°C and (storage temperature) 5 to 45% with protection class at least IP-65 having vibration resistance acc. to IEC 60068-2-6/60068-2-64 or equivalent and Shock resistance 15g per IEC 60068-2-27/60068-2-64 or equivalent, I/O Module Expansion with number of modules per node/rack without bus extension min. 60 modules and support for 24VDC Digital I/Os, Support for 0-20mA and 4-20mA I/Os, with battery backup up to 8 hours in case of failure of electricity, <b><i>Country of Origin : North America, Europe, Japan or equivalent.</i></b></p>	
2	<p>P/I Priming Tank Level Switch with Temperature range (0-50°C) and Max pressure of 5[bar] with operation conditions protection IP 67, 65 and Product Certification of (CE/FM/CSA/UL) or equivalent <b><i>Country of Origin : North America, Europe, Japan or equivalent.</i></b></p>	
3	<p>P/I Solenoid valves for auto priming of pump having Body Material (SS) with operating temperature range (0 to 50°C), Ambient temperature range (-10 to 55°C), Max. Operating Pressure from 0 to 5 [bar], with Protection IP-65 and Product Certification of (CE/FM/CSA/UL) or equivalent</p>	

4	P/I Solenoid valves for Auto Air release including Body Material (SS) with operating temperature range (0 to 50°C), Ambient temperature range (-10 to 55°C), Max. Operating Pressure from 0 to 5 [bar], with Protection IP-65 and Product Certification from (CE/FM/CSA/UL) or equivalent	
5	P/I Auto On/Off Chlorinator Meter Control with the tube well operation and provision of an indication for low level of chlorine to the main controller via sensor	
6	P/I Pressure Transmitter with ambient temperature [°C] ranging from -5 to 55, Operating temperature [°C] ranging from 0 to 50 and operating conditions protection IP 67 , Vibration resistance capacity approved from DIN 60068-2-64 or equivalent, Certification from CE/FM/CSA/UL or equivalent and Mechanical data material SS 316, SS Corrosion resistant. <b>Country of Origin : North America, Europe, Japan or equivalent.</b>	
7	P/I Ancillary equipment including installation material, cables,GI perforated/ Powder coated Perforated cable trays, terminals, clamps, mounting kits, GI/UPVC/flexible conduits, shipment and travelling etc.	
8	P/I Power Analyzer for power factor metering and Integratable with main controller unit and features the measurement of current, voltages, true power, apparent power, current transformers and provision of data for analysis. Voltage Measuring range [0 to 1000 VAC] having Current Measuring range [0 to 300 A], Power factor [0 to 1], Communication interfaces to RTU having access to USB, Ethernet and RS 232, Numerical Display format, Operating Temperature ranging from (-5 to 60°C) and Certifications (CE/CSA/UL) or equivalent. <b>Country of Origin : North America, Europe, Japan or equivalent.</b>	
9	<p><b>P/I MCC PANEL COMPONENTS</b></p> <p>Components required to modify Panels to interface with main PLC in accordance with Technical Specifications :</p> <p><b>Tube Wells</b></p> <p>i Auto / Manual Selector Switch - 3 Position</p> <p>ii Local / Remote Selector Switch - 3 Position</p>	

	<p>The specific works data shall include the following requirements for SwitchGear/MCC and Accessories:</p> <p>a) <u>Auto-changeover Device</u></p> <p>b) <u>Cables</u></p> <ul style="list-style-type: none"> <li>● Conductor material</li> <li>● Insulation material</li> <li>● Sheath material</li> </ul>	
10	<p><b>P/I MECHANICAL WORKS ON WATER SUPPLY LINE AND TANKS FOR INSTALLATION OF INSTRUMENTS INCLUDING FLANGES &amp; OTHERS</b></p> <p><b>Tubewells</b></p> <p>A Threadolet or Flange, Class 150 for installation of Pressure Transmitter</p> <p>B Threaded Connector or Flange for Level Switch of Priming tank</p>	
11	<p><b>P/I IoT Cabinet</b></p> <p>HMI LCD Display, 01 year data network coverage and charges,</p> <p>Voltage protection indicator</p> <p>Current protection indicator</p> <p>Three phase voltage indicator</p> <p>Auto/Manual switch with indicator</p> <p>220 V Relays</p> <p>Timing Relays</p> <p>Lockable and expandible for future Ports</p>	
12	<p><b>P/I CENTRAL CONTROL ROOM (CCR)</b></p> <p>SCADA Server with server hosting for web services, Monitor, keyboard, mouse, peripheral interface cards and operating system including operation/ Production Reports daily, weekly and monthly, Intelligent Dashboards/Reports for web based portal with Comprehensive Dash Board for Remote Monitoring of Tubewells, Responsive interface, Reporting module and admin/stakeholder access, Option of Storing and retrieving data to Open Database i.e. MySQL, SQL or equivalent, Alarm Logger, Event Logger, Multiple Use /Access levels or Logins, Option of remote web client, Graphical User interfaces /Mimics, Multiple Trends /Graphical Charts with various options of objects such as circle, square, ellipse, etc including color animation and Spare Capacity for future expansion upto 30%.</p> <p><b>Control Station including Software with genuine licenses for Window and PLC, Operator station (SCADA System)</b></p> <p><b>Engineering Workstation (PC)</b></p>	



	<p><b>Tower Computer:</b>  Core i5  4GB RAM  512 GB hard disk  HDMI interface  52X - CD ROM  44" LED or better  Microsoft Windows</p> <p><b>Other Display:</b>  <b>Wall/Desk mounted LED Display (55")</b></p> <p><b>Printer:</b>  A3/A4 Colour Laser Printer wireless and network capable.</p> <p><b>Networking:</b>  Local Area network (LAN) comprising router and other networking equipment</p> <p><b>UPS:</b>  Uninterruptible Power Supply (UPS) Compatible to run the system at peak load for 8 hours.</p>	
13	<p><b>OPERATION &amp; MAINTENANCE</b>  OPERATION &amp; MAINTENANCE of complete SCADA system for 2 years.</p>	

Name of Firm \_\_\_\_\_

Address \_\_\_\_\_

Signature \_\_\_\_\_



**WATER AND SANITATION AGENCY (LDA)**  
59-F GULSHAN-E-RAVI LAHORE

**Financial Bid**

RECEIPT NO. \_\_\_\_\_

DATED \_\_\_\_\_

OPENING DATE \_\_\_\_\_

(FOR OFFICE USE ONLY)

**TENDER NO.P&S/25.01/6116 - ESTABLISHMENT OF SCADA SYSTEM AT 2 NO TUBEWELLS FOR WASA LAHORE.**

NAME OF FIRM \_\_\_\_\_

ADDRESS \_\_\_\_\_

COMPLETION PERIOD 30-DAYS

DCR NO. \_\_\_\_\_ DATED \_\_\_\_\_ RS. \_\_\_\_\_

ISSUED BY \_\_\_\_\_ Name of Branch \_\_\_\_\_

**INSTRUCTIONS FOR BIDDERS**

1. The bidder should quote rate after careful study of bid document.
2. The rates should be quoted both in figures as well as in words. Similarly the total amount of the individual items should also be mentioned both in figures as well as in words.
3. The bid must accompany NTN certificate from concerned Income Tax Office without which the bid will not be entertained.
4. Any rebate on tendered rates of item/whole bid cost shall not be accepted.
5. The bidder shall fill up the bid schedule and indicate the percentage rate above or below the schedule of rates for the "scheduled items". No percentage premium will be quoted by the bidder against "Non-scheduled items" failing which the bid may be rejected.
6. Bid will be valid for the 120 days.
7. No tender will be received telegraphically or by post.
8. Conditional tender will not be accepted.
9. The bidder must provide PRA Certificate along with bid.
10. In case the total tendered amount is less than 5% (Five) of the approved estimated (DNIT) amount, the lowest bidder shall have to deposit additional performance security from the Scheduled Bank ranging from 5.00% to 10%.

**SPECIAL CONDITIONS**

1. The bidders shall have to provide authorization letter from original Equipment manufacturer for equipment that are not manufactured by the bidder.
2. The manufacturer shall be certified as per certifications mentioned in Technical Specification.
3. Relevant certifications must be attached with the technical bid.
4. Bidder may provide equipment with better features / quality / specifications as compared to those mentioned in technical specification (page-06).
5. As-Built documentation and Operation and Maintenance (O&M) Manuals for the complete installed system shall be submitted before formal takeover.
6. As-Built Drawings (to be provided before taking-over certificate).
7. Brochures and Technical Literature shall be provided for each equipment of SCADA System.
8. The scope includes training of WASA Staff for the system operation & maintenance.
9. Surprise visits at SCADA installed / linked sites may be conducted by WASA, any negligence or short coming may result in imposition of fine / penalty.
10. Contractor shall be responsible for the complete solution, supply, installation and commissioning including operations and maintenance for 02-years.
11. On page 06 technical specifications to facilitate the bidder for the purpose of indicating minimum requirements and major items for each tubewell have been mentioned. However, the bidder shall include all such additional items in bid / proposal; whether, such items / works are mentioned or not in bidding documents which are necessary for the proper functioning of SCADA system at tubewells.
12. SCADA system shall enable CCR operators to continuously monitor flow, pressure, level, current, voltage, frequency, power factor, power consumption and the working status of all pumps installed at concerned WASA sites.
13. The CCR operator shall be able to remotely control (START/STOP) the pumps through SCADA system by manual or automatic means.
14. Contractor shall be completely responsible to supply, install and commission the RTU, Electrical components / systems (Motor Control Center), Instruments, field cables (instrument / electrical cables whether internal / external to a panel or inside / outside of a building) and associated accessories / equipment i.e, wired-up panels, flanges, installation supporting structure / material, and including all labor works such as mechanical, electrical and civil required for the project.
15. All softwares, databases, operating system and web servers must be provided with genuine licenses
16. Perform 30-days mandatory integrated system test for the complete SCADA after completion of works at all sites and CCR in accordance with

the procedure and methodology provided after approval from competent authority.

17. The Contractor shall provide WASA Lahore the necessary import documents for items / material / equipment that are sourced / bought from foreign firms at the time of delivery concerning SCADA System.
18. The Contractor shall pay all the duties, taxes and transportation charges etc by itself and provide copy to WASA
19. The Contractor shall provide shipping documents of the imported equipment / material supplied.
20. The successful bidder shall have to arrange pre-shipment inspection at manufacturer's site of work by a firm of international repute regarding their correctness and genuineness in respect of specification mentioned in the Technical Specification. The certificate so issued be provided at the time of delivery at site failing which material will not be accepted.
21. The Contractor shall attach relevant documents as a support which is required in technical evaluation criteria duly signed and stamped by bidder otherwise bidder shall not be qualified / responsive.
22. The successful bidder shall have to provide one (01) year Warranty of all components of SCADA system and shall be responsible to rectify any default including replacement with new one.
23. The decision of Technical Evaluation committee shall be final and acceptable by the bidders.
24. O&M of 02-years of all components of SCADA system shall be the responsibility of contractor and the contractor shall rectify any default including replacement with new one.
25. **Mode of Payment:** 90% of Installation and commissioning amount will be made on successful commissioning of SCADA System and 10% shall be retained by WASA as retention money which will be released 06-months after / beyond successful operation and maintenance. 50% of O&M amount will be paid at the end of each year.
26. The Contractor shall ensure by his own means and guarantee that the SCADA System in every aspect shall be in accordance with the certificates mentioned in Technical Specification.
27. If the necessitated scope of work is not achieved due to but not limited to compatibility issue, the contractor / firm shall be solely responsible and shall take proper action to ensure smooth running / working of SCADA System. The nature of SCADA system inherits different constituents and their variations, such changes shall not prevent contractor / firm from achieving the results as desired by WASA Lahore.
28. Technical bid must be accompanied by a Bid Security **63,350/- (Rupees Sixty Three Thousand Three Hundred and Fifty Only)** in the shape of **CDR** in favour of **Deputy Director Procurement** WASA which is 2% of estimated cost shall be submitted with technical bid failing which the bid may be rejected.
29. Joint Venture must comply with the following requirements:
  - a) Following are minimum requirements for Joint Venture: -
    - i) In accordance with PEC Bye Laws, Foreign Firms are required to form JVs with local Firms.

- ii)** The lead partner shall meet not less than 40% percent of all qualifying criteria given in paras heretofore.
  - iii)** Each of the partners shall meet not less than 25% percent of all the qualifying criteria given in paras heretofore.
  - iv)** The joint venture must collectively satisfy the technical evaluation criteria. Heretofore, for which purpose the relevant figures for each of the partners shall be added together to arrive at the JV's total capacity. Individual members must satisfy each of the requirements of paras 30, 31 & 32 heretofore.
  - v)** The lead partner shares shall not be less than 50% and shares of each partner of JV shall not be less than 25%.
  - vi)** The JV agreement must registered with sub registrar mentioning the joint and several liabilities with respect to the contract and Joint account of the firms to whom the transactions shall be made.
- b)** Any change in a technically responsive/ qualified JV after evaluation, shall be subject to the written approval of the client such approval may be denied if: -
- i)** Partner(s) withdraw from a JV and remaining partners do not meet the qualifying / technical evaluation criteria;
  - ii)** The new partners to a JV are not stand qualified/ responsive individually or as another JV; or
  - iii)** In the opinion of the Client, a substantial reduction in competition would result.
  - iv)** One firm shall not be partner in more than one JV.
- c)** Bid shall be signed by all members in the JV so as to legally bind all partners, jointly and severally, and any bid shall be submitted with a copy of the JV agreement dully registered with sub-registrar providing the joint and several liabilities with respect to the contract.
30. The technically evaluation of a JV does not necessarily qualify any of its partners individually or as a partner in any other JV or association. In case of dissolution of a JV, each one of the constituent firms may be declared qualified / technically responsive if they meet all the requirements as described in technical criteria and any partner of JV has requested/shall request for the same and then his qualification shall be subject to the written approval of the Client.
31. The Bidder (including all members of a JV) must not be associated, nor have been associated in the past, with the consultants or any other entity that has prepared the design, specifications and bidding documents for the project, or was proposed as Engineer for the contract, over the last five (05) years. Any such association may result in disqualification/ non-responsiveness of the Bidder.
32. A qualified firm/contractor/JV may participate only in one bid only for the contract. If a firm submits more than one bid, singly or as a JV, all bids including that bidder will be rejected.
33. **Equivalent :** Equivalency of any component shall be subject to prior approval from DMD(Engg).

**Bid Schedule**  
**TENDER NO.P&S/25.01/6116 - ESTABLISHMENT OF SCADA**  
**SYSTEM AT 2 NO TUBEWELLS FOR WASA LAHORE**

S/ No.	Description	Qty	Unit	Rate	Amount
<b>1</b>	<b>TUBEWELLS (RTU, Instrumentation, Electrical)</b>	2	P/Job		
	<p>P/I PLC System for Tubewells with RTU &amp; Battery Backup with voice service GSM/GPRS modem DL/HF (DL/PL) modem for dedicated or private lines including SMS services (bidirectional) having GPRS connection to internet with Wireless technology GSM/Edge/UMTS/HSPA+ and LED to show Mobile network status, system status etc, CPU atleast 600 MHz having minimum system &amp; program memory of 100MB , with Retention/non-volatile memory atleast 100KB and having Programming languages per IEC 61131-3, Communication with Ethernet, RS-232 serial interface and RS-485 interface and having compatibility with Environmental requirements including surrounding air (operating temperature) - 10 to 55°C and (storage temperature) 5 to 45% with protection class at least IP-65 having vibration resistance acc. to IEC 60068-2-6/60068-2-64 or equivalent and Shock resistance 15g per IEC 60068-2-27/60068-2-64 or equivalent, I/O Module Expansion with number of modules per node/rack without bus extension min. 60 modules and support for 24VDC Digital I/Os, Support for 0-20mA and 4-20mA I/Os, with battery backup up to 8 hours in case of failure of electricity,  <b>Country of Origin : North America, Europe, Japan or equivalent.</b></p>				
2	<p>P/I Priming Tank Level Switch with Temperature range (0-50°C) and Max pressure of 5[bar] with operation conditions protection IP 67, 65 and Product Certification of (CE/FM/CSA/UL) or equivalent  <b>Country of Origin : North America, Europe, Japan or equivalent.</b></p>	2	P/Job		
3	<p>P/I Solenoid valves for auto priming of pump having Body Material (SS) with operating temperature range (0 to 50°C), Ambient temperature range (-10 to 55°C), Max. Operating Pressure from 0 to 5 [bar], with Protection IP-65 and Product Certification of (CE/FM/CSA/UL) or equivalent</p>	2	P/Job		

4	P/I Solenoid valves for Auto Air release including Body Material (SS) with operating temperature range (0 to 50°C), Ambient temperature range (-10 to 55°C), Max. Operating Pressure from 0 to 5 [bar], with Protection IP-65 and Product Certification from (CE/FM/CSA/UL) or equivalent	2	P/Job		
5	P/I Auto On/Off Chlorinator Meter Control with the tube well operation and provision of an indication for low level of chlorine to the main controller via sensor	2	P/Job		
6	P/I Pressure Transmitter with ambient temperature [°C] ranging from -5 to 55, Operating temperature [°C] ranging from 0 to 50 and operating conditions protection IP 67 , Vibration resistance capacity approved from DIN 60068-2-64 or equivalent, Certification from CE/FM/CSA/UL or equivalent and Mechanical data material SS 316, SS Corrosion resistant. <b>Country of Origin : North America, Europe, Japan or equivalent.</b>	2	P/Job		
7	P/I Ancillary equipment including installation material, cables,GI perforated/ Powder coated Perforated cable trays, terminals, clamps, mounting kits, GI/UPVC/flexible conduits, shipment and travelling etc.	2	P/Job		
8	P/I Power Analyzer for power factor metering and Integratable with main controller unit and features the measurement of current, voltages, true power, apparent power, current transformers and provision of data for analysis. Voltage Measuring range [0 to 1000 VAC] having Current Measuring range [0 to 300 A], Power factor [0 to 1], Communication interfaces to RTU having access to USB, Ethernet and RS 232, Numerical Display format, Operating Temperature ranging from (-5 to 60°C) and Certifications (CE/CSA/UL) or equivalent. <b>Country of Origin : North America, Europe, Japan or equivalent.</b>	2	P/Job		
9	<b>P/I MCC PANEL COMPONENTS</b>				
	Components required to modify Panels to interface with main PLC in accordance with Technical Specifications :				
	<b>Tube Wells</b>				
i	Auto / Manual Selector Switch - 3 Position	2	P/Job		
ii	Local / Remote Selector Switch - 3 Position	2	P/Job		

	The specific works data shall include the following requirements for SwitchGear/MCC and Accessories: a) <u>Auto-changeover Device</u> b) <u>Cables</u> ● Conductor material ● Insulation material ● Sheath material				
10	<b>P/I MECHANICAL WORKS ON WATER SUPPLY LINE AND TANKS FOR INSTALLATION OF INSTRUMENTS INCLUDING FLANGES &amp; OTHERS</b>				
	<b>Tubewells</b>				
A	Threadolet or Flange, Class 150 for installation of Pressure Transmitter	2	P/Job		
B	Threaded Connector or Flange for Level Switch of Priming tank	2	P/Job		
11	<b>P/I IoT Cabinet</b>	2	P/Job		
	HMI LCD Display,01 year data network coverage and charges,				
	Voltage protection indicator				
	Current protection indicator				
	Three phase voltage indicator				
	Auto/Manual switch with indicator				
	220 V Relays				
	Timing Relays				
	Lockable and expandible for future Ports				
12	<b>P/I CENTRAL CONTROL ROOM (CCR)</b>	1	P/Job		
	SCADA Server with server hosting for web services, Monitor, keyboard, mouse, peripheral interface cards and operating system including operation/ Production Reports daily, weekly and monthly, Intelligent Dashboards/Reports for web based portal with Comprehensive Dash Board for Remote Monitoring of Tubewells, Responsive interface, Reporting module and admin/stakeholder access, Option of Storing and retrieving data to Open Database i.e. MySQL, SQL or equivalent, Alarm Logger, Event Logger, Multiple Use /Access levels or Logins, Option of remote web client, Graphical User interfaces /Mimics, Multiple Trends /Graphical Charts with various options of objects such as circle, square, ellipse, etc including color animation and Spare Capacity for future expansion upto 30%.				
	<b>Control Station including Software with genuine licenses for Window and PLC, Operator station (SCADA System)</b>				



	<b>Engineering Workstation (PC)</b>				
	<b>Tower Computer:</b> Core i5 4GB RAM 512 GB hard disk HDMI interface 52X - CD ROM 44" LED or better Microsoft Windows				
	<b>Other Display:</b> <b>Wall/Desk mounted LED Display (55")</b>				
	<b>Printer:</b> A3/A4 Colour Laser Printer wireless and network capable.				
	<b>Networking:</b> Local Area network (LAN) comprising router and other networking equipment				
	<b>UPS:</b> Uninterruptible Power Supply (UPS) Compatible to run the system at peak load for 8 hours.				
13	<b>OPERATION &amp; MAINTENANCE</b>	1	P/Job		
	OPERATION & MAINTENANCE of complete SCADA system for 2 years.				

Name of Firm \_\_\_\_\_

Address \_\_\_\_\_

Signature \_\_\_\_\_