

PROJECT IMPLEMENTATION SUPPORT AND CAPACITY DEVELOPMENT

1. The project implementation support and the capacity development component of the proposed multitranche financing facility (MFF) has three major subcomponents: (i) project preparation and implementation support; (ii) enterprise resource planning (ERP) support; and (iii) capacity building. The subcomponents and their costs are given in Table 1.

Table 1: Subcomponents and Costs of the Capacity Development Component

General Description		Contract Value (in \$ million)	Purpose
A.	Project Preparation and Implementation Support	0.9	
a.	Project Management and Construction Supervision for Lakwa Replacement Gas Engine Based Power Plant	0.38	Project management and construction supervision
b.	Project Preparation, Tender Development and Award Management Process for Lower Kopili Hydropower Project	0.52	Project Preparation for hydropower
B.	ERP and IT Support	1.85	
a.	ERP Specialist	0.35	Design of tender, specifications
b.	ERP Implementation and Infrastructure Development for APGC	1.5	Audit accounts, materials management, information technology systems
C.	Capacity Building and Training Support	2.25	
a.	Environment and Social Specialist (LRPP)	0.325	Monitoring and Regulatory requirement
b.	Environment and Social Specialist (LKHEP)	0.325	Monitoring and Regulatory requirement
c.	Accounting, Audit, Budget & Cost Accounting and Materials	0.2	Development of manuals
d.	Capacity Building and Human Resource Development for Power Sector Utilities	1.4	Conduct of trainings in procurement, financial management, project management monitoring and evaluation, demand side management, environment and social safe guards; and human resource management.

A. Project Preparation and Implementation Support

2. This subcomponent provide implementation consultants for tranche 1 Lakwa gas power plant with 5 person-months of international consultants and 8 person-months of national consultants. Project preparatory assistance will be provided through 11 person-months of international consultants and 19 person-months of international consultants.¹ These consultants will be deployed through firms in two packages as described in Table 2. Outline terms of references of the consultants are given in Appendix 1 and 2.

Table 2: Summary Consulting Services Requirement for Project Preparation and Implementation

No	Firm based Project	International		National	
		Name of Positions	p-m *	Name of Positions	p-m *
1	Project Preparation, Tender Development and Award Management Process for Lower Kopili Hydropower Project	Hydropower Design Civil Engineer Team Leader	5	Deputy Team Leader Hydropower Engineer	5
		CDM Specialist	2	Transmission Engineer	2
		Construction Planner / Cost Estimator	2	Mechanical Engineer	2
		Dam Safety Engineer	2	Social / Resettlement Specialist	4
				Environmental Specialist	4
				Financial and Economic Analyst	2
2	Project	Team Leader	5	Site Project Manager (Civil)	4.5

¹ A firm has been engaged to develop the detailed designs of the Lower Kopili hydropower project. The proposed consultant support is only for filling the gaps of the firms work.

No	Firm based Project	International		National	
		Name of Positions	p-m *	Name of Positions	p-m *
	Management and Construction Supervision for Lakwa Replacement Gas Engine Based Power Plant	(Mechanical Engineer cum Gas Engines Expert)		Engineer)	
				Electrical Control & Instrumentation and Quality Assurance Expert	2
				Finance Account & Legal Expert	1.5

Source: Asian Development Bank estimates.

B. ERP and Information Technology (IT) Support

1. Needs Assessment

3. An assessment of Capacity Development and Institutional strengthening needs for APGC, AEGCL, and APDC, including their financial management and procurement capacities was conducted under the TA 7378 - Capacity Development of the Assam Power Sector Utilities. The assessment of the Generation Process Management and procedures in the APGC found the following gaps and areas for improvement:

- (i) Planning and progress monitoring needed more attention.
- (ii) Lack of a defined detailed benchmark maintenance plan for different systems/equipment against which actual implementation may be checked.
- (iii) Accountability/responsibility for efficiency, planning and progress monitoring.
- (iv) Monitoring tools such as Primavera software, Management Information System (MIS) customized software, DBM, ERP not available.
- (v) Communication system at plant level is unreliable.
- (vi) Inventory and spares management efficiency system not found.
- (vii) Specific and adequate training policy does not exist.
- (viii) Environment, Health and Safety issues not taken seriously as necessary at plant level.
- (ix) Procurement procedures results in delays beyond normal standards.

4. The assessment of the Distribution Process Management and procedures in the APDC found the following gaps and areas for improvement:

- (i) Lack of motivation of workers and lack of understanding the company's objectives.
- (ii) Lack of result-oriented procedures in commercial and operational areas.
- (iii) Energy Accounting is currently carried out through manual input of data, a computerized system is necessary.
- (iv) A systematic process for formulating long-term demand projection is not evident.
- (v) There is no monitoring from a central location. Commercial processes are not standardized and no standard process document (like ISO document) exist.
- (vi) Usage of de-centralized database for commercial function in all Sub-divisions has led to manual intervention in generation of MIS and other reports.
- (vii) All consumer records are maintained in hard copy, computerization is necessary for easily access.
- (viii) Meter Reading is carried out manually and there is no proper monitoring of meter reading performance cycle time and efficiency.

5. In addition to the above assessment, PPTA consultants for the MFF reviewed the above assessment and the financial management and procurement capacity and the status of implementation of the above issues. This more recent assessment revealed that some the challenges identified under the study are yet to be entirely addressed. Some of the comments included:

- (i) Weaknesses in financial management, accounting and internal audit remain in both APGC and APDC. There is a distinct need to address the weak financial management, internal audit, cost accounting and accountancy controls, support is envisaged to develop new internal audit, cost accounting and accountancy manuals.
- (ii) APGC lacks internal staffing capacity to address technical design and mitigation measures for environmental assessment for its projects. Social impact assessment and community development plan, including support for livelihood opportunities in the project-affected area need to be monitored and implemented by APGC's capacity building consultant on social safeguards.
- (iii) Project monitoring mechanism seems to be weak as there is no monitoring from a central location. Commercial processes are not standardized and no standard process document (like ISO document). Usage of de-centralized database for function in all Sub-divisions has led to manual intervention in generation of management information system (MIS) and other reports
- (iv) The existing manpower at APGC is in excess of the requirement and still continues to be on the rolls of the joint cadre of erstwhile ASEB. APGC is managing its operations with the manpower that has been assigned to it as part of the restructuring process, without taking in to cognizance its actual requirement. APGC needs to undertake a detailed analysis of the present manpower vis-a-vis its actual requirement based on proper benchmarking against similar organizations.
- (v) Deficiencies in the Materials management, inventory management, reporting are immense. Development of an enterprise resource planning (ERP) system will help develop an effective procurement procedure and Inventory management system, maintenance management, accounting and reporting systems effective and efficient.
- (vi) The issues of poor planning and cost overruns with respect to projects need attention. This can be addressed by carrying out proper engineering due diligence, providing consultancy support, reorientation its systems and procedures in line with those followed by efficient power utilities in India.

6. Based on the above needs the ERP and Information technology support was designed. APGC intends to put in place an ERP system that will help integrate its operations through an online system on a real time basis. As a first step in this direction, APGC intends to hire the services of a highly qualified expert in the field of information technology with sufficient experience in setting up of ERP systems, to advise the corporation in selecting the most suited an experienced company to implementation ERP system in APGC. The ERP support component will be fully developed by an international consultant (12 person-months) recruited as an individual consultant. This consultant will finalize the TORs for other ERP implementation consultants (12 international and 56 national) and help implementing the ERP support program. The remaining ERP consultants will be recruited through a firm (Table 3). ERP costs also include hardware and software. Outlined terms of reference for an individual consultant (individual 12 months) and a firm are given in Appendix 3 and 4. Table 3 provides summary of

the consultants' services for ERP support component.

Table 3: Summary of ERP Consulting Services Requirement

No	Description	International		National	
		Name of Positions	p-m *	Name of Positions	p-m *
1	Firm based ERP Implementation and Infrastructure Development for APGC	Team Leader	12	Finance and Accounting Expert	6
				Maintenance Management Expert	3
				Materials Management Expert	3
				Project Management Expert	6
				Human Resource Management Expert	6
				Programmers (4),	32
		Other hardware, software, licenses, data center costs			
2	Individual Undertake preparatory work to recruit a firm	ERP consultant	12		

APDC = Assam Power Generation, ERP = enterprise resource system.

Source: Asian Development Bank estimates.

C. Capacity Building and Training

7. AEGC, APGC and APDC are expected to operate as professional corporate entities with the objective of optimizing shareholder value and serve the interests of its stakeholders and customers. The existing business model, which is a full-service utility model, with internal human and technical resources for planning and development, technical design, project management, financial management, and environmental and social safeguards management is inadequate. The utilities are still using the inefficient manual process for all its operations.

8. The assessment by the TA7378 team specifically targeted the weaknesses of the financial management and proposed time-bound actions plans provided to APGC and APDC to address major financial management shortcomings highlighted by statutory auditors. These agencies need to realign its processes and procedures with clear delineation of role/responsibilities for officials. The span of control for senior management is too high and workers lack motivation for attaining company's objectives. Lack of result-oriented procedures in commercial/operational areas is resulting in poor performance of the utilities. The international best practices are not being followed for operating the plants.

9. Accordingly a detailed analysis of the processes, systems and the current manpower for APGC and other utilities, their job profile, a detailed and optimal capacity building and training program has been suggested. Outline terms of references (TORs) for following contracts are attached in Appendixes 5-8 for hiring of consultants for the following major heads: (i) social and environmental safeguard support for Lakwa and Lower Kopili plants; (ii) financial management support; and (iii) human resource development support. Summary of the consultancy requirement for capacity development is given in Table 4.

Table 4: Summary of ERP and Capacity Building Consulting Services Requirement

No	Description	International		National	
		Name of Positions	p-m *	Name of Positions	p-m *
a	Firm based Financial Management Accounting, Audit, Budget & Cost Accounting and Materials Management Manuals Preparation	Team Leader/Expert in Accounting and Audit	4	Financial Management/ Financial Accounting Internal Audit Expert	3
				Budget, Cost Audit & Accounting/Materials/Inventory Management Expert	3
b	Firm based Human Resource Development Capacity Building and Human Resource Development for Power Sector Utilities	Team Leader Power Engineering Expert External Specialist Faculty	8 5 10 training	Transmission Engineer	2
				Power Distribution Engineer	3
				Hydropower Engineer	2
				Finance and Accounts	4
				IT Expert	2
				Training and Coordinator	8
				Environment and Social Expert	3
				External Specialist Faculty	20 training
c	Individual Lakwa Plant: Environment and Social Safeguard			Environmental and social safeguard specialist	30
d	Individual Lower Kopili Plant: Environment and Social Safeguard			Environmental and social safeguard specialist	30

Source: Asian Development Bank estimates.

* This is indicative figures and are suggestive in nature only but not prescriptive in nature as the contractor is free to include these or any other cv and time frame as deemed necessary

10. Capacity building consultancy service will be recruited through firms in two major packages: financial management; and human resource development. Capacity for financial management will be provided through a firm with 10 man months (4 international and 6 national). The human resource development consultancy service will be obtained through a firm with 47 man months (23 international and 24 national). Environmental and social safeguard support will be provided through two individual consultants for 30 person months each spread over five year period. The individual summary consultants' requirement for capacity development is given in Table 4.

Outline Terms of Reference
Project Management and Construction Supervision for Lakwa Replacement Gas Engine Based Power Plant for APGC (Firm)

1. **Objective.** APGC intends to hire the services of a qualified and experienced Consultant for Project Management Construction and Commissioning Supervision for the Lakwa power plant. The objective of hiring the services of a Consultant with sufficient experience in supervision of installation and commissioning of gas based power plants including those using reciprocating engines and associated compressors. The consultant shall deploy suitable experts to supervise each aspect of construction management and commissioning to ensure that replacement of the old gas turbines at Lakwa TPS is done in most efficient and economical manner and in compliance with best international practices while ensuring on-time commissioning of the project.

2. **Scope of Work.** The work will be executed by the EPC contractor, i.e. the equipment suppliers, but the Consultant will represent the owner in ensuring that the work of the EPC contractor is being executed as per the contract, applicable codes, desired Quality Standards and in timely manner. The scope of services of the Consultant will cover complete oversight of the EPC contractor starting from design approvals, decommissioning, disposal, supply, construction (erection and commissioning, testing) supervision and monitoring, startup of generation and O&M up to the development of terms for execution of long term service agreement (LTSA). These services will broadly be covered in the following phases:

- (i) Engineering Approvals
- (ii) Project Management
- (iii) Construction, Erection and Commissioning (Construction) Supervision
- (iv) O&M and LTSA

Outline Terms of Reference
Project Preparation, Tender Development and Award Management Process for Lower
Kopili Hydropower Project for APGC (Firm)

1. **Objective of the Assignment.** APGC intends to hire the services of a qualified and experienced Consultant for Project Preparation, Tender Development and Award Management Process for Lower Kopili Hydropower Project. The objective is to hire the services of a Consultant with sufficient experience in supervision of construction management and bid management procedure for the implementation of the Lower Kopili hydropower project. The consultant shall deploy suitable experts to conduct of the tasks allocated to ensure that hydropower project is constructed in most efficient and economical manner and in compliance with best international practices while ensuring on-time commissioning of the project within the allocated budget.

2. **Scope of Work.** 2. The Consultant's work in addition to assisting APGC is also to conduct review of information for ADB as the financier of the technical assistance. The consultant shall study the engineering services for the HEP by previous Contractors for their totality and beyond the safety aspect for meeting the ADB's requirements. The consultant shall also oversee the environmental and social impact assessments, mitigation measures and preparation and implementation of the Resettlement and Environmental Management Plans. The consultant shall prepare tender documents and manage the tender evaluation and award process keeping in view the following:

- (i) the proposed project layout should be optimal; the physical impacts of the project have been identified and addressed in the conceptual design; the project development plan, its cost, its implementation schedule as envisaged are realistic and achievable; and is in compliance with international standards of dam safety and sustainable development,
- (ii) the estimate of power and energy production is an accurate assessment of the hydropower potential, and
- (iii) the Safeguards issues have been addressed in a manner that is consistent with ADB requirements as specified in ADB's Safeguard Policy Statement 2009).

3. The Consultant shall carry out the work in four inter-related Phases under this assignment:

Phase 1: Collect and Study Feasibility Study/DPR/EIA documents approved by CEA, GSI etc.;

Phase 2: Review of Cost Estimate, Schedules, Economic-Financial evaluation, Safeguards and Risk management issues;

Phase 3: Conduct of SIA and tribal surveys for Lower Kopili Hydropower Plant;

Phase 4: Preparation of Bidding Documents, and manage the Evaluation and Award Process for APGC.

4. Deliverables in the different phases are as follows:

- (i) Draft EIA Report (including EMP) and CDM documents
- (ii) Draft SIA Report, Resettlement Plan and IPP.
- (iii) Draft Tender Documents
- (iv) Final Tender Documents
- (v) Finalised Safeguard Documents including CDM Documents.

Outline Terms of Reference: ERP and IT Specialist, National, 12 pm (Individual)

1. Objective/Purpose of the Assignment. The objective of this assignment is to engage a consultant who will be associated with the APGC, right from conceptualization till its technical and financial closure for ERP based Information Technology (IT) solution. All back end office processes like Financial Management, Accounting, Asset Management, Human Resource Management, Inventory Management, Equipment and Material Procurement, Project monitoring etc., would be integrated through the ERP package. The consultant is required to study the feasibility of the ERP solution, workout infrastructure requirement, prepare budgetary estimates, Functional Requirement Specifications (FRS), RFP and provide assistance in selection and evaluation of a Implementation Partner for the ERP project and assist during implementation, technical and financial closure of the project etc.

2. Scope of Work. The broad scope work shall cover the following activities, phased into three distinct components:

- (i) Pre- implementation - preparation of roadmap and RFP and selection of ERP partner.
- (ii) Implementation- change management, implementation monitoring etc:
- (iii) Post Implementation – post implementation audit, Financial and technical Closure etc.

Outline Terms of Reference (Firm)
ERP Implementation and Infrastructure Development for APGC

1. **Objective/Purpose of the Assignment.** APGC therefore, intends to put in place an ERP system that helps it to integrate all its operations through an online system on a real time basis. APGC hired the services of a highly experienced and qualified expert in design and implementation of ERP systems for utilities. Based on the ERP design, the implementing partner will implement the ERP system in the APGC. The objective of this assignment is to implement the ERP system as recommended by the ERP design consultant associated with the APGC right from conceptualization stage till the Enterprise Resource Planning (ERP) based Information Technology (IT) solution becomes fully operational in APGC. The ERP system will integrate all the functions of the APGC including its back office processes like Financial Management, Accounting, Asset Management, Human Resource Management, Inventory Management, Equipment and Material Procurement, Project monitoring amongst other things. The ultimate objective of the project is to enable APGC to improve its operational and financial performance through the online integration of all its operations on a real time basis. Integration of EPR with business intelligence (BI) is must for APGC to employ the full functionality of the data center for business decision making.

2. **Scope of Work.** The ERP will be a single unified business information system for APGC's Resource Management and the solution should be a completely integrated, available of-the-shelf ERP product. The System should have the required depth, breadth and flexibility to provide on-line information access to all the designated users who will operate the respective business processes. The main system and database will be residing in the Data center to be set at the Head office, in Guwahati. The general scope of the proposed ERP based Integrated Information System (IIS) is as follows:

a. Plans & Schedules

- (i) Business process study ("As-Is") and recommendation of best practices ("To Be") so as to identify the amendments to be made in the ERP package.
- (ii) Identify the process/procedure that needs to be modified/ introduced to meet the needs of the proposed system.
- (iii) Prepare a project-plan with detailed activity schedules and a time-bound action plan for the ERP based IIS.

b. Supply / Development / configuration & installation of the software

- (i) Supply and configuration of all the ERP hardware and application software, Relational Database Management System (RDBMS) software and other utility software as required. Develop of software to integrate BI into ERP data programming.
- (ii) Supply, configuration and implementation of the ERP hardware and software based IIS at all locations.
- (iii) Design of architecture & preparation of test script, test data, trial run and arranging acceptance testing of all modules.

c. Installation of hardware and Integration of Software

- (i) System Integration at Corporate and all other offices of APGC.

d. Go live and Roll Out

- (i) Go-Live run of all modules at Corporate office with real-time data along with

“Stabilization of the System”

- (ii) Roll out of the System to all the other Offices of APGC.

e. Training and Operation Manual

- (i) Prepare and supply User/Operation Manual for smooth and trouble free operation of the system
- (ii) Impart User training at all levels at all sites as per APGC’s requirement to make them self-dependant.

f. Technical Support

- (i) Maintenance and Technical Support for the ERP hardware and software system for a period of 2 (two) years after delivery of licenses. Thereafter, 3 years of O&M contract after the period for hardware and ERP software on paid basis.

Outline Terms of Reference: Lakwa Thermal Power Plant Environment and Social Safeguards Specialist, National, 60 pm (Individual)

1 Objective of the Assignment. One of the generation facilities inherited by APGC from the erstwhile ASEB is the 4 x15 MW Lakwa gas based thermal power plant. The gas turbines operating in open cycle mode were set up in seventies and eighties and have outlived their service life. APGC has planned to replace these gas turbines with adequate number of reciprocating gas engines with total nominal capacity of 70 MW. Each engine rating is expected to be between 7 to 10 MW. The Environment Impact Assessment Report for this project shall primarily be limited to the impacts due to the changed technology intended to be deployed. This report shall be prepared by a specialist who is well aware of the involved requirements for obtaining MOEF clearance.

2. Scope of Work. As per EIA clearance requirement of MoEF empowered committee, the Environmental Cell of APGC should be headed by an officer of appropriate superiority and qualification and shall comprise of at least one expert in environmental science / engineering, occupational health and social scientist. Therefore the consultant shall work full time to support APGC at the site for project implementation and O&M timeframe. The consultant will be based at the project site itself and shall report to the Head of the Cell, who in-turn shall directly report to the head of the organization who would be accountable for implementation of environmental regulations and social impact improvement/mitigation measures.

3. Detailed Tasks and/or Expected Output. The specific tasks to be performed by the Environment and Social Scientist for Lakwa Gas based Thermal Power Plant will include, but not be limited to the following activities:

- (i) To study the existing environmental conditions based on data available with Lakwa TPS and Meteorological Department for the last 2 years and frame BASE Data on this basis. This should cover
 - Air pollution (particulate/dust, CO₂, CO, NO_x, SO_x etc.).
 - Water pollution (if any).
 - Noise (Background Noise).
- (ii) Review the Environment Impact Assessment Reports (EIAR) and advise APGC with regard to its acceptability.
- (iii) Periodically review the construction management procedures adopted by EPC Contractor for ensuring that no pollution is created during construction/implementation of the Project. Prepare a monthly fact sheet on Health and Safety issues encountered during implementation of the project activities.
- (iv) Participate in the commissioning and testing of pollution control equipment/systems to ensure that same meet the requirements of MOEF/State Pollution Control Agency.
- (v) Obtain all necessary periodic clearances from the MOEF, GOI and State Pollution Control Board/Authority and direct implementation of specific correction measures suggested by regulatory agencies.
- (vi) Advise APGC with regard to any environmental/social issues including matters relating to Corporate Social Responsibilities.
- (vii) The consultant should undertake an environmental compliance audit and Health and Safety audit including on-site assessment on quarterly basis, and prepare an audit report along with corrective action plan for resolution of any non-compliance.

4. Deliverables. Following are the expected deliverables:

- | | | |
|-------|--|----------------|
| (i) | Data Collation of data received from EPC contractor | Report |
| (ii) | Environment and social parameters | Report |
| (iii) | Prepare Environment and Social Impacts Monitoring Reports for APGC HQ, MoEF, GOI and state pollution control board | Report |
| (iv) | Obtain all necessary periodic clearances from the MOEF, GOI and State Pollution Control Board/Authority. | Clearance |
| (v) | Direct implementation of specific correction measures suggested | Process report |

**Outline Terms of Reference: Lower Kopili Hydropower Project
Environment and Social Safeguards Specialist, National, 60 pm (Individual)**

1. **Objective of the Assignment.** APGC is enhancing its in-house generation capacity by implementing the 120 MW Lower Kopili HEP (LKHEP). APGC intends to hire the service of an Environment and Social scientist to provide necessary technical advice to APGC on all environment and social issues related to LKHEP's Environment and Social Impacts analysis being done by the EIA consultant. The expert will assist the EA/IA consultant (already hired by APGC) in obtaining all the necessary approvals and clearances from the MOEF, Assam State Pollution Control Board and other relevant authorities and agencies for the implementation of the project. He shall provide guidance to EA/IA consultant for preparation of the Environmental Management Plan to be implemented during and after the implementation of the project; and advise APGC on all: environment, social, resettlement, rehabilitation, gender, health & safety; and other related issues as required; to meet the ADB Safeguard Policy 2009. A domestic expert is required to assist the Executing Agency (EA) and Implementing Agency (IA) for departmental administration, technical support and project management.

2. **Scope of Work.** The primary responsibilities of the Social, Environmental and Resettlement Specialist is to advise and assist the EA/IA in mitigating Social and Environmental issues and to draw the detailed Resettlement Plan, Providing Logistic Support, Administration and Implementation of Social and Environmental management & Monitoring Plans financed under the ADB's MFF and capacity development for EA/IA staff.

3. **Detailed Tasks.** The responsibilities, lines of reporting and specific tasks of the specialist will be defined by the Managing Director, APGC as the project proceeds. Such tasks will be within the normal scope of project management and administration. Specific tasks will include, but not be limited to the following:

A. Project Preparation Stage:

Baseline Conditions: The consultant will review the data collected by the EIA consultant for the project area and consult with APGC and other line departments to review the baseline conditions in terms of physical and biological environment and socio-economic conditions in the project area.

Analysis of Alternatives: The consultant will analyze the alternatives suggested by the EIA consultant and review their environmental and social impacts, their extent, mitigation measures, proposed by the EIA Consultant hired by the APGC for the project, in terms of their socio-economic costs/impacts. He will also analyze these aspects in respect of the siting of the associated transmission line and the sub-station.

Public/stakeholders' consultations: The consultant will review the list of project stakeholders identified by the EIA consultant and hold consultations with them to delineate the appropriate boundaries of the environmental assessment and to screen potential adverse environmental and social issues.

Identification of Environmental/Social Impacts for the Project, the associated facilities such as power evacuation line and the pooling sub-station: The consultants will review the potential environmental and social issues relating to the entire project in terms of nature, magnitude, extent and location, timing and duration. These impacts may relate to the project design stage, construction stage and/or the project preparation and implementation stage. Based on impact prediction methods used by the

EIA consultant and as a result of public consultations, the consultant will screen adverse environmental impacts for inclusion in the proposed mitigation measures and environmental management plan. The process will be followed for identification of social impact, gender, health & safety and related issues/ impacts and the feedback of impacts from stakeholder's viewpoint will be provided through public consultations.

Mitigation measures: The consultant will review the proposed mitigation measures for their appropriateness in mitigating adverse environmental impacts.

Environmental Management & Monitoring Plan (EMMP) and Resettlement Plan/ Resettlement Policy Framework: The consultant will describe comprehensive environmental management and monitoring plan to ensure the adequacy and effectiveness of the proposed management plan by clearly identifying the roles and responsibilities of the contractor, supervisory consultant and the client. The consultant will also elaborate on the monitoring mechanism and the reporting frequency. The consultants will assist the EIA consultant to prepare the costs estimates for the proposed EMMP and the social component/social mitigation measures as a part of the project costs/benefits which will be part of the Resettlement Plan (RP) document. The consultant will also develop environment performance indicators to monitor, audit, evaluate and supervise negative and positive project environmental impacts.

Project Implementation Stage:

- (i) The Consultant will review the reports submission by the EIA consultant during various stages of EIA preparation.
- (ii) Preparation of the bidding documents for the external monitoring and evaluation agency for implementation of the RP.
- (iii) Assist in Land Acquisition for the LKHEP and the associated transmission system and the substation.
- (iv) Assist the EA in Grievance Redress on social and environmental issues; Liaise with the relevant line departments for necessary environmental clearances;
- (v) Prepare and submit requisite reports on the implementation activities on both RP and EMP for ADB, APGC etc. Prepare a monthly fact sheet on Health and Safety issues encountered during implementation of the project activities.
- (vi) Assist the EA in resolution Social and Environmental Issues that may arise during the various hydropower project implementation stages, and erection of transmission line and construction of the sub-station stage;
- (vii) Assist the EIA consultant and APGC in conflict resolution on social and environmental issues during executing stage of the project: and
- (viii) The consultant should undertake an environmental compliance audit and Health and Safety audit including on-site assessment in quarterly basis, and prepare an audit report along with corrective action plan for resolution of any non-compliance.
- (ix) Any other support as may be relevant for the EA during the project execution.

Outline Terms of Reference
Accounting, Audit, Budget & Cost Accounting and Materials Management Manuals
Preparation for APGC (Firm)

Objectives. As per the findings of Capacity Development of the Assam Power Sector Utilities ADB TA No. 7378, the above entities still follow the ASEB system and procedures, including those in respect of their financial management and maintenance of accounts. Most of which are manual, not reflecting the present day needs of the corporate world. In view of the changed scenario, the prevailing systems need an urgent change. Following are the key post reform challenges likely to be faced by the accounts and finance departments of APGC. APGC, therefore, intends to hire the services of a qualified and experienced Consultant Firm or consortium of firms to study its existing accounting, audit, budget & cost accounting and materials management systems and procedures and lay down new ones that help APGC to adhere to all the above rules, acts, guidelines, standards etc. relating to its field of activity.

The main objectives of the assignment are to:

- (i) Identify areas for efficiency improvement measures in all processes of accounting, financial management, inventory management and all operational aspects of the APGC and reengineering of existing processes to improve the financial function effectiveness;
- (ii) Standardize various procedures and processes, by developing and documenting the manuals:
 - Financial Accounting Manual,
 - Budget & Costing Manual,
 - Internal Audit Manual, and
 - Inventory Management System.

Scope of Work. The scope of services would inter-alia include development of the following manuals:

- (i) Accounting manual;
- (ii) Budgeting & Costing Manual,
- (iii) Internal Audit Manual, and
- (iv) Inventory Management System
- (v) Training at Head Office (HO) up to 15 persons per functional area for a minimum period of 7 days.

Team Composition. The Consulting firm would be required to deploy team of experts that includes (i) Team Leader /Expert in Accounting and Audits (International), (ii) Financial Management and Financial Accounting and Internal Audit Expert (National), (iii) Budget Cost Audit and accounting, Material and Inventory management expert (National). The experts will work under a Team Leader to ensure smooth liaison, single point of contact/accountability and lesser duplication in case of common areas. The level of effort for each Team Member is given below. The Consultant is required to submit the CVs of Team Leader and the two other experts. Each module should be appropriately structured to ensure smooth functioning of the assignment. The team should prepare manuals referred to above; develop MIS and manuals for monitoring and evaluation for power sector companies.

Deliverables/Expected Output. The Consultant will deliver the following as part of this assignment:

- (i) Accounting Manual;
- (ii) Budgeting & Cost Accounting Manual;

- (iii) Internal Audit Manual;
- (iv) Inventory and Materials Management Manual
- (v) Training of APGC professionals in each of the above areas.

Terms of Reference (Firm)
Capacity Building and Human Resource Development for Power Sector Utilities

1. **Objective of the Assignment.** APGC intends to hire the services of a Consulting Firm who would deploy a team of qualified and highly experienced Human Resource experts in different fields to study the existing manpower on roles of all the three Corporations and advise them about the actual requirement in relation to their current and future requirements and on all associated matters, so that the Corporations function efficiently. The objective of hiring a highly experienced Human Resource Consulting Firm is to help APGC, AEGCL and APDC to handle this sensitive issue in a professional manner, keeping the associated sensitivities involved in view; while rendering the advice.

2. **Scope of Work.** The scope of services of the Consultant, will inter-alia include, but not be limited to the following:
 - (i) Benchmark existing manpower level working in the three corporations with similar other state owned generation, transmission and distribution corporations in comparable settings and global best practices in power utilities.
 - (ii) Work out the future manpower requirement of the three corporations keeping in view the future power scenario of Assam, including growth in demand and likely changes in power market viz. open access and other issues over the next 15 years.
 - (iii) Match the available Human Resources with the projected manpower requirements.
 - (iv) Suggest functional divisions with manpower requirement, with roles and responsibilities for proper and efficient functioning of the corporations for the next 10-20 years.
 - (v) Identify the core/non-core functions that could be outsourced for cost effective and efficient management.
 - (vi) Identify the training needs and submit a plan for existing manpower with potential for redeployment and reassignment of roles.
 - (vii) Develop specific training modules and needs assessment for introduction of power trading and effective load dispatch management of energy and state-of-the-art smart grid development methodologies.
 - (viii) Coordinate with the other Consultant, such as, the ERP, Finance and Accounts, and other consultant hired by the corporations under the ADB TA, for an integrated approach to training and HR development.
 - (ix) The Consultant will also identify the External Training Programs, Study Tours and organization of in-house Training Programs that would have to be delivered through the hiring of services of the external specialist faculty at the APGC Training facility; and the associated budgetary requirements for the same.