

PROJECT PREPARATORY TECHNICAL ASSISTANCE

A. Justification

1. The PPTA will include (i) due diligence on the feasibility studies of the small hydropower scheme¹ elaborated by EPC; (ii) carry out feasibility study for the Alaoa Dam to increase storage capacity for Samasoni hydropower scheme and settlement for drinking water; (iii) design of a business model for community participation in the project; (iv) preparation of an investment pipeline for implementing the hydropower scheme; (v) evaluation of selected schemes composed of technical (energy efficiency issues), economic, financial (including cofinancing assessment),² environmental, legal and social considerations, safeguards, and gender action plan; (v) evaluate alternative procurement strategies, recommend procurement and contract management risk mitigating strategy. And preparation of procurement plan and draft tender documentation; and (vi) operation, maintenance and capacity strengthening program for EPC including customers.

B. Major Outputs and Activities

2. The major outputs and activities are summarized in Table A4.1.

Table A4.1: Summary of Major Outputs and Activities

Major Activities	Expected Initiation Date	Major Outputs	Expected Completion Date
1.1 Related to project sites, carry out network study and synchronization analysis. Review project related information. 1.2 Conduct due diligence and draft feasibility for 4MW Sili plant. System energy efficiency issues. 1.3 Capacity building program and cofinancing assessment.	January 2013 May 2013	Deliverable 1: Inception Report Deliverable 2: Progress Report Including draft safeguard due diligence reports/plans	May 2013 June 2013
1.4 Draft analysis report of feasibility study, training programs for EPC, customers, O&M, including manuals. Board documentation as needed.	June 2013	Deliverable 3: Draft Final Report	July 2013
2. Evaluate alternative procurement strategies, and recommend procurement and contract management risk mitigating strategy. Prepare procurement plan and draft tender documentation.	July 2013	Deliverable 5: Tender Documents	August 2013

Source: Asian Development Bank estimates.

¹ EPC scheme comprises: (i) 360 kW Faleseela plant; (ii) 1,181 kW Tafitoala plant; (iii) 762 kW Tiapapata plant; (iv) 1,184 kW Faleata plant; (v) 1,154 kW Fuluasou plant; (vi) pump storage the 227 kW Vaipu plant; and the 2 MW Sili plant due diligence feasibility study, will be carried out during project preparation.

² Given the Government preference for solar and biomass to be developed by the private sector, the PPTA will assess options for private sector participation in the development of hydropower.

C. Cost Estimate and Proposed Financing Arrangement

3. The PPTA is estimated to cost \$0.75 million equivalent, of which \$0.75 million equivalent will be financed on a grant basis by ADB's Technical Assistance Special Fund (TASF-other sources). The government will provide counterpart support in the form of counterpart staff, office and housing accommodation, office supplies, secretarial assistance, domestic transportation, and other in-kind contributions. The value of government contribution is estimated to account for 10% of the total TA cost. The detailed cost estimate is presented in Table A4.2.

Table A4.2: Cost Estimates and Financing Plan
(\$'000)

Item	Total Cost
Asian Development Bank ^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants (25 person-months)	575.0
ii. National consultants (8 person-months)	48.0
b. International and local travel	40.0
c. Reports and communications	10.0
2. Equipment ^b	15.0
3. Workshops, training, seminars, and conferences ^c	10.0
4. Surveys	12.0
5. Contingencies	40.0
Total	750.0

^a Financed by the Asian Development Bank's Technical Assistance Special Fund (TASF-other sources).

^b Equipment: will be turned over to the EA upon completion of PPTA activities.

Type: Ground hydrological/measurement instruments Quantity: 1 Cost: \$15,000

^c Workshops, training, seminars, and conferences Purpose Stakeholder consultation Venue: EPC

Source: Asian Development Bank estimates.

D. Consulting Services

4. The PPTA will require 25 person-months of international and 8 person-months of national consulting inputs. ADB will hire a consulting firm in accordance with the *Guidelines on the Use of Consultants* (April 2010, as amended from time to time). The consulting firm will be engaged through quality and cost based selection method (quality-cost ratio of 90:10), due to the specific technological complexity of the project using simplified technical proposal. The proceeds of the PPTA will be disbursed in line with ADB's *Technical Assistance Disbursement Handbook* (April 2010, as amended from time to time). The outline terms of references for the PPTA consultants are described in paragraphs 5 to 12. Table A4.3 reflects required services.

Table A4.3: Summary of Consulting Services Requirement

International Name of Positions	Person-months	National Name of Positions	Person-months
Electromechanical Specialist and Project Team Leader	6.0	Support local professional	6.0
Hydropower Engineer	6.0		
Financial Specialist	3.0		
Procurement Expert	2.0		
Social Specialist	4.0		
Environment Specialist	4.0		

Source: Asian Development Bank estimates.

5. **Electromechanical Specialist and Team Leader** (international, 6 person-months). Will have a minimum of 10 years experience developing small hydropower projects (on/off-grid-connected). The specialist will act as Team Leader and be responsible for managing and coordinating the PPTA, with following responsibilities:

- (i) Review related data of selected small hydropower (SHP) scheme in Samoa. Assess existing grid, conduct a network study and synchronization analysis, fuel and load profile/forecast analysis; key words: grid stability and compensation, integrated energy matrix. Design balance of plant: protection, control, monitoring, compensation, synchronization, power transformer and switchgear design. Explore system energy efficiency issues. Deliverable 1: Inception Report
- (ii) Lead the due diligence process: technical, economic, safeguards, social and GAP. Including governance, anticorruption, procurement.
- (iii) Supported by the Financial Specialist, conduct techno-financial analysis, tariff calculation using the “Levelized Cost of Energy” method.
- (iv) Lead consultation workshops with Government and non-Government representatives and relevant stakeholders to assess system issues and discuss the proposed projects. Deliverable 2: Progress Report
- (v) Draft the assessment report of the existing studies for the SHP scheme under guidance of the Energy Specialist, PATE. Exact contents will be determined during the inception mission but will include site description, technical specifications, detailed cost estimates, economic and financial feasibility, procurement plan, environmental and social safeguard findings.
- (vi) Develop training programs and manuals for EPC personnel and DSM-Plan and capacity building for customers, including risk management aspects. Explore other project cofinanciers and donors. Conduct and administer stakeholder training workshops. Deliverable 3: Draft Final Report (including Training Report)
- (vii) Deliverable 4: Board documents.
- (viii) Deliverable 5: Draft Tender Documents, according to ADB’s guidelines.

6. **Hydropower (Civil) Engineer** (international, 6 person-months). Will have at least 5 years experience in designing, implementing and commissioning SHP developments. The specialist will have following responsibilities:

- (i) Preliminary design and implementation arrangements for short listed subprojects including verification of technical feasibility and the suitability of sites identified for the intake, powerhouse, and penstock route.
- (ii) Prepare the preliminary civil design assessment for the scheme of prioritized subprojects containing the major indicative scope, and recommend a procurement method. Prepare structural (civil works) assessment and design of needed civil works for the SHP, confirm detailed cost estimates and prepare procurement scheme. The prices determined shall reflect the realistic cost of equipment to be sourced from prospective suppliers and contractors and take into account the procurement method and EPC’s procurement capacity.
- (iii) Assist the Project Team Leader in drafting all deliverables

7. **Financial Specialist** (international, 3 person-months). Will have at least 5 years experience in project finances. The consultants’ work will consist of the following:

- (i) Prepare cost estimates for the SHP scheme, including power demand, least-cost, sensitivity and risk analysis, EIRR, FIRR, WACC and calculate the LCOE, including O&M and replacement parts. Reference: ADB’s *Handbook for Integrating Risk Analysis in the Economic Analysis of Projects*.

- (ii) Incorporate into the economic analysis the economic quantification of environmental impact caused by the project. Reference: ADB's *Economic Valuation of Environmental Impacts: A Workbook* (1996), and *Environmental Assessment Guidelines* (2003).
- (iii) Review of the audited financial statements of the IA for the past 5 years to assess (a) historical financial performance, (b) capital structure, and (c) internal funds generation. Prepare tariff analysis.
- (iv) Design the funds flow and disbursement mechanisms for the ensuing project.
- (v) Prepare financial analysis suitable for presentation to interested parties from the private sector, including preparation of supporting material for a workshop to gauge private sector interest.
- (vi) Capacity building related to financial, economic and project management aspects

8. **Procurement Expert** (international, 2 person-months). Will have at least 5 years experience in project procurement. The consultants' work will consist of the following:

- (i) Evaluate alternative procurement strategies and recommend procurement and contract management risk mitigating strategy.
- (ii) Prepare procurement plan and draft tender documentation.

9. **Social Specialists** (international/individual, 4 person-months). Will have at least 5 years experience in social analysis, the consultants' work will consist of the following:

- (i) Conduct surveys and consultations with Government and NGO's to supplement secondary data; stakeholder consultation activities (community leaders, elderly, disabled, women, etc.). Prepare poverty profile; safeguard corrective action plan.
- (ii) Conduct a social compliance audit for the existing facilities to identify past or present concerns related to impacts on land acquisition/resettlement or indigenous peoples in accordance to ADB *Safeguard Policy Statement*.
- (iii) Conduct poverty analysis and pro-poor impacts within the project area. Present findings in the Summary Poverty Reduction and Social Strategy template.
- (iv) Identify gender issues, suggest remediation measures and incorporate them into the project design. Prepare and integrate the Gender Action Plan into the PAM.
- (v) Impact on indigenous peoples, and prepare an indigenous peoples plan (if any), following ADB's Safeguard Policy Statement.
- (vi) Investigate land acquisition, use, and access; and natural resources. Undertake necessary due diligence/assessment and prepare a resettlement plan (RP) based on census of affected/displaced people (DPs), inventory of losses, and socio-economic survey of DPs, review of the country safeguard systems and identification on necessary measures in accordance with ADB's SPS. The contents of RP should follow the outline in Appendix 2 of the SPS.

10. **Environment Specialist** (international, 4 person-months). The Environment Specialist will have at least 5 years experience in environmental assessment of infrastructure projects. The consultant's work will consist of the following:

- (i) Prepare the environmental assessment for the project in accordance with local and ADB's Safeguard Policy Statement (2009).
- (ii) Draft (a) Gantt Matrix focusing on energy, technology, environment, social, legal, and economic aspects; (b) listing of impacts on soil, air and water and relevant mitigation measures, including climate change; (c) consultation with project stakeholders; (d) assessment of the institutional capacity of the Project proponent, relevant regulatory agencies involved with implementing the Project's environmental management plan; and (e) draft related TOR for capacity building.

- (iii) Draft (a) initial environmental examination and environmental management plan, in accordance with ADB's Safeguard Policy Statement (2009); (b) environmental text for the Project Administration Manual, including detailed activities, and (c) draft environment text for key project documents as RRP, and Project Agreement

11. **National Support Professional and Community Facilitator** (Generalist: technical or social 8 person-months). Will undertake following activities:

- (i) Assist the Project Team in gathering existing background data and reports.
- (ii) Assist the project team in (a) arranging travel logistics, (b) arranging meetings and workshops, (c) maintaining contacts with stakeholders, (d) obtaining relevant country background data, and (e) obtaining follow-up technical data.
- (iii) Support the Government in coordinating and implementing TA activities.
- (iv) Community facilitator: during communication and consultations between team, government and community; preparation of technical specifications and feasibility studies; implementing workshops and dissemination activities.

12. The consultants will submit following deliverables, (i) Inception Report; (ii) Progress Report; (iii) Final Report (including Training Report); (iv) Report and Recommendation of the President to the Board of Directors, including linked documents; and (v) Draft Tender Documents.

E. Implementation Arrangements

13. The Ministry of Finance (MOF) will, as the executing agency, have oversight responsibility over the project implementation. MOF has assigned EPC as the implementing agency. EPC will be involved in day-to-day activities of the PPTA implementation and will nominate counterpart staff with adequate capacity in engineering and power system planning, finance, environment, and social areas, before fielding of consultants, and provide assistance to the PPTA consultants in liaising with other government ministries and agencies, and in obtaining necessary data and technical documentation as requested. The PPTA will be implemented between January 2013 and December 2013. The PPTA processing and implementation schedule is listed in Table A4.4.

Table A4.4: Proposed Technical Assistance Processing and Implementation Schedule

Major Milestones	Expected Completion Date
Concept Paper Approval	December 2012
Signing of TA letter of Agreement	December 2012
Consulting Firm Recruitment	January 2013
Consultant Mobilization	January 2013
Inception Report	May 2013
Draft Final Report	July 2013
Physical Completion	September 2013
Financial Closure	December 2013

Source: Asian Development Bank estimates.