

- System Design Document detailing architecture, components, and workflows
 - Integration API Documentation with detailed specifications and examples
 - User Manual for end users and consumers
 - Administrator Manual for system administrators
 - Security Key Management Policy and Procedures
 - Operations and Maintenance Manual
 - Troubleshooting and Diagnostic Guide
9. User Acceptance Testing (UAT) Report with test cases, results, and sign-off
 10. Data Migration Validation Report documenting migration process and verification
 11. Comprehensive training for all WZPDCL staff categories as detailed in Section 9
 12. All necessary software licenses for 30 lakh meters initially, scalable to 40 lakh meters
 13. Five-year Operation and Maintenance (O&M) Support as specified in Section 8
 14. Source code or source code escrow arrangement as per WZPDCL requirements

5. IMPLEMENTATION TIMELINE AND PHASING

The project shall be executed in five distinct phases with clearly defined activities, deliverables, and timelines. The total implementation period excluding the five-year operation and maintenance support is seven months.

PHASE	KEY ACTIVITIES	DURATION
PHASE 1 System Assessment and Design	• Comprehensive assessment of existing system • Data profiling and migration strategy • System architecture design • Integration design documentation • Security architecture design • Project plan finalization	All work must be completed within the stipulated time mentioned in GCC-29.1.
PHASE 2 Development and Customization	• Software development and customization • Security module implementation • Consumer portal and mobile app development • Integration module development • Testing in development environment • Code review and quality assurance	
PHASE 3 Integration and Migration	• System deployment in production environment • Integration with internal and external systems • Data migration execution • HSM/SSM setup and key management • Network configuration and optimization	
PHASE 4 Testing and UAT	• System testing and integration testing • Performance and load testing • Security testing and penetration testing • User Acceptance Testing (UAT) • Issue resolution and fine-tuning • UAT sign-off by WZPDCL	
PHASE 5 Go-Live and O&M	• Go-live preparation and cutover • Hypercare support period • Operation and Maintenance (O&M) • Continuous monitoring and support • Regular system health checks • Security updates and patches	5 Years

6. QUALIFICATION REQUIREMENTS FOR BIDDER

Bidders must meet the following minimum qualification requirements to be eligible for this tender:

1. Experience integrating Head End System (HES) and Meter Data Management (MDM) with major Utility Customer Information Systems
2. Demonstrated expertise in data migration and cyber security implementation experience and key management.
3. Proven cyber security implementation experience including HSM/SSM deployment and key management
4. Valid manufacturer authorization or partnership agreement for all required software modules and components
5. ISO 9001:2015 Quality Management System certification
6. ISO/IEC 27001 Information Security Management certification (preferred)
7. Financial capacity to execute a project of this magnitude with bank solvency certificate
8. Dedicated project team with qualified professionals including project managers, system architects, developers, and support staff

7. PERFORMANCE AND SERVICE LEVEL REQUIREMENTS

The upgraded system must meet the following performance and service level requirements:

1. System Uptime: Minimum 99.5% availability excluding planned maintenance windows
2. Response Time: Less than 3 seconds for meter data retrieval and command execution
3. Data Collection Success Rate: Minimum 95% daily data collection success rate
4. Support Availability: 24x7 operation helpdesk with multilingual support (Bengali and English)
5. Fault Restoration Time: Maximum 4 hours for critical system failures
6. Non-Critical Issue Resolution: Maximum 24 hours for non-critical issues
7. Scalability: System must handle 20% growth in user base without performance degradation
8. Concurrent Users: Support for minimum 500 concurrent users without performance impact
9. Transaction Processing: Handle minimum 10,000 vending transactions per hour during peak times
10. Backup and Recovery: Daily automated backups with maximum 4-hour Recovery Time Objective (RTO)

8. WARRANTY AND OPERATION & MAINTENANCE SUPPORT

The bidder must provide comprehensive five-year Operation and Maintenance (O&M) support including:

- Corrective Maintenance: Resolution of all system bugs, errors, and functional issues
- Preventive Maintenance: Regular system health checks, optimization, and performance tuning
- Security Patch Updates: Timely application of security patches and vulnerability fixes
- Version Upgrades: Minor and major version upgrades as released by vendors
- 24x7 Helpdesk Support: Dedicated helpdesk for incident reporting and resolution
- On-site Support: Regular on-site visits and emergency on-site support when required
- Remote Support: Remote access capability for troubleshooting and issue resolution
- Periodic Audit and Health Check: Quarterly system audits and annual comprehensive health checks
- Knowledge Transfer: Continuous knowledge transfer to WZPDCL IT staff
- Documentation Updates: Updates to all documentation reflecting system changes
- Spare Parts and Components: Supply of necessary spare parts and replacement components
- Performance Monitoring: Continuous monitoring of system performance against SLAs

8.1 Support Response Times

The following support response times shall be maintained:

SEVERITY LEVEL	DESCRIPTION	RESPONSE TIME
Critical (P1)	System down or major functionality unavailable	1 hour
High (P2)	Significant functionality impaired	4 hours
Medium (P3)	Minor functionality affected	8 hours
Low (P4)	Cosmetic issues or enhancement requests	24 hours

9. TRAINING REQUIREMENTS

Comprehensive training must be provided to WZPDCL staff to ensure effective operation, administration, and maintenance of the upgraded system. Training shall be conducted in multiple phases and cover all user categories.

9.1 Training Categories

IT Administrators and System Administrators

Training topics include:

- System architecture and components
- System administration and configuration
- User management and security
- Database management and backup/recovery
- Performance monitoring and optimization
- Troubleshooting and diagnostics
- Integration management

Call Center Staff and Customer Service Representatives

Training topics include:

- Consumer portal and mobile app features
- Customer query handling
- Transaction processing and verification
- Complaint management
- Report generation for customer service

Vending Operators and Agent Network

Training topics include:

- Token generation and vending procedures
- Payment processing
- Agent Management System (AMS) operations
- Transaction reconciliation
- Customer verification procedures

Field Engineers and Technical Staff

Training topics include:

- Meter installation and commissioning
- On-site troubleshooting
- Remote meter management
- Firmware upgrade procedures
- Hand Held Unit (HHU) operations

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Management and Reporting Team

Training topics include:

- Dashboard and analytics usage
- Report generation and customization
- Business intelligence tools
- Key Performance Indicators (KPI) monitoring
- Decision support system usage

9.2 Training Methodology

Training shall be delivered through a combination of:

- Classroom training sessions with presentations and demonstrations
- Hands-on practical training in a sandbox/training environment
- On-the-job training during parallel run and hypercare period
- Training documentation including user guides and quick reference cards
- Video tutorials and e-learning modules for self-paced learning
- Train-the-trainer sessions to create internal WZPDCL training capacity

9.3 Training Schedule and Duration

Minimum training hours required per category:

USER CATEGORY	NUMBER OF PARTICIPANTS	TRAINING DURATION	Remarks
IT Administrators	10 persons	32 hours	The duration of the training shall not exceed the number of man-months specified in the Price Schedule.
Call Center Staff	13 persons	24 hours	
Field Engineers	50 persons	32 hours	
Management Team	10 persons	16 hours	

9.4 For Foreign Training

9.4.1 During Training Course Tenderer have to follow as per EC-Council for CEH (Certified Ethical Hacker), Standard Course from Microsoft for MCSE (Microsoft Certified Solution Expert) and Standard Certified Course from CISCO. Tenderer provide Certification Voucher and training facility of Vendor Certification.

Also, training shall be provided as required on the subjects mentioned below.

9.4.2 Understand SDN architecture, components, controllers, APIs, protocols

- Understand SDN architecture, components, controllers, APIs, protocols
- Deploy and manage SDN controllers
- Implement fabric networking (spine-leaf)
- Apply network automation and programmability
- Integrate SDN with traditional enterprise networks
- Understand real-world datacenter use cases

- Build strong foundation in enterprise cyber security
- Configure and manage firewalls, IPS, WAF, EDR
- Understand vulnerability management, SOC processes, log analysis
- Learn incident detection & response
- Hands-on practical security operations

9.4.3

1. Service Level Management

- Service Level Management
- Needs analysis
- Capability assessment
- Service portfolio
- Service catalogue
- Service Level Agreements (SLAs)
- Availability measurement
- Data points in SLA
- Service reporting
- Complaint procedure
- Customer satisfaction measurement
- Service Improvement Process (SIP)
- SLA content

2. The Data Centre Organization

- Operational issues
- Organization chart
- Roles and responsibilities
- Skills matrix
- Contingency / backup roles
- Shift management
- Performance management
- Career development
- Training and assessment
- Job rotation
- Succession planning
- Disciplinary program

3. Managing Safety & Statutory Requirements

- Safety policies and regulations
- Occupational Health and Safety (OH&S)
- Safety awareness training
- Permit to Work (PTW)
- Lock-out / Tag-out
- Personal Protective Equipment (PPE)
- Testing and tagging of equipment
- Emergency preparedness and response
- Reporting of safety issues
- Reviews / internal audit / external audit

4. Managing Physical Security

- Security policies and procedures
- Security standards and guidelines
- Security awareness
- Security incident management
- Disciplinary program
- Reviews, internal and external audits

5. Facilities Management

- Maintenance policies and procedures
 - Various maintenance programs
 - Outsourcing of maintenance activities
 - Maintenance contract options
 - Warranty
 - Maintenance schedule
 - Service situations
 - Spare part management
 - Contamination control
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6. Data Centre Operations

- Policies and procedures for data centre operations
 - Service operations and daily data centre operations
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7. Monitoring / Reporting / Control

- Monitoring requirements
 - Escalation procedures
 - Reporting
 - Trend analysis
 - Reviews
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8. Project Management

- Project management
 - Project organization
 - Project manager
 - Project phases
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9. Environmental Sustainability

- Importance of sustainability
 - Sustainability policies
 - Environmental management
 - Waste management
 - Water management
 - ICT utilisation management
 - Environmental performance measurements
 - Renewable energy factor (REF)
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10. Organizational Resilience

- Business continuity
 - Data centre facility options
 - Business Impact Analysis
 - Type of facility
 - Human resources
 - Facility, equipment and consumables
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11. Governance, Risk and Compliance

- Management commitment
 - Coordination, collaboration and integration
 - Compliance
 - Risk management
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- Document management
- Financial management
- Vendor management
- Asset management

9.4.4 Virtualization and Storage management with RAID; Overview of Various command to access CISCO/Fortinet network equipment so that one Data center manager can operate data center easily.

The tenderer will provide required training in the manufacturers/suppliers' country(s).

9.5 Training Cost

The full training program is to be approved by the employer/engineer prior to commencement. The cost of Air Tickets (both way) from Bangladesh to Manufacturer's Country, Hotel Accommodation, fooding and lodging etc. will be borne by the contractor. Other than this, the Contractor will pay a standard amount of pocket money (USD 150) per day (including journey Period). All the cost of this purpose shall be deemed is included in the offered price.

The contractor shall also to arrange a local training program. The Contractor is to report on the capability and progress of each trainee at the completion of their training periods. All cost of local training including accommodation, transport and fooding will be bear by the contractor. The contractor also pay pocket money (BDT 1000) per day for each trainee during local training.

10. ACCEPTANCE CRITERIA

The upgraded system will be accepted by WZPDCL only after successful completion and verification of all the following acceptance criteria:

1. All system components successfully installed, configured, and operational
2. All integrations with internal WZPDCL systems functioning correctly with verified data flow
3. All integrations with external systems (payment gateways, SMS, email) operational
4. Complete data migration validated with zero data loss and 100% accuracy verified
5. User Acceptance Testing (UAT) completed successfully with formal sign-off from WZPDCL
6. Security compliance proven through security audit and penetration testing reports
7. Performance benchmarks met as specified in Section 7 with documented proof
8. All documentation delivered and reviewed by WZPDCL
9. Training completed for all user categories with training completion certificates
10. Hardware Security Module (HSM) and Software Security Module (SSM) operational
11. Consumer portal and mobile applications functional and published to app stores
12. System demonstrated to support specified capacity (40 lakh meters)
13. Backup and disaster recovery procedures tested and validated
14. Parallel run successfully completed for agreed duration
15. No critical or high severity defects remaining in the system

10.1 Acceptance Process

The acceptance process shall follow these steps:

1. Bidder notification of system readiness for acceptance testing
2. WZPDCL team conducts comprehensive acceptance testing covering all criteria
3. Issues identified during testing documented and prioritized
4. Bidder resolves all critical and high priority issues
5. Re-testing of resolved issues by WZPDCL
6. Final acceptance testing and system verification
7. Formal acceptance sign-off by designated WZPDCL authority
8. Commencement of warranty and O&M support period

11. PAYMENT TERMS

Payments shall be made in installments linked to completion and acceptance of project phases as follows:

As per Tender Document

Note: All payments are subject to deduction of applicable taxes as per Government of Bangladesh regulations.

PGSA

12. OTHER CONDITIONS AND REQUIREMENTS

12.1 Regulatory Compliance

The bidder must comply with:

- All relevant laws and regulations of the Government of the People's Republic of Bangladesh
- Bangladesh Energy Regulatory Commission (BERC) rules and guidelines
- WZPDCL standards, policies, and operational procedures
- Bangladesh Telecommunication Regulatory Commission (BTRC) requirements for communication systems
- Data protection and privacy regulations applicable in Bangladesh

12.2 Intellectual Property and Source Code

All customized software and configurations developed specifically for this project shall remain the intellectual property of WZPDCL. The bidder must provide either:

- Complete source code of all customized modules with full rights for WZPDCL to modify and maintain, OR
- Source code escrow arrangement with a reputable escrow agent with clearly defined release conditions

12.3 Data Ownership

All data collected, processed, and stored in the system belongs solely to WZPDCL. The bidder has no rights to use, access, or share this data except as necessary for providing contracted services. Upon project completion or contract termination, the bidder must securely delete all WZPDCL data from their systems and provide certification of data deletion.

12.4 Software Licenses

All software licenses must be:

- Perpetual licenses with 5 years Operational Support Service.
- Transferable to WZPDCL name without additional cost
- Licensed for the full capacity (initially 20 lakh meters, scalable to 40 lakh meters)
- Include all necessary user licenses, API licenses, and concurrent access licenses
- Provided with valid license certificates and activation keys

12.5 Warranty and Liability

The bidder warrants that:

- The system will function as specified in this TOR and bid documents
- The system is free from defects in design, materials, and workmanship
- The system does not infringe on any third-party intellectual property rights
- The bidder has authority to grant all necessary licenses and rights
- The system complies with all specified security and performance standards

12.6 Dispute Resolution

Any disputes arising from this contract shall be resolved through:

1. Initial attempt at amicable settlement through mutual discussion
2. Mediation by a mutually agreed mediator if direct discussion fails
3. Arbitration under the Bangladesh Arbitration Act, 2001 if mediation fails
4. Legal jurisdiction of courts in Dhaka, Bangladesh as final resort

12.7 Force Majeure

Neither party shall be liable for failure to perform obligations due to force majeure events including natural disasters, wars, epidemics, government actions, or other events beyond reasonable control. The affected party must notify the other party within 7 days of the force majeure event and make reasonable efforts to resume performance.

12.8 Confidentiality

The bidder must maintain strict confidentiality of all WZPDCL information, data, and business processes. Confidential information shall not be disclosed to third parties without prior written consent from WZPDCL. This confidentiality obligation shall survive contract termination for a period of 5 years.

13.0 TECHNICAL ORIENTATION AND QUALITY TEST WITNESS:

13.01 Factory Inspection and Test Witness:

The PE shall have the right to inspect/test the goods/materials to confirm their conformity to the specification. The PE shall be entitled at all reasonable time during manufacture to inspect, examine and test of goods/materials at the manufacturers' premises, workmanship and performance.

The test shall be carried out as per related standard and GTP unless otherwise mentioned at the manufacturer premises or other places where the test facilities are available.

The Contractor shall, after consulting the PE, give the PE reasonable notice in writing of the date and the place at which any material or equipment will be ready for testing as provided in the contract and unless the PE shall attend at the place so named on date, which the contractor has stated in his notice, the contractor may proceed with the tests, which shall be deemed to have been made in the PE's presence, and shall forth with forward to the PE duly certified copies of test readings.

When the PE intends to attend the test, he shall promptly inform the contractor accordingly in writing, so that he can take action. The PE shall give the contractor timely notice in writing of his intention to attend the test.

Where the contractor provides for tests on the premises of the contractor or of any manufacturer of the contractor, except where otherwise specified, shall provide free of charge such assistance, labor, materials, electricity, fuel, stores, apparatus and instruments as may be requisite and as may be reasonably demanded to carry out such test efficiently. These tests shall be performed as per related standard & GTP and only routine tests as agreed upon, will be performed.

As and when the PE is satisfied that any materials/equipment shall have passes the tests referred to in this clause, PE shall notify the contractor in writing to that effect.

Should any inspected/tested goods fail to conform to the specification, the PE shall have the right to reject any of the items or complete batch if necessary. In that case Contractor has to replace the Equipment and to make good of them without any financial involvement to the PE. In case any of the Equipment found not conforming with the specification at the time of post landing Inspection, the contractor will in no way be relieved from the responsibility of replacing them or making them good at their own cost, despite the Equipment were found good at the time of Factory Acceptance Test. Nothing in this clause shall in any way release the contractor from any warranty or other obligations under the contract.

If the offered goods are manufactured outside the PE's country, then Utility's Inspection Team shall have to conduct Technical Orientation and Quality Test Witness at the manufacturer's factory premises. The PE's nominated "Engineering Team" consisting of at least 03 (Three) Engineers in each team shall take part in the witness of the QAT of the goods/ Technical Orientation on the manufacturer's premises for a period of 7 days (excluding journey time). All the cost regarding QAT witness by the PE's 'Engineering Team' i.e. the cost of Air Ticket from Dhaka to the place of inspection/training & return, internal transportation, Phone, Fax, E-mail, Health insurance, Hotel accommodation, Food etc. and pocket money of 150 USD per day per person for the period of 7 days (excluding journey time) shall be borne by the Contractor and the cost shall be included with the equipment's quoted price.

No goods shall be packed, prepared for shipment / delivery unless it has been approved including Test reports and written instruction has been issued by the PE.

The tenderer has to mention the place of Technical Orientation and Quality Test Witness in the following table:

Sl. No.	Item	Period of Technical Orientation and Quality Test Witness	Place & Country of Technical Orientation and Quality Test Witness

During Technical Orientation & Quality Test Witness, the inspection team will select at random basis for testing the selected items in an independent testing lab for the tests.



13.02 Post-Delivery Inspection & Testing:

The Contractor shall inform the PE immediately after arrival of the goods at the designated store of Utility (as per delivery schedule). An Inspection team of Utility shall perform the post-landing inspection in presence of contractor's representative. The Contractor shall arrange the program of post-landing inspection. Any defect or damage have been found at post-landing inspection, the defective or damaged materials/ goods to be replaced by the contractor at his own cost within the stipulated time.

The PE 's right to inspect, test (where necessary) and reject the goods after delivery at the designated store of Utility shall in no way be limited or waived by reason of the goods having previously been inspected, tested and passed by the PE prior to the good's delivery. The cost incurred for this purpose shall be borne by the contractor.

APPENDIX - ACRONYMS AND DEFINITIONS

ACRONYM	FULL FORM
AES	Advanced Encryption Standard
AMS	Agent Management System
API	Application Programming Interface
BERC	Bangladesh Energy Regulatory Commission
CIM	Common Information Model
CIS	Customer Information System
CRM	Customer Relationship Management
DCU	Data Concentrator Unit
DT	Distribution Transformer
GIS	Geographic Information System
HES	Head End System
HHU	Hand Held Unit
HSM	Hardware Security Module
IVR	Interactive Voice Response
KEK	Key Encryption Key
KPI	Key Performance Indicator
MDM	Meter Data Management
NERC CIP	North American Electric Reliability Corporation Critical Infrastructure Protection
NIST	National Institute of Standards and Technology
NTP	Network Time Protocol
O&M	Operation and Maintenance
OTP	One-Time Password
RBAC	Role-Based Access Control
RTO	Recovery Time Objective
SA	Security Association
SAAS	Software as a Service
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SCADA	Supervisory Control and Data Acquisition
SIEM	Security Information and Event Management
SLA	Service Level Agreement
SMS	Short Message Service
SSM	Software Security Module
TLS	Transport Layer Security
TOR	Terms of Reference
TOU	Time of Use
UAT	User Acceptance Testing
VPN	Virtual Private Network
WZPDCL	West Zone Power Distribution Company Limited