



**Multan Electric Power Company (MEPCO)
Terms of Reference (TORs)**

(CONSULTING SERVICES)

Project Management Consultant (PMC)

For

**Power Distribution Strengthening Project
Loan 4567-PAK**

January 2026

1. Project Background

1.1. The Government of Pakistan has received financing from the Asian Development Bank (ADB) for the Power Distribution Strengthening Project. Multan Electric Power Company (MEPCO) is a state-owned electricity distribution company (DISCO) under the Ministry of Energy (MoE) Power Division (PD), the Government of Pakistan, and is one of the implementing agencies responsible for its respective activities and subprojects under this project.

1.2. The Power Distribution Strengthening Project aims to address critical challenges in Pakistan's power sector, which are exacerbated by a difficult macroeconomic environment, a growing circular debt burden, and chronic inefficiencies in the distribution sector. These challenges including high transmission and distribution losses, low revenue collection, inadequate infrastructure, and governance issues have strained the country's fiscal stability and its reliable energy supply. The project aims to modernize power distribution infrastructure, reduce technical and commercial losses, and improve institutional capacity of the project's three selected distribution companies (DISCOs) in Punjab and Sindh provinces of Pakistan. Key components include installing advanced metering infrastructure (AMI) and online transformer performance monitoring system (also known as asset performance monitoring system or APMS). Additionally, the project emphasizes gender equality and climate resilience by integrating targeted measures to address these critical areas while supporting Pakistan's broader goals of sustainable, efficient, and inclusive economic growth.

1.3. Multan Electric Power Company is the largest electric distribution company of Pakistan in terms of service territory. It supplies electricity to the operations circles of Multan, D.G Khan, Vehari, Bahawalpur, Sahiwal, R.Y. Khan, Muzaffargarh, Bahawalnagar, and Khanewal of the province of Punjab. Presently, MEPCO owns one hundred and twenty-eight (128Nos) of 132 kV sub-stations and six (06) 66kV substations and independent sub-stations feeding consumers are twelve (12) in MEPCO tertiary.

2. Purpose of the Assignment

2.1. Multan Electric Power Company (MEPCO) intends to hire a Project Management Consultant (PMC) to ensure high-quality implementation, supervision, safeguards compliance, and timely completion. The services of a Project Management Consultant (PMC), "the firm," will be required to support Project Management Unit (PMU) implementing the project. Specifically, the PMC will support PMU on project planning, contract management, construction/installation supervision, testing and commissioning, implementation and updating and monitoring of social and environmental safeguards, OHS compliance, project performance monitoring, evaluation and reporting. Project Management consultants will complement existing staff of PMU, thus ensuring a high degree of implementation efficiency of components financed under the project.

2.2. MEPCO is under procurement process of following two EPC packages:

a) **Package 1:** Supply, Installation, Testing & Commissioning of 13,323 APMS units on 100 KVA and 200 KVA distribution transformers including HES, MDC, and integration with MDM. The total duration for contract completion is 18 months.

In this package, the scope also includes the supply and installation of 11KV D-fuse fittings and 11KV jumpering with Dog conductor at respective Distribution transformers.

b) **Package 2:** Supply, Installation, Testing & Commissioning of 150,000 three phase Smart Meters including HES, MDC, and integration with MDM. The total duration for contract completion is 18 months.

2.3. The purpose of engaging the PMC is to provide professional project management and supervision services to ensure that APMS and AMI systems are installed, tested, commissioned, and integrated in full compliance with ADB requirements, contract specifications, industry standards, and MEPCO's operational procedures. The Consultant will carry out obligations with due diligence, efficiency, and economy in accordance with generally accepted professionalism/techniques and shall observe sound management practices by employing highly skilled human resources and appropriate advanced technology.

3. Duration and Location of Services

3.1. The assignment will spread over 24 months with approximately 290 staff man months (112 for Key Experts and 178 for Non-key experts) input on intermittent basis, primarily based in Multan, Pakistan, with possible remote interactions for expert consultations. MEPCO comprises of the following nine distribution Operation Circles.

- i. Multan Circle
- ii. Dera Ghazi Khan Circle
- iii. Vehari Circle
- iv. Bahawalpur Circle
- v. Sahiwal Circle
- vi. Rahim yar Khan Circle
- vii. Muzaffargarh Circle
- viii. Bahawalnagar Circle
- ix. Khanewal Circle

4. Scope of Services, Tasks

4.1. The Consultant shall provide comprehensive support in project planning, supervision, testing, commissioning, quality assurance, safeguards compliance, OHS monitoring, and contract management. The scope of the output/deliverable-based consultancy services will include but not necessarily be limited to the following tasks.

Task-1: Project Planning and Implementation

a) **Review EPC contractor work plans, QAP, ITP, and safety plans**

The Consultant shall undertake a comprehensive review of the EPC contractor's proposed Work Plans, Quality Assurance Plans (QAP), Inspection and Test Plans (ITP), Health, Safety and Environment (HSE) plans to ensure

their adequacy, alignment with contract specifications, and consistency with ADB and MEPCO requirements. This includes verifying whether the installation methodologies, sequencing of activities, resource deployment schedules, testing procedures, and safety arrangements are technically sound and realistically achievable within the contract timelines. The Consultant shall identify gaps, propose improvements, and formally recommend acceptance or required modifications to MEPCO. The Consultant shall also ensure that the contractor's documentation incorporates mitigation measures for project risks, OHS hazards, and site-specific challenges.

b) Prepare the consolidated Project Implementation Plan (PIP)

Building on the approved EPC contractor plans, the Consultant shall prepare a comprehensive, integrated Project Implementation Plan (PIP) that consolidates all project activities, milestones, interfaces, and dependencies across both APMS and AMI packages. The PIP shall include detailed timelines, installation phasing, communication network roll-out plans, staffing schedules, material delivery coordination, testing and commissioning sequences, and safeguards compliance activities. The PIP shall serve as the master document guiding project execution and shall be updated periodically to reflect actual progress, constraints, and corrective actions. It will also include risk registers and mitigation plans to support MEPCO in proactive project management.

c) Conduct installation readiness surveys including pole condition verification

The Consultant shall carry out thorough installation readiness surveys across selected APMS installation sites to confirm field preparedness prior to installation works. This includes verifying the structural and operational condition of distribution poles, cross-arms, insulators, service lines, transformer structures to ensure they can safely accommodate APMS units and communication modules. The Consultant shall document deficiencies such as damaged poles, non-standard wiring, overloaded structures, hazardous site conditions, and proper Transformer earthing & grounding, and coordinate with relevant MEPCO sub-divisions to ensure timely rectification before installation teams are deployed. These surveys shall be validated through photographic evidence, GIS tagging, and checklists.

d) Supervise field installation of APMS, Smart Meters, and communication modules

The Consultant shall provide continuous on-site technical supervision of APMS and AMI field installations to ensure strict compliance with contract technical specifications, installation guidelines, safety standards, and manufacturer recommendations. This includes overseeing transformer-level APMS node proper installation, proper installation of D-fuse fittings, 11KV Jumpering, cable and its connections, meter removal and replacement processes, communication module mounting, network connectivity checks, and proper configuration of field devices. The Consultant shall verify workmanship quality, enforce safe work practices, confirm accurate labeling and tagging, and ensure that all installation data is captured accurately in the project records. Any deviations detected shall be recorded and resolved through formal Non-Conformance Reports (NCRs).

e) Oversee HES–MDM integration and validation of data flows

The Consultant shall supervise and verify the integration of the Head-End System (HES) with the Meter Data Management (MDM)/Meter Data Center

(MDC) to ensure reliable, accurate, and secure end-to-end data flow from field devices to backend systems. This includes validating the registration of meters and APMS units on the HES/MDM platforms, ensuring firmware updates are correctly applied, verifying communication pathways (RF/PLC/GPRS), and conducting data validation checks such as meter reads, outage events, tamper events, billing-quality data, and load profiles. The Consultant shall coordinate and witness System Integration Tests, user acceptance tests, and reporting validations, ensuring the systems meet contractual performance requirements.

f) Maintain Asset inventories including installed and dismantled equipment
The Consultant shall establish and maintain a comprehensive digital inventory management system to track all APMS units, smart meters, communication modules, and associated materials installed under the project. The system shall also record all dismantled meters and equipment returned to designated MEPCO sub-division staff. This inventory shall include geotagging, serial numbers, date of installation of new equipment and date of dismantling of equipment alongwith final readings (in case of meters) and status updates. The Consultant shall ensure real-time reconciliation of installed versus supplied materials and support MEPCO in maintaining accurate asset records for audit, operational planning, and future maintenance needs.

Task-2: Quality Monitoring and Reporting

a) Conduct quality audits of installation sites

The Consultant shall perform planned and random quality audits of installation sites to verify that field works meet required technical specifications, installation standards, and safety guidelines. These audits will include visual inspections, physical verification of installation practices, testing of communication performance, confirmation of proper sealing and wiring, and validation of APMS and AMI functional parameters. The Consultant shall prepare audit reports identifying any deviations, workmanship deficiencies, or safety violations and recommend corrective actions to be implemented by the EPC contractor.

b) Verify compliance with IEC standards and contract specifications

The Consultant shall ensure that all equipment, components, and installation activities conform to the relevant IEC standards, ADB technical requirements, and the EPC contract specifications. This includes verifying equipment ratings, communication protocols, accuracy classes, antenna installation specifications, electrical clearances, grounding practices, and overall technical compliance. The consultant shall approve the Drawings/ Data submitted by the contractors before mass production. The Consultant shall compare installed equipment and field practices against approved drawings, test certificates, factory acceptance results, and contractual technical clauses to confirm full conformity.

c) Issue Non-Conformance Reports and track corrective action

When deviations from standards or contract requirements are identified, the Consultant shall formally issue Non-Conformance Reports (NCRs) outlining the nature of the deviation, its potential impact, and required corrective measures. The Consultant shall maintain an NCR log, track contractor response times, verify implementation of corrective actions, and close NCRs only after confirming full compliance. Persistent issues shall be escalated to MEPCO for contractual enforcement if necessary.

d) Prepare weekly, monthly, and quarterly progress reports in ADB format

The Consultant shall prepare structured weekly summaries, monthly progress reports, and quarterly progress reports (QPRs) in the format required by MEPCO and ADB. These reports shall include narrative descriptions of progress, charts, updated schedules, quality audit results, safeguards compliance, financial progress, risks and mitigation measures, and contract management updates. The reports shall be data-driven, supported by photographs, GIS mapping outputs, dashboards, and installation statistics.

Task-3: Environmental, Social and OHS Management

a) Monitor compliance with the Environmental Management Plan (EMP)

The Consultant shall review and assist PMU in approving a site-specific environmental management plan (SSEMP), and oversee implementation of the Environmental Management Plan (EMP) and SSEMP during all phases of APMS and AMI installation. This involves ensuring that the contractor complies with environmental mitigation measures such as waste handling, hazardous material disposal, noise control, and protection of sensitive receptors. The Consultant shall conduct environmental inspections, maintain records, and ensure corrective actions are taken promptly where non-compliance is identified.

b) Ensure labor standards, community safety, and grievances redress measures

The Consultant shall monitor contractor adherence to labor management standards, including the prohibition of child labor, fair wage practices, and worker welfare provisions. The Consultant shall ensure that community safety measures such as public warnings, barricading, and traffic control are implemented during installation activities. In addition, the Consultant shall track and document complaints received through Grievance Redress Mechanisms (GRMs), coordinate with MEPCO to ensure timely resolution, and ensure that communities and workers are protected throughout the project.

c) Ensure safe installation practices, PPE use, working-at-height protocols, and electrical isolation

The Consultant shall closely monitor compliance with occupational health and safety (OHS) requirements, ensuring that the contractor consistently implements safe installation practices. This includes verifying the use of personal protective equipment (PPE), ensuring proper procedures for working at height, monitoring safe ladder and bucket truck operations, validating lockout/tagout (LOTO) procedures, and ensuring electrical lines are properly isolated before installation begins. The Consultant shall proactively identify unsafe practices and enforce corrective action.

d) Submit semi-annual safeguard monitoring reports

The Consultant shall prepare and submit semi-annual environmental and social safeguards monitoring reports in the format prescribed by ADB. These reports shall document compliance with the EMP, social safeguards performance, OHS statistics, GRM status, incident reports, corrective actions implemented, and recommendations for improvement. The reports shall be supported with photographs, checklists, environmental records, consultations, and verification data.

Task-4: Contract Management and Closure

a) Support MEPCO in contract administration, payments, variation approval, and claims management

The Consultant shall assist MEPCO in administering the EPC contracts throughout the project lifecycle. This includes monitoring contractual deliverables, verifying compliance with key obligations, advising on interpretation of contract provisions, and supporting the evaluation of contractor requests relating to payment, variations, extensions of time (EOT), and claims. The Consultant shall help prepare technical justifications, contractual analyses, and recommendations while ensuring that all decisions align with ADB procurement and contract management principles.

b) Validate contractor invoices and milestone completion

The Consultant shall thoroughly review and validate contractor invoices by verifying the actual quantities of work completed, materials installed, test results obtained, and achievement of contractual milestones. This includes reconciling field records, inventory data, and commissioning certificates with invoices to ensure that payments correspond strictly to completed and compliant work. Certification of milestone completion shall only be recommended once all relevant installation, testing, commissioning, and documentation requirements have been satisfied.

c) Prepare contract completion and close-out reports

At the end of the contract, the Consultant shall prepare comprehensive contract completion and close-out reports summarizing the entire implementation process, work completed, key challenges, safeguards performance, financial status, NCR closure, integration results, and lessons learned. The Consultant shall verify that all contractual obligations have been fulfilled, deliverables submitted, warranties registered, and all project documents properly archived. The Consultant shall assist MEPCO in formal contract close-out in compliance with ADB guidelines.

5. Key Timelines and Milestones

a) Mobilization – Month 1

The Consultant is expected to mobilize its full core team within the first month following contract signing and subsequent notice to proceed issued by MEPCO. Mobilization shall include establishment of office facilities near to MEPCO headquarters, deployment of key experts, initiation of coordination meetings with MEPCO and the EPC contractors, and commencement of initial reviews of available project documentation. The Consultant shall also submit the Mobilization Plan and identify any immediate issues that may affect project readiness. Mobilization shall culminate in the submission of the Inception Report outlining the Consultant's operational arrangements, methodology, staffing schedule, and a preliminary review of project risks and constraints.

b) Work Plan Approval – Month 2

By the end of the second month, the Consultant shall have completed a detailed review of the EPC contractor's Data/ drawings, Work Plans, Quality Assurance Plans (QAP), Inspection and Test Plans (ITP), Safety Plans, and Installation Schedules. Based on this review, the Consultant shall prepare and submit a

consolidated Project Implementation Plan (PIP) incorporating installation phasing, material delivery sequencing, testing and commissioning activities, safeguards compliance arrangements, and resource deployment schedules. The Consultant shall work closely with MEPCO to finalize and obtain formal approval of both the EPC Contractor's Work Plan and the consolidated PIP. Approval of the Work Plan shall serve as the baseline for all subsequent monitoring and reporting.

c) APMS Installation Completion – Month 18

By Month 18, the Consultant shall ensure that all installations under the APMS package comprising 13,323 units for 100 kVA and 200 kVA Distribution transformers are fully completed in accordance with the EPC contract specifications and ADB standards. This includes supervision of field works, verification of pole readiness, confirmation of correct mounting and wiring of APMS devices, validation of communication performance, and witnessing of testing and commissioning procedures. The Consultant shall ensure that installation data, and digital asset records are complete and reconciled with contractor submissions. All Non-Conformance Reports (NCRs) associated with APMS installation shall be resolved prior to confirming completion.

d) Smart Meter Installation Completion – Month 18

By Month 18, the Consultant shall ensure completion of the installation of 150,000 smart meters, communication modules, and associated components. This milestone includes verifying the replacement of legacy meters, proper sealing, activation of communication modules, and completion of consumer-level installation documentation. The Consultant shall further ensure that network coverage testing, communication stability checks, and initial meter communication through the HES have been successfully completed. Installation completion must be supported by reconciled installation logs, consumer lists and inventory records for installed and dismantled equipment.

e) Full integration and Data Validation – Month 20

By Month 20, the Consultant shall ensure that all APMS and AMI field devices are fully integrated with the Head-End System (HES) and Meter Data Management (MDM) platforms, and that stable, consistent, and verifiable end-to-end data flows are established. The Consultant shall supervise system integration tests (SIT), user acceptance tests, meter data validation checks, load profile consistency checks, firmware update verification, alarm/event reporting validation, and system performance benchmarking. Any issues pertaining to communication failures, integration gaps, or data quality anomalies shall be resolved through coordinated action between the EPC contractor, MEPCO, and the Consultant. Successful completion of this milestone requires documented validation of system outputs and acceptance of integration results by MEPCO.

f) Final Acceptance – Month 22-24

By Month 22 - 24, the Consultant shall support MEPCO in completing all remaining contract close-out activities leading to Final Acceptance of the EPC works. This includes verifying that all punch-list items have been rectified, all

NCRs are closed, all testing and commissioning results are formally accepted, and all datasets, manuals, as-built drawings, warranties, and licenses have been submitted by the Contractor in accordance with contract provisions. The Consultant shall prepare the Final Completion Report and Contract Close-Out Report, summarizing project performance, safeguards compliance, system readiness, and lessons learned. Final Acceptance shall only be recommended once all technical, contractual, safety, and documentation requirements have been fulfilled to MEPCO's satisfaction and in accordance with ADB procedures.

6. Team Composition and Qualifications

S. #	Expert	Qualification & Experience	Detailed Tasks	Positions	Input (by person Month)
International (Key Experts)					
1	Project Manager (Team Lead)	<ul style="list-style-type: none"> Bachelor's degree in Electrical/ Electronics Engineering, preferably with Project Management qualification. Minimum 15 years of experience in power sector. Minimum 10 years experience in distribution, smart grid, AMI/MDM or distribution automation projects. Experience in leading multidisciplinary teams in large donor-funded projects (ADB, WB, USAID, IsDB, etc.). Demonstrated experience in supervising EPC contractors, project scheduling, QA/QC oversight, and contract administration. Strong knowledge of IEC standards, utility operations, and international utility best practices. 	<ul style="list-style-type: none"> Provide overall leadership, coordination, and direction for all Consultant activities under the assignment. Lead the preparation, revision, and implementation of the Project Implementation Plan (PIP) and ensure alignment with EPC Contractors' work schedules. Coordinate closely with MEPCO, ADB, EPC Contractors, and other stakeholders to ensure seamless project implementation, timely decision-making, and resolution of issues. Oversee and ensure high-quality supervision of APMS, AMI, and communication system installation, testing, and commissioning. Monitor the Contractor's compliance with technical specifications, QA/QC requirements, safeguards, and OHS protocols. Lead progress review meetings, prepare high-level reporting for ADB and MEPCO, and support contract administration, variation evaluation, and claims review. 	1	8

S. #	Expert	Qualification & Experience	Detailed Tasks	Positions	Input (by person Month)
			<ul style="list-style-type: none"> Manage risks, maintain project dashboards, and ensure timely completion of project milestones. Mentor national staff and ensure knowledge transfer to MEPCO. 		
National (Key Experts)					
2	Deputy Project Manager (Deputy Team Lead)	<ul style="list-style-type: none"> Master's in Electrical/Electronics Engineering. Minimum 10 years experience in power distribution operations, project management, or utility modernization. Minimum 07-years Experience supervising field teams, coordinating with DISCO departments, and supporting EPC contract oversight. Familiarity with AMI, APMS or smart grid technologies. Strong communication, reporting, and coordination skills. 	<ul style="list-style-type: none"> Assist the Team Leader in managing day-to-day project operations, coordination, supervision, and reporting. Ensure effective communication with MEPCO departments, sub-divisions, and EPC Contractor field teams. Support preparation of weekly/monthly progress reports, dashboards, and issue escalation briefs. Oversee field teams, validate field inspection reports, and ensure compliance with approved methodologies. Support verification of milestone completion, quality audits, and safeguards monitoring. Coordinate scheduling, logistics, and alignment of activities across APMS and AMI packages. 	1	22
	Smart Meter/AMI Expert	<ul style="list-style-type: none"> BSc Electrical/ Electronics or Equivalent. Minimum 07 years experience in Smart Meters/ AMI, HES, MDM,. Hands-on expertise in meter interoperability, device provisioning, firmware management, communication diagnostics, and AMI systems. Experience in implementing AMI/HES/MDM for utilities of comparable size. Familiarity with leading AMI platforms). Experience in end-to-end systems integration, and large-scale data validation. 	<ul style="list-style-type: none"> Lead and supervise all technical integration activities between field devices, HES, MDM, and MEPCO IT systems. Review and approve data/ drawings submitted by the contractor and verify communication network designs (RF/PLC/GPRS), data flow architecture, and device provisioning procedures. Supervise configuration of meters, HES, and MDM, ensuring correct registration, firmware updates, 	1	10

S. #	Expert	Qualification & Experience	Detailed Tasks	Positions	Input (by person Month)
			<p>communication settings, and security credentials.</p> <ul style="list-style-type: none"> Conduct and validate system integration testing (SIT), user acceptance testing (UAT), stress and load testing, and full data validation cycles. Diagnose and resolve integration-related issues, communication failures, and data accuracy anomalies. Ensure compliance with cybersecurity standards, data governance frameworks, and access control policies. <p>Provide technical guidance to MEPCO IT and AMI staff on backend system operations.</p>		
3	Supervision Engineers (Team Member)	<ul style="list-style-type: none"> Bachelor's degree in Electrical/Electronics Engineering. Minimum 07 years experience in power sector. Minimum 05 years field experience in distribution network O&M/ Energy meter installation/ transformer installations, and line equipment. Strong understanding of installation standards, and testing procedures. Experience supervising installation crews and conducting technical inspections. Familiarity with APMS and AMI installations. 	<ul style="list-style-type: none"> Conduct daily site supervision of APMS, smart meter, and communication module installations. Verify pole condition, meter board readiness, service wiring, transformer mounting structures, and LV network safety. Check installation workmanship, electrical connections, sealing, grounding, and adherence to quality & safety protocols. Conduct installation audits, prepare site inspection reports, and identify non-conformities. Support pre-commissioning tests, communication tests, and functional checks. Provide technical inputs to progress reports and inventory reconciliation. 	3	39
4	IT Specialist (Team Member)	<ul style="list-style-type: none"> Bachelor's degree in Computer Science, IT, or Software Engineering. Minimum 05 years experience in utility IT systems, server 	<ul style="list-style-type: none"> Support configuration, troubleshooting, and performance monitoring of HES, MDM, MDC, and related databases. 	1	10

S. #	Expert	Qualification & Experience	Detailed Tasks	Positions	Input (by person Month)
		<p>administration, networking, databases, APIs, or integration with operational systems.</p> <ul style="list-style-type: none"> • Minimum 03 years Experience working with AMI/HES/MDM systems, data centers, or utility cybersecure environments is highly desirable. • Proficiency in SQL, network monitoring tools, and data validation. 	<ul style="list-style-type: none"> • Assist with user account management, data backup, cybersecurity adherence, and system log analysis. • Perform data validation checks, error-handling analysis, and communication diagnostics. • Provide IT support during installation phases and prepare associated documentation. 		
5	Contract Management Specialist (Team Member)	<ul style="list-style-type: none"> • Bachelor's degree in Engineering, Law, Finance, or Business Administration. contract management certification preferred. • Minimum 7 years' experience in contract administration for infrastructure/utility projects. • Experience reviewing invoices, milestone verification, variation orders, EoT requests, and claim assessments. • Knowledge of FIDIC, MDB (ADB/WB) procurement frameworks, and EPC contract structures. 	<ul style="list-style-type: none"> • Support MEPCO and Team Leader in contract administration, milestone verification, and payment certification. • Review Contractor invoices, assess quantity claims, and validate supporting documentation. • Assist in preparation of Variation Orders, Extension of Time (EoT) analyses, and contractual correspondence. • Maintain contract registers, deliverables tracking, and documentation logs. • Support preparation of contract completion and close-out reports. 	1	10
6	OHS Safeguards Specialist (Team Member)	<p>&</p> <ul style="list-style-type: none"> • Bachelor's degree in Environmental Sciences, Safety Engineering, or related disciplines; HSE certifications preferred (NEBOSH/IOSH). • Minimum 7 years experience in occupational health and safety for power sector projects. • Experience in EMP/IEE implementation, community safety, worker safety, and compliance monitoring. • Experience with ADB Safeguard Policy, GRM processes, and OHS reporting. 	<ul style="list-style-type: none"> • Monitor implementation of OHS measures, PPE compliance, LOTO procedures, and safe installation practices. • Conduct field safety audits, toolbox talks, and incident investigations. • Ensure compliance with the Environmental Management Plan (EMP) and social safeguards requirements. • Maintain GRM records and verify timely resolution of grievances. • Prepare monthly and semi-annual environmental & social 	1	13

S. #	Expert	Qualification & Experience	Detailed Tasks	Positions	Input (by person Month)
		<ul style="list-style-type: none"> Ability to conduct safety audits, toolbox talks, and incident investigations. 	safeguards monitoring reports.		
National (Support Staff)/Non-key Expert					
7	Office Manager	<ul style="list-style-type: none"> Bachelor's degree in Business Administration or related field. Minimum 5 years experience managing project offices, logistics support, staff coordination, and administrative documentation. Proficiency in MS Office and document organization. 	<ul style="list-style-type: none"> Manage project office operations, logistics, scheduling, documentation, and administrative coordination. Support team deployment, meeting arrangements, vehicle scheduling, and communication with MEPCO. Maintain office inventory, stationery, and administrative files. Support preparation of reports and correspondence. 	1	24
8	Field Supervisors	<ul style="list-style-type: none"> Diploma of Associate Engineering (DAE – Electrical/Electronics) degree. Minimum 5 years field experience with meter installations/ distribution network or transformer installations. Strong knowledge of safety practices and installation procedures. Ability to supervise installation crews and maintain daily site logs. 	<ul style="list-style-type: none"> Supervise daily field installation teams for APMS, AMI, and communication components. Verify installation readiness, safety compliance, and documentation completeness. Maintain daily site diaries, workforce attendance, and material usage logs. Report installation issues, deviations, and progress updates to the Engineer and Deputy Team Leader. 	10	130
9	Document Controller	<ul style="list-style-type: none"> Bachelor's degree in Business Administration, IT, or Library Sciences. Minimum 5 years experience in document management for engineering projects. Familiarity with version control, filing systems, document tracking, and metadata management. Proficiency in MS Office and digital record-keeping. 	<ul style="list-style-type: none"> Maintain project documentation including inspection records, NCR logs, testing reports, inventory lists, and correspondence. Ensure proper filing, version control, data archiving, and retrieval systems. Support preparation and consolidation of monthly/quarterly reports and contract documentation. 	1	24

S. Expert #	Qualification & Experience	Detailed Tasks	Positions	Input (by person Month)
		<ul style="list-style-type: none"> Coordinate with MEPCO and EPC contractor teams to ensure complete and orderly document handover. 		

7. Qualification for the Consulting Firm

7.1 The consulting firm must have proven experience as described below: -

- a) At least ten (10) years overall experience, including at least five (5) years of experience to demonstrate that the firm holds the requisite knowledge, skills and competencies required to perform its responsibilities as mentioned in the TORs with due professional care.
- b) Demonstrated corporate experience in delivering engineering, energy sector, and digital utility transformation projects.
- c) Proven experience working as Lead Consultant or Project Management Consultant (PMC) in large-scale infrastructure or power-sector modernization projects.
- d) Minimum One (01) successfully completed assignments in the past 10 years in one or more of the following areas:
 - o Advanced Metering Infrastructure (AMI) / Smart Metering rollouts
 - o Asset Performance Management Systems (APMS) or transformer monitoring systems
 - o SCADA/DMS/EMS/DA automation and distribution system digitalization
 - o Utility communication networks (RF/PLC/GPRS/4G/LTE/IoT)
 - o Meter Data Management (MDM) and Head-End System (HES) integration
 - o Large-scale power distribution modernization
- e) Proven experience working on at least 01(one) project financed by ADB, World Bank, AIIB, KfW, IsDB, or other major development partners
- f) Familiarity with ADB's Procurement Regulations for Borrowers, ADB-quality requirements, reporting formats, safeguards compliance, and contract management procedures
- g) Strong internal quality management systems for engineering, installation supervision, testing and commissioning oversight, and data verification
- h) Capability to manage geographically dispersed projects with large volumes of field installations (100,000+ smart meters or multi-district deployments preferred).
- i) Proven experience in preparing and executing Project Implementation Plans (PIP), QA/QC frameworks, Inspection & Test Plans (ITP), and OHS management systems.
- j) Experience leading and coordinating with EPC contractors, utility teams, safeguards units, and different tiers of stakeholders.
- k) Ability to monitor and ensure compliance with ADB's Safeguard Policy Statement (SPS), Environmental Management Plans (EMP), Social requirements, and GRM procedures.

- I) Adequate financial stability and turnover to manage a multi-year PMC contract of similar size and complexity.
- m) Ability to mobilize staff rapidly and maintain project offices, logistics, and administrative support within Pakistan.
- n) Demonstrated experience in delivering capacity-building programs for utility staff, including hands-on training in AMI, APMS, HES, MDM, communication systems, asset records, and OHS.

8. Reporting Requirements and Time Schedule for Deliverables

8.1. Deliverables

- **Inception Report**

The Consultant shall submit an Inception Report within 30 days of mobilization. The report will confirm the Consultant's detailed understanding of the project scope and will present: (i) the finalized methodology for supervision, integration oversight, QA/QC, and safeguards monitoring; (ii) the consolidated Project Implementation Plan (PIP) synchronized with EPC contractors' schedules; (iii) the supervision framework including communication protocols, reporting templates, and risk-management approach; (iv) stakeholder mapping and agreed coordination arrangements with MEPCO, contractors, and relevant departments; and (v) a detailed work plan linked to Key Timelines and Milestones. Submission and approval of the Inception Report will constitute the first payment milestone under the contract.

- **Monthly Progress Reports (MPRs)**

The Consultant shall prepare and submit Monthly Progress Reports (MPRs) throughout the duration of the assignment. Each report will summarize progress achieved during the reporting month, including quantities installed (APMS, smart meters, DCUs), field supervision activities, QA/QC findings, NCR status, HES/MDM integration progress, communication network performance, safeguards/OHS compliance, risk issues, contractor performance, installation readiness constraints, and updated work schedules. The MPRs shall include geotagged progress data, photographic evidence, updated asset inventory status, and a summary of activities planned for the next reporting period. Monthly reporting will also form part of the basis for ongoing payment certification.

- **Quarterly Progress Reports (QPRs) (in ADB format)**

The Consultant shall prepare Quarterly Progress Reports (QPRs) in compliance with ADB's standard reporting format. These reports will consolidate implementation progress during the quarter, including: cumulative installation achievements, milestone verification status, APMS and AMI integration results, QA/QC audit summaries, financial progress, updated risk registers, safeguard compliance records, GRM status, stakeholder engagement, and contract administration issues. The QPRs shall provide an analytical assessment of implementation constraints and

propose corrective measures. Acceptance of each QPR will be associated with quarterly payment milestones for the Consultant.

- **Safeguard Monitoring Reports (semi-annual)**

In accordance with ADB's Safeguard Policy Statement, the Consultant shall submit Semi-Annual Safeguard Monitoring Reports, covering both environmental and social performance. These will assess compliance with the Environmental Management Plan (EMP), worker and community health and safety requirements, GRM status and resolutions, gender-related activities (if applicable), and monitoring of any site-specific mitigation measures. The report shall include field audit results, corrective actions, incidents/near-miss analyses, and updated compliance checklists. Submission of each safeguard monitoring report will be tied to semi-annual contract payment milestones.

- **Site Acceptance Test (SAT)**

The Consultant shall prepare Site Acceptance Test (SAT) Reports for APMS, smart meters, HES/MDM components, DCUs, and communication equipment. SAT reports shall document compliance of hardware and software with technical specifications, test procedures, quality certifications, and acceptance criteria conducted at the manufacturer's facilities. SAT reports shall document final verification of installation quality, functional performance, communication reliability, integration success, and end-to-end data validation. These reports shall serve as the technical basis for milestone payments linked to equipment delivery, testing, and commissioning.

- **Contract Closeout Report**

At the completion of the assignment, the Consultant shall submit a comprehensive Contract Closeout Report summarizing (i) final installation quantities and asset inventories, (ii) results of QA/QC audits, (iii) verification of all commissioning tests, (iv) status of NCRs and corrective actions, (v) final safeguards compliance, (vi) lessons learned, and (vii) handover of all project documentation, databases, GIS layers, and digital records. The report will also certify completion of all contractual obligations by the EPC contractors and provide a final assessment against key timelines and milestones. Approval of the Closeout Report will constitute the final payment milestone.

8.2. Key Milestones with Timelines

Sr #	Deliverable/ Milestone	Description	Time schedule
1	Mobilization & Inception Report	Mobilization of core team; establishment of project office; submission and MEPCO approval of the Inception Report including detailed work plan, PIP, methodology, staffing, QA/QC framework, and risk matrix.	Month 1
2	Quarterly Progress Reports (QPRs)	Submission and acceptance of QPRs in ADB format, summarizing installation progress, QA/QC supervision, integration status,	8 quarters (One report for each quarter)

Sr #	Deliverable/ Milestone	Description	Time schedule
		safeguards performance, issues, and updated timelines. Payment made per accepted QPR.	
4	Semi-Annual Safeguard Monitoring Reports	Submission and acceptance of Environmental & Social Safeguards Reports (semi-annual) covering EMP compliance, OHS audits, GRM status, and mitigation measures.	4 Reports
5	APMS Installation Completion Verification	Verification and acceptance of installation and commissioning of 13,323 APMS units including NCR closure and digital asset reconciliation.	Month 18
6	Smart Meter Installation Completion Verification	Verification and acceptance of installation and commissioning of 150,000 smart meters; validation of field documentation; closure of NCRs; updated inventory logs.	Month 18
7	SAT Reports (APMS + AMI)	Completion and acceptance of Site Acceptance Test (SAT) Reports after field installation, covering functionality, communication performance, and installation quality.	Month 20
8	Full System Integration & Data Validation Report	Acceptance of full end-to-end integration results between APMS/AMI and HES-MDM, including SIT/UAT completion, stability tests, and data validation cycle reports.	Month 22
9	Contract Close-Out Report	Submission and acceptance of final Contract Close-Out Report including final installation inventory, testing summaries, safeguards compliance, lessons learned, and full documentation handover.	Month 24

9. Client's Input and Counterpart Personnel

a) Institutional Arrangements

- Overall monitoring of progress shall be done by the MEPCO's Project Management Unit (PMU). PMU will be supported by other relevant departments to form a multi-tier, multi-disciplinary team to oversee the execution of the assignment and the Project.
- Chief Engineer (Development)/Project Director PMU will be representative of the MEPCO and will be responsible for coordinating all interfaces with the Consultant. Chief Engineer (Development) will be the main interface for the Consultant and will provide all required information and other documents. He will also support the Consultant in resolving various administrative issues which may arise during the duration of the assignment.
 - Consultant shall arrange all logistical, transport, communication and accommodational facilities to its team to enable them to perform efficiently.

b) MEPCO will provide and make available to the consultants the following:

- MEPCO will provide access to sites, data, and coordination support to the consultant team.
- The MEPCO will provide copies of available studies, designs, related drawings, and any other relevant information to the PMC.

10. Knowledge Transfer and Capacity Building

- 10.1. The Consultant shall implement a structured knowledge-transfer and capacity-building program for MEPCO staff throughout the assignment. This will include on-the-job training, technical workshops, and hands-on coaching covering APMS and AMI installation supervision, QA/QC procedures, HES–MDM integration, communication network diagnostics, safeguards compliance, and contract management practices. The Consultant shall develop project related training materials, user guides, and standard operating procedures (SOPs) to strengthen MEPCO's long-term operational, technical, and analytical capabilities. Capacity-building activities shall be delivered progressively and aligned with key implementation milestones to ensure effective assimilation of skills and institutional learning.