Facility Administration Manual

Project Number: 47101
Facility Number: M {XXXX}
Loan Number: {LXXXX;}
June 2014

India: Assam Power Sector Investment Program

Contents

Facility Administration Manual Purpose and Process

The facility administration manual (FAM) describes the essential administrative and management requirements to implement the investment program on time, within budget, and in accordance with Government of India (GOI), Government of Assam (GOA) and Asian Development Bank (ADB) policies and procedures. The FAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the FAM.

The GOA, Assam Power Generation Corporation (APGC) and Assam Power Distribution Company (APDC) are wholly responsible for the implementation of ADB financed projects, as agreed jointly between the borrower and ADB, and in accordance with GOI's, GOA's and ADB's policies and procedures. ADB staff is responsible to support implementation, including compliance by GOA, APGC and APDC of their obligations and responsibilities for investment program implementation in accordance with ADB's policies and procedures.

At Loan Negotiations the borrower and ADB have agreed to the FAM and ensure consistency with the Framework Financing Agreement (FFA). Such agreement is reflected in the minutes of the Loan Negotiations. In the event of any discrepancy or contradiction between the FAM and the Loan Agreement, the provisions of the Loan Agreement shall prevail.

After ADB Board approval of the investment program's report and recommendations of the President (RRP) changes in implementation arrangements are subject to agreement and approval pursuant to relevant GOI, GOA and ADB administrative procedures (including the Project Administration Instructions) and upon such approval they will be subsequently incorporated in the FAM.

Abbreviations

ADB	–	Asian Development Bank
AEGC	–	Assam Electricity Grid Corporation
APDC	–	Assam Power Distribution Company
APGC	–	Assam Power Generation Corporation
APSDP	–	Assam Power Sector Development Program
APSEIP	–	Assam Power Sector Enhancement Investment Program
ASEB	–	Assam State Electricity Board
EARF	–	environmental assessment and review framework
EIA	–	environmental impact assessment
EMP	–	environmental management plan
ERP	–	enterprise resource planning
FFA	–	framework financing agreement
FMA	–	financial management assessment
GAP	–	gender action plan
GOA	–	Government of Assam
GOI	–	Government of India
IEE	–	initial environmental examination
IPPF	–	indigenous people planning framework
LIBOR	–	London interbank offered rate
LKHP	–	Lower Kopili hydropower project
LRPP	–	Lakwa Gas Replacement Power Plant
MFF	–	multitranche financing facility
OCR	–	ordinary capital resources
O&M	–	operation & maintenance
PFR	–	periodic financing request
RF	–	resettlement framework
RP	–	resettlement plan
T&D	–	transmission and distribution
TA	–	technical assistance
TOR	–	terms of reference

WEIGHTS AND MEASURES

km	–	Kilometer
kV	–	Kilovolt
MW	–	megawatt (1,000 kilowatts)
MWh	–	megawatt-hour

I. DESCRIPTION OF THE FACILITY

1. **Rationale.** The Government of Assam (GOA) prepared a power sector master plan, with the Asian Development Bank (ADB) assistance,[1] covering the 12th (2012-2017) and 13th (2017-2022) planning periods. Objectives of the master plan are to: (i) achieve universal access to electricity by 2022; (ii) improve quality and reliability; and (iii) remove energy sector constraints to improve the economy of the state. This plan includes a sector road map (Road Map), including a generation plan, a transmission plan and a distribution plan, with a total cost of about $3.5 billion. According to the plan, the state's generation capacity will be increased from 365 megawatt (MW) (as of May 2013) to 1,410 MW by March 2022. The total cost of this capacity addition is estimated to be $1.2 billion. In addition, the North Eastern Region of India is expected to increase generation capacity by 3,636 MW[2] during the 12th five year plan period. Assam expects to get its share of about 990 MW from these central generating stations to cater to the state's growing demand.

2. Transmission plan of the road map envisages construction of 88 transmission substations, and about 4,800 circuit kilometers (km) of transmission lines. The estimated cost of the transmission plan is about $1.1 billion. Similarly, the distribution plan envisages building of 265 distribution substations and 63,500 circuit km of distribution lines to provide about 7.1 million new power connections at a cost of $1.1 billion. Loss reduction remains a key focus of GOA's Road Map for the distribution subsector; aims to reduce the total losses to 19% (comprising 15% distribution loss and 4% transmission loss) by FY2017. The Road Map also includes institutional strengthening initiatives, including improved construction supervision capabilities, enhanced management of ongoing projects, improved financial management systems, and a computerized management system by implementing the enterprise resource planning (ERP) system.

3. The size of the multitranche financing facility (MFF) is $300 million. Funding will be structured into three tranches. The first tranche will support the replacement of an old and inefficient gas plant located in Lakwa. This physical investment will be supplemented with non-physical investments. The second tranche will finance distribution system improvements and additional "soft" components. The third tranche will finance the construction of a 120 MW hydropower plant, including the associated transmission line. The Assam Power Sector Investment Program (Investment Program) will be implemented during 2014 – 2024.

4. **Impact and Outcome.** The Investment Program's impact will be increased availability of electricity in Assam, and the outcome will be increased capacity and efficiency of energy generation and distribution systems in Assam.

5. **Outputs.** The outputs of the Investment Program will be (i) upgraded and expanded generation system; (ii) upgraded and expanded distribution system; and (iii) strengthened institutional capacity of Assam Power Generation Corporation (APGC) and Assam Power Distribution Company (APDC). Outputs under generation capacity upgrading and expansion includes: (i) replacing of inefficient and old open gas cycle turbines with the more efficient reciprocating internal combustion gas engines with 70 MW capacity; and (ii) construction of a new hydropower plant with 120 MW capacity. Outputs under upgrading and expansion of distribution system include construction or upgrading of about 30 numbers of 33/11 kV substations and 100 km of 11 kV distribution lines.

[1] Updating Load Forecast and Power System Master Plan for Assam technical assistance (TA 8129).
[2] 2,810 MW hydro and 826 MW gas.

6. Output under strengthening institutional capacity has three major subcomponents: (i) project preparation and implementation support; (ii) ERP support; and (iii) capacity building and training. Project preparatory support will be provided for the development of tranche 3 of the MFF and implementation support is for the Lakwa gas power plant in project 1. ERP support includes both hardware and software for introducing computerized management system for APGC. The ERP will computerize the Financial Accounting & Controls, Human Resource Management and General Management, Procurement and Materials Management, Maintenance Management system, and Project System Management. Capacity building and training will cover financial management and audit, project management, procurement, monitoring and evaluation, human resource management, demand side management, and social and environment safeguards

7. The tranche sequencing plan of the facility is given in Table 1:

Table 1: Tranche Sequencing Plan

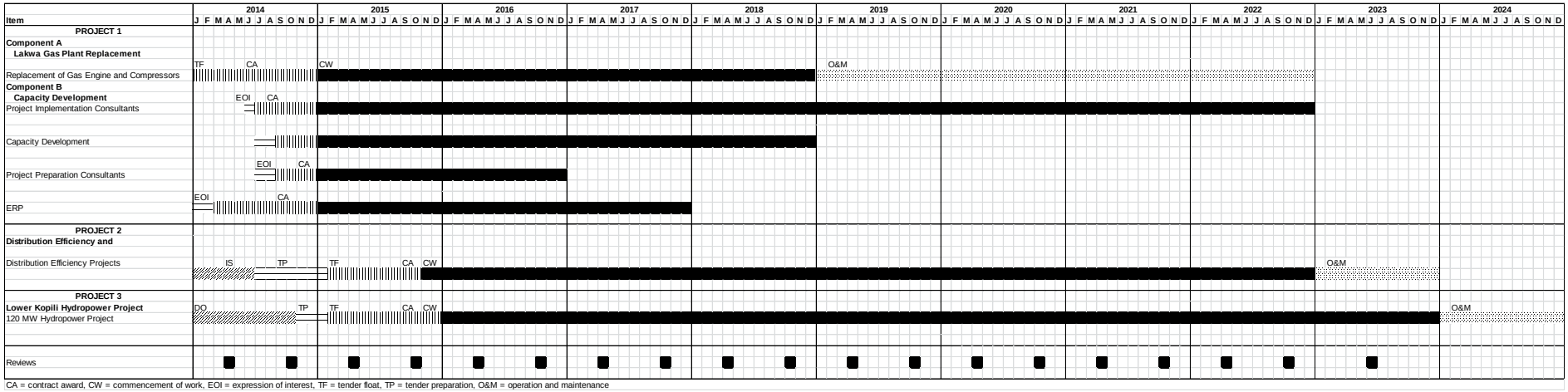
Tranche Description	Expected Date of Approval	Expected Date of Completion
Tranche 1 – Replacement of Lakwa Gas Plant and capacity strengthening	7 July 2014	31 December 2018
Tranche 2 – Distribution system improvement	27 August 2015	31 December 2020
Tranche 3 – Construction of Lower Kopili Hydropower Plant	31 August 2016	31 December 2023

II. IMPLEMENTATION PLANS

A. Project Readiness Activities for Project 1

	Months Jan – July 2014							
Indicative Activities	**Jan**	**Feb**	**May**	**June**	**July**	**Aug**	**Sept**	**Responsible Party**
Advance contracting actions		X						APGC , ADB
Retroactive financing actions					X			APGC, GOA
Establish project implementation arrangements	X							APGC
ADB Board approval					X			ADB
Loan signing						X		DEA, GOA and APGC
Government legal opinion provided							X	GOA, DEA
Government budget inclusion				X				GOA, APGC
Loan effectiveness							X	ADB

B. Overall Investment Program Implementation Plan



CA = contract award, CW = commencement of work, EOI = expression of interest, TF = tender float, TP = tender preparation, O&M = operation and maintenance

III. PROJECT MANAGEMENT ARRANGEMENTS

A. Project Implementation Organizations – Roles and Responsibilities

Project Implementation Organizations	Management Roles and Responsibilities
• GOA	➢ Day to day coordinating function
• APGC	➢ Responsible for the day-to-day project implementation (Tranches 1 and 3)
• APDC	➢ Responsible for the day-to-day project implementation (Tranche 2)
• AEGCL*	➢ Support APGC in the transmission component implementation for hydropower project (Tranche 3)
• Project Management Unit (PMU)	➢ Responsible for project coordination and administration among EAs, DEA and ADB
• ADB	➢ Will undertake regular project review and facilitate project implementation

*State will ensure AEGCL's support for implementation of transmission component. ADB = Asian Development Bank, AEGC = Assam Electricity Grid Corporation, APDC = Assam Power Distribution Company, APGC = Assam Power Generation Company, DEA = Department of Economic Affairs, EA = executing agency, GOA = Government of Assam,

B. Key Persons Involved in Implementation

Executing Agency

GOA	Mr. Anurag Goel, IAS Commissioner and Secretary Government of Assam Tel.: +91 361 2237355 Email: agoelias@yahoo.co.in
APDC	Mr. Rajiv Yadav, IAS Chairman and Managing Director Tel.: +91 361 2237355 Email: cmdAPDC@gmail.com
APGC	Mr. R. C. Jain, IAS Managing Director Tel. +91 – 94353 40540 (mobile) Email: jain_rcj@yahoo.com / jain.rcj1958@gmail.com
PMU	Mr. Bikash Paul Project Director, APDC Tel.: +91 9435018574

Email: pmu_aseb@rediffmail.com

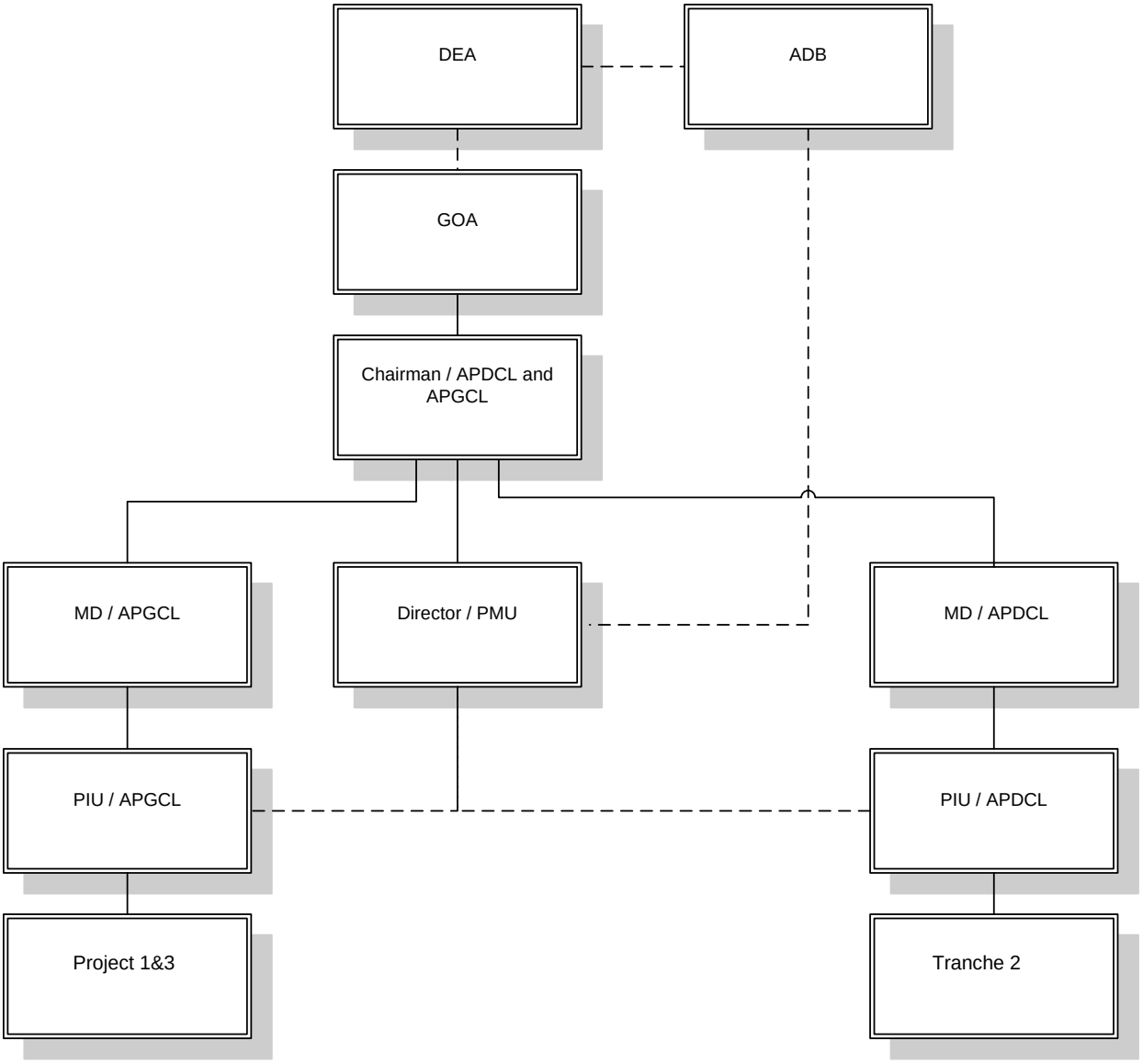
ADB

Energy Division (SAEN), South Asia Department (SARD)	Yongping Zhai Director South Asia Energy Division Tel.: +63 2 632 5839 Email: yzhai@adb.org
Mission Leader	Herath Gunatilake Lead Energy Economist South Asia Energy Division Tel.: +63 2 682 5468 Email: hgunatilake@adb.org

C. Investment Program Organization Structure

8. APGC will be the executing agency (EA) for Project 1 and Tranche 3, whereas, APDC will be the EA for Tranche 2, each having overall responsibility for the implementation of respective project components in the respective tranches. The Project Management Unit (PMU) already established under the Chairman, APDC, will function as overall project coordination entity. The PMU will be responsible for implementing, monitoring, and reporting on the progress of project implementation to ADB, and the GOA and Government of India (the government). Project implementation units (PIUs) are established within APGC and APDC, which will have the responsibilities of overall implementation of the Investment Program, including supervising the output of project implementation support consultants. The PMU responsibilities will include (i) overall coordination, macro level project management and monitoring; (ii) annual budget preparation and monitoring utilization of loan proceeds; (iii) progress reporting, including reports on financial management, safeguard compliance and project impact; and (iv) ensuring compliance with Investment Program undertakings and loan covenants. The PMU with EAs will also be responsible for administration, and financial and technical supervision of the subprojects, including procurement of goods and services, engagement of consultants, engineering and construction contractors, and monitoring subproject operation performance. The Chairman APDC and APGC along with Secretary, GOA Department of Power will co-chair the Steering Committee, the oversight body of the Investment Program, provide support on the policy related issues to the EAs, and assist in dealing with the central level agencies, and government fund and budgetary matters. Following (Figure 1) will be the project organization structure.

Figure 1: Organization Structure of Investment Program



IV. COSTS AND FINANCING

9. The total cost of the Investment Program will be $430 million inclusive of taxes, duties, and contingencies and financing charges (Table 2). ADB will fund $300 million of this amount under the MFF, and the government will finance the balance of $130 million. ADB financing will be secured from ADB's ordinary capital resources (OCR), and will consist of three tranches, subject to the government's submission of related periodic financing requests (PFR), execution of the related loan and project agreements for each tranche, and fulfillment of terms and conditions and undertakings set forth in the framework financing agreement (FFA). The tentative MFF financing plan is shown below.

Table 2: Tentative Finance Plan, 2014-2022

Source	**Amount** ($ million)	**Share of Total (%)**
Asian Development Bank (Ordinary Capital Resources (Loan))	300.00	70
Government of India	130.00	30
Total	**430.00**	**100**

Source: Asian Development Bank estimates.

10. The investment projects are expected to be completed by 31 December 2023. The MFF availability period ends 30 June 2024. All provisions of the Ordinary Operations Loan Regulations applicable to London interbank offered rate (LIBOR)-based loans[3] will apply to each loan, subject to any modifications that might be included under the loan agreement. The specific terms of each loan will be based on the related PFR, with interest to be determined in accordance with ADB's LIBOR-based lending facility. The government has provided ADB with (i) the reasons for its decisions to borrow under ADB's LIBOR-based lending facility, and (ii) an undertaking that these choices were its own independent decision and not made in reliance on any communication or advice from ADB.

11. Detailed cost tables by expenditure category, including by financier, will be prepared for each proposed tranche and will be included in the PFR, along with the proposed financing arrangements.

[3] ADB. 2001. *Ordinary Operations Loan Regulations Applicable to LIBOR-Based Loans Made from ADB's Ordinary Capital Resources*. Manila.

A. Detailed Cost Estimates by Expenditure Category (Project 1)

Item		USD million	
		Total Cost	**% of Base Cost**
A.	**Investment Costs**[a]		
	1. Civil works and erection	12.26	24.00
	2. Equipment	30.76	61.00
	3. Consultants		
	a. Project management, design and supervision	0.48	1.00
	b. Capacity development[c]	4.50	9.00
	4. Taxes and duties	2.24	4.00
	Subtotal (A)	**50.24**	99.00
B.	**Other Costs a/**		
	1. Land	0.00	0.00
	2. Environmental and social mitigation	0.40	1.00
	3. Project management and construction supervision[b]	0.31	1.00
	Subtotal (B)	**0.72**	1.00
	Total Base Cost	**50.96**	100.00
C.	**Contingencies**		
	1. Physical[d]	4.48	9.00
	2. Price[e]	5.77	11.00
	Subtotal (B)	**10.25**	20.00
D.	**Financing Charges During Implementation**		
	1. Interest during implementation[f]	0.73	1.00
	2. Commitment charges[g]	0.05	0.00
	Subtotal (C)	**0.78**	2.00
Total Project Cost (A+B+C+D)		**62.00**	122

a/ In Q3 2013 prices; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.
b/ APGC overhead costs capitalized to project account plus Corporate Social Responsibility (CSR) provision.
c/ Includes general capacity development costs for APDC and APGC, implementation of limited enterprise resource planning (ERP) at APGC and investment due diligence for MFF tranches 1 and 2
d/ Computed at 8.8% of base costs.
e/ Computed using ADB's forecasts of international and domestic inflation.
f/ Interest during implementation has been computed at the five-year forward Libor rate plus a spread of 0.1%.
g/ Commitment charges computed at 0.15% of undisbursed loans amounts.
Sources: Assam Power General Corporation (APGC) and Asian Development Bank estimates

B. Allocation and Withdrawal of Loan Proceeds (Project 1)

12. Except as ADB may otherwise agree, withdrawals shall be made from the loan proceeds as follows.

Table 3: Allocation and withdrawal of loan proceeds (Project 1)

ALLOCATION AND WITHDRAWAL OF LOAN PROCEEDS (Project 1)			
Number	Item	Total Amount Allocated for ADB Financing (M$)	Basis for Withdrawal from the Loan Account
1	Civil works and erection	12.26	100% of total eligible expenditure claimed*
2	Equipment	30.76	100% of total eligible expenditure claimed*
3	Consulting Services	5.00	100% of total eligible expenditure claimed*
4	Unallocated	1.98	
	Total	**50.00**	

*Exclusive of taxes and duties imposed within the territory of the Borrower.

C. Detailed Cost Estimates by Financier (Project 1)

	Item	Total	USD million Cost			
			ADB		Government/APGC	
			Amount	% of Cost Category	Amount	% of Cost Category
A.	**Investment Costs**					
	1. Civil works and erection	12.26	12.26	100.00	0.00	0.00
	2. Equipment	30.76	30.76	100.00	0.00	0.00
	3. Consultants					
	a. Project management, design and supervision	0.48	0.48	100.00	0.00	0.00
	b. Capacity Development	4.50	4.50	100.00	0.00	0.00
	4. Taxes and duties	2.24	0.00	0.00	2.24	100.00
	Subtotal (A)	**50.24**	**48.00**	96.00	**2.24**	4.00
B.	**Other Costs**					
	1. Land	0.00	0.00	0.00	0.00	100.00
	2. Environmental and social mitigation	0.40	0.00	0.00	0.40	100.00
	3. Project management and construction supervision	0.31	0.00	0.00	0.31	100.00
	4. Other consultancy	0.00	0.00	0.00	0.00	0.00
	Subtotal (B)	**0.72**	**0.00**	0.00	**0.72**	100.00
	Total Base Cost	**50.96**	**49.00**	94.00	**2.96**	6.00
C.	**Contingencies**					
	1. Physical	4.48	1.44	32.00	3.04	68.00
	2. Price	5.77	0.55	10.00	5.22	90.00
	Subtotal (C)	**10.26**	**1.99**	19.00	**8.26**	81.00
D.	**Financing Charges During Implementation**					
	1. Interest during implementation	0.73	0.00	0.00	0.73	100.00
	2. Commitment charges	0.05	0.00	0.00	0.05	100.00
	3. Front-end fees	0.00	0.00	0.00	0.00	100.00
	Subtotal (D)	**0.78**	**0.00**	0.00	**0.78**	100.00
Total Project Cost (A+B+C+D)		**62.00**	**50.00**	80.00	**12.00**	20.00

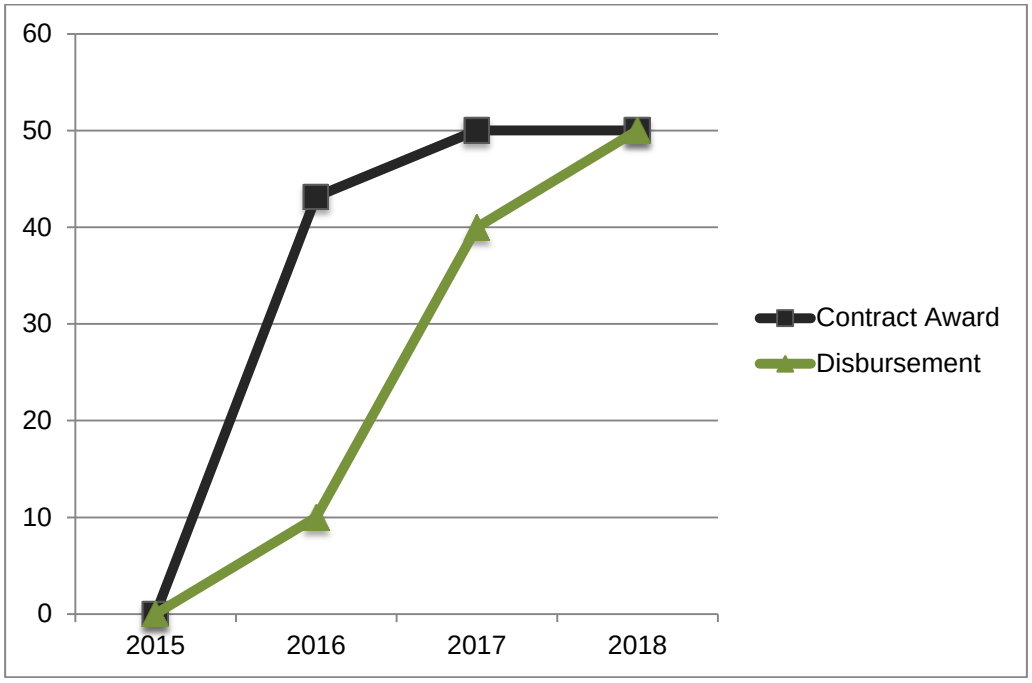
Sources: Assam Power Generation Corporation (APGC) and Asian Development Bank estimates

D. Detailed Cost Estimates by Year (Project 1)

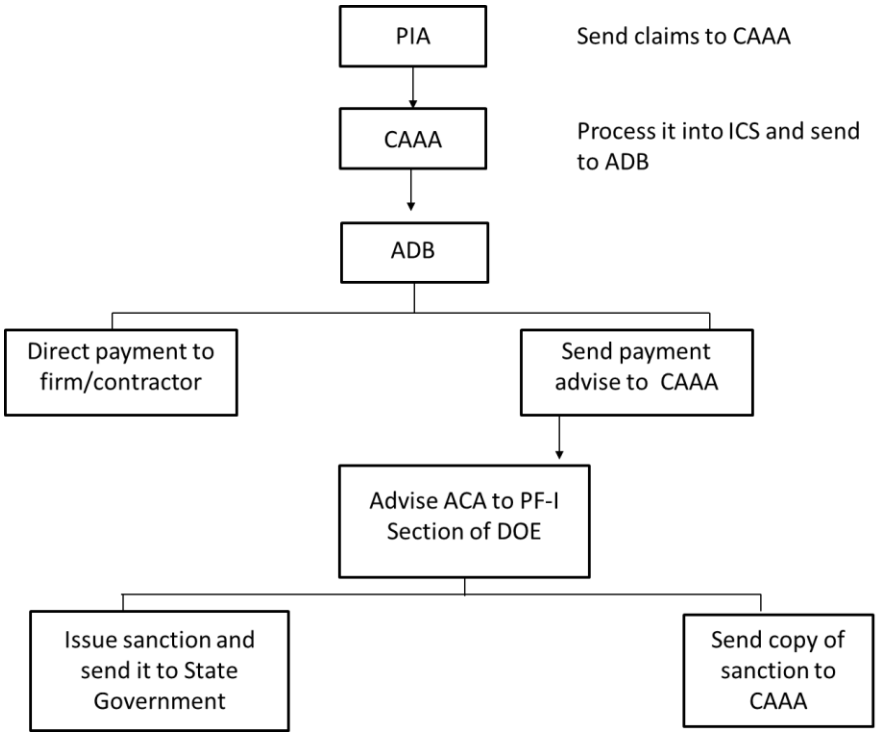
Item	Total Cost a/	USD million Year 1	Year 2	Year 3
A. Investment Costs				
1. Civil works and erection	12.26	2.45	7.36	2.45
2. Equipment	30.76	6.15	18.46	6.15
3. Consultants				
a. Project management design and supervision	0.48	0.10	0.29	0.10
b. Capacity Development	4.50	0.90	2.70	0.90
4. Taxes and duties	0.00	0.00	0.00	0.00
Subtotal (A)	**48.00**	9.60	28.80	9.60
B. Other Costs				
1. Land	0.00	0.00	0.00	0.00
2. Environmental and social mitigation	0.00	0.00	0.00	0.00
3. Project management and construction supervision	0.00	0.00	0.00	0.00
4. Other consultancy	0.00	0.00	0.00	0.00
Subtotal (B)	**0.00**	0.00	0.00	0.00
Total Base Cost	**48.00**	9.60	28.80	9.60
C. Contingencies				
1. Physical	1.44	0.29	0.86	0.29
2. Price	0.55	0.11	0.33	0.11
Subtotal (C)	**1.99**	0.40	1.19	0.40
D. Financing Charges During Implementation	**0.00**	0.00	0.00	0.00
Total Project Cost (A+B+C+D) a/	**50.00**	10.00	30.00	10.00
% Total Project Cost	100.00	20.00	60.00	20.00

a/ The total cost amount represented in this table is the sum of ADB OCR loans funds for the Project.

E. Contract and Disbursement S-curve for Project 1



F. Fund Flow Diagram



CAAA = Controller of Aid, Accounts and Audit, PIA = Project Implementing Agency

V. FINANCIAL MANAGEMENT

A. Financial Management Assessment

13. Project specific governance risks have been identified through financial management and procurement assessments of the APDC and the APGC in accordance with ADB's Guidelines for the Financial Management and Analysis of Projects.[4] The financial due diligence was carried out in accordance with ADB's Financial Due Diligence: ADB Methodology Note[5] was followed focusing on fund flows, staffing, accounting policies and procedures, internal controls, financial reporting and monitoring, and internal and external audit. The assessment draws lessons learned from the implementation of ongoing loans under the MFF: Assam Power Sector Enhancement Investment Program (APSEIP), the findings and recommendations arising from TA 7378 - Capacity Development of the Assam Power Sector Utilities, as well as face-to-face interviews with APDC and APGC staff. For the country level assessment, the financial management assessment (FMA) also refers to India country partnership strategy (draft 2013-2017) and India Public Financial Management Performance Assessment Report (2010).

14. Overall, financial management capacity is assessed as low, and financial management risk was assessed as high. These assessments identified a number of weaknesses, including (i) weak internal controls over fixed assets, cash management and payroll, (ii) weak internal audit, (iii) out-of-date accounting manuals and handbooks; and (iv) a manual accounting and financial management system.

15. Weaknesses in financial management, accounting and internal audit remain in both APGC and APDC. ADB previously supported a diagnostic study on capacity development for APDC and APGC under TA 7378. A comprehensive action plan with different timelines for each activity was proposed. However, these recommendations, which included appointment of a regular finance director at board level, appointment of cost auditor and installation of cost accounting system, formation of accounting application committee, strengthening internal control system, development of standard format for the Statement of Non Adherence/Part Adherence of accounting policies, development of risk management framework and adoption of computerized inventory management systems, have not been fully implemented. ADB will assist in addressing some of these critical areas through the design of the capacity development component under the MFF. Undertakings in the FFA and specific covenants in loan agreement were included to address financial management risks.

16. The FMA noted that finance and accounting staff within APDC and APGC have clearly defined responsibilities, and there is satisfactory separation of function and delegation of authority within each entity. Only APDC has institutional experience in managing ADB funded projects.[6] Both entities have staff seconded to the PMU presently established for implementation of the ongoing MFF - APSEIP. Financial reports are prepared according to the Indian Accounting Standards. According to relevant Indian audit law, APDC and APGC are currently subject to annual auditing conducted by chartered accountants appointed by India's Comptroller and Auditor General.

[4] ADB. 2005. *Financial Management and Analysis of Projects*. Manila. Available at: http://www.adb.org/Documents/Guidelines/Financial/default.asp
[5] ADB. 2009. *Financial Due Diligence: A Methodology Note*. Manila.
[6] Assam Power Sector Enhancement Investment Program, approved on 18 November 2009.

17. The financial management risk mitigation measures includes: (i) capacity building component of the investment program that specifically targets the weaknesses of the utilities' financial management; (ii) implementation of time-bound action plans provided by APGC and APDC to address major financial management shortcoming highlighted by the statutory auditors; (iii) full implementation of financial management module of ERP; (iv) specific covenants on financial management aspects in the loan agreements; and (v) use of direct payment method to expedite the disbursement process and ease the administrative burden imposed on APDC and APGC. .

B. Disbursement

18. The Loan proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2012, as amended from time to time),[7] and detailed arrangements agreed upon between the government and ADB.

19. Each PFR will result in a separate loan agreement, which will describe the detailed disbursement arrangements agreed on by the government, GOA, APGC, APDC, and ADB.

20. Before the submission of the first withdrawal application, the borrower should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the borrower, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is US$100,000, unless otherwise approved by ADB. Individual payments below this amount should generally be paid by the EA and subsequently claimed to ADB through reimbursement. ADB reserves the right not to accept withdrawal applications below the minimum amount. Withdrawal applications and supporting documents will demonstrate, among other things that the goods, and/or services were produced in or from ADB members, and are eligible for ADB financing.

C. Accounting

21. APGC and APDC will maintain, or cause to be maintained, separate project financial statements, books and records by funding source for all expenditures incurred on the investment program. APGC and APDC will prepare project financial statements in accordance with the government's accounting laws and regulations (the government's accounting laws and regulations under the Companies Act, 1956, the Electricity Act, 2003, and any other applicable law or regulation prevailing in India) which are consistent with international accounting principles and practices. Activities under tranches may be consolidated into one set of project financial statements. APGC and APDC shall prepare financial statements separately. Project financial statements shall include at a minimum, a statement of receipts and payments with accompanying notes and schedules. These shall be prepared to ensure maximum alignment to international accounting standards and the government's financial regulations.

D. Auditing and Public Disclosure

22. APGC and APDC will cause the detailed project financial statements to be audited in accordance with International Standards on Auditing and with the government's audit regulations, by an independent auditor acceptable to ADB. The audited project financial statements will be submitted in the English language to ADB within six months of the end of the fiscal year by APGC and APDC.

[7] Available at: http://www.adb.org/Documents/Handbooks/Loan_Disbursement/loan-disbursement-final.pdf

23. In addition, APGC and APDC will also cause the entity-level financial statements to be audited in accordance with International Standards on Auditing and with the government's audit regulations, by an independent auditor appointed by the CAG, India. The audited entity-level financial statements, together with the auditors' report and management letter, will be submitted in the English language to ADB within one month after their approval by the competent authority.

24. The annual audit report for the project financial statements will include audit opinions which cover (i) whether the project financial statements present a true and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting framework; (ii) whether loan proceeds were used only for the purposes of the project or not; (iii) the level of compliance for each financial covenant contained in the legal agreements for the project. If the auditor issues a management letter, a copy will also be submitted to ADB.

25. Compliance with financial reporting and auditing requirements will be monitored by ADB review missions and during normal investment program supervision, and followed up regularly with all concerned, including the external auditor.

26. The government, APGC and APDC have been made aware of ADB's policy on delayed submission,[9] and the requirements for satisfactory and acceptable quality of the audited project financial statements. ADB reserves the right to require an addition in the auditor if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

27. Public disclosure of the project financial statements, including the audit report on the project financial statements, will be guided by ADB's Public Communications Policy (2011).[10] After review, ADB will disclose the project financial statements for the project and the opinion of the auditors on the financial statements within 30 days. The management letter and entity level financial statements will not be disclosed.

[9] ADB Policy on delayed submission of audited project financial statements:

- When audited project financial statements are not received by the due date, ADB will write to the executing agency advising that (i) the audit documents are overdue; and (ii) if they are not received within the next six months, requests for new contract awards and disbursement such as processing of new reimbursement, and issuance of new commitment letters will not be processed.
- When audited project financial statements have not been received within 6 months after the due date, ADB will withhold processing of requests for new contract awards and disbursement such as processing of new reimbursement, and issuance of new commitment letters. ADB will (i) inform the executing agency of ADB's actions; and (ii) advise that the loan may be suspended if the audit documents are not received within the next six months.
- When audited project financial statements have not been received within 12 months after the due date, ADB may suspend the loan. Available from http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications.

VI. PROCUREMENT AND CONSULTING SERVICES

A. Advance Contracting and Retroactive Financing

28. All advance contracting and retroactive financing will be undertaken in conformity with ADB's Procurement *Guidelines* (2013, as amended from time to time) (ADB's *Procurement Guidelines)*[11] and ADB's *Guidelines on the Use of Consultants* (2013, as amended from time to time) (ADB's *Guidelines on the Use of Consultants).*[12] The issuance of invitations to bid under advance contracting and retroactive financing will be subject to ADB approval. The borrower, APDC and APGC have been advised that approval of advance contracting and retroactive financing does not commit ADB to finance the Project.

29. **Advance contracting.** To expedite implementation, the government and GOA have requested ADB's approval to carry out advance actions for procurement of works and goods, and recruitment of consultants. The advance procurement action is intended to be used in all tranches of the MFF.

30. **Retroactive financing.** Except as otherwise agreed with ADB, the expenditures incurred for equipment, civil works, and consulting services will be eligible for retroactive financing, provided that these are incurred before the effectiveness of the related loan agreement, but not earlier than 12 months preceding the signing of the related loan agreement, and as long as they do not exceed an amount of 20% of the individual loan.

B. Procurement of Goods, Works and Consulting Services

31. All procurement of goods and works will be undertaken in accordance with ADB's *Procurement Guidelines.*

32. International competitive bidding procedures will be followed for the equipment contract.

33. An 18-month procurement plan indicating threshold and review procedures, goods, works, and consulting service contract packages and national competitive bidding guidelines is in Section C.

34. All consultants will be recruited according to ADB's *Guidelines on the Use of Consultants*.[13] The terms of reference for all consulting services are detailed in Section D.

35. Consultants will be engaged in accordance with *Guidelines on the Use of Consultants (2013, as amended from time to time)*. Individual consultants will be engaged, consisting of 03 positions and 132 person-months. Work to be performed by consultants includes assisting APGC with (i) preparation of ERP infrastructure hardware and software implementation design, preparation of technical specifications for hardware and software, bidding document preparation and bid evaluation, award, monitoring of system installation, go live and commission of ERP system at APGC for the Project 1 loan; (ii) preparation of environment and social safeguards monitoring documents, monitoring of EPC contractors work for meeting compliance; submission

[11] Available at: http://www.adb.org/Documents/Guidelines/Procurement/Guidelines-Procurement.pdf
[12] Available at: http://www.adb.org/Documents/Guidelines/Consulting/Guidelines-Consultants.pdf
[13] Checklists for actions required to contract consultants by method available in e-Handbook on Project Implementation at: http://www.adb.org/documents/handbooks/project-implementation/

of documents for regulatory compliances, and also monitoring of the operation and maintenance (O&M) contractor to meet Lakwa Gas Replacement Power Plant (LRPP) statutory requirements as per environmental impact assessment (EIA) clearances procured; (ii) review of environment and social safeguards assessment documents prepared by EIA contractor, conduct due diligence and surveys (including tribal surveys), review resettlement plans (RP) and SIA done by the Project design consultant for Lower Kopili hydropower project (LKHP) including consultations and review of climate change documentation for CDM and also risk mitigation measures;.

Table 4: Summary of Individual Consulting Services Requirement

National Name of Positions	Person-months	National – Staff Consultant (deputed at site by APGC) Name of Positions	Person-months
ERP Specialist	12.0	Environment and Social Specialist (LRPP)	60.0
		Environment and Social Specialist (LKHP)	60.0

Source: Asian Development Bank estimates.

C. Procurement Plan for Project 1

Basic Data

Project Name:	Assam Power Sector Investment Program – Project 1
Country:	India
Executing Agencies:	Assam Power Generation Corporation (APGC)
Loan Amount:	$50 million for Project 1
Loan Number:	To be determined (tbd)
Date Procurement Plan:	13 May 2014

I. Process Thresholds, Review and 18-Month Procurement Plan

1. Project Procurement Thresholds

36. Except as ADB may otherwise agree, the following process thresholds shall apply to procurement of goods, works and consulting services:

Procurement of Goods, Works and Consulting Services

Method	Threshold
International Competitive Bidding (ICB) for Works	$40,000,000 and more
ICB for Goods	$1,000,000 and more
NCB for Works	Less than $40,000,000
NCB for Goods	Less than $1,000,000
Recruitment of Consulting Firms	
Quality- and Cost-Based Selection	to be determined based on the nature of assignment
Quality-Based Selection	to be determined based on the nature of assignment

2. ADB Prior or Post Review

37. Except as ADB may otherwise agree, the following prior or post review requirements apply to the various procurement and consultant recruitment methods used for the project.

Procurement Method	Prior or Post	Comments

Procurement Method	Prior or Post	Comments
Procurement of Goods and Works		
ICB Works	Prior	
ICB Goods	Prior	
NCB Works	Prior	
NCB Goods	Prior	
Recruitment of Consulting Firms		
Quality- and Cost-Based Selection (QCBS)	Prior	
Quality-Based Selection (QBS)	Prior	
Other selection methods: Consultants Qualifications	Prior	
Recruitment of Individual Consultants		
Individual Consultants	Prior	

3. Goods and Works Contracts Estimated to Cost more than $1 million:

38. The following table lists goods and works contracts for which procurement activity is ongoing or expected to commence within next 18 months.

General Description	Contract Value ($ millions)	Procurement Method	Prequalification of Bidders (y/n)	Advertisement Date Comments	Comments
Turnkey Contract for Design and Engineering, Manufacture, Supply, Erection, Testing and Commissioning including all Civil and Allied Works of 70MW (Nominal) Gas Engine based Lakwa Thermal Power Replacement Project at Lakwa Thermal Power Station	43.02	ICB	N	Q1- 2014	Financed by ADB

4. Consulting Services Contracts Estimated to Cost More Than $100,000

39. The following table lists consulting services contracts for which procurement activity is either ongoing or expected to commence within the next 18 months.

General Description	Contract Value ($ million)	Recruitment Method	Advertisement Date (quarter/year)	International or National Assignment	Comments
A. Project Preparation and Implementation support					
1. Project Management and Construction Supervisor for Lakwa Replacement Gas Engine Based Power Plant	0.520	QCBS	Q4/2014	International	Financed by ADB
2. Project Preparation, Tender Development and Award Management Process for Lower Kopili Hydropower Project	0.380	QCBS	Q3/2014	International	Financed by ADB
B. ERP and IT Support					
1. ERP Specialist	0.350	Individual	Q3/2014	National	Financed by ADB

General Description	Contract Value ($ million)	Recruitment Method	Advertisement Date (quarter/year)	International or National Assignment	Comments
2. ERP Implementation and Infrastructure Development for APGC	1.500	QCBS	Q3/2014	International	Financed by ADB
C. Capacity Building and Training Support					
1. Environment and Social Specialist for Lakwa Replacement Gas Engine Based Power Plant	0.325	Individual	Q3/2014	National	Financed by ADB
2. Environment and Social Specialist for Lower Kopili Hydropower Project	0.325	Individual	Q3/2014	National	Financed by ADB
3. Accounting, Audit, Budget & Cost Accounting & Materials	0.200	QCBS	Q3/2014	National	Financed by ADB
4. Capacity Building and Human Resource Development for Power Sector Utilities	1.400	QCBS	Q3/2014	International	Financed by ADB

ADB = Asian Development Bank, QCBS = Quality- and Cost-Based Selection

II. Indicative List of Packages Required Under Project1

40. The following table provides an indicative list of all procurement (goods, works and consulting services) over the life of the project under Project 1. Contracts financed by the borrower and others should also be indicated, with an appropriate notation in the comments section.

Component A: Goods

General Description	Estimated Value (cumulative) ($ million)	Estimated Number of Contracts	Procurement Method	Domestic Preference Applicable	Comments
Turnkey Contract for Design and Engineering, Manufacture, Supply, Erection, Testing and Commissioning including all Civil and Allied Works of 70MW (Nominal) Gas Engine based Lakwa Thermal Power Replacement Project at Lakwa Thermal Power Station.	43.02	1	ICB	N	Financed by ADB

ADB = Asian Development Bank, ICB = international competitive bidding

Component B: Consulting Services

General Description	Estimated Value (cumulative) ($ million)	Estimated Number of Contracts	Procurement Method	Domestic Preference Applicable	Comments
A. Project Preparation and Implementation support					
1. Project Management and Construction Supervisor for Lakwa Replacement Gas Engine Based Power Plant	0.520	1	International	STP	Financed by ADB
2. Project Preparation, Tender Development and Award Management Process for Lower Kopili Hydropower Project	0.380	1	International	STP	Financed by ADB
B. ERP and IT Support					
1. ERP Specialist	0.350	1	National	Individual	Financed by ADB
2. ERP Implementation and Infrastructure Development for APGC	1.500	1	International	FTP	Financed by ADB
C. Capacity Building and Training Support					
1. Environment and Social Specialist for Lakwa Replacement Gas Engine Based Power Plant	0.325	1	National	Individual	Financed by ADB
2. Environment and Social Specialist for Lower Kopili Hydropower Project	0.325	1	National	Individual	Financed by ADB
3. Accounting, Audit, Budget & Cost Accounting & Materials	0.200	1	National	STP	Financed by ADB
4. Capacity Building and Human Resource Development for Power Sector Utilities	1.400	1	International	FTP	Financed by ADB

ADB = Asian Development Bank, FTP = Full Technical Proposals, ERP = enterprise resource planning, HEP = hydroelectric power, HR = human resources, ICB = International Competitive Bidding, QCBS = Quality- and Cost-Based Selection, STP = Short Technical Proposals

D. Consultant's Terms of Reference

41. The detailed Terms and References (TOR)[14] of the Consultants are presented in Appendix 1.

VII. SAFEGUARDS

42. **Environment aspects.** EA will ensure that the projects under the MFF are undertaken, and that all project facilities are designed, implemented, operated, and maintained, in accordance with all applicable laws and regulations of India and GOA, ADB's SPS, and the environment assessment and review framework (EARF). For each project, EA will prepare and implement the necessary initial environmental examination (IEE) or EIA, as appropriate, and environmental management plan (EMP) (with budget), in accordance with the EARF. For each project under the MFF, the environmental categorization and assessment procedures defined in the EARF will be followed.

43. For all tranches, EA will ensure that necessary environmental clearances are obtained from the applicable statutory authorities of the government and the GOA. Environmental mitigation measures set forth in the site-specific EMPs for each project are incorporated in detailed designs (including any amendments to detailed designs) and followed during construction and operation of the subprojects. EA will monitor, audit, and report twice annually to ADB the implementation of tranche-specific EMPs. Pursuant to ADB's Safeguard Policy Statement (2009) (SPS),[15] ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the SPS.

44. Adequate provisions will be made under the Investment Program to cover the environmental mitigation and monitoring requirements, and their associated costs. The civil works contracts will incorporate mitigation measures related to construction as specified in the EMPs. Implementation of construction mitigation measures will be the contractor's primary responsibility, and the EA will be responsible for implementing tranche-specific EMPs. The principal impacts are to be described in the tranche-specific EMPs, together with specific mitigation measures.

45. For those tranches where subproject site survey works are underway, EA will collect data regarding air, water, noise and soil quality; topography and contour; required land cutting and filling; distance from water bodies and from major roads; details of forest/non-forest; and wildlife and land details. This supplementary information for each of the subprojects will be supplied by EA to ADB for prior approval of environmental compliance before awarding of contracts for these subprojects.

46. **Involuntary resettlement.** The basic objective of ADB's SPS is to avoid or minimize impact on land acquisition, involuntary resettlement and indigenous people. If they are unavoidable in realizing the benefits of the projects, these should be mitigated or compensated for such adverse project impacts. The implementation of safeguards plans of the project is guided by loan covenants and approved safeguard planning instruments. According to ADB's SPS, Project 1 is classified as 'C' for involuntary resettlement impacts. Therefore, no RP was required to be prepared, except for preparation of social due-diligence report.

[14] Terms of reference guidelines available at: http://www.adb.org/Documents/Manuals/Consulting-Services-Operations-Manual/CSOM.pdf?bcsi_scan_D4A612CF62FE9576=AORY9a8Nho2ezS9Xss/ligEAAAANNiAA&bcsi_scan_filename=CSOM.pdf (paras 65–72).

[15] Available at: http://www.adb.org/Documents/Policies/Safeguards/Safeguard-Policy-Statement-June2009.pdf

47. Resettlement Framework (RF) has been prepared for the entire Investment Program for future tranche subprojects in accordance with the national and state laws and policies and the SPS. Compensation rates for the loss of land and structures, income restoration assistance, and additional support for vulnerable groups and indigenous groups, if necessary, are provided in the RF. If any changes or additional land requirements or involuntary resettlement impacts are identified, an RP will be prepared or modified according to the applicable laws referred to in the RF. The RP will be submitted to ADB for review and approval. ADB's approval will also be obtained before any further implementation of the subproject. The EA with the assistance of PIU and PMU will be responsible for safeguards implementation, monitoring and reporting.

48. RPs will be prepared for each tranche if impact on land acquisition and involuntary resettlement is found. RPs will be prepared in accordance with national laws and policies (Land Acquisition Act, 1894, and National Rehabilitation and Resettlement Policy-NRRP-2007), state laws, ADB's SPS and the agreed RF. Additionally, a reference has already been made to the LARR Act -2013 (*Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and ResettlementAct, 2013*),. . This will detail the impact of land acquisition and resettlement in the project. The implementation of the RP will be the condition to the start of the civil work. The EA will be responsible for preparing and implementing land acquisition and resettlement activities prior to the start of the civil work, which means that all disbursement of compensation will have been completed and other assistances will have been provided to the Displaces Persons/Affected Persons (physical and economic). Future tranches, especially Tranche 3 being a hydro project, will have significant land acquisition and resettlement issues. Hence, the implementation of the RP needs to be done properly and in a timely manner. The EAs, through its respective PIU and PMU, will be responsible for preparing, updating, and finalizing the RP, followed by its disclosure to the local people. The EA will, in advance, allocate the land acquisition and resettlement costs, as set out in the RP for each tranche, in its overall annual budget.

49. **Indigenous people.** The project impacts on indigenous peoples are classified as category 'C' for tranche-1. Social assessments conducted during project preparation found no indigenous peoples who would be impacted by project activities; therefore, no Indigenous Peoples Plan (IPP) is required to be prepared for Project 1. However, an Indigenous Peoples Planning Framework (IPPF) has been prepared for the entire MFF in accordance with the national and state laws and policies and the SPS. If any project impact on indigenous peoples is found during project implementation, the EAs will formulate an IPP in accordance with the IPPF. The IPP will be submitted to ADB for review and approval. If impacts on indigenous peoples are identified in the future tranches, mitigation will be undertaken commensurate with the magnitude of project impacts and sensitivity levels. This will be done through preparation of an IPP (if required), or integration of specific sections in favor of the indigenous people in the RP, based on ADB's SPS.

VIII. GENDER AND SOCIAL DIMENSIONS

50. The social assessment brought forth that the power sector has significant potential to contribute to economic development and social wellbeing, and is both directly and indirectly linked to poverty reduction. Reliable and adequate electricity supply improves living conditions, promotes business expansion, and increases employment opportunities, which will have a positive impact on poverty reduction. A good quality, reliable electricity supply is also a key to meeting the basic human needs of health and education. Poor and vulnerable consumers, as well as public institutions such as public hospitals and schools, are often particularly disadvantaged by an inadequate power supply, load shedding, and poor power quality, and will therefore benefit directly from the project.

51. **Gender.** Project 1 is classified as "No Gender Elements", given the limited opportunities for gender mainstreaming. The loan agreement includes a standard assurance related to compliance with labor standards for contractors, including provisions to ensure equal pay for work of equal value, and the provision of awareness training on sexually transmitted infections, including HIV/AIDs, and forced/bonded labor and human trafficking. Dialogue and communication (both written and verbal) with stakeholders will be carried out in a gender-specific and culturally sensitive manner and in local languages, as required during safeguards implementation. There are special provisions for the vulnerable households, including the women headed households, in the RF. For the future tranches, efforts will be made to assess gender elements in the project, and the future tranche projects will be classified for gender accordingly, followed by preparation and implementation of necessary plans (Gender Action Plan).

52. **HIV /AIDS.** Based on the poverty and social assessment, there is no risk that the project will increase HIV/AIDS incidence. However, contractors will carry out HIV/AIDS awareness for their laborers at work sites, which will be monitored by the construction supervision consultants.

53. **Health.** The EAs will ensure that contractors provide adequately for the health and safety of construction workers and further ensure that bidding documents include measures on how contractors will address this, including an information and awareness raising campaign for construction workers on sexually transmitted diseases, including HIV/AIDS, and human trafficking.

54. **Labor.** The EAs will ensure that civil works contractors comply with all applicable labor laws and regulations, do not employ child labor for construction and maintenance activities, provide appropriate facilities for women and children in construction campsites; and do not differentiate wages between men and women for work of equal value, The EAs will ensure that specific clauses ensuring these will be included in bidding documents.

IX. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

A. Design and Monitoring Framework for the Investment Program

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
Impact Increased availability of electricity in Assam	By 2027: load shedding in the state reduced to zero (Baseline 2013: up to 5–6 hours/day)	CEA and MOP publications	**Assumption** Proposed central generating station (northeast and eastern region) and independent power producer projects are commissioned as planned. **Risk** Increase in fuel prices due to international market conditions and inability of APDC to purchase sufficient power to meet the demand.
Outcome Increased capacity and efficiency of energy generation and distribution systems in Assam	By 2024: Energy generation increased by 962 GWh/year Distribution losses reduced to 15% (Baseline 2012: 25%)	For all indicators: APGC and APDC annual reports, and CEA and MOP statistics	**Assumption** Other power sector distribution projects in the state funded by other agencies are completed as planned. **Risk** A long-term gas supply is not available for the new gas power plant.
Outputs 1. Generation system upgraded and expanded	By 2018: Lakwa 4x15 MW gas power generation units replaced with new gas engines with (7x10) MW of total capacity By 2024: Lower Kopili Hydro Project 120 MW (peaking run-of-river) constructed	For all indicators: APGC and GOA, annual reports	**Assumption** All statutory and nonstatutory approvals for Lower Kopili hydropower plant are received on time. **Risk** Geological uncertainties in Lower Kopili hydro project may lead to cost and time overrun.
2. Distribution system upgraded and expanded	By 2022: About 30 33/11 kV substations upgraded or built About 100 km of 11 kV lines installed	For all indicators: APDC and GOA annual reports	
3. Institutional capacity of APGC and APDC strengthened	By 2018: ERP system fully operating By 2017: About 30 staff trained on procurement, project implementation, demand management, safeguards, and monitoring	For all indicators: project review reports of executing agencies	

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
	and evaluation By 2017: about 70 staff trained on financial and human resource management		
4. Project management system in place	Investment program implemented on time within allocated budget		

Activities with Milestones	Inputs
1. Generation system upgraded and expanded 1.1. Replacement of Lakwa gas power plant 1.1.1. Complete procurement by Q1 2015 1.1.2. Compete construction of Lakwa gas power plant by Q4 2018 1.2. Construction of 120 MW Lower Kopili hydroelectric power plant 1.2.1. Complete procurement by Q2 2016 1.2.2. Complete construction by Q24 2023 2. **Distribution system upgraded and expanded** 2.1 Complete procurement by Q2 2015 2.2 Complete construction by Q4 2020 3. **Institutional capacity of APGC and APDC strengthened** 3.1 Complete detailed needs assessment by Q1 2015 3.2 Develop ERP systems by Q4 2015 3.3 Develop training modules by Q2 2015 3.4 Conduct training through 2015–2017 3.5 Initiate construction supervision for Lakwa gas power plant by Q1 2015 3.6 Prepare Lower Kopili hydroelectric power project documents by Q3 2015 4. **Project management system in place** 4.1 Advertise bid for project 1 by Q1 2014 4.2 Recruit consultants for capacity strengthening by Q4 2014 4.3 Submit PFR 2 by Q4 2014 4.4 Advertise bids for tranche 2 by Q4 2014 4.5 Submit PFR 3 by Q4 2015 4.6 Advertise bids for tranche 3 by Q2 2016	**ADB (loan):** OCR $300 million (in three tranches) **Government:** $130 million (in three tranches)

ADB= Asian Development Bank; APDC = Assam Electricity Distribution Company Ltd, APGC = Assam Power Generation Corporation Ltd; CEA = Central Electricity Authority, CGS= Central Generating Station ER = Eastern Region; GOA = Government of Assam, GWh = Giga watt hour, HVDS = High Voltage Distribution System; IDC = Interest During Construction; IPP = Independent power producers; kV = Kilo – Volt; KM= Kilo-Meter; kWh = Kilo – Watt Hour; MOP = Ministry of Power, MW = Mega-Watt, NER = North Eastern Region; OCR = Ordinary Capital Resources; T&D = Transmission & Distribution; TPS = Thermal Power Station.
Source: Asian Development Bank.

Design and Monitoring Framework for the Project1

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
Impact Increased capacity and efficiency of energy generation systems in Assam	By 2022: Energy generation in Assam increased by 962 GWh/year	APGC's annual reports, and CEA and MOP statistics	**Assumption** Proposed central generating station (northeast and eastern region) and independent power producer's projects are commissioned as planned.
Outcome Increase capacity and efficiency in Lakwa power plant.	By 2018: Energy generation in Assam increased by 354 GWh/year Lakwa plant load factor increased to 90% (Base year 2013 = 59%)	For all indicators: APGC/GOA, annual reports.	**Risk** Lack of long term gas supply for the new gas plant.
Outputs 1. Generation system upgraded and expanded 2. Institutional capacity of APGC & APDC strengthened.	By 2018: Lakwa 4x15 MW gas power generation units are replaced with new gas engines with (7x10) MW of total capacity. ERP system made fully operational by 2018 About 30 staff trained on procurement, project implementation, demand side management, safeguards, monitoring and evaluation by 2017; About 70 of staff trained on financial and human resource management by 2017.	For all indicators: Project Review Reports of APGC.	**Risk** Exchange rate fluctuation result in inadequate resources to deliver outputs

Activities with Milestones	Inputs
1. Generation system upgraded and expanded 1.1. Complete procurement by Q1 2015 1.2.Compete construction of Lakwa gas power plant by Q4 2018 **2. Institutional capacity of APGC& APDC strengthened** 2.1 Complete detailed needs assessment by Q1 2015 2.2 Develop ERP systems by Q4 2015 2.3 Develop training modules by Q2 2015 2.4 Conduct training through 2015–2017 2.5 Initiate construction supervision for Lakwa gas power plant by Q1 2015 2.6 Prepare Lower Kopili HEP project documents by Q3 2015	**ADB:** **Loan:** OCR $50 million **Government:** $12 million

ADB= Asian Development Bank; APGC = Assam Power Generation Corporation; CEA = Central Electricity Authority; CGS= Central Generating Station ER = Eastern Region; ERP = enterprise resource planning; GOA = Government of Assam, GWh = gigawatt hour, HEP = hydroelectric power; MOP = Ministry of Power; NER = North Eastern Region; MW = megawatt, OCR = ordinary capital resources.
Source: Asian Development Bank.

B. Monitoring

55. **Project performance monitoring.** The PMU, in coordination with the EA, will establish a performance monitoring system for the MFF and for each project. The performance reports for each project will be compiled for preparation of the MFF performance reporting. Project completion reports will be prepared for each project within 6 months of project completion, and an MFF completion report will be prepared within 6 months of MFF completion. The PMU will prepare quarterly progress reports and submit these to ADB within 30 days of the end of each quarter. These reports will include: (i) a narrative description of progress made during the period; (ii) changes in the implementation schedule; (iii) problems or difficulties encountered; (iv) work to be carried out during the next period; (v) progress on environmental and social compliance; (vi) a report on implementation of the EMPs for all environment category A projects; and (vii) compliance with covenants of the individual loan and project agreements. The progress reports will include project expenditures during the period and total expenditures to date. Performance will be evaluated on the basis of indicators and targets stipulated in the design and monitoring framework. The ADB project team will prepare periodic and annual reports to inform ADB's Board of Directors of overall progress, and supplemental progress reports prior to management approval of individual tranches.

56. **Compliance monitoring.** The EA will ensure that the projects under the MFF are undertaken, and that all project facilities are designed, implemented, operated, and maintained, in accordance with all applicable laws and regulations of the GOI and GOA, and the EARF. For each project, EAs will prepare and implement the necessary IEE or EIA, and EMP (with budget) in accordance with the EARF. For each project, the environmental categorization and assessment procedures defined in the EARF will be followed.

57. For any environment category A projects, an EIA will be prepared and made available to the public 120 days before a PFR is submitted to ADB for approval. For category B projects, an IEE will be prepared and disclosed to affected persons and the EA/ADB websites. APGC and APDC will monitor, audit, and report to ADB twice a year on implementation of the EMPs for each project. APGC and APDC will ensure that all associated projects will be constructed and commissioned in compliance with the laws and regulations of the GOA and GOI.

58. **Safeguards monitoring - Environment.** The quarterly reports will also include sections on the monitoring of environment and social safeguards matters. For all projects, a progress report on implementation of the relevant EMPs is required semi-annually. ADB SPS 2009 guidelines require APGC/APDC to establish a Grievance Redress Mechanism having suitable grievance redress procedure to receive and facilitate resolution of affected peoples' concerns, complaints, and grievances about the subproject's environmental performance. The bi-annual reports will also include sections on the monitoring of environment safeguards matters. For all projects, a progress report on implementation of the relevant EMPs is required semi-annually

59. **Safeguards monitoring - Social (IR and IP). Project** 1 is categorized as category "C" for both IR and IP, and does not require any specific monitoring during implementation. In case of any impact on IR and IP in future tranches (especially Tranche 3 with a hydro component), specific monitoring mechanism will be developed as outlined in the RF and IPPF, as applicable. The monitoring of respective plans related to land acquisition, IR and IP will be the responsibility of the EA through its PIUs and PMU. The EAs are required to implement safeguard measures and relevant safeguard plans, as provided in the legal agreements, and to submit periodic monitoring reports (semi-annual) on their implementation performance. ADB will require EAs to:

- establish and maintain procedures to monitor the progress of implementation of social safeguard plans;
- verify the compliance with social safeguard measures and their progress toward intended outcomes;
- document and disclose monitoring results, and identify necessary corrective and preventive actions in the periodic monitoring reports;
- follow up on these actions to ensure progress toward the desired outcomes, retain qualified and experienced external expert to verify monitoring information for projects with significant impacts and risks; and
- submit periodic monitoring reports (semi-annual) on safeguard measures as agreed with ADB.

60. The EAs monitoring will include daily planning, implementation, feedback and troubleshooting with individual Displaced Persons/Affected Persons and file maintenance, community relationships, dates for consultations, number of appeals placed and progress reports. Monitoring reports documenting progress on social safeguard implementation and completion reports will be provided by the PMU to ADB for review. Additionally, ADB will monitor projects on an ongoing basis until a project completion report is issued.

61. **Gender and social dimensions monitoring.** Project 1 is categorized as 'no gender elements', therefore, no specific monitoring will be required for gender. However, other social dimensions during the project construction, such as core labor standard, health safety, gender equality in employment and wage, human trafficking, child labor, and STDs/HIV/AIDS need to be properly monitored. The EA will ensure that these parameters are properly taken care of by the construction contractor, and will document in their monitoring report. In case of future tranches with gender impact, GAP will be prepared and gender aspects of project activities will be monitored regularly and adjusted based on field reality. Parameters and indicators for monitoring the gender issues will be set out in the GAP. The results of GAP monitoring will be reported to ADB by the EAs through it's PIU and the PMU with routine project progress reports.

C. Evaluation

62. ADB shall field an inception mission within 3 months of the approval of the Facility. ADB shall review the implementation and operation of the Facility based on the quarterly progress reports and meet with the EAs and GOA semi-annually to discuss the progress of the individual project and any changes to implementation arrangements or remedial measures required to be undertaken towards achieving the objectives of the projects, and the Facility under the Investment Program. Within 6 months of physical completion of a Project, EA, will submit a project completion report[16] to ADB.

Evaluation Methodology

Evaluation Activity	Purpose	Methodology	Who responsible and involved
Review Mission	Review the progress of the projects under the Investment Program and provide guidance to facilitate implementation	Site visits and meetings with EA officials, contractors, consultants at least twice a year	GOA/APGC/APDC/ADB
Mid Term Review	Comprehensive review of the Facility	2 years after the loan effectiveness, focusing on the engineering, resettlement, and environmental aspects of the project preparatory works under the Investment Program, and reviewing the financial status of APGC and APDC.	GOA/APGC/APDC/ADB
Project completion report	Evaluate the overall output of the Investment Program and its relevance and suitability	Site visit and meetings with APGC and APDC officials, contractors, consultants	GOA/APGC/APDC/ADB

D. Reporting

63. The EA will provide ADB with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions, (c) updated procurement plan, and (d) updated implementation plan for the next 12 months; and (iii) a project completion report within 6 months of physical completion of the Project. To ensure projects continue to be both viable and sustainable, project financial statements and the audited financial statements of the EAs, together with the associated auditor's report, should be adequately reviewed.

[16] Project completion report format is available at: http://www.adb.org/Consulting/consultants-toolkits/PCR-Public-Sector-Landscape.rar

E. Stakeholder Communication Strategy

64. The EA has consulted with stakeholders, including affected communities, during the project design stage. During the preparatory stages of each tranche under the Facility, meaningful consultations will be carried out with various stakeholders and government officials concerned. Local communities will be consulted as part of the social and resettlement study to gather their views on the proposed projects under the Facility. All affected people will be consulted on one-to-one basis through questionnaire surveys. Additionally, focus group discussions will be conducted within the project influence areas. Consultations will continue during the entire project cycle according to a stakeholder participation plan.

Stakeholder Communication Strategy

Project information to be communicated	Means of Communication	Responsibility	Audience	Frequency
Report and Recommendation of the President (RRP) with linked documents	ADB website	ADB	ADB, Government of India, Development Partners, Civil Society, Individuals	Once
Project information while planning/ designing	Discussions and stakeholder consultations	EAs	Project beneficiaries	Regular intervals during planning and design
Status of implementation during construction	Communication boards at site	EAs/Contractors	Project beneficiaries	All the time at construction sites
Project Performance Reports and Project Information Documents	ADB website	ADB	ADB, Government of India, Development Partners, Civil Society, Individuals	Every quarter
Safeguards Monitoring during implementation (i.e., Environmental and Social Monitoring Reports)	ADB website	ADB and EAs	ADB, Government of India, Development Partners, Civil Society, Individuals	Semi-annual
Project Completion Report	ADB website	ADB	ADB, Government of India, Development Partners, Civil Society, Individuals	Once

X. ANTICORRUPTION POLICY

65. The Government, State, APGC, and APDC agencies are advised of ADB's Anticorruption Policy (1998, as amended to date). Consistent with its commitment to good governance, accountability and transparency, implementation of the Projects under the Facility shall adhere to ADB's Anticorruption Policy. ADB reserves the right to review and examine, directly or through its agents, any alleged corrupt, fraudulent, collusive, or coercive practices relating to the Projects under the Facility. In this regard, investigation of Government officials, if any, would be requested by ADB to be undertaken by the Government.

66. To support these efforts, relevant provisions are included in the loan/grant regulations and the bidding documents for the Project. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the Project.[17] All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency(ies) and all Project contractors, suppliers, consultants and other service providers. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the Project.[18]

67. ADB's Anticorruption Policy designates the Office of Anticorruption and Integrity (OAI) as the point of contact to report allegations of fraud or corruption among ADB-financed projects or its staff. OAI is responsible for all matters related to allegations of fraud and corruption. For a more detailed explanation refer to the Anticorruption Policy and Procedures. Anyone coming across evidence of corruption associated with the project may contact the Anticorruption Unit by telephone, facsimile, mail or email at the following numbers/addresses:

by email at integrity@adb.org or anticorruption@adb.org
by phone at +632 632 5004
by fax to +632 636 2152
by mail at the following address (Please mark correspondence Strictly Confidential):

Office of Anticorruption and Integrity
Asian Development Bank
6 ADB Avenue Mandaluyong City
1550 Metro Manila, Philippines

[17] Available at: http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf
[18] ADB's Integrity Office website is available at: http://www.adb.org/integrity/unit.asp

XI. ACCOUNTABILITY MECHANISM

68. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of, their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.[21]

XII. RECORD OF FAM CHANGES

69. All revisions/updates during the course of implementation are retained in this Section to provide a chronological history of changes to implementation arrangements recorded in the FAM.

Date	Changes made to the Facility Administration Manual

[21] For further information see: http://www.adb.org/Accountability-Mechanism/default.asp.

Consultant Firms' Terms of References

Firm based consultants shall be hired for the following activities for which the TORs are attached in Appendices 2a, b ,c, d and e. The summary of consultants firm assignments are given below:

Table 1: Summary of Firm based Consulting Services requirement

No	Firm based Project	International Name of Positions	p-m *	National Name of Positions	p-m *
1	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
2	Capacity Building and Human Resource Development for Power Sector Utilities	Team Leader	8	Transmission Engineer	2
		Power Engineering Expert	5	Power Distribution Engineer	3
		External Specialist Faculty	10 training	Hydropower Engineer	2
				Finance and Accounts	4
				IT Expert	2
				Training and Coordinator	8
				Environment and Social Expert	3
				External Specialist Faculty	20 training
3	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
4	Project Management and Construction Supervision for Lakwa Replacement Gas Engine Based Power Plant	Team Leader (Mechanical Engineer cum Gas Engines Expert)	5	Site Project Manager (Civil Engineer	4.5
				Electrical Control & Instrumentation and Quality Assurance Expert	2
				Finance Account & Legal Expert	1.5
5	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

No	Firm based Project	International Name of Positions	p-m *	National Name of Positions	p-m *
				Programmers (4),	32
		Other hardware, software, licenses, data center costs			

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

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

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.

Scope of Work of the Consultant

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).

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.

Phase 1 - Collect and Study Feasibility Study/DPR/EIA documents prepared by CEA, GSI etc. for Lower Kopili HEP

1. The Consultant shall collect, analyse available documents/records for tender development purposes for the Lower Kopili HEP, such as:

(i) The Pre-Feasibility Report
(ii) The Feasibility Study Report with Appendices (Volumes I to VI)
(iii) Detailed Project Report
(iv) Environmental Impact Assessment
(v) Topographic surveys, mapping, aerial photography, satellite imagery, etc.
(vi) Geological, seismicity and geotechnical investigation report
(vii) Meteorology and hydrology report
(viii) Reservoir simulation studies (power, energy, irrigation, flood mitigation)
(ix) Engineering design criteria used (civil, electrical, mechanical, etc.)
(x) Concept design and drawings of the Project components
(xi) Cost estimates
(xii) Economic and financial evaluations
(xiii) Project implementation plan
(xiv) Adequacy of bridges, roads, culverts etc. to Lower Kopili to transport heavy equipment
(xv) Any other existing study/reports relevant to the Lower Kopili HEP which are deemed necessary by APGC.

2. As part of the familiarisation process the Consultant shall conduct a project area and site inspection to assess the general conditions of the area and the conditions at the sites of the proposed works.

Phase 2 - Review of Cost Estimate, Schedule, Economic cum financial evaluation, Safeguards and Risk Management issues covered for Lower Kopili HEP

A. Review of Cost Estimate

3. The Consultant shall review the feasibility cost estimate for compliance with prevailing construction rates in Assam and market prices of the electrical and mechanical plant and equipment. The Consultant shall check that:

(i) The civil works prices have been derived specifically for the project taking into account construction methodology and cost for construction equipment, local labour, materials, etc.
(ii) The E&M equipment prices are based on information from potential suppliers.
(iii) The estimate includes an estimate for engineering, supervision, administration, legal costs, land acquisition, resettlement, environmental, etc.
(iv) Physical contingencies for the various project components, the price escalation during construction and the financing charges during construction are provided.

B. Review of Implementation Schedule

4. The Consultant shall review the implementation schedule to check if:

(i) Preconstruction activities are defined, including access and transportation route and method.
(ii) Contract packaging is defined.
(iii) Main construction, manufacturing, delivery/shipping, installation and commissioning activities are defined for each component of the project.
(iv) Construction camp and site infrastructure, and office facilities are included.
(v) Environmental requirements and resettlement activities are included.

(vi) The critical activities and the critical path are defined.

C. Review of Economic and Financial Evaluation

5. The Consultant shall check that the economic and financial analyses have been carried out in accordance with the ADB guidelines and that sensitivity analyses have been applied on important parameters in order to check their impact on the viability of the project.

D. Evaluation of Risk or risk management issues

6. The Consultant shall evaluate various risks involved in project development, implementation and commissioning and as they may relate to climate, disaster, financial, technology, regulatory and management and any other as relevant issue. The risk analyses shall be carried out in accordance with the ADB guidelines and that sensitivity analyses have been applied on important parameters in order to check their impact on the viability of the project.

E. Review of Safeguards Issues

Environmental Assessment

7. The EIA undertaken during the feasibility study submitted for approval to the Government in 2010. The Consultant shall review this to ensure the EIA complies with ADB's Safeguard Policy Statement (SPS) (2009), specifically, *Appendix 1. Safeguards Requirements 1: Environment*. Taking account of the technical review of the feasibility/DPR study and the EIA document, the Consultant will liaise with APGC and will prepare a checklist to find out the gaps followed by a proposed action plan to comply with the requirement as per national and ADB's policy.

8. Based on the gaps identified above, the Consultant shall

(i) Prepare an updated environmental impact assessment (EIA) or an addendum to the EIA of the proposed HPP, associated transmission line(s) and substation(s), considering the likely impacts associated with pre-construction and construction activities as well as the long-term impacts during operation. The Consultant shall carryout assessments to confirm important parameters such as environmental flow etc. where necessary.

(ii) As part of the updated EIA, prepare an environmental management plan (EMP) detailing environmental mitigation measures to address each identified impact as well as an environmental monitoring programme to be implemented during various project phases. The EMP shall identify detailed costs per measure, institutional responsibilities, schedule/time frame, location, and monitoring parameters. The Consultant shall also conduct an assessment of current institutional capability to implement the EMP and develop the EMP monitoring plan and shall propose capacity building needs as necessary.

(iii) Conduct consultations with groups to be affected by the project (local residents, local officials, people's organisations, and other stakeholders) and local NGOs. A proper Grievance Redress Mechanism (GRM), as required in the SPS, will be established to monitor/redress the grievance over the various project phases. Consultations shall be carried out at least twice, i.e. once during the early stages of EIA preparation; and once when the draft EIA report is available, as well as conduct suitable public disclosure of the documents prior to loan appraisal by ADB. The results of the consultations shall be documented.

(iv) Ensure that the all costs for implementing mitigation measures, monitoring plan and environmental management capacity building activities are included in the total project cost.

9. Furthermore, the Consultant shall prepare all necessary documents for due diligence for climate change related document preparation and guide the APGC in order to apply and obtain CDM benefits for the Lower Kopili Hydropower Project.

Phase 3: Based on the assessment of the gaps noticed in the EIA and social documents, the consultant shall conduct the following:

A. Develop Social Impact Assessment and Tribal survey, Land Acquisition and Resettlement Plan

a. The Consultant shall review the existing documents prepared during the feasibility on social and resettlement issues to check whether necessary plans/reports (Land Acquisition and Resettlement Plan, Indigenous Peoples Plan, Gender Action plan etc) have been prepared and comply with the ADB's Safeguard Policy Statement (SPS) (2009). Taking in to account of the technical review of the feasibility study the Consultant will liaise with APGC and will prepare a checklist to find out the gaps followed by a proposed action plan in order to comply with the requirement as per national and ADB's policy.

b. Based on the gap assessment and the action plan, the Consultant shall:

(i) Prepare a sample-based social impact assessment (SIA), including gender analysis, of the proposed project to provide adequate information, including any potential impacts on indigenous peoples; provide mitigation measures/affirmative activities to ensure that ethnic minorities are safeguarded during construction and the project implementation period.

(ii) Prepare a Resettlement Plan for the project in accordance with Safeguard Requirements 2: Involuntary Resettlement of ADB's SPS 2009.

(iii) Prepare an Indigenous People's plan (IPP), if necessary, in accordance with Safeguard Requirements 3: Indigenous Peoples of SPS 2009.

(iv) Review and assess the risk of spreading HIV/AIDS and other sexually transmitted diseases during the construction phase.

(v) Prepare a plan for mitigating the risk of these diseases to construction workers and communities; the plan shall include the requirement for the contractor to prepare and implement an HIV/AIDS and sexually transmitted disease awareness programme for its workers, for which the bidding documents shall include a budget line item.

(vi) Prepare a Community Development Plan based on the social assessment study. Social impacts shall be determined and analysed through a participatory process with key stakeholders. The Community Development Plan shall propose a range of social uplift measures in addition to the requirements of the Resettlement Plan. Social uplift measures may include, inter alia, provision of new roads, electricity, water supplies, health inputs, support for agricultural/income generating developments, schools, and education scholarships, to villages most immediately affected.

(vii) Assess the positive and negative impacts on people receiving electricity; for the first time as a result of the project (ability and willingness to pay etc.), and propose appropriate mitigation and enhancement measures. This shall include identification of the potential for productive uses of electricity to stimulate economic opportunities for poor communities.

(viii) Disclose the RP in local language to the APs and the same will be disclosed in the website of APGC and ADB.

B. Project Review Report

The Consultant shall prepare and submit the Project Review Report which shall present the results of the review, and make suitable recommendations as to any additional

investigations that may be required and include a work plan for the subsequent phases of the development. The report shall comprise as a minimum:

(i) An Executive Summary
(ii) Explanation of the Methodology Adopted for the Review
(iii) Analysis and Observations on the Documentation Reviewed
(iv) Analysis and Observations on the Site Inspection
- Geological, Geophysical and Geotechnical Investigations
- Meteorological and Hydrological Studies
- Project Layout and Optimisation
- Design Criteria
- Hydraulic Studies
- Concept Design

(v) Review of Cost Estimate
(vi) Review of Implementation Schedule
(vii) Review of Economic and Financial Evaluation.
(viii) Actions to be Taken and Work Plan
(ix) Updated Safeguards reports as appropriate (EIA, EMP, SIA, RP and IPP).

C. Phase 1-3 Deliverables

The following are Phase 1 deliverables:

(i) Report on data collected for tender preparation
(ii) Draft EIA Report (including EMP) and CDM documents
(iii) Draft SIA Report, Resettlement Plan and IPP.

Phase 4 –Preparation of Tender Documents for Development of Lower Kopili HEP

Scope of the Consultant's Services

The Consulting services to be completed in Phase 4 will be to develop tender documents, tender evaluation and award management of works related to Lower Kopili HEP components:

(i) Project Preparatory Works including access roads, culverts and bridges, construction and permanent site facilities
(ii) Hydropower and Transmission Works; including civil, structural and hydro-mechanical works, electro mechanical works, switchyard and transmission lines and terminations/connections to the grid.
(iii) Environmental mitigation measures as specified in the EMP, CDM benefits accrued etc.
(iv) Land Acquisition and Resettlement issues and mitigation measures as specified in the Resettlement Plan.

A. Tender Documents

For the purpose of preparing technical and financial proposals, the Consultant shall assume one/two procurement packages on turnkey basis for procurement, construction and commissioning the Works as follows:

(i) **Part 1 - Preparatory Works**; covering construction and commissioning of the preparatory works including access roads, bridges and drainage, construction and permanent operations and maintenance village and site facilities, Resettlement site, construction power to the main work sites.
(ii) **Part 2 - Main Civil Works;** covering procurement, construction and commissioning of the Civil Works for dam, intake, headrace tunnel, surge shaft, power station, switchyard and tailrace canal.

(iii) **Part 3 - Hydro-Mechanical Works;** covering procurement, construction and commissioning of all the gates, valves and steel liner for the high pressure tunnel and manifold.

(iv) **Part 4 - Electro-Mechanical Works;** covering procurement, construction and commissioning of turbines, generators, auxiliary equipment, cables, protection, communications and control equipment, ancillary equipment and equipment for outdoor switchyard, etc.

(v) **Part 5 - Transmission Line;** covering procurement, construction and commissioning of the 220 kV transmission line and substation switchyard, and connections to the grid.

Tender Documents shall be audited to ensure that all relevant environmental mitigation measures specified in the EMP are included in the schedule of quantities. The tender documents for procurement, construction, manufacture and commissioning of the works shall be based on FIDIC or other agreed standard conditions of contract. The bid documents will generally comprise:

(i) Invitation to Tender
(ii) Project Description and Overall Requirements
(iii) Definition of the Site and Work Areas
(iv) Conditions of Tender
(v) Form of Tender
(vi) Conditions of Contract
(vii) Conditions of Particular Application (Special Conditions of Contract)
(viii) Technical Specifications and Drawings
(ix) Performance Guarantee requirements
(x) Schedule of Quantities
(xi) Schedules of Electrical and Mechanical Plant and Equipment
(xii) Environmental and Social Requirements
(xiii) Implementation Programme
(xiv) Any other document the Client determines to be necessary for tendering.

The Consultant shall also prepare the following documents:

(i) Prequalification Documents
(ii) Supporting documents for Prequalification Process like evaluation etc.

B. Tender Evaluation and Award

The Consultant shall act as the Owners' Engineer for assisting in the evaluation process – both technical and commercial.

C. Phase 4 Deliverables

The following are Phase 4 deliverables:

- Draft Tender Documents
- Final Tender Documents
- Finalised Safeguard Documents including CDM Documents.

The Consultant shall offer the following:

(i) Technology transfer: The Consultant shall endeavour to transfer his engineering knowledge to the local staff members engaged in the project by means of seminars, lecturers, on-the-job training during Phase 3 and Phase 4.

(ii). APGC will provide:

- All available background information, data and reports

- Office facilities at APGC project offices
- Counterpart staff.

CONSULTANT'S TEAM

It is estimated that the detailed engineering study will take a total of 18 months to complete and will require a total of 30 person-months (p-m) allocated among the following team of international and national specialists:

International Team (Total of 11 p-m)	**National Team** (Total of 19 p-m)
Hydropower Design Civil Engineer Team Leader, 5 pm	**Deputy Team Leader Hydropower Engineer, 5 pm**
CDM Specialist 2 pm	Transmission Engineer, 2 pm
Construction Planner / Cost Estimator, 2 pm	Mechanical Engineer, 2 p m
Dam Safety Engineer, 2 pm	Social / Resettlement Specialist, 4 pm
	Environmental Specialist, 4 pm
	Financial and Economic Analyst, 2 pm

PROJECT COST ESTIMATE

The TA's total cost is estimated at $415,000 equivalent. ADB will finance $380,000 equivalent. The Government of India will finance $35,000 equivalent of local currency costs. The detailed cost estimates and financing plan are given in the following table.

Table 2: Lower Kopili Cost Estimates and Financing Plan

($'000)

A. Asian Development Bank Financing	
1. Consultants	
a. Remuneration and Per Diem	
i. International Consultants [a]	$150
ii. National Consultants [b]	$100
b. International and Local Travel [c]	$50
c. Reports and Communications	$10
4 Social and Environment Surveys	$50
5. Miscellaneous Administration and Support Costs [d]	$10
6. Contingencies	$10
Subtotal (A)	**$380**
B. Government Financing	
1. Office Accommodation [e]	$15
2. Counterpart Staff	$20
Subtotal (B)	**$35**
Total	**$415**

[a] Consisting of a total of 11 person-months across all components.
[b] Consisting of a total of 19 person-months across all components.
[c] Includes vehicle rental
[d] Includes office facilities and communication (telephone lines and internet access); utilities (air conditioners), electricity and water charges in the consultant's office.
[e] work place at the APGC building

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

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:

1. Engineering Approvals
2. Project Management
3. Construction, Erection and Commissioning (Construction) Supervision
4. O&M and LTSA

2.1 Engineering Approvals:

(i) Review of all design engineering documents pertaining to Gas Engines including, but not limited to the following:
- Equipment Data Sheets
- System Process Flow Diagrams (PFD) and, Piping and Instrumentation Diagrams(P&ID)
- System descriptions, design/selection criteria, sizing calculations and related documents

(ii) Review of engineering documents like P&ID, layouts (including overall plant layout), technical specifications of BOP equipment etc.
(iii) Preparation of documents required for obtaining approval from statutory authorities.
(iv) Review and finalization of Quality Assurance Procedures (QAP), Quality Plans etc.
(v) Review of Health, Safety and Environment (HSE) procedures
(vi) Review of erection, commissioning Performance Test and reliability test Procedures and finalization of same.
(vii) Review of O&M Manuals and As Built Drawings and finalization of same.
(viii) Review of other such documents required for the proper execution and handing over of the Project by EPC Contractor.

2.2 Project Management:

(i) Review and monitor Project Schedules.
(ii) Ensure deployment of EPC Contractor resources to match the Project Schedule.
(iii) Hold regular (weekly/monthly) Project Review Meetings for monitoring Project progress to meet Project schedule.
(iv) Suggest midcourse corrective actions needed to keep the Project on track.
(v) Advise APGC with regard to Project execution by the EPC Contractor, availability of adequate resources and corrective actions.
(vi) Review EPC Contractor's monthly reports and convey their findings/comments to APGC.
(vii) Ensure the plant design parameters lie within the prescribed EMP and RP/

2.3 Construction Supervision:

(i) Review EPC Contractor's construction procedures/manuals/quality assurance and safety procedures and get the same finalized in line with Contract, relevant codes and international good engineering practices in consultation with APGC.
(ii) Ensure that all construction activities are carried out in line with the Approved procedures/Manuals/Codes/best engineering practices etc.
(iii) Review and approve all quality plans (QAP) with Owner Witness points clearly indicated.
(iv) Witness Quality related tests, test reports etc. and give comments/approval.
(v) Ensure that all quality related documents including test reports are properly compiled by EPC Contractor for handing over to APGC at the time of Project Completion.
(vi) Review Health Safety and Environment (HSE) of EPC contractor and approve these procedures after the incorporation of Owner/Consultant/Regulatory Agencies comments.
(vii) Periodically review/inspect to ensure that HSE procedures are strictly followed.
(viii) Review/comment and approve pre-commissioning and commissioning procedures/test procedures.
(ix) Witness and ensure conductance of all commissioning tests as per agreed procedures/codes/best engineering practices.
(x) Ensure that EMP and RP measures are fully adhered while construction and commissioning period. Retain requisite records of environmental parameters as per the EMP for meeting regulatory and compliance requirements.
(xi) Ensure proper synchronization of the gas plant with the grid.

2.4 O&M and LTSA:

(i) Preparation of Technical specifications for O&M for Gas plant, review of technical bids and preparation of technical recommendations.
(ii) Review of engineering documents pertaining to O&M for Gas Engines. Assist in award for O&M contract as well as LPSA.
(iii) Ensure deployment of Contractor resources to match the O&M Schedule.
(iv) Review and monitor O&M Schedules.
(v) Hold regular (weekly/monthly) Project Review Meetings for monitoring O&M schedules.
(vi) Suggest corrective actions needed to ensure proper O&M if any gaps are encountered.

3. Deliverables/Expected Output

The Consultant will deliver the following as part of this assignment:

(i) Monthly Progress Reports
(ii) Project schedules based on EPC Contractor's resource deployment.
(iii) Corrective/Mitigation plans/suggestions for keeping the Project progress as per schedule.

4. Team Composition

The Consultant would be required to deploy team of experts for executing following tasks:

(i) Team Leader (Mechanical Engineering cum Gas Engines Expert) with a team of engineers in relevant disciplines for the engineering phase of the Project.
(ii) Site Project Manager (Civil Engineer) having adequate qualifications and experience of similar job with at least 15 years post qualification experience. He should have good knowledge/experience in Primavera Project management tools.
(iii) Electrical Control & Instrumentation and Quality Assurance Expert having adequate experience (minimum 10 years) in execution of electrical systems at Power Plants. He should have expertise in design and implementation of electric installations at least two similar power plants.
(iv) Finance Accounts and Legal Expert shall have expertise in ADB related claims, reimbursement as well as claims avoidance procedure.

Each member of the consultant's team should have an appropriate/relevant mix of qualification, experience and expertise in respect of project preparation detailed design/engineering, management and construction supervision, legal, finance/accounts expert. Project Management chart detailing the deployment of persons for execution of the Project shall be furnished along with the qualifications/experience of the persons proposed to be deployed. Deployment of personnel shall be subject to APGC approval.

Minimum General Experience of the Consultant Firm	15 Years
Minimum Specific Experience of Team Leader and Mechanical Engineer	15 Years
Minimum Specific Experience of Site Project Manager (Civil Engineer)	10 Years
Minimum Specific Experience of other Engineers/Experts	10 Years
Regional/Country Experience Required	Yes

Team Leader (Mechanical Engineer cum Gas Engines Expert), International, 5 person months

The Team Leader and Gas Engines expert should have an Engineering Degree in Mechanical Engineering and 15 years of post-qualification experience in installation commissioning and testing of gas turbines and gas engines of at least 10 MW Capacity each. He should have successfully implemented at least three projects of the proposed size of Lakwa TPS. The Scope of work, inter-alia will include but not be limited to the following:

(i) Overall responsibility for successful implementation of the replacement of the gas turbine with gas engines and the entire scope of work detailed in item 3 above.
(ii) Advise APGC in all aspects of project implementation that can broadly be categorized in the following phases:
    a. Engineering Approvals
    b. Project Management
    c. Construction, Erection and Commissioning (Construction) Supervision
    d. O&M and LTSA
(iii) With the assistance of the team members advise APGC in accomplishing all the tasks listed in item 3 of the Firm's TOR stated above.
(iv) Advise APGC in the preparation of RFQ, RF, bid document, bid evaluation, selection of the EPC contractor, entering in to contract with the successful bidder.

(v) Examine the inputs provided by the team members and work out the most suited solutions suggested by them in respect of the individual packages of the project.
(vi) Coordinate the activities of the team members, so as to ensure that the project is implemented in an efficient, cost effective and timely manner.
(vii) Monitor the implementation of various the packages under the project.
(viii) Interact with and coordinate activities regarding the implementation of the project with the EPC contractor.
(ix) Involve the APGC gas turbine professionals on various aspects of project implementation so as to transfer necessary skills for implementation of such projects in future.
(x) He shall be responsible for smooth functioning of the project after the test runs are completed.

Site Project Manager (Civil Engineer), National, 4.5 person months

The Site Manager should have a Degree in Civil Engineering having adequate experience of similar jobs with at least 15 years post qualification experience. He should have good knowledge/experience in Primavera Project management tools. The Scope of work, inter-alia will include but not be limited to the following:

(i) Review and monitor Project Schedules.
(ii) Ensure deployment of EPC Contractor resources to match the Project Schedule.
(iii) Hold regular (weekly/monthly) Project Review Meetings for monitoring Project progress to meet Project schedule.
(iv) Suggest midcourse corrective actions needed to keep the Project on track.
(v) Advise APGC with regard to Project execution by the EPC Contractor, availability of adequate resources and corrective actions.
(vi) Review EPC Contractor's monthly reports and convey their findings/comments to APGC.
(vii) Ensure the plant design parameters lie within the prescribed EMP and RP.

Electrical Control & Instrumentation and Quality Assurance Expert, National 2 person months

He shall have a Degree in Electrical Engineering having adequate experience (minimum 10 years) in installations of gas engines and other electromechanical equipment including controls and instrumentation for gas based power plants, switch yards and substation. The Scope of work, inter-alia will include but not be limited to the following:

(i) Review EPC Contractor's construction procedures/manuals/quality assurance and safety procedures and get the same finalized in line with Contract, relevant codes and international good engineering practices in consultation with APGC.
(ii) Ensure that all construction activities are carried out in line with the Approved procedures/Manuals/Codes/best engineering practices etc.
(iii) Review and approve all quality assurance plans (QAP) with Owner Witness points clearly indicated.
(iv) Witness Quality related tests, test reports etc. and give comments/approval.
(v) Ensure that all quality related documents including test reports are properly compiled by EPC Contractor for handing over to APGC at the time of Project Completion.
(vi) Review Health Safety and Environment (HSE) of EPC contractor and approve these procedures after the incorporation of Owner/Consultant/Regulatory Agencies comments.
(vii) Periodically review/inspect to ensure that HSE procedures are strictly followed.
(viii) Review/comment and approve pre-commissioning and commissioning procedures/test procedures.

(ix) Witness and ensure conductance of all commissioning tests as per agreed procedures/codes/best engineering practices.
(x) Ensure that EMP and RP measures are fully adhered while construction and commissioning period. Retain requisite records of environmental parameters as per the EMP for meeting regulatory and compliance requirements.
(xi) Ensure proper synchronization of the gas plant with the grid.

Finance Account & Legal Expert, National, 1.5 person months

The consultant should be a CA/ICWA/MBA (Finance) with at least 10 years' experience in managing the accounts/financial matters of power project developers during the construction of phase of power plants, of at least similar or higher magnitude. The consultant will support project implementation by assisting APGC to ensure timely management of all financial reporting related requirements under the ADB loan or for other purposes.

(i) Preparing withdrawal applications for loan disbursements to contractors based on submitted contractor invoices.
(ii) Develop Statement of Expenditure (SOE) and/or imprest account procedures, including proper record keeping for reimbursements.
(iii) Assist in preparation of the reply to the internal and/or external Audit of all ADB Projects as per guidelines;
(iv) Periodical reporting of project financial and legal matters, including disbursements and disbursement projections, for ADB reporting purposes.
(v) Provide feedback to the Project Design Engineer on any project progress matters including legal, finance and reimbursements as deemed necessary for claims avoidance.

Budget Table: Project Management and Construction Supervision for Lakwa Cost Estimates and Financing Plan

(in US $)

A. Asian Development Bank Financing	
1. Consultants	
a. Remuneration and Per Diem	
i. International Consultants [a]	110,000
ii. National Consultants [b]	200,000
b. International and Local Travel [c]	50,000
c. Reports and Communications	20,000
2. Training	100,000
3. Miscellaneous Administration and Support Costs [d]	20,000
4. Contingencies	20,000
Subtotal (A)	**$520,000**
B. Government Financing	
1. Office Accommodation [e]	20,000
2. Counterpart Staff	30,000
Subtotal (B)	**50,000**
Total	**570,000**

[a] Consisting of a total of 5 person-months across all components.
[b] Consisting of a total of 8 person-months across all components.
[c] Includes vehicle rental
[d] Includes office facilities and communication (telephone lines and internet access); utilities (air conditioners), electricity and water charges in the consultant's office.
[e] work place at the APGC building

Terms of Reference (Individual)

ERP and IT Specialist, National, 12 pm

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.

The detailed scope, but not limited thereto, under each phase is given below.

2.1 Phase-1: Pre-implementation-preparation of road map and RFP and selection of ERP partner.

2.1.1 Activity A: As-Is Assessment

The As-Is assessment phase will consist of the following key activities.

A.1 Assessment of Processes

(i) Study organizational hierarchy, department, roles and responsibilities of personnel/ officials within APGC.
(ii) Study the existing capacities in terms of available manpower, skills and competencies in APGC to identity and address the gaps keeping in view the future requirements.
(iii) Study the existing procedures/processes within the organizational functions such as Human Resources, Payroll, Finance, Asset Management, Maintenance Management, Materials Management and Procurement, Energy Chain Management, Project Management and any other business processes.
(iv) Study the procedures in place to manage the available data of the above mentioned functions, whether manual-entry, automated, combination of manual and automated, involvement of outsourcing, whether in hard-copy/ soft-copy etc.
(v) Understand the challenges being faced currently in the various business functions listed above.
(vi) Study the key entities that play a role in the business processes of the above mentioned functions.

A.2 Assessment of existing IT infrastructure

(i) Study the available IT infrastructure being used and to be created by APGC along with their user departments and functionalities.
(ii) Study the usage of various existing and to be used software applications and identify the

challenges faced at various levels.

(iii) Study various aspects of existing and to be used applications like licensing, possibility of integration, application maintenance procedures, operating system, databases, architecture, any enhancement plans that are being undertaken etc.

(iv) Study the functionalities/processes that are supported by the existing and to be used applications.

(v) Study the hardware available at headquarters and other offices and assess possibilities to leverage the existing capacities more effectively in future.

2.1.2 Activity B: To-Be Design

Based on the detailed assessment conducted in the As-Is Assessment phase, the consultant should develop the IT proposed ERP functionality architecture based on the following objectives:

(i) Meeting APGC's requirement for a state of the art data centre facility at the HQ.

(ii) Meeting APGC's requirement to establish a state of art processes as part of ERP.

(iii) Meeting APGC's generation-business specific requirements.

(iv) Implementing the technology design based on leading industry standards while addressing the need for scalability and flexibility without undermining the data integrity and transparency required for enabling the processes.

(v) Leveraging various existing and planned components of IT solutions.

(vi) Ensuring integration as necessary with various existing and planned IT solutions.

The following are the activities envisaged as part this phase.

B.1 Solution Design for ERP

Based on the assessment of processes undertaken as part of the As-Is assessment phase, the consultant in discussion with APGC shall identify and propose the ERP modules to be adopted based on consideration of various aspects such as- strategy for procurement of the modules, options for phased implementation, merits of each module etc.

(i) Consultant will take into consideration APGC's need to manage and administer specific business requirements as part of the ERP solution.

(ii) Consultant will take into consideration the legacy applications which are required to be continued as per APGC's needs and design the solution keeping in mind the integration with the legacy applications.

(iii) Consultant will discuss with APGC to design and finalize the likely ERP modules to be adopted viz Financial Management, HR Management, Asset Management, Maintenance Management, Materials Management and Procurement Management, Energy Chain Management, Project Management, etc. Consultants have to ensure that there is no duplication of any work *vis-a-vis* APGC with any other projects and initiatives undertaken by APGC.

(iv) Consultant shall deploy suitable Business Intelligence (BI) tools in the ERP structure to ensure that both BI and ERP can be integrated for decision making.

(v) Consultant will discuss with APGC on the other critical requirements of the ERP solution (ex. Training, Change Management), and formulate a strategy for addressing these requirements.

(vi) Consultant will develop the technical architecture and the solution architecture for implementing the ERP solution.

(vii) Consultant will develop the licensing requirements of the ERP solution based on usage requirements of APGC.

(viii) Consultant will discuss and finalize the scope of the implementation, and the approach for phased implementation.

(ix) Consultant shall evaluate standard features & capabilities of the relevant ERP Commercial Of-The-Shelf (OTS) software solutions available and widely adopted.
(x) Consultant shall draft the detailed Functional Requirement Specifications (FRS) for each module. This can be included as specifications in the Terms or Reference for the selection of the Implementation Agency.
(xi) Consultant shall discuss the draft requirements with APGC prior to finalizing the same.
(xii) Consultant shall also identify and incorporate the unique/custom requirements of the Process Owners of the concerned business functions of APGC.
(xiii) Consultant shall Conduct Presentations & Workshops for building common vision and understanding of BI and the ERP system and developing best business practices.
(xiv) Consultant shall prepare best suited IT Roadmap and ERP implementation project plan including the strategy before buying and installing ERP system as per approved budgetary plan.
(xv) Consultant shall prepare a Detailed Feasibility Report covering the scope of work, budgetary estimate, Information System architecture, documentation and work flow etc.
(xvi) Consultant shall assist in re-engineering and identifying organization obsolete functions in the organization - oriented management practices and to recommend for ERP based process or change / customize ERP and use BI for customisation.

B.2 Designing IT Infrastructure

(i) The existing IT infrastructure as well as the infrastructure planned under any other scheme for APGC Headquarters as well as other offices shall be assessed before defining additional requirements of IT infrastructure.
(ii) Consultant shall take into consideration the redundant telecommunication connectivity which is existing, and suggest the requirements for the proposed ERP system.
(iii) Consultant shall estimate and develop the specifications for all the IT infrastructure components required for deploying the information systems across the headquarters and other offices of APGC, including:
    a. Desktops, Hardware, Network requirements and peripherals
    b. Servers
    c. Storage Devices
    d. Network Devices
    e. Network Connectivity
    f. Security Devices
    g. Software
    h. Asses the office space and furniture requirements for the Data Centre and other relevant places.
(iv) Consultant shall suggest ways and means to leverage the existing investments in IT before detailing out the additional capital (CAPEX) and operational (OPEX) expenditure based on the estimate developed.
(v) Consultant shall adopt latest technology standards and practices for developing the specifications for the required IT infrastructure.
(vi) Consultant shall draft detailed requirements that can be included as specifications in the Terms of Reference for the selection of the Implementation Agency.

B.3 Preparation of the IT Budget (Capital & Operational Expenditure)

(i) Based on the specifications prepared for various IT products and services identified, the Consultant shall prepare a Detailed Project Report including Detailed IT Budget with CAPEX and OPEX outlay required for undertaking the proposed initiatives
(ii) This budget should clearly state CAPEX and OPEX investments as well as year-on-year

annual budget requirements

(iii) Consultant shall assist APGC in seeking approval of the IT budget from the concerned authorities

2.1.3 Activity C: Selection of Implementing Agency

Based on the finalization of the IT goods and services, the consultant shall assist APGC in the preparation of a Request for Proposal for the procurement, implementation and management of the ERP solution and for the selection of a qualified and capable implementing agency.

C.1 Preparation of tender documents for the ERP solution

(i) Based on the type of data centre facility, list of IT goods and services identified and the corresponding specifications defined, the consultant shall prepare a Request for Proposal (RFP) for selection of the implementation agency.

(ii) The RFP should acknowledge the procurement strategy established as part of the previous activities.

(iii) To prepare tender document i.e. Request for Proposal (RFP)/ NIT document for selection of an Implementation Partner to deliver the ERP software product, required hardware and data center facility to be establishes along with requisite hands on training. This should cover the scope of work, technical & functional requirements of the ERP system as well as the commercial, contractual terms & conditions etc. The RFP will also include the draft contract for the project implementation partner.

(iv) All relevant sections/volumes of a Request for Proposal that include but not limited to the following shall be prepared:

a. Pre-qualification Criteria
b. Evaluation Criteria
c. Scope of work
d. Timelines, Milestones and Deliverables
e. Instructions to Bidder
f. General Conditions of Contract
g. Special Conditions of Contract
h. Service Level parameters etc.

C.2 Assistance in Bid Management

(i) Consultant shall assist APGC in preparing advertisement inviting Tender and correspondence with the bidders.

(ii) Consultant shall assist APGC in co-coordinating Pre-Bid Meetings, clarifying and responding to queries from bidders, etc.

(iii) Consultant shall assist in preparing corrigendum, if required, to the released as part of the RFP and in communicating the same to bidders.

(iv) Consultant shall assist APGC in evaluating the technical proposal received from the bidders as per the evaluation criteria finalized and laid out in Request for Proposal.

(v) Consultant will assist APGC in evaluating the presentations by the bidders.

(vi) Consultant will assist APGC in evaluating the Financial Proposals and in working out the total cost of ownership.

(vii) Consultant shall prepare a Vendor Evaluation Report as an outcome of the evaluation and assist APGC in finalization of the successful bidder.

(viii) Consultant will assist in technical evaluation for selection of ERP product and Implementation Partner. The consultant will provide all necessary assistance during the technical evaluation of tenders in selecting the technically qualified vendor. This would include assisting APGC in short-listing of qualified bidders, evaluation of technical

proposals, evaluation of financial proposals, and determination of final ranking of proposals and recommending selection of the ERP vendor and Implementation Partner and hardware to APGC.

(ix) Facilitate submission of the draft documents and evaluation of results to ADB for review and approval.

(x) Assist in finalizing award and signing of Contract Agreement.

(xi) Conduct financial management and accountability study to improve accounting and auditing systems.

(xii) Carry out other relevant tasks as may be requested for achieving the objectives.

C.3 Assistance in Contract Finalization with the Implementing Agency

(i) Consultant shall assist in negotiations with successful bidder and in finalizing the contract with the selected bidder/Implementing Agency.

C.4 Assistance in formation of APGC's Project Team

(ii) Consultant shall assist APGC in identifying and forming the team consisting of program lead, process owners of different business functions, subject matter experts, technical team, and data migration team**.** Ensure that APGC has expertise to view summary data and go for selective data mining, hyperlink to additional data and use analytical tools as and when required.

(iii) Consultant shall assist APGC to identify the single-point-of-contact for each module for the effective coordination with the implementation team during the project phases.

(iv) Consultant shall assist APGC to identify APGC's Project Team Members across all geographic locations under scope. Form a competency center comprised of key management from both IT and line management functions.

(v) Provide formal business intelligence (BI) training to APGC.

2.2 Phase II: Implementation-change management, implementation monitoring etc.:

2.2.1 Tasks

Consultant shall assist APGC in program management of the ERP solution implementation which will be 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 stake holders (APGC, ERP Implementing Agency etc.) and would assist APGC 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 during this phase.

(i) Prepare critical examination and review of project management plan submitted by ERP implementation vendor and assist in project implementation management.

(ii) Guide the organization in implementation task and facilitate the overall implementation process and help in setting up the expectations of the users at various levels.

(iii) Assist in Preparing Implementation Approach and Review of Progress.

(iv) Assist in identifying skill required, top management roll, project team roll, key project deliverable milestone and activities working along with ERP implementation vendor.

(v) Prepare Review of Blue Print document prepared by ERP vendor.

(vi) Conduct workshop on BI and ERP for Senior Management (two workshops of half day each).

(vii) Review the BI and ERP training need proposed by ERP vendor for all levels of management.

(viii) Assist in vetting of documents on specification of servers and data center related IT infrastructure prepared by ERP vendor for the project.

(ix) Participate in Steering committee meetings in reviewing the progress especially on

technical issues.

(x) Vet the test script documents prepared by ERP vendor as well as integration test for Go-Live preparedness.

(xi) Review the change management plan and the BI architecture prepared by ERP vendor.

(xii) Review financial and management reporting, internal controls, auditing system and financial management assessment.

(xiii) Review of Go-Live parameters.

2.2.2 Monitoring and Review

(i) Consultant shall assist in reviewing the progress of the implementation of the ERP solution and the integration of the same with any legacy applications.

(ii) Consultant shall review the conformity of the project plan in terms of schedule and milestones and provide weekly periodic status review updates to APGC.

(iii) Consultant shall actively participate in project status review meetings with APGC and the implementing agency at various levels (ex. Steering Committee level, Project Management level) and assist in resolution of pending issues.

(iv) Consultant shall identify and report issues that require attention of APGC.

(v) Consultant shall assist APGC and the implementing agency in easy resolution of issues, escalations and conflicts.

(vi) Review of Deliverables:

a. Consultant shall track and review all deliverables of the Implementation agency and provide feedback to APGC and the implementation agency.
b. Consultant shall confirm the quality and adequacy of the deliverables as per the Terms of Reference/Contract with the implementation Agency.

2.2.3 Adherence to Service Levels

(i) Consultant shall assist APGC to develop a Service Level Agreement (SLA), between APGC and the implementation partner.

(ii) Consultant shall conduct periodic review of implementing agency's adherence to the SLA and shall submit a periodic SLA Compliance Report to APGC and follow-up on the previous non-compliances by the implementation agency, if any.

(iii) Consultant shall assist APGC in assessing penalties for non-compliance of SLA's if required.

2.2.4 Training and Change Management

(i) Consultants shall provide assistance in effectively strategizing and conducting the training plan and the change management plan by way of discussions with the utility and the implementing agency.

(ii) ***Planning for Knowledge Transfer and User Training***

a. Consultant shall assist APGC in reviewing and improving the knowledge transfer and training plan developed by the Implementation Agency.
b. Consultant shall review and provide inputs for improving to the training content prepared by the Implementation Agency.

(iii) ***Monitoring of training delivery***

a. Consultant shall monitor the delivery of training as per plan and provide feedback to APGC on the adequacy and effectiveness of the training.
b. Consultant shall monitor training across the locations identified.
c. Consultant shall collect feedback from training participants and assess the satisfaction levels.

d. Consultant shall review all materials used to conduct the training and shall provide feedback on the same to APGC.

(iv) Consultant shall monitor the change management workshops which shall be conducted for the Business Process Owners and shall provide feedback on the same to APGC

(v) Consultant will assist APGC with the mapping of the new roles (resulting from the ERP implementation) with the roles/designations currently in place

2.3 Phase III: Post Implementation – post implementation audit, Financial and Technical Closure etc.

(i) Prepare Road map for post implementation management of ERP solutions.
(ii) Assist in financial and technical closure, and
(iii) Audit of ERP implementation.

3. Support from APGC

APGC will provide the Consultant with:

(i) Information about their existing operational processes and procedures that is required for understanding these processes/practices.
(ii) Information about the existing IT and related infrastructure.
(iii) Adequate time with the relevant personnel for meetings and discussion, subject to due notice.
(iv) Identification of trainees for each function;
(v) Reasonable space in APGC's offices while working on this assignment.
(vi) Training facilities; and
(vii) Any other data, service, facilities, etc. as mutually agreed.

(iv) Consultant's Qualifications:

Experience/Qualifications

The consultant should have at least a Bachelor Degree in IT or an Engineering Degree in Computer Sciences/Electronics/Telecommunication. The Consultant must have previously providing consultancy for implementation of packaged solution implementation like ERP, Business Process Re-engineering to reputed organizations/Govt./ PSU's. The consultant should be capable of taking the services/associating with him financial and other specialists from reputed management organizations in order to conduct financial management and accounting study to improve accounting and auditing systems. The consultant should have worked as Consultant in at least 2 ERP projects in Government or Public Sector Undertakings out of which at least one should be in power sector with the work of preparing Feasibility Report, RFP document and Technical Evaluation of ERP solution and its Implementation Partner Selection. The ERP Management Specialist shall be appointed as per the approval of the ADB.

Minimum General Experience	10 Years
Minimum Specific Experience (relevant to assignment)	5 Years
Regional/Country Experience	Not Required

Deliverables	**Submission Date***	**Type**
1. ERP Needs Assessment, ERP solution and IT Infrastructure Design, Budget for implementing ERP system in APGC	2 months	Report
2. Prepare Draft RFP for Selection of Implementing Agency	3 months	Draft RFP/other documents

3. Assistance in Bid Management including bid evaluation	5 months	BER**
4. Selection of Implementing Agency	6 months	Recommendation
5. Supervision of: (i) ERP implementation, (ii) training and change management, (iii) Data Migration, (iv) Testing and (v) Successful implementation of the ERP system	24 months	Final Report
Level of Effort	12 Peron Months over 2 year	
Location	APGC office Guwahati, Assam	

*All timelines are from the date of Notice to Proceed
** Bid Evaluation Report

Budget	**in US $**
Remuneration	270,000
Per-diem (Guwahati)	25,000
Travel (Guwahati)	25,000
Miscellaneous (Software, Communications etc.)	30,000
Total	350,000

Terms of Reference (Individual)
(Project: Lakwa Thermal Power Plant)

Environment and Social Specialist, National, 60 pm

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.

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.

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, CO_2, 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.

Minimum Qualification Requirements

The consultant must at least have a bachelor's degree in environmental and social sciences or equivalent with sufficient experience of having successfully advised a state power utility in refurbishment of gas based thermal power projects of similar or higher magnitude. The Consultant should have exposure to the Government of India and to ADB environment and social related norms for power plants. Consultant's exposure to working in the power sector in Assam, India will be an added qualification.

Minimum General Experience	10 Years
Minimum Specific Experience (relevant to assignment)	5 Years
Regional/Country Experience	Required

Deliverables

1. Data Collation of data received from EPC contractor	Report
2. Environment and social parameters	Report
3. Prepare Environment and Social Impacts Monitoring Reports for APGC HQ, MoEF, GOI and state pollution control board	Report Clearance
4. Obtain all necessary periodic clearances from the MOEF, GOI and State Pollution Control Board/Authority.	
5. Direct implementation of specific correction measures suggested	Process report

Budget	**in US $**
Remuneration	285,000
Per-diem (From LTPS/Dibrugarh to Guwahati)	10,000
Travel (from LTPS/Dibrugarh to Guwahati)	15,000
Miscellaneous (Communications etc.)	15,000
Total	

Terms of Reference (Individual)
(Project: Lower Kopili Hydropower Project)

Environment and Social Specialist, National, 60 pm

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.

Scope of Work:
The primary responsibilities of tile 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.

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

EIA Report

Ensure that the EIA report prepared by the EIA consultant follows the GoI norms and also follows ADB's SPS 2009 guidelines.

Specific Qualification:
The Social, Environmental and Resettlement Specialist must have a degree in Environment and Social sciences with have an overall experience of 10 years in preparation, implementation and review of RPs and EIAs for international agencies. He will also need to be able to undertake analysis and use the qualitative and quantities data/information collected by the EIA consultant for the EIA. He should have worked on similar projects with one being on ADB funded projects in the power sector covering hydropower projects and associated transmission lines of at least similar capacity as that of the LKHEP.

Minimum General Experience	10 Years
Minimum Specific Experience (relevant to assignment)	5 Years
Regional/Country Experience	Required

Deliverables	**Estimated Submission Date**	**Type**
(i)	Data Collation of data received from EIA preparation consultant On Environment and social parameters	Report
(ii)	Review all documentation submitted for necessary clearances from the MOEF, GOI and State Pollution Control Board/Authority.	Status
(iii)	Prepare Environment and Social Impacts Monitoring Reports For APGC HQ, MoEF, GOI and state pollution control board	Report
(iv)	Direct implementation of specific correction measures suggested	Process report

Budget	**in US $**
Remuneration	285,000
Per-diem (From Lower Kopili to Guwahati)	10,000
Travel (from Lower Kopili to Guwahati)	15,000
Miscellaneous (Communications etc.)	15,000
Total	325,000

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

1. 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:

(i) Compliance with the provisions of Companies Act,1956 with up to date amendments thereto;
(ii) Compliance of Accounting Standards issued by *National Advisory Committee on Accounting Standards* (NACAS) and convergence with **International Financial Reporting Standards (IFRS)**, if applicable;
(iii) Compliance with Generation License conditions and other regulatory compliances for finance functions
(iv) Mandatory requirement to maintain cost records in accordance with the Cost Accounting Records Rules, 2011;
(v) Revision/Development of manuals in respect of Financial accounting, Budgeting, Costing, Internal Audit and Material/Inventory Management;
(vi) Compliance of Cost accounting Standard issued by Institute of Charter Accountants of India (ICAI);
(vii) Compliance of Electricity Act, 2003

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.

(i) The main objectives of the assignment are to:
   a. 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;
   b. Standardize various procedures and processes, by developing and documenting the manuals:
      - Financial Accounting Manual,
      - Budget & Costing Manual,
      - Internal Audit Manual, and
      - Inventory Management System.

2. Scope of Work

(i) The scope of services would inter-alia include development of the following manuals:
   a. Accounting manual;
   b. Budgeting & Costing Manual,
   c. Internal Audit Manual, and
   d. Inventory Management System
   e. Training at Head Office (HO) up to 15 persons per functional area for a minimum

period of 7 days.

(ii) The development of the above manuals should be based on the following:

a. Study of the existing manuals, existing processes/systems, identify areas for improvement/ gaps in the existing manuals/processes, and propose reengineering of the processes and proposed organizational structure; so that APGC operations are in compliance with the relevant provisions/requirements of the following:
    1. Companies Act, 1956 with latest amendment thereto;
    2. Accounting Standards issued by ICAI;
    3. Companies (Auditor's Report) Order, 2003 (as amended up to date);
    4. Cost Accounting Records (electricity industry) Rules, 2011 and Cost Audit Report Rules, 2011,
    5. Electricity Act, 2003;
    6. Regulation and guidelines notified by Central Electricity Regulatory Commission and the Assam State Electricity Regulatory Commission, and
    7. Direct and Indirect taxes - Income tax Act, 1961/Direct Tax Code, Excise duty, customs duty, service tax, and all other statutory requirement.

b. The manuals should cover the detailed processes and procedures to be carried out by the financial accounting, audit and budgeting wings. The Consultants will discuss the draft manuals with the management of APGC to obtain their inputs before finalization of the manuals.
c. The development of manuals shall be followed by training sessions of 7 days each to the officials of APGC at head office (HO) for all the manuals separately.
d. In order to contain costs and save time, the consultants could take advantage of similar exercise carried out by the Assam Power Distribution Corporation Ltd. (APDC) and review the manuals and procedures developed by them for adoption with suitable modifications by APGC.

3. 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.

The EOI to be submitted by the firm should include the approach, methodology and Work plan besides the personal expertise and experience of each team Member, to help proper evaluation of the EOI.

4. Qualifications and Experience:

The Consultant should have strong accounting, and financial skill sets and management experience of dealing with utilities, including In-depth knowledge of Indian power sector, especially in respect of the issues relating to accounts, finance functions and Internal audit and; experience of development of manuals for power companies in India.

The basic qualifications of each team member of the Consultant' Firm deployed to this assignment would be a degree from the Institute of Chartered Accountants and/or Institute of Cost and Works Accountants of India, as the case may be. Each team member deployed for this assignment should have had exposure to the Government and ADB financial management, accounting, audit, evaluation, monitoring, procurement procedures and guidelines. Individual expert's exposure to working in the power sector in Assam, India will be an added qualification.

Minimum General Experience of the Audit and Accounts Firm	The Consultant for this assignment should have at least 20 years experience in the field of activities stated above, and it should have advised power utilizes in India on at least two similar assignments.
Minimum Specific Experience of the Team Leader in undertaking such assignments	15 Years
Minimum Specific Experience of each Team Member/Expert (relevant to assignment)	10 Years
Regional/Country Experience	Required
Source	International/national

Brief Scope of work for each of the Experts for the Assignment is given below:

Team Leader/Expert in Accounting and Audit (International): 4 person months
The Team leader for the assignment must be a Fellow Member of the Institute of Chartered Accountants of India (ICAI) with a minimum of 15 years' experience or equivalent and have lead a team of expert in carrying out similar exercise for 2 power utilities in India. He will have the overall responsibility of delivering quality service to APGC in all respects of the accomplishment of the assignment. He will:

(i) Lead the team of experts in accomplishing all the tasks listed at Serial number 3 above.
(ii) Guide the Team in the preparation of following:
- Accounting manual;
- Budgeting & Costing Manual,
- Internal Audit Manual, and
- Inventory Management System

(iii) Prepare the Draft Internal Audit Manual to be followed by APGC.
(iv) Review other proposed draft procedures and manuals to be prepared by other experts and discuss the same with APGC before their finalization.
(v) Get the training need assessed by the respective expert and get the training programs designed to meet the identified needs.
(vi) Organize the delivery of the training through the team members.

Financial Management/ Financial Accounting Internal Audit Expert (National): 3 person months
A graduate from the ICAI with 10 year post qualification experience in financial management, in large corporate organizations and having handled the finance and account portfolio' of the companies. He will:

(i) Review the prevailing systems and procedures in APGC as far a the above two function are concerned;

(ii) Prepare the Draft Financial Management and accounting procedures for efficient management of the finances of APGC;
(iii) Lay down procedures for the maintenance of accounts by APGC; so as to meet all its statutory and regulatory requirements in conformity with the standard accounting practices etc.;
(iv) Discuss the above drafts procedure and accounting manual with APGC before their finalization;
(v) The Expert will assist the Team Leader in drafting of reports, incorporation of audit requirements and help institutionalize the internal audit control systems within the organization.
(vi) Identify the training need in respects of the above functions;
(vii) Design and deliver the training program to the professionals of the APGC, so as to make them conversant with the new system and if need be through the hand-holding on the job.

Budget, Cost Audit & Accounting/Materials/Inventory Management Expert (National): 3 person months

A graduate from the ICAI/ICWA with 10 year post qualification experience in the areas of Inventory/ Material Management, Budget, Cost Accounting and carrying out of Cost Audit in large manufacturing organizations; or in utility businesses including for firms of large magnitude. He will:

(i) Review the prevailing systems and procedures in APGC as far as the above two function are concerned;
(ii) Lay down the procedure for the preparation of the Budget, maintenance of record for timely monitoring of expenditure against the approved Budget;
(iii) Prepare the Draft Manuals for Cost Audit and Materials/Inventory Management in APGC
(iv) Lay down cost accounting procedure so as to help monitoring of costs/expenditure for efficient management of the finances of APGC so as to meet all statutory and regulatory requirements, conforming to the standard accounting practices etc.
(v) Lay down the systems and procedures for proper Materials/Inventory Management in APGC; and determine loopholes that cause heavy losses to the utilities/ manufacturing industries/ process organizations on account of poor material and inventory management.
(vi) Discuss the draft Manuals with the top management of APGC and facilitate their approval by the Board of Directors of the company;
(vii) Design and deliver the training program to the professionals of the APGC, so as to make them conversant with the new system and if need be through the hand-holding on the job.

5. Support from APGC

APGC would be responsible to provide to the Consultant with:

(i) Existing manuals and any other circulars related thereto;
(ii) Any other information that is necessarily required for understanding the prevailing processes;
(iii) Adequate time with the relevant personnel for meetings and discussion, subject to due notice, provide timely feedback on draft manuals, training material etc. and related sign offs;
(iv) Identification of trainees for each function;
(v) Ensure the concerned officials are freed of their normal duties in order to attend the training and hands-on exercises.

(vi) Reasonable space in APGC's offices while working on this assignment, training hall(s); and
(vii) Any other data, service, facilities, etc. as mutually agreed.

6. 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.

The assignment of the team members is on an intermittent basis. The budget is given herewith. The deliverables should be –in hard copies 4 sets each in a good quality paper and binding and in the CDs/ pen drives.
The deliverables should be –in hard copies 4 sets each in a good quality paper and binding and in the CDs/pen drives.

Budget Table: Accounting, Audit, Budget & Cost Accounting and Materials Management Manuals Preparation Cost Estimates and Financing Plan

(in US $)

A. Asian Development Bank Financing	
1. Consultants	
a. Remuneration and Per Diem	
i. International Consultants [a]	70,000
ii. National Consultants [b]	90,000
b. International and Local Travel [c]	15,000
c. Reports and Communications	10,000
2. Training	5,000
3. Miscellaneous Administration and Support Costs [d]	5,000
4. Contingencies	5,000
Subtotal (A)	**$200,000**
B. Government Financing	
1. Office Accommodation [e]	10,000
2. Counterpart Staff	10,000
Subtotal (B)	**20,000**
Total	**220,000**

[a] Consisting of a total of 4 person-months across all components.
[b] Consisting of a total of 6 person-months across all components.
[c] Includes vehicle rental
[d] Includes office facilities and communication (telephone lines and internet access); utilities (air conditioners), electricity and water charges in the consultant's office.
[e] work place at the APGC building

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.

3. Qualifications and Experience:

The Consultant Firm should have carried out similar study/consultancy for a Public Sector Undertaking in infrastructure sector.

Minimum Annual Turnover of the Consultant firm should be	Rs. 15 Crores.
Minimum General Experience of the Consultant Firm	15 Years
Minimum Experience of the Team Leader	15 years
Minimum Specific Experience of individual experts relevant to the assignment	10 Years
Regional/Country Experience	Required
Source:	International/National

4. Deliverable:

	Deliverables	Submission Date	Document
A.	**HRD Plan**		
1.	Draft HR Requirement Report for the three corporations	60 days	Report
2.	Redeployment Plan of the existing manpower in APGC, AEGCL and APDC; along with the training plan and needs.	90 days	Report
3.	Need assessment report on Power Trading and Load Dispatch management and Pilot development of demand side management	120 days	Report
4.	HR Plan for the three Corporations, keeping in view power market scenario in Assam/North Eastern region over the next 15 years.	150 days	Report
B.	**Training Plan**		
1.	Training Needs Plan	150 Days	
2.	Deployment of External faculty	As per need	Training Programs Schedule
3.	External Training programs, Study Tours,	As per need	Itinerary for programs,

Draft SOWs of Team of Experts

Team Leader, International, 8 person months

The team leader should be a leading HR expert with MBA (HR) from a reputed institute in India, such as the IIMs or equivalent with 15 year experience in advising large organizations, preferably power utilities on designing their HR functions. S/he should have a thorough understanding of the project implementation, operational, financial and other aspect of the Indian power utilities. He/she should have working exposure to regulatory aspects related to tariff and performance. The scope of work would inter-alia include:

(i) Overall responsibility of delivering all item of work stated in item 3 above.
(ii) Take an inventory of the existing technical manpower in these organizations.
(iii) Based on the various technical functions performed by the corporations and level of activity under each function, the expert shall work out the actual manpower requirement on the technical side and the support staff requirement for efficient running of these organizations.
(iv) Match the actual HR inventory with the actual requirement assessed above and find the best fit professionals for assuming new roles under the new organization structure.
(v) Identify the mismatch in the skill sets available and those required by these organizations in each area of expertise.
(vi) Recommend steps for utilization of maximum number of existing employees through training, skill development etc.
(vii) Examine the inputs provided by the team members and work out the best suited organization structure for these organizations to carry out their present and future functions in an efficient and cost effective manner over the next 15-20 years.
(viii) Review their inputs for incorporation in the draft and final reports.
(ix) Finalize the organizational structure for each of the three Corporations in consultation with

their top management.

(x) Coordinate with other consultants hired by these organizations in different areas, under this TA; from the perspective of their Capacity Building needs.

(xi) Have the training needs of each of the organizations identified in each of their functional areas, have training programs designed, and suggest the mechanism of imparting the training.

(xii) Advise the organizations on holding the training program in an efficient and cost effective manner.

Power Engineering Expert, International, 5 person months

The expert shall have a degree in Electrical engineering and should have handled the Power Engineering function in international organisations on power trading, management, development of load dispatch centers for energy management, IT skills development at Central power utilities. The expert should have exposure to training manpower in each functional areas of mentioned above. The scope of work would inter-alia include:

(i) Take inventory of the power infrastructure of the three organizations.

(ii) Take inventory of the actual human resources working in these organizations.

(iii) Training on Power Trading, load dispatch center management, development of modules for effective energy dispatch management. Develop a needs assessment report for implementation of Trading and effective load dispatch management.

(iv) Match the actual HR inventory with the actual requirement assessed above and find the best fit professionals for assuming new roles under the new organization structure.

(v) Develop and design training programs, their duration, level and list of experts and institutions for delivery of training and development of skill, wherever required in consultation of the ERP and other consultants.

(vi) Liaise closely with the ERP Consultant/ERP solution providers of the APDC, AEGCL, and APGC for assessment of the manpower requirement both professional and support staff.

(vii) Give all necessary inputs to the team leader for development of a holistic and robust organization structure for the three corporations from the technical side.

Transmission Engineer, National, 2 person months

The expert shall have a degree in electrical engineering and should have worked in a power transmission utility in India. The expert should preferably have exposure to smart grid development and be able to assess the manpower requirement for each functional area on the transmission engineering side. The scope of work would inter-alia include:

(i) Take inventory of the power infrastructure of the three organizations.

(ii) Take inventory of the actual human resources working in these organizations.

(iii) Liaise closely with the ERP Consultant/ERP solution providers of the AEGCL for assessment of the manpower requirement both professional and support staff.

(iv) Work out the potential manpower requirement of Power professionals at AEGCL.

(v) Identify the opportunities and train staff on smart grid development.

(vi) Identify the mismatch in the skill sets available and those required by these organizations in the fields, such as, transmission, distribution and generation fields.

(vii) Give all necessary inputs to the Team Leader and Power Engineering Expert on recommendations for utilization of maximum number of existing employees through training, skill development etc. in the IT function of the Corporation.

(viii) Develop and design training programs, their duration, level and list of experts and institutions for delivery of training and development of skill, wherever required in consultation of the ERP and other consultants.

(ix) Give all necessary inputs to the team leader for development of a holistic and robust

organization structure for the three corporations from the technical side.

Power Distribution Engineer, National, 3 person months

The expert shall have a degree in electrical engineering and should have worked for a Demand Side Management at a power distribution utility in India. The expert should be able to assess the manpower requirement for effective demand and supply side management. The scope of work would inter-alia include:

(i) Take inventory of the power infrastructure of the three organizations.
(ii) Take inventory of the actual human resources working in these organizations.
(iii) Liaise closely with the ERP Consultant/ERP solution providers of the APDC for assessment of the manpower requirement both professional and support staff.
(iv) Work out the potential manpower requirement of Power professionals at APDC.
(v) Match the actual HR inventory with the actual requirement assessed above and find the best fit professionals for assuming new roles under the new organization structure.
(vi) Identify the opportunities and train staff to implement Demand Side Management at a pilot implementation.
(vii) Develop and design training programs, their duration, level and list of experts and institutions for delivery of training and development of skill, wherever required in consultation of the ERP and other consultants.
(viii) Give all necessary inputs to the Team Leader on recommendations for utilization of maximum number of existing employees through training, skill development etc. in the IT function of the Corporation.

Hydropower Engineer, National, 2 person months

The expert shall have a degree in electrical engineering/hydrologist and should have hands on experience in project planning/preparation/implementation/construction supervision, and operation of hydropower project in India. The expert shall be able to assess the manpower requirement for each functional areas of the corporation stated above on the hydropower/ engineering side. The scope of work would inter-alia include:

(i) Take inventory of the power infrastructure of the three organizations.
(ii) Take inventory of the actual human resources working in these organizations.
(iii) Liaise closely with the ERP Consultant/ ERP solution providers and other consultants hired by the APGC for assessment of the manpower requirement both professional and support staff.
(iv) Work out the potential manpower requirement of Power professionals at APGC over the next 20 years.
(v) Match the actual HR inventory with the actual requirement assessed above and find the best fit professionals for assuming new roles under the new organization structure.
(vi) Identify the mismatch in the skill sets available and those required by these organizations in the fields such as transmission, distribution and generation field.
(vii) Develop and design training programs, their duration, level and list of experts and institutions for delivery of training and development of skill, wherever required in consultation of the ERP and other consultants.
(viii) Give all necessary inputs to the Team Leader on recommendations for utilization of maximum number of existing employees through training, skill development etc. in the IT function of the Corporation.

Finance and Accounts Expert, National, 4 person months

The expert shall be a Fellow of ICAI or ICWA, having thorough understanding of Finance, Accounts, Budget, Costing, inventory and Materials Management and related functional aspects of power utilities in India. The scope of work would inter-alia include:

(i) Take an inventory of the existing manpower working in the Finance and Account (F&A) and related areas in these organizations,
(ii) Based on the various functions performed by the corporations and level of activity under each function in the F&A area, the expert shall work out the actual professional and support staff requirement for efficient running of these organizations.
(iii) Match the HR inventory with the actual requirement assessed above and find the best fit professionals for assuming new roles under the new organization structure.
(iv) Identify the mismatch in the kill sets available and those required by these organizations in F&A area over the next 20 years.
(v) Recommend steps for utilization of maximum number of existing employees through training, skill development etc.
(vi) Develop and deign training programs, their duration, level and list of experts and institutions for delivery of training and development of skill.
(vii) Give all necessary inputs to the team leader for development of a holistic and robust organization structure for the three corporations from the technical side.

IT Expert, National, 2 person months

A graduate engineer in information technology having 5 year experience in advising power utilities in assessing IT manpower requirements, training of IT and non-IT professionals in IT area. The scope of work would inter-alia include:

(i) Take inventory of the IT infrastructure of the three organizations.
(ii) Take inventory of the actual human resources working in the IT area in these organizations.
(iii) Liaise closely with the ERP Consultant/ ERP solution providers of the APDC; and APGC (if they hire the ERP consultant during the execution of the assignment) for assessment of the manpower requirement both professional and support staff.
(iv) Work out the potential manpower requirement of IT professionals in the three corporations.
(v) Match the actual HR inventory with the actual requirement assessed above and find the best fit professionals for assuming new roles under the new organization structure.
(vi) Identify the mismatch in the skill sets available and those required by these organizations in the IT field. Introduction to SCADA and latest communication techniques for effective smart grid management. And also train utility staff on software for effective demand side management at the utility.
(vii) Recommend steps for utilization of maximum number of existing employees through training, skill development etc. in the IT function of the Corporations.
(viii) Develop and design training programs, their duration, level and list of experts and institutions for delivery of training and development of skill, wherever required in consultation of the ERP consultants.
(ix) Give all necessary inputs to the team leader for development of a holistic and robust organization structure for the three corporations from the technical side.

Training and Coordinator, National, 8 person months

S/he shall be an expert with MBA (HR), with expertise in design, development of training modules and delivery of training in all operational aspects of power utilities. The scope of work would inter-alia include:

(i) Review the training needs assessed by the other team members listed above.
(ii) Provide inputs for enhancing the effectiveness of the training programs proposed by the functional experts.
(iii) Identify the training needs that may be common in various functional areas and that

could be delivered to batches of trainees from across the three corporations.

(iv) Comment on the training program design and delivery mechanisms suggested by the team members.

(v) Identify training program that can be organized in-house and those which need to be outsourced and/or conducted by professional bodies/organization.

(vi) Develop and design training programs, their duration, level and list of experts and institutions for delivery of training and development of skill.

(vii) Lay down a detailed training schedule that could be followed by these organizations over the period of time.

(viii) Identify institutions that are most suited for delivering each type of training recommended by the functional area experts referred to above.

(ix) Advise the corporation on the preparation of the budget for the training needs assessed above.

(x) Conduct training programs using internal, guest or external faculty both in-house and external conducted at the three corporations in a professional manner.

(xi) Give all necessary inputs to the team leader for development of a holistic and robust organization structure supported by a trained and skilled manpower; for the three corporations.

(xii) Coordinate all external faculty training programs, plan and implement external training and study tour programs in close coordination with the Team Leader and other experts.

Environment and Social Expert, National, 3 person months

The expert should have a degree in environmental and/or social sciences with 10 year experience. The expert should have worked on developing skills and capacity in the Indian power sector. The scope of work would inter-alia include:

(i) Identify the corporate responsibility of these corporations from environmental and social aspect, both towards the organizations themselves and to the society at large.

(ii) Contribute a chapter for HR Manual on “Environment and Social Responsibility” of the three corporations that would highlight: i. the global best practice followed by the similar power utilities across the world from environmental and social perspective, ii. Lay down norms to be followed by these organizations that would help them become responsible corporate citizens, iii. role of the individual employees in their day-day working to help the organizations achieve their goal towards fulfilling their environmental and social responsibilities.

(iii) Develop and design training programs, their duration, level and list of experts and institutions for delivery of training so as to sensitize the employees about their responsibilities towards environment and society.

(iv) Give all necessary inputs to the team leader on environmental and social issues for development of a holistic and robust organization structure that is supported HR that is knowledgeable about their environmental/social responsibilities for the three corporations.

External Specialist Faculty, National/International, 10 (International faculty) + 20 trainings (national faculty)

External specialist faculty from India and abroad to deliver lectures at the APGC Training facility in various disciplines in Guwahati (30 programs). The trainings should include introduction to state-of-the-art technology options and best practices in power sector.

5. Level of Effort:

The assignment of the team members is on an intermittent basis. The budget is given herewith. The deliverables should be –in hard copies 4 sets each in a good quality paper and binding and in the CDs/pen drives.

Budget Table: Capacity Building and Human Resource Development for Power Sector Utilities Cost Estimates and Financing Plan

(in US $)

A. Asian Development Bank Financing	
1. Consultants	
a. Remuneration and Per Diem	
i. International Consultants a	200,000
ii. National Consultants b	300,000
b. International and Local Travel c	
c. Reports and Communications	100,000
2. Training	250,000
3. Miscellaneous Administration and Support Costs d	50,000
4. External Faculty	
- Remuneration and per-diem	100,000
- Travel (National/International)	30,000
5. External Training/Study Tour	
- Fees/ Charges for attendance etc.	200,000
- Travel and per-diem	150,000
6. Contingencies	20,000
Subtotal (A)	**$1,400,000**
B. Government Financing	
1. Office Accommodation e	40,000
2. Counterpart Staff	100,000
Subtotal (B)	**140,000**
Total	**$1,540,000**

a Consisting of a total of 4 person-months across all components.

b Consisting of a total of 24 person-months across all components.

c Includes vehicle rental

d Includes office facilities and communication (telephone lines and internet access); utilities (air conditioners), electricity and water charges in the consultant's office.

e work place at the APGC/APDC/AETCL building

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 scope of work of the implementing partner will include but not be limited to the following:

a. General Scope:

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:

1. Plans & Schedules

a) 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.
b) Identify the process/procedure that needs to be modified/ introduced to meet the needs of the proposed system.
c) Prepare a project-plan with detailed activity schedules and a time-bound action plan for the ERP based IIS.

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

a) 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.
b) Supply, configuration and implementation of the ERP hardware and software based IIS at all locations.

c) Design of architecture & preparation of test script, test data, trial run and arranging acceptance testing of all modules.

3. Installation of hardware and Integration of Software

a) System Integration at Corporate and all other offices of APGC.

4. Go live and Roll Out

a) Go-Live run of all modules at Corporate office with real-time data along with "Stabilization of the System"
b) Roll out of the System to all the other Offices of APGC.

5. Training and Operation Manual

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

6. Technical Support

a) 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.

b. Functional Coverage:

3.2.1 The ERP shall cover all the functional areas of APGC, more specifically the following.

A. Prime functions

(i) Financial Management, Accounts, Budget, Cost Accounting & Control etc.;
(ii) Materials and Inventory Management;
(iii) Maintenance Management;
(iv) Project Management;
(v) Human Resource Management mainly Payroll & ESS; and
(vi) Management Information System

B. In order to support the prime functions and other functions, the ERP shall also cover the following modules either built in the Core module /add on modules.

(i) Dashboard for Senior Managers with Business Intelligence
(ii) Workflow Management
(iii) Enterprise Portal

C. In order to enable legacy data and support data warehousing functions, ERP should integrate BI techniques for enabling better decisions at the management level.

The vendor should include the detailed requirements for each of the modules during business process mapping at the time of implementation.

c. Geographical Spread:

The ERP shall cover the following geographical spread of APGC offices locations-

1. Corporate Office in Guwahati
2. All other offices of APGC

d. Number of Users:

(i) Estimated number of users of the system at APGC Corporate Office and other offices has been assessed at 500 named ERP user licenses (including 500 ESS licenses). The vendor is requested to quote for 500 named ERP user licenses (including 500 ESS licenses). It shall be the decision of APGC to distribute the user licenses within the organization. There should not be any restriction in use of functions/modules in each named user license.

(ii) The Supplier shall also provide an extra 1000 Employee Self Service (ESS) licenses apart from the licenses as required in Clause (I) above.

(iii) The Supplier shall provide details of number of named user ERP licenses, latest ORACLE RDBMS & Development License based on details provided in Clause (I) above.

e. System Requirements:

The system will, essentially be characterized by the following features:

(i) User Interface: The interfaces should be user friendly and with Graphic User Interface (GUI) with web access as the system will be at Corporate and other offices of APGC. There should be sufficient edit and validation checks in the system. It should provide safeguards to prevent damage to data from operator errors, simultaneous updating, and module unavailability or system failures. The system should provide consistent screen and modules. It should provide on-line error reporting and use a menu- based system with facilities to bypass menus. The system should provide drill down facility to next level of details and so on.

(ii) Single Point Data entry/Data capture: The system should be based on Single Unified data model and capable of capturing data, already entered into the computer so as to ensure integrity of data.

(iii) Data Access and Security: The system should have proper security and maintenance facility which limits access to the system and its various functions to the users delegated with appropriate authority. It should provide log in, both by user and by terminal. The System should provide the date and time of all transaction with details of creation, read, change/ update, delete or print. Access should be restricted at different levels of data file, program, module, screen, record, field database table, row or column. Suitable firewall against unauthorized uses, interceptions, misuses by outside parties shall be provided.

(iv) Data Archival: The system should be able to archive data based on user specified parameters (i.e. data range) and restore archival data for on-line use as and when required

(v) Open Architecture: The system should be open to allow interoperability with general-purpose hardware and software and have the facility to export/import data files from other applications. The system should be compatible to major operating systems (UNIX/LINUX/Windows) and hardware platform (SUN/IBM/HP Servers).

(vi) Dash Board Function: Data collection rules for Management Dashboard Function (Executive Information System) should be dynamic and flexible. It should be capable of being refreshed on schedule or on periodic basis.

(vii) Performance Optimization: The hardware and software system should support

functionally distributed computing from a centralized environment, allowing distributed functions across different locations. It should include integrated tools for monitoring system performance such as response time, CPU utilization etc.

(viii) Flexibility: The hardware and the software system should support customization to business requirements of utility industry's changing business practices.

(ix) Modularity: The system will initially be required to cover a range of business process modules as mentioned above but it should allow addition of more data devices (e.g. portable handheld devices), users and modules as and when required, which should seamlessly integrate into the core system.

(x) Integration: The system should be fully integrated across departments, functional areas and also across geographical location of sites. It should be unified and interfaced. It should have the ability to automatically update all related modules, for any change which has occurred in one module. It should have the ability to assign validation on specific fields based on entries in the data validation reference file. It should adapt Work Flow management techniques and also have interface for Billing & GIS system implementation.

(xi) Internet and Intra-net enabled: The system should be fully web enabled to work in the Internet and Intranet environment.

(xii) Scalable: The hardware and the software system should be scalable to handle up to three times the number of users and volume of data load.

(xiii) System Control and Audit: The system should be able to define audit trails, audit logs and transaction log-in requirements. It should enable audit trails on-line, tailor audit requirements by modules, call audit records to an archive based data or other recorded audit details.

(xiv) Localization: The system should have adequate localization to handle specific requirements of Regulatory Indian Laws (Central and State), tax and duty legislation and other regulations.

(xv) Help facility: The system should provide context based help facilities and also on-line help at functions, screen and field level that can be tailored to suit APGC requirement.

(xvi) Collaboration: The system should provide tools to collaborate between APGC offices on web conferencing.

(xvii) Search Engine: The system should be able to search across multiple repositories i.e. relational databases, HTML documents served by Web servers, files on disk & email servers etc.

(xviii) File Management: The system should provide for searching of files to increase employee productivity by enabling users to easily collaborate with their co-workers among APGC Offices and find files with a single search.

(xix) Performance Standard: The System should ensure that functions and its integrations are according to the definition as per scope of work and shall have 98% uptime efficiency at all locations.

f. Technical Requirements:

Technical Services: The Supplier shall be required to do the following:

a) Prepare all Technology policies and procedures related to ERP including authorization, backups, table space maintenance, archival etc.

b) The Supplier will assist the APGC team to perform all authorization-related activities (activity group, authorizations, profiles, etc) till the stabilization in the roll out sites.

c) Assist APGC in managing the legacy data interfaces, print spools, batch Jobs, printer configuration etc.

d) Prepare a detailed operational manual, which would be used by APGC to run the ideal production environment. This should include how the various parameters should be monitored/ tuned in a live system.

Hardware Configuration: Develop a list of quantity and configuration of servers, storage, switches, firewalls, internet connectivity bandwidth etc. for suppliers proposed solution for all the tiers of deployment including Disaster Recovery site. Intranet connectivity between all the proposed hardware in public / internet / intranet zones should be mapped with each user.

Migration from the Legacy System: The Supplier shall ensure that data migration is complete in all respects and the activities are completed in time so that all the requirements of implementation are fulfilled. All specifications that are needed to populate the data into the new ERP system need to be defined. Supplier shall develop the data migration templates and facilitate the migration of legacy and new data elements to the ERP system. This shall include the following tasks:

(i) Identification & development of the data upload/download programs
(ii) Providing data migration tools to APGC
(iii) Guidance for creating data extraction programs in the legacy systems to convert into the format as required by ERP system
(iv) Training and facilitating the APGC core team
(v) Assistance in Checking data quality and Integrity
(vi) Integration testing of the configured system using the populated master and transaction data
(vii) Assist APGC team in Master Data management

Data Migration: The following data need to be migrated.

a) All open transactions and all transactions from the start of financial year of Go-Live.
b) Standing or master data such as vendors/Suppliers, customers, material, work breakdown structures, equipment, preventive maintenance, work specification, defect codes, cost data, etc.

Supplier's responsibility shall be to ensure that data migration is complete in all aspects, within time so that the requirements of the implementation are fulfilled. APGC shall cleanse and rationalize the data in the required format provided by the Supplier with their assistance. Supplier shall prepare and provide detailed system for Master Data management.

Data Center: The service provider shall develop the data center including all infrastructure costs such as office partitions, tables and chairs, air conditioners, power supplies, copier, printers etc. and any other peripherals required for complete functioning of the data center.

g. Annual Technical Support :

i. **Annual Technical Support (ATS) for the ERP system:** The bidder shall provide warranty, support and maintenance of all computer hardware, ERP package, tools, accessories and any service provided as part of solution for a period of two years from the date of delivery of license. During this period, the ATS shall include technical and functional support and maintenance of hardware equipment, ERP, RDBMS and Bolton applications and all other standard third party software which form the part of the ERP

solution.

ii. The ATS contract should cover the services which the hardware products and the ERP product vendor provides normally under Technical support and shall include minimally the following support for all hardware equipment, ERP, RDBMS and all other standard hardware/software wherever applicable.
   a) All product upgrades
   b) User and technical support on a 24 * 7 basis
   c) Provide free upgrades, updates, fixes, upgrade scripts & patches of the ERP software and tools to APGC within 7 working days of its release by the ERP product vendor.
   d) Technical support for installation of any patch or product upgrades
   e) Periodic site visits as mandatory and as required.

iii. The bidder shall specify Maintenance Charges that are firm and final at the time of the Contract.

iv. The supplier shall also quote ATS Charges for the subsequent period of three years (which is extendable at the discretion of APGC) applicable after expiry of the 2 years of ATS period. The ATS charges for the next three years shall be considered towards financial evaluation.

v. Post Go-Live support from the Implementation Partner

a) **Stabilization support:** Supplier shall be responsible for Project implementation and correct & satisfactory functioning of the ERP system. Supplier shall provide post – implementation support to the APGC to ensure the efficient day-to-day functioning of the ERP system during stabilization support period for a period of three months from the date of Go-Live. At least one person from each function and two persons from technical area like programming, system administration etc. should be there on site during stabilization period. In addition, Supplier shall also support during the 1st quarterly, half yearly, nine monthly and annual closing (for 5-10 days for each).

b) **Extended support :** In addition to (a) above, Supplier may be asked to provide extended support at the discretion of the APGC for another 3 months from the end of stabilization period, at a price to be quoted separately for this work in the financial bid. During this period, Supplier shall ensure trouble free running of the total system.

c) 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.

h. Custom Development Scope:

APGC understands the need for adopting the process reengineering and best practices as built into ERP system with as far as possible minimal custom developments. Hence APGC requests for provision of minimal custom developments as necessitated by statutory and/or industry specific business critical requirements as and where not supported by ERP standard software. Such developments would however, be in accordance to the allowed provisions in the software.
As far as possible, all the requirements mentioned in this document should be met by the core applications comprising the latest versions of the ERP packages, including functionalities such as business intelligence. However, customized solutions may be employed to support the desired functionalities- only after an explicit permission from APGC.

The customization scope that is covered as part of the overall scope of work defined as follows:

a) *Internal and Statuary Reports*- Up to 300 customized reports for internal and statutory requirements shall be carried out as part of the defined scope of work.

b) *Enhancement Development Scope:* Critical/statutory business requirements, not

supported by ERP standard solution set, may require to be developed using programming language of ERP software. Enhancements, if any, may be carried out by using ERP recommended methods like User/Field Exits. Precise nature of these requirements shall be ascertained during the implementation in the Blueprint stage.

c) *Reports and Forms Development Scope:* APGC will strive to adopt, as much as possible, from the standard reports provided by ERP. Emphasis will also be made to adopt the standard reports as provided from BIW. However, the use of custom developed reports would ideally be limited to only the critical/statutory reporting requirements that are not well addressed in the standard ERP solution set.
d) *Reports using Business Intelligence:* APGC would like to utilise as many of the standard reports from business information warehouse as possible to minimise the development effort. Keeping this in view, Bidder will be required to activate all the standard provided models against the main functions under implementation.
e) *Data Conversion Scope:* Data conversion is always a critical aspect of ERP implementations in organizations operating legacy packages across functions and locations. The master data of the past one year would have to be migrated to the ERP system including all open transactions and key data sets deemed essential for a successful Go-live.
f) Implementation Partner would develop all the requisite data conversion programs for migrating to ERP system. APGC personnel will prepare the data in the required upload format, to be provided & explained by bidder, and load into ERP system.

(i) **Quality Review and Audit by the ERP product vendor:**

The ERP implementation at APGC is to be audited/ reviewed on continuous basis by the ERP Product vendor for ensuring proper, smooth and timely implementation as per the requirement of APGC. The IP shall provide details of the Quality Assurance Plan envisaged for the implementation of ERP system in the project plan. The cost involved in the above is to be borne by the IP. APGC may directly pay the ERP product vendor against their invoice to be routed through the IP's project Manager and such payment to the ERP product vendor will be limited to the total payment due to the IP up to the completed milestone.

The ERP Product vendor will depute one Senior Manager on at least 5 days each month on mutually agreed days at APGC site during the entire period of ERP implementation (starting from project definition stage till Go-Live acceptance stage) for ensuring smooth, proper and timely implementation of ERP system at APGC. The Manager deputed for this purpose should possess at least 2 end-to-end ERP implementation cycle experience as project manager in a power utilities industry. Also representatives from ERP Product vendor will be members of the Steering Committee to be formed at APGC for the constant review and monitoring of the ERP implementation at APGC. The Quality Review Group proposed to be formed at APGC shall comprise representatives of APGC, ERP Product vendor, Implementation Partner and the ERP Consultant. The envisaged responsibilities of ERP Product vendor for the ERP implementation project at APGC are as follows:

Project review and monitoring

a) Communicating the project status & risk to top management
b) Establish Project Standards, Methodologies & Tools
c) Participate in Steering Committee meetings
d) Drive Quality Review process

Monitor Quality of Project's Progress

a) Review Business Blueprinting prepared by IP, finalise BI integration.
b) Prepare Quality Review Strategy & BI Plan
c) Suggest Review recommendations and update Steering Committee
d) Periodic review of Project status, Plans and Progress
e) Participate in select project meetings

Monitor Quality of Go Live and Stabilization

a) Review ERP system Go live readiness
b) Review to ensure smooth handover
c) Review system maintenance procedure
d) Study Post Go-Live status and submit report to APGC

Apart ERP Product vendor shall perform Audit service as per the scope of work specified in the tender document and submit Audit report/Audit observations on ERP implementation to the steering committee from time to time including audit report/observations to be submitted, one after the Business Blue print and the other after the Go-Live of the ERP system. The man-days for these Audits together should be 30 man-days.

(The bidders will have to submit a confirmation with regard to above, from Computer hardware equipment and peripherals and the ERP Product vendor on their Letter head signed by their authorized signatory and enclosed with technical bid part – I).

j. Implementation:

The ERP shall be implemented in the Corporate and all other offices of APGC. The user level training will be arranged in batches to cover the training requirement for all the users either in the field locations or Guwahati to be mutually decided by APGC and the IP.

3.11 Implementation Mechanism:

The implementation of the ERP based IIS will be overseen by a Steering Committee. It is imperative that at least one representative from each ERP vendor & Implementation Partner side will represent on this steering committee. The size and composition of the steering committee will be decided by the APGC in consultation with the supplier within 14 days of signing of contract.

3.12 Documentation:

Supplier should ensure complete documentation of all configuration settings, other activities, Interfaces and their steps/stages involved in the implementation with the support of the project team. Supplier shall prepare the business process documents, end-user manuals and training documents and other needful documents.

3.13 Training

The bidder shall conduct a training need assessment of APGC's ERP core team members as well as power users/end-users as a component of the process improvement and change management process. Training needs should be continuously refined and frequently reconfirmed with the end-user community & the core team as the project progresses.

(i) **Training tools and Training materials:** Use of recommended ERP training tools / software(s) for providing various trainings is essential. Adequate training material which includes training manuals, quick reference cards etc. should be provided during the training

sessions. The recommended training material should be in paper and electronic media with courses on ERP product fundamentals, business process overview, job activity training, and delivery options being on-line, instructor led class rooms, etc.

(ii) **Management exposure:** This is the management exposure for 4 members of the ERP project team where they will visit one ERP implementation site in a Power Utility in India and one in abroad preferably in Power generation sector. The Executive team will comprise of 4 members. The cost of the visit is to be borne and arranged by the bidder. This needs to be provided at the start of the project after signing of the contract by the bidder.

(iii) **Overview level training:** The bidder shall conduct one overview level training of all the modules of the ERP solution that will be implemented for all the users of APGC at the start of the project to provide an insight to the functioning of the ERP system. This overview level training should be for 3 days duration in each module to be implemented. Apart from this, the bidder shall also conduct three overview-level training programs for the Top Management of APGC, one at the start of the project, one after Business Blueprint and the last before Go-Live of the ERP system. The training should highlight on reporting features of all the modules and primarily concentrate on use of Business Intelligence and MIS.

(iv) **Core Team Training:** This is the training for the ERP core team of APGC for ERP implementation. This core team of APGC will comprise of members from all the business functions and IT. This training should enable the ERP core team of APGC for setting up of ERP Competency Centre and to involve in implementation, building and managing ERP related skills and maintain the ERP system in APGC. The training should be given to approximately 15 personnel of APGC by the bidder themselves, at the cost of bidder at APGC. The quality of the training should be equivalent to certification level training based on standard ERP certification training material.

(v) **End User Training:** All the users need to be trained for the smooth functioning on ERP System. The bidder shall submit a detailed Training Plan for power/super users & end users.

3.14 Over Implementation Review

The IP will be responsible for the overall successful implementation of the ERP system in all aspects to the satisfaction of the APGC. The IP can suggest any alternatives/changes to meet the objectives better, provided that such deviations are properly justified and implemented in an optimal manner.

4. Implementation Schedule

The total project shall be completed within 24 months. IP shall suggest suitable schedule for implementation in the proposal.

5. Implementing Partners Qualifications Criteria for the ERP Product Vendor

S. No	Performance Variable	Minimum Qualifying Requirements
1	Company profile	The company should have a global turnover of more than Rs. 1000 crores per year for the last three years
2	Customer base globally	Offered ERP product should have at least 10 operational global ERP application customers with at least 1000 users in each customer
3	Operating system	The offered ERP should be able to work on each of the following operating systems: Sun solaris, HP Unix, IBM Aix, Windows Server family
4	Package Web Enabled	Offered ERP Package should be web enabled
5	India specific features (localization)	Offered ERP should have specific version to support latest India specific legal requirements on TDS, Service Tax, VAT & other taxation accounting, Payroll, GPF, Salary TDS (Form 16 & 24) certificates etc.
6	Installation in Power Utility sector in India	Should have implemented at least 2 projects of the offered ERP product in Power Utility Sector with multi-locations in India where at least 4 out of following 5 functional areas are implemented-

S. No	Performance Variable	Minimum Qualifying Requirements
		• Financial Accounting & Controlling • Materials Management • Asset/ Maintenance Management • Project Management • Payroll/ HR
7	Presence in Government/ PSU	Offered ERP product should have at least 2 implementations with multi-locations in Government / Public Sector in India where at least 4 out of following 5 functional areas are implemented- • Financial Accounting & Controlling • Materials Management • Asset/ Maintenance Management • Project Management • Payroll/ HR
8	SLA based Support	OEM should have SLA based support for various products related issues with first level support point in India. The support should be 24x7x365.
9	Training Support	OEM Should have its training facilities in India.

6. Areas of Expertise of Individual Consultants to be deployed for the project

The experts to be deployed by the IP for this assignment should have expertise in the following functional areas and must have been involved in successful implementation of at least one ERP solution in an Indian power utility:

(i) Finance and Accounting
(ii) Maintenance Management
(iii) Materials Management
(iv) Project Management
(v) Human Resource Management
(vi) Programming expertise

1. Team Leader, International (12 pm)

Should be a leading IT expert having a degree in IT or engineering in computer sciences with 15 years of post-qualification experience, including that as a Team Leader for a period of 5 years and have successfully implemented 2 ERP projects in the utility sector in India; preferably in the power utility business.

(i) The scope of work would inter-alia include:
(ii) Overall responsibility for successful implementation of the ERP solution in APGC as per the scope of work given in item 3 above.
(iii) Advise the team members from various disciplines listed in item 4 above in designing, implementing and testing of the various ERP packages in their respective areas of expertise.
(iv) Examine the inputs provided by the team members and work out the most suited solutions suggested by them in respect of the individual packages for incorporation in the overall ERP implementation plan.
(v) Oversee the implementation of the packages on a day-to-day basis and suggest any mid-course corrections if needed. The activities involved would inter-alia include data mining, data collection, its formatting and feeding of data in to the ERP system, trail runs, testing etc. and all other activities identified under the SOW listed at serial number 3 of the TOR for the ERP Implementation Partner.
(vi) Review the training needs of the employees of the APGC identified by the team members, the design of the training programs proposed by them and organize imparting of training to them on the use of the ERP software and systems so as to enable them to efficiently use

the ERP system.

(vii) He shall be responsible for smooth functioning of the ERP system after the test runs are completed.

2 Finance and Accounting Expert, National, 6 pm

The Finance and Accounting Expert should have a degree from the Institute of Chartered Accounts of India or Institute of Cost and Works Accountants of India with 10 year experience and should have been the finance and accounts expert on an ERP Solution implementation team that has successfully implemented at least 2 ERP solutions in utility business, especially the power utilities.

The scope of work would inter-alia include:

(i) Overall responsibility for successful implementation of the ERP solution in APGC in his area of expertise.

(ii) Provide necessary advice and recommendations to the team leader about the implementation of the ERP package pertaining to financial management, accounting, cost accounting, budget, inventory and materials management, tax audit, salary, billing and collection, receivable management, and all other function that fall within the domain of finance and accounting.

(iii) Examine the prevailing practice and procedure followed in the F&A division of APGC and devise methodology for smooth transition from the present manual system to IT based ERP system.

(iv) Advise the F&A staff/officers of APGC on data mining, data collection, its formatting and feeding of data in to the ERP system, execute trail runs, testing etc. and all other activities identified under the SOW listed at serial number 3 relating to his field of his expertise.

(v) Oversee the implementation of the packages on a day-to-day basis and suggest any mid-course corrections wherever needed.

(vi) Identify the training need of the employees of the APGC F&A Division, designing training programs and impart training to them on the use of the ERP software and systems so as to enable them to efficiently use the ERP system.

(vii) He shall be responsible for smooth functioning of the ERP package relating to his field of expertise after the test runs are over.

3 Maintenance Management Expert, National, 3 pm

The Maintenance Management Expert should have a degree in Mechanical Engineering with 15 year experience in operation and maintenance of power plants of the capacity similar to those owned and operated by APGC. He should have been the Maintenance Management Expert of team that has successfully implemented at least two ERP solutions in Indian power utilities.

The scope of work would inter-alia include:

(i) Overall responsibility for successful implementation of the ERP solution in APGC in respect of operation and maintenance management.

(ii) Provide necessary advice and make recommendations to the team leader about the introduction of ERP solution package for operation and maintenance of the generation and other assets of APGC, and all other function that fall within that domain.

(iii) Examine the prevailing practice and procedure followed by APGC for the operation and maintenance of its generation facilities and devise methodology for smooth transition from the present manual system and procedure about the operation/maintenance of records, requirement of spare parts, consumables, and other materials for smooth operation of power plants and related assets using the ERP system.

(iv) Maintain maintenance schedules and actual maintenance undertaken records for future

reference.

(v) Oversee the implementation of the ERP packages in relation to operation and maintenance of power plants and associated facilities on a day-to-day basis and suggest any mid-course corrections needed.

(vi) Identify the training needs of APGC Operation and Maintenance Division employees, design training programs and imparting training to them on the use of the ERP software and systems so as to enable them to efficiently use the ERP system.

(vii) He shall be responsible for smooth implementation and functioning of the ERP package relating to his field of expertise as delineated under section 3 of the TOR.

4 Materials Management Expert, National, 3 pm

The Materials Management Expert should have a degree from the Institute of Cost and Works Accountants of India with 10 years' experience in materials management or a degree in Engineering with 10 year overall experience including 5 years' experience in materials management of a power utility. He should have been a member of an ERP team that has successfully implemented Inventory and Materials Management packages for 2 ERP systems in utilities.

The scope of work would inter-alia include:

(i) Overall responsibility for successful implementation of the ERP solution in APGC in his area of materials management.

(ii) Provide necessary advice and recommendations to the team leader on all the aspect of inventory and material management keeping in view the specific requirements of APGC.

(iii) Examine the prevailing practice and procedure followed by APGC in the area of material management and devise methodology for smooth transition from the present manual system and procedure of maintenance of records pertaining to the requirement of spares, consumables, and other materials for smooth operation of power plants using the ERP system.

(iv) Advise APGC in taking a inventory of all material in its stores, power plants and other sites and bring them on record after proper valuation so that APGC has a realistic stores valuation that can be fed in to the ERP system; after which all new purchases will be properly entered and accounted for; thereby eliminating the possibility of leakage if any.

(v) Lay down the procedures for taking any stocks in to the inventory and issue procedures, so that any item that either enters the stores or is issued gets properly recorded and accounted for.

(vi) Lay down an efficient inventory management system including procurement procedures, frequency of procurement so that the carrying cost of inventory is minimized and at the same time, it is ensured that lack of proper inventory does not affect the operational performance of the APGC.

(vii) Ensure the implementation of the ERP package in respect of the Inventory Material Management as detailed in the item 3 of the TOR for ERP Implementation Partner.

(viii) Have trail runs undertaken to test check the efficacy of the ERP package in respect of material management and suggest any mid-course corrections if needed.

(ix) Identify training need of the employees of the APGC Material Management Division; designing training programs and imparting training to them on the use of the ERP software and systems so as to enable them to efficiently use the ERP system.

(x) He shall be responsible for smooth implementation and functioning of the ERP package relating to his field of expertise as delineated under section 3 of the TOR.

5 Project Management Expert, National, 6 pm

The Project Management Expert shall have a Degree in Civil or Electrical Engineering with 15

years' experience, out of which 5 years should be as a project manager for implementing a hydropower project of installed capacity of above 100 MW. He should have been a part of an ERP team that has successfully implemented two ERP systems including the area of project management.

The scope of work would inter-alia include:

(i) The expert shall have the overall responsibility for successful implementation of the ERP solution in APGC in his area of power plant implementation and project management.
(ii) Provide necessary advice and recommendations to the team leader about the project implementation of the generation projects and other assets of APGC, and all other function that fall within that domain.
(iii) Examine the prevailing practice and procedure followed by APGC in implementing projects and suggest measures for better project management practices for implementing project by the APGC and integrate these practices through the ERP system.
(iv) Computerize the entire project implementation processes, schedule etc. in respect of the new power plants to be implemented by APGC; and rehabilitation, renovation and modernization of existing power plants.
(v) Maintain all records/references in respect of approvals, clearances, permissions etc. and statutory requirements and clearances required in all operational aspect of APGC.
(vi) Oversee the implementation of the ERP packages in relation to project implementation &, management of power plants and associated facilities on a day-to-day basis and suggest any mid-course corrections needed.
(vii) Identification of the training need of the employees of the APGC Project Management Division, designing training program and imparting training to them on the use of the ERP software and systems so as to enable them to efficiently use the ERP system.
(viii) He shall be responsible for smooth implementation and functioning of the ERP package relating to his field of expertise as delineated under section 3 of the TOR.

6 Human Resource Management Expert, National, 6 pm

The HR Expert shall have an MBA (HR) degree from a reputed Institute with 10 years' experience in managing HR function in a power utility. He should have been a part of an ERP team that has successfully implemented two ERP systems including the area of HR management.

The scope of work would inter-alia include:

(i) The expert shall have the overall responsibility for successful implementation of the ERP solution in APGC in his area of Human Resource Management.
(ii) Provide necessary advice and recommendations to the team leader about the ERP implementation in the HR management functions of APGC.
(iii) Examine the prevailing practice and procedure followed by APGC in respect of HR Management and advise APGC as well as the ERP team leader in incorporation of best practice in HR management and integrate these practices in the ERP system of APGC after seeking necessary approvals.
(iv) Advise APGC HR team in compiling the data pertaining to its human resources, have the same fed in to the ERP system, have test checks run to ensure that the data fed in to the system is correct.
(v) Computerize the entire HR Records and processes.
(vi) Oversee the implementation of the ERP packages in relation to HR function on a day-to-day basis and suggest any mid-course corrections needed.
(vii) Identification of the training need of the employees of the APGC HR Division, designing training program and imparting training to them on the use of the ERP software and systems

so as to enable them to efficiently use the ERP system.

(viii) He shall be responsible for smooth implementation and functioning of the ERP package relating to his field of expertise as delineated under section 3 of the TOR.

7. Programmers (4), 32 person months

7. Level of Effort:

The assignment of the team members is on an intermittent basis. The budget is given herewith. The deliverables should be –in hard copies 4 sets each in a good quality paper and binding and in the CDs.

Budget Table: ERP Implementation Cost Estimates and Financing Plan (in US $)

A. Asian Development Bank Financing	**Approximate Percentage of budget**
1 Software Implementation Cost	
- Software Development Costs - Manpower Cost	47%
- Field Consultants for Scoping	
- Software development Staff	
- ERP Product license	0.2%
2. Hardware Costs	13%
- Server Costs	
- Computers/other peripherals	
3. Data Center costs	
- Data Center Infrastructure	2%
4. Training	28%
5. Miscellaneous Administration and Support Costs d	
6. Extended Warranty	5%
7. Contingencies	4.8%
Subtotal (A)	**$1,500,000**
B. Government Financing	
1. Office Accommodation a	50,000
2. Counterpart Staff	100,000
Subtotal (B)	**150,000**
Total	**$1,650,000**

a Includes office facilities and communication (telephone lines and internet access); utilities (air conditioners), electricity and water charges in the consultant's office/work place at the APGC building.