

TERMS OF REFERENCE FOR CONSULTANTS
Electricity Grid Modernization Project- Additional Financing
PROJECT MANAGEMENT CONSULTANT FOR ERP AND RMS

BACKGROUND

1. Electricity is one of the key elements of the infrastructure of a country for acceleration of economic development and is considered as an important input to improve quality of life. About 86 % of the total households of Nepal have access to grid electricity, with an increase of 18% from the year 2016. The total consumers as of July 2020 stand at 42,17,710, with annual growth of 8%. In FY 2019/20, a total of 6420.762 GWh of energy was sold earning gross revenue of Rs. 74,309.877 million. Industrial and Commercial consumer categories combined together represent only 2.03% of the total number of consumers but shared 43.42% of total sales. Similarly, the domestic consumer category represents 93.24% of total consumers and contributed 44.34% to the total sales. Out of the total consumers, Kathmandu valley which houses the capital of Nepal accounts for approximately 5,00,000 consumers.
2. The Average Annual Growth Rate(AAGR) of peak demand of the country in last 5 years is 10% while the AAGR of energy demand is 12% during the same period. Further, on an average the revenues spiked by 20% annually. Kathmandu Valley and major urban centers have witnessed a rapid growth in huge residential apartments and commercial complexes over the last decade putting heavy burden on NEA to meet the electricity demand. Considering the rapid growth in demand of energy and revenues and to cater to the aspiration of their consumers, NEA needs to strengthen their business processes in line with their vision of “Digital NEA” and “Digital Nepal”. NEA has already started its journey by taking initiatives like Smart Metering, Substation Automation, expansion of IT infrastructure and Distribution Command and Control Centre. In order to further move ahead in its journey by bringing improvement in operational efficiency, enterprise robustness and financial soundness, NEA has decided to implement enterprise-wide solutions like ERP based Integrated Financial Management Information System(IFMIS) and Revenue management system(RMS).
3. NEA intends to implement ERP based IFMIS solution for an integrated data collection, analysis and sharing platform to address the key business challenges and share the data across various functional areas which can make its business processes efficient, more robust and reliable to meet the present and future challenges. Further a unified RMS would migrate all its 5 million consumers from decentralized billing systems onto one unified platform. In this backdrop, the Asian Development Bank (ADB) has agreed to provide financing for Integrated Financial Management Information System (IFMIS) and Revenue Management System (RMS).
4. NEA is the executing agency (EA) for the proposed project. The term “NEA”, “EA” and “the Employer” have the same meaning and may be used interchangeably in this document depending on the context.
5. NEA seeks through this term of reference (TOR) to engage a team of Project Management Consultants (PMC) through a firm in accordance with Procurement Regulations for ADB Borrowers to supervise the implementation of IFMIS and RMS projects.
6. The team of consultants is referred to hereafter as “the PMC” or “the Consultant”. The term “PMC” and “Consultant” may be used interchangeably in this document depending on the context. The services of the PMC are hereafter referred to as “the Services”.
7. This document sets forth TOR for the Services.

OBJECTIVE OF THE ASSIGNMENT

8. The services aim at providing high quality professional services to assist NEA in supervising and implementing the projects and to ensure that the projects will be completed according to the schedule and that the completed projects will deliver the quality, capacity, performance, reliability and economic life as per the employer’s requirement defined in the turn key contracts with the contractors.



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SCOPE OF THE SERVICES, TASKS (COMPONENTS)

A. Scope of the services

9. The PMC is expected to deliver the Services for:

- (i) Project Monitoring Support
- (ii) Project Implementation Support
- (iii) Facility Management Services (FMS) and Service Level Agreement (SLA) management Support
- (iv) Third party audit (TPA) agency on-boarding support

B. Detailed Tasks

10. The PMC's detailed tasks are as follows:

Tasks:

Consultant shall assist NEA in program management of the ERP solution implementation throughout the whole project implementation for the duration of the pilot go-live as well as for the roll-out to all project locations. Consultant shall co-ordinate with various stakeholders (NEA, ERP Implementing Partner (SI) etc.) and would assist NEA in key decision-making and review of the work being undertaken during implementation and rollout. Described in the following sections are the key activities that will be executed by the Consultant during this phase.

10.1 Project Implementation Support

- (i) Support in designing/drafting/validating agreements (Project agreements, contract agreements, service-level agreements, operating-level agreements etc.)
- (i) Review, suggest improvements and recommend for approval to NEA, the various documents submitted by different SIs (Inception report, Project implementation plan, blue-print document, As-Is/To-Be reports, Functional Requirement Specifications, System Requirement Specifications, Test Plan/test cases, As-Built reports etc.)
- (ii) Guide NEA with assessment of choices made by the SI for various business processes and suggest better alternatives, where scope for the same exists. Assess the completeness of the identified business requirements.
- (iii) Support NEA in reviewing data migration procedures and methodologies proposed by the SI.
- (iv) Provide report on testing of all hardware/software and related equipment done by the SI.
- (v) Provide User Acceptance Test (UAT)/ System Integration Testing (SIT) Strategy Review Report including suggestions on UAT/SIT Test Scenarios. Review the UAT/SIT Strategy proposed by SIs. Check comprehensiveness of test scenarios and create additional scenarios, if required.
- (vi) Along with NEA, participate in the UAT/SIT. Assist in validation of actual results versus expected results.
- (vii) Analyze change requests put-up by the SI and assess whether such requests are for the activities outside the scope of the work. For activities identified outside the scope of work, evaluate efforts and timelines proposed by SIs.
- (viii) Managing dependencies across multiple projects
- (ix) Ascertain whether system security and confidentiality of the information are maintained.
- (x) Validate user exits / workarounds / customizations from the perspective of efficiency and effectiveness
- (xi) Third-party software integration support: Support for reviewing, testing, and validating the third-party components being integrated with the core technology solutions
- (xii) Review the final build of technology solution offered by SI as proposed in the final business blueprint document, test the IT enabled business controls, identify weaknesses, and suggest controls as per best practices
- (xiii) Review the Roll Out strategy prepared by the SI and recommend revisions on strategic realignment based on their learning and experiences of similar projects.
- (xiv) Prepare a Go-Live Checklist that shall govern the success of any site Go Live.
- (xv) Prepare an exit management plan and adhere to the same with detailed knowledge transfer session to the authorized NEA officials and nodal officer.
- (ii) Consultants will hand over the project related documents to respective NEA's nominated officer included updated project plan, tracker, technical support documents, risks and mitigation



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- plans/documents etc.
- (xvi) Assist in vetting of documents on specification of servers and data center related IT infrastructure prepared by the SI for the project.

10.2 Project Monitoring and review Support

- (v) Review and monitor project scope, objectives and deliverables of the projects; benchmarking the progress of the projects vis-a-vis timelines
- (vi) Assist in reviewing the progress of the implementation of the solutions and the integration of the IFMIS and RMS and the integration of the same with any legacy applications.
- (vii) Review the conformity of the project plan in terms of schedule and milestones, and provide weekly periodic status review updates to NEA.
- (viii) Participate in the “Subproject Steering Committee”, to ensure project implementation. Report the gaps as measured against the targets to the steering committee and the top level management at NEA
- (ix) Provide visibility of program and project status and risks
- (x) Strict monitoring and actionable suggestions towards Contracts management.
- (xi) Update mechanism to escalate issues that do not get resolved by the project teams, to the steering committee.
- (xii) Maintain documentation, minutes of meetings, track action points to ensure the mitigation of risks and issues.
- (xiii) Review of Deliverables:
- Consultant shall track and review all deliverables of the SI and provide feedback to NEA and the SI
 - Consultant shall confirm the quality and adequacy of the deliverables as per the Terms of Reference/Contract with the Sis of IFMIS and RMS systems.

10.3 FMS SLA Management

- (i) SLA management of FMS activities carried out by SI.
- (ii) Consultant shall conduct periodic review of Implementation Partner’s adherence to the SLA and shall submit a periodic SLA Compliance Report to NEA and follow-up on the previous non-compliances by the SI.
- (iii) This task would be done on a quarterly basis after the start of the FMS period or until the end of consultant’s project duration whichever is earlier.
- (iv) Consultant shall assist NEA in assessing penalties for non-compliance of SLA’s if required.

10.4 Training and Change Management

- (i) Consultant shall provide assistance in effectively strategizing and conducting the training plan and the change management plan by way of discussions with NEA and SI
- (ii) **Planning for Knowledge Transfer and User Training**
- Consultant shall assist NEA in reviewing and improving the knowledge transfer and training plan developed by the SI.
 - Consultant shall review and provide inputs for improving to the training content prepared by the Implementation Partner.
- (iii) **Monitoring of Training Delivery**
- Consultant shall monitor the delivery of training as per plan and provide feedback to NEA on the adequacy and effectiveness of the training.
 - Consultant shall monitor training across the locations identified.
 - Consultant shall collect feedback from training participants and assess the satisfaction levels.
 - Consultant shall review all materials used to conduct the training and shall provide feedback on the same to NEA.
 - Assist NEA in identifying the Subject Matter Resources for the Trainings.
 - Provide report on the efficacy of the trainings being provided by the SI and suggest re trainings (if required to be carried out by SI due to unsatisfactory trainings).



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10.5 Third Party Audit (TPA) Agency on boarding support

- (i) Assistance in RFP preparation and selection of TPA consultant
- (ii) Assistance in the bid process management, technical and financial evaluation of proposals submitted for TPA consultant selection
- (iii) Assistance in the draft contract preparation to sign the contract with the TPA audit consultant

TEAM COMPOSITION & QUALIFICATION REQUIREMENTS FOR THE KEY EXPERTS

A. Team Composition

1. It is estimated that a total 79 person-months of services are required with total inputs of 65 person-months from international experts and 14 person-months from national experts. Details on expertise and person month requirements are in Table 1. The international expertise should be provided by a consulting firm specializing in ERP consultancy in the field of IFMIS and RMS. The firm shall preferably have the experience of working with NEA.

Expertise	No of PM	Total REM	Total REM
		Field	Home
International Consultant			
Team Leader/ Project Management expert	18	6	12
Finance & Accounts expert	4	1	3
Human Resource & Administration expert	4	1	3
Maintenance and Linear asset Management expert	4	1	3
Material, inventory, procurement, and contract management expert	4	1	3
Business Intelligence(BI), Business Warehouse (BW), Document Management System (DMS) and File lifecycle management expert	4	1	3
Metering, Billing and Collection (MBC), New Connection (NC), Disconnection (DC), Dismantling Expert	14	2	12
Customer Relationship Management (CRM) Expert	5	1	4
Integration Expert - RMS & ERP	3	1	2
ICT Infrastructure expert	3	1	2
Cyber Security expert	2	1	1
National Consultant			
Database Expert - RMS	4	4	
Power Sector Domain Expert	4	4	
Energy Audit Expert	6	6	
Total	79	31	48

B. Qualifications/Experience Requirements for the Experts

All the subject specific consultants are required to have excellent writing and communication skills in English.



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2. **Project Manager/Team Leader:** He/She shall have preferably Bachelor's degree in Electrical/Electronics/IT/Computers with Master's in business administration with at least 15 years of operational experience in IT implementation in power sector at leadership level. The expert shall have previous team leader experience in IFMIS and RMS systems.
3. **Finance and Accounts Expert:** He/She shall have preferably master's in business administration/ACCA or related field and at least 10 years of proven experience in ERP consultancies in area of Finance and Accounts.
4. **Human Resource & Administration expert:** He/she shall have preferably Masters in Business Administration or related field and at least 10 years of proven experience in ERP consultancies in area of Human Resource and Administration.
5. **Maintenance and Linear Asset Management expert:** He/She shall have preferably Master's Degree in Electrical/Electronics/IT/Computers and at least 10 years of proven experience in ERP consultancies in the relevant area.
6. **Material, Inventory, procurement and contract management expert:** He/She shall have preferably Bachelor's Degree in Electrical/Electronics/IT/Computers with Masters in Business Administration and at least 10 years of proven experience in ERP consultancies in area of Material, Inventory and Procurement.
7. **Power Sector Domain Expert:** He/She shall have preferably Master's in power/electrical engineering and at least 10 years of proven experience in power sector including generation, transmission and distribution.
8. **BI BW, DMS and File lifecycle management expert:** He/She shall have preferably Bachelor's Degree in Electrical /IT/ Computer Science/or related field and at least 5 years of proven experience in ERP consultancies in relevant area.
9. **MBC, NC, DC, Dismantling Expert:** He/She shall have preferably Bachelor's Degree in Electrical/Electronics/IT/Computers with Masters in Business Administration and at least 10 years of proven experience in consultancies in area of revenue management in power utilities.
10. **CRM Expert:** He/She shall have preferably Bachelor's Degree in Electrical/Electronics/IT/Computers or related field and at least 10 years of proven experience in consultancies in area of customer relationship management in power utilities.
11. **Energy Audit Expert:** He/She shall have preferably Bachelor's Degree in Electrical/Electronics/IT/Computers and at least 10 years of proven experience in consultancies in area of energy audit.
12. **Database Expert - RMS & ERP:** He/She shall have preferably Bachelor's Degree in IT/ Computer Science/or related field and at least 10 years of proven experience in consultancies in area of database administration/consulting.
13. **Integration Expert - RMS & ERP:** He/She shall have preferably Bachelor's Degree in Electrical/Electronics/IT/Computers/or related field and at least 10 years of proven experience in consultancies in area of integration/enterprise architecture.
14. **ICT Infrastructure expert:** He/She shall have preferably Master's degree in computer science/or related field and at least 10 years of proven experience in areas of ICT Infrastructure in ERP and RMS consultancies.
15. **Cyber Security expert:** He/She shall have preferably Bachelor's Degree in Electrical /IT/Computer Science/or related field and at least 5 years of proven experience in cyber security consultancies.

C. Responsibilities of the Experts



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The main responsibilities of each international expert are highlighted, but not limited to, as follows:

16. The **Project Manager/Team Leader** is responsible for:

- (i) Lead role in management of consulting team.
- (ii) Overall project planning and discussions with senior management of client
- (iii) Overall review of the tasks and progress of the project
- (iv) Planning, resourcing and supervision of all IFMIS and RMS initiatives at NEA
- (v) Delivery of robust IFMIS & RMS solutions for NEA
- (vi) Regular reporting for project progress against schedule and discrepancies between expected schedule and actual progress.
- (vii) Sets deadlines, assigns responsibilities and monitors progress of pertaining to the Project Management Module as per the scope of work defined in ToR.
- (viii) Evaluates and recommends changes to current and future IFMIS and RMS system requirements to meet organizational needs.
- (ix) Monitoring of FRS and assistance in compliance of the same.
- (x) Leads the implementation of new organizational processes aligned with IFMIS and RMS configuration.
- (xi) Support in the selection of Third Party Audit Consultant.
- (xii) Monitors & reports progress of all infrastructure development, upgradation initiatives.

The following specific subject consultants for the ERP based IFMIS are responsible for:

- (i) Evaluates and recommends changes to current and future IFMIS system requirements to meet organizational needs.
- (ii) Monitoring of respective FRS and assistance in compliance for the same.
- (iii) Bid process Management for Third party audit
- (iv) Leads the implementation of new organizational processes aligned with IFMIS configuration.
- (v) Monitors & reports progress of all infrastructure development, upgradation initiatives.

In addition to the above, the consultants are specifically responsible for:

17. The **Finance & Accounts Expert** is responsible for:

- (i) Sets deadlines, assigns responsibilities and monitors progress of pertaining to the Finance & Accounts module as per the scope of work defined in ToR.

18. The **Human Resource & Administration Expert** is responsible for:

- (i) Sets deadlines, assigns responsibilities and monitors progress of pertaining to their Human Resource & Administration module as per the scope of work defined in ToR.

19. **Maintenance and Linear asset management expert** is responsible for:

- (i) Sets deadlines, assigns responsibilities and monitors progress of pertaining to the Maintenance and Linear Asset Management module as per the scope of work defined in ToR.

20. **Material, inventory, procurement and contract management expert** is responsible for:

- (i) Sets deadlines, assigns responsibilities and monitors progress of pertaining to the Material, inventory, procurement and contract management module as per the scope of work defined in ToR.

21. **BI BW, DMS and File lifecycle management expert** is responsible for:

- (i) Sets deadlines, assigns responsibilities and monitors progress of pertaining to the BI BW, DMS and File lifecycle management module as per the scope of work defined in ToR.

The following specific subject consultants for the RMS are responsible for:

- (i) Interact with NEA users and work towards analysing user related, acceptance related, technical and functional issues of solution stack and work towards closure of them.
- (ii) Identification of key technical risks associated with the various modules and work with developers/SI Team towards closure.



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- (iii) Assist NEA by coordinating for IT audit activity and closure of gaps and findings.
- (iv) Monitoring and Reporting

In addition to the above, the consultants are specifically responsible for:

22. **MBC Expert** is responsible for:

- (i) Identification of Utility Business Requirements, Mapping of Existing Business Process, Alignment of Software Solution with Utility Business needs and Overall implementation / usability of RMS Software Solution Stack.

23. **NC, DC, Dismantling Expert** is responsible for:

- (i) Identification of Utility Business Requirements, Mapping of Existing Business Process, Alignment of Software Solution with Utility Business needs and Overall implementation / usability of New Connection, Disconnection and Dismantling Solution Stack.

24. **CRM Expert** is responsible for:

- (i) Identification of Utility Business Requirements, Mapping of Existing Business Process, Alignment of Software Solution with Utility Business needs and Overall implementation / usability of Customer Relationship Management Solution Stack.

25. **Energy Audit Expert** is responsible for:

- (i) Identification of Utility Business Requirements, Mapping of Existing Business Process, Alignment of Software Solution with Utility Business needs and Overall implementation / usability of Energy Audit Solution Stack.

26. **Database Expert – RMS Expert** is responsible for:

- (i) Monitoring and maintenance of databases, installation of database software patches/upgrades, monitoring of database backups, database replication techniques, standardization, and implementation of databases to improve the management of production and test environments.
- (ii) Support users by resolving problems with applications' databases.
- (iii) Monitor and allocate volumes, analysis of utilization and resources, performance tuning, monitor DB replication, coordination of system upgrades or fixes.

27. **Integration Expert - RMS & ERP** is responsible for:

- (i) Analysing existing and upcoming business, information, application, and technology architecture operating at a tactical level for resolution of utility business problems.
- (ii) Supervise the interface/integration between metering, billing and collection systems with the base ERP system.
- (iii) Shall supervise in developing interface with existing IT applications (DMS, AMI, MDM etc)

28. **ICT Infrastructure Expert** is responsible for:

- (i) Analyse the enterprise specific requirements, formulate solution framework, technology selection, Overall IT solution development, solution prototype etc.
- (ii) Responsible for planning and implementation of IT equipment's at identified locations, installation and maintenance of hardware, software & network, development of business continuity plan, evaluation of system performance and tracking of project deliverables & progress etc. with overall project management support.

29. **Cyber Security Expert** is responsible for:

- (i) Cyber security expert shall be responsible for assisting NEA in maintaining system security and will assist by recommending latest cyber security technologies and measures.

REPORTING REQUIREMENTS, TIME SCHEDULE FOR DELIVERABLES AND IMPLEMENTATION ARRANGEMENT

30. The Consultant shall prepare various reports and maintain records documenting decisions made at meetings,



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progress on project implementation, financial records and changes to the contract plans. All documents and reports would be made available on electronic format to NEA and ADB. The reporting shall, in general, comprise of the following:

- Inception report
- Formats for site supervision and site supervision reports
- At NEA's request, all necessary reports concerning special matters related to the project (supply, installation, work methodology, safety, claims, checklist for equipment and software testing and commissioning etc.)
- Monthly reports concerning physical progress/status of works, expenditures, delivery of materials (hardware and software) etc. in the formats acceptable to NEA and ADB.
- Quarterly progress report giving the progress status, schedules, costs, budgets etc. in the formats acceptable to NEA and ADB.
- Bidding documents and Technical Evaluation Report including for major selection of Third Party Audit agency for ERP and RMS audit.
- Software change control and release management framework as per ITIL.
- Exit management plan – One time.
- Project closure report (PCR) – One time.

CLIENT'S INPUT AND COUNTERPART PERSONNEL

31. **Administrative support for Consultant Team:** If required by local regulations, NEA will provide consultant with necessary support letters for obtaining visas and permits for its experts. The cost and timing of obtaining the above is entirely the responsibility of the consultants.
32. **Office Space, Office Equipment, Transportation and Accommodation:** NEA will provide office space, necessary furniture and office equipment (computers, fax, telephone etc.) in Kathmandu. The consultant shall make his own arrangements for transportation and accommodation for its personnel in Nepal. The consultant shall arrange itself any other equipment and planning software required during execution of works. Consultant shall be responsible for international telephone bills, maintenance of office equipment and consumables necessary for its own use.
33. **NEA Project Team:** The subprojects (IFMIS and RMS) shall have its own contract management team comprising of project manager, engineer and other support staff. The subproject team shall assist the consultant in collecting data required for study. The subproject team shall work in close collaboration with the consultant's team and be fully involved in all aspects of the consulting services. Both NEA and consultant's teams shall work together as one single team in all matters related to the project.

Further, NEA will facilitate access of the consultant to other government agencies for communications, collecting of relevant information, data documents, etc. and other activities related to the consultant's assignment.



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