

PROJECT PREPARATORY TECHNICAL ASSISTANCE (Scaling Up Renewable Energy Project)

A. Justification

1. The SREP Investment Plan that was endorsed by the SREP committee provides the background for selection of the components, technology types and modalities. The lending modalities would need to be developed in line with ADB requirements. Further, the components would need to be assessed on safeguard requirements and necessary documentation acceptable to ADB for this modality. The PPTA resources will be used to prepare the project for ADB financing considering these aspects.

B. Major Outputs and Activities

2. The main output of the PPTA will be: (i) Nepal power and financial sectors assessment; (ii) problem tree analysis; (iii) institutional capacity assessment of the EA/IA and FI/PFIs; (iv) prioritization of subprojects based on the economic optimality and national priorities; (v) preparation of cost estimates; (vi) economic and financial analyses; (vii) safeguard and gender assessments and preparation of associated plans.

3. The major outputs and activities are summarized in Table A5.1.

Table A5.1: Summary of Major Outputs and Activities

Major Activities	Expected Completion Date	Major Outputs	Expected Completion Date
Update the assessment of the operational environment and the performance of the Nepal off-grid renewable energy sector, institutional setup, future plans and long term sustainability; problem tree analysis.	June 2012	Power sector assessment	July 2012
Assessment of the institutional capacity of the EA/IA/FI/PFIs handling the Project.	June 2012	Procurement and implementation capacity assessment of EA/IA, FMA of FI/PFIs	July 2012
Economic and financial viability assessment, financial projections for EA/IA/FI/PFIs and assessment of past financial performance and financial management systems	June 2012	Economic and Financial due diligence report	July 2012
Review safeguard documentation for subprojects; carry any required safeguard assessments, gender assessments and preparation of associated plans	June 2012	EMP, RP, MP, GAP, ESMS	July 2012

EA = Executing Agency; IA = Implementation Agency; FI = Financial Institution; PFI = Participating Financial Institution; IEE = initial environmental examination; EIA = environmental impact assessment; ESMS = environmental and social management system; GAP = gender action plan; EMP = environmental management plan; RP = resettlement plan; MP = monitoring plan
Source: Asian Development Bank Estimates

C. Cost Estimate and Proposed Financing Arrangement

4. The TA is estimated to cost \$580,000 which will be financed on a grant basis by the Strategic Climate Fund, and administered by ADB. The detailed cost estimate is presented in Table A5.2.

Table A5.2: Cost Estimates and Financing Plan
(\$'000)

Item	Total Cost
A. ADB Strategic Climate Fund ^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants (13 person-months)	338.0
ii. National consultants (18 person-months)	72.0
b. International and local travel	80.0
c. Reports and communications	8.0
3. Surveys	14.0
4. Miscellaneous administration and support costs	14.0
5. Contingencies	54.0
Subtotal	580.0
Total	580.0

^a Under the Scaling Up Renewable Energy Program in Low-Income Countries financed by Strategic Climate Fund. The ADB Strategic Climate Fund is administered by the Asian Development Bank.
Source(s): Asian Development Bank estimates

D. Consulting Services

5. A total of 31 person months of consultancy services requiring 4 international and 6 national staff will be required to prepare the project. ADB will recruit the consultants in accordance with its *Guidelines on the Use of Consultants* (2010, as amended from time to time). It is proposed to recruit the consultants as individuals. To expedite project processing, advanced contracting procedures are proposed to be adopted, so that the consultants can be on board soon after the TA is effective.

Table A5.3: Summary of Consulting Services Requirement

International Name of Positions	Person-months	National Name of Positions	Person-months
RE Specialist/Team Leader	4	Renewable Energy Specialist	3
RE Engineer	3	Hydropower Engineer	3
Financial Specialist	3	Economist	3
Environment Specialist	3	Financial Specialist	3
		Social safeguard Specialist	3
		Environment Specialist	3

Source: Asian Development Bank estimates

6. The outline terms of reference for the project preparatory TA consultants are described in paras. 7 to 16.

7. Renewable Energy Specialist and Team Leader (international, 4 person-months). The consultant should have at least a bachelor's degree in engineering and at least 8 years experiences working in renewable energy sector. A finance background would be an added advantage. The specialist will carry out, but not limited to, the following tasks:

- (i) Review the government strategies, policies, legal framework, regulations of the energy sector, the relevant documentation on renewable energy development, and prepare power sector assessment;
- (ii) Support EA/IA to develop guidelines and procedures to develop a database of project promoters, project implementation partners, EPC contractors and civil works contractors, with assistances of other consultants;
- (iii) Support EA/IA to develop guidelines for selection of FIs, PFI, and MFIs eligible for participation under the CREF program, with assistance from other consultants and in coordination with other RREP consultants;
- (iv) Support EA/IA to develop guidelines for selection of projects to be implemented under SREP from its pipeline of projects and from the portfolio of projects developed by FIs under the CREF with assistance from other consultants;
- (v) Prepare feasibility study for sample subprojects, with assistances of other consultants;
- (vi) Review the detailed procedures for the operation of the CREF including fund governance structure, fund replenishment, credit terms, appraisal, payment modes, fund transfer mechanism prepared by the IA and the RREP with assistance from the financial specialist;
- (vii) Measure the counterpart agencies' capacity to handle relevant financial management, procurement, and other related institutional issues, and support establishment of a PMU to support project implementation;
- (viii) Develop the capacity building requirement;
- (ix) Identify potential financing through the Clean Development Mechanism (CDM) or sales of Verified Emissions Reduction Credits in non-CDM carbon markets;
- (x) Assist ADB project officer in coordinating with the activities of other consultants;
- (xi) Help the ADB project officer in any other aspect of the loan processing, including preparation of required documents and government consultation and dialogue; and
- (xii) Conduct other duties as reasonably requested by ADB project officer.

8. Renewable Energy Engineer (international, 3 person months). Then consultant should have at least a bachelor's degree in engineering and have at least 8 years experience working in the renewable energy sector. The consultant should have experience in the design and implementation of small renewable energy projects especially relating to wind power and solar home systems. The tasks to be conducted by the consultant include, but are not limited to, the following:

- (i) Support EA/IA to develop guidelines and procedures to develop a database of project promoters, project implementation partners, EPC contractors and civil works contractors, with assistance from the national consultant;
- (ii) Support EA/IA to develop guidelines for selection of projects to be implemented from its pipeline of projects with assistance from the national consultant;
- (iii) Conduct wind-solar hybrid project design based on the projects identified.

- (iv) Prepare technical feasibility study for sample subprojects, with assistances of other consultants;
- (v) Access capacity building needs among stakeholders for development of small scale renewable energy projects;
- (vi) Assess potential for financing projects through the Clean Development Mechanism (CDM) or sales of Verified Emissions Reduction Credits in non-CDM carbon markets;
- (vii) Help the ADB project officer in any other aspect of the loan processing, including preparation of required documents and government consultation and dialogue; and
- (viii) Conduct other duties as reasonably requested by ADB project officer.

9. Financial Specialist (international, 3 person months). The consultant should have at least a bachelor degree in finance/economics/accountancy and have at least 8 years of work experience in finance/accounting sector. The consultant should have fund management experience. In accordance with ADB's Guidelines for *the Financial Governance and Management of Investment Projects* (2002), *the Financial Analysis and Management of Projects* (2005), *the Financial Management Assessment Questionnaire* (2005), and *the Financial Due Diligence Methodology Note* (2005), the consultant will carry out, but not be limited to, the following tasks:

- (i) Conduct a financial management assessment for the project and design the Project's fund flow and disbursement mechanism, and recommend arrangements for financing for procurement, EPC contracts, civil works, and lending and on-lending arrangements as appropriate;
- (ii) Support EA/IA to develop guidelines for selection of FIs, PFI, and MFIs eligible for participation under the CREF program, with assistance from other consultants and in coordination with other RREP consultants. Also support the IA in shortlisting eligible FIs to participate in the SREP component;
- (iii) Prepare financial/economic eligibility criteria for projects, and eligibility criteria for borrowers and sub borrowers who can participate in SREP as applicable;
- (iv) Undertake financial analysis and sensitivity analysis of typical investment subprojects and assess financial performance and financial management capabilities of the EA/IA, project promoters/implementation partners, and FI/PFIs as applicable
- (v) Assist the team leader to assess demand for loan financing based on project pipeline of the IA and participating FIs as appropriate;
- (vi) Assess the status of and relevant issues for financial sector development for off-grid development and clean energy in Nepal;
- (vii) Assess the project's contributions to creating sustainable and efficient financial mechanisms and institutions;
- (viii) Support the team leader and the IA in reviewing detailed procedures for the operation of the CREF prepared by RREP including fund governance structure, fund replenishment, credit terms, appraisal, payment modes, fund transfer mechanism.
- (ix) Work with the national consultant to evaluate the direct and indirect environmental impacts for sample subprojects, and carry out economic analysis of these impacts in terms of net present value and internal rates of return in accordance with ADB's Handbook on Economic Evaluation of Environmental Impacts;
- (x) In consultation with the social development specialist, incorporate poverty reduction impacts in accordance with ADB's Handbook on Integrating Poverty Impact Assessment in the Economic Analysis of Projects;
- (xi) Work with the national consultant to assess various stakeholders' willingness to pay and ability to pay for expected various services under the proposed project;

- (xii) Work with the national consultant to improve all the spreadsheet models developed for the economic analysis of sample subprojects to make them transparent and self-explanatory before handing over the same to ADB at the end of the assignment;
- (xiii) Prepare necessary documentation to assist the team leader to identify potential financing through the Clean Development Mechanism (CDM) or sales of Verified Emissions Reduction Credits in non-CDM carbon markets;
- (xiv) Help the ADB project officer in any other aspect of the loan processing, including government consultation and dialogue; and
- (xv) Perform other functions as may be assigned or delegated by the team leader from time to time during the assignment.

10. Environment Specialist (international, 3 person months). The specialist should have at least a bachelor's degree in environmental science or other related disciplines and with at least 8 years of related work experience. The specialist should have experience in preparing environmental impact assessments and initial environmental examinations of projects financed by international financial institutions. In accordance with ADB guidelines and Nepal regulations, the specialist will carry out, including but not be limited to, the following tasks:

- (i) Assess institutional capacities of EA/IA, FI/PFIs', and/or implementation partners for the management and mitigation of environmental and social impacts into their investments;
- (ii) Prepare an environment and social management system (ESMS) and Environmental Assessment and Review Framework (EARF) where and as applicable in accordance with the ADB's Safeguard Policy Statement 2009, and Nepal environmental regulations for use by the EA, IA, FI, and PFIs;
- (iii) Assist the EA and IA in preparing the required environmental impact assessment (EIA), initial environmental examination (IEE), and environmental Management Plan (EMP), as applicable; the IEE or EIA (if required) will include an assessment of cumulative and induced impacts based on representative sample subprojects;
- (iv) Assist the team leader to prepare the selection criteria for subsequent subprojects;
- (v) Assist the team leader in identification of potential financing through the Clean Development Mechanism (CDM) or sales of Verified Emissions Reduction Credits in non-CDM carbon markets;
- (vi) Help the ADB project officer in any other aspect of the loan processing, including government consultation and dialogue; and
- (vii) Perform other functions as may be assigned or delegated by the team leader from time to time during the assignment.

11. Renewable Energy Specialist (national, 3 person months). The specialist should have at least bachelor's degree in engineering, with at least 6 years work experience in the design and implementation of renewable energy programs and/or projects in Nepal, and be familiar with and knowledgeable about Nepal's energy laws, policies, and regulations. The specialist will carry out, but not be limited to, the following tasks:

- (i) Collect and categorize the government strategies, policies, legal framework, regulations on the renewable energy sector, collect the available and relevant documentation on renewable energy development, including existing and proposed renewable energy programs/projects, particularly mini-micro hydropower, wind power, solar home systems, etc;
- (ii) Assist the international renewable energy specialist to conduct project design and carry out other tasks under his/her terms of reference;

- (iii) Help the ADB project officer in any other aspect of the loan processing, including government consultation and dialogue; and
- (iv) Perform other functions as may be assigned or delegated by the team leader from time to time during the assignment.

12. Hydro Engineer (national, 3 person months). The consultant should have at least a bachelor's degree in engineering with at least 6 years work experience in the design and implementation of hydro power programs and/or projects in Nepal. The specialist will carry out, but not be limited to, the following tasks:

- (i) Assist the team leader to carry out each of the tasks under his/her terms of reference, focusing on mini-micro hydropower subprojects;
- (ii) Help the ADB project officer in any other aspect of the loan processing, including government consultation and dialogue; and
- (iii) Perform other functions as may be assigned or delegated by the team leader from time to time during the assignment.

13. Economist (national, 3 person-months). The consultant should have at least bachelor's degree in economics with minimum 6 years work experiences in energy sector in Nepal. In accordance with ADB's *Guidelines for the Economic Analysis of Projects*, the economist, will undertake economic analysis of the proposed subprojects/project and assess their economic viability. Working in collaboration with the financial specialist to ensure the use of consistent approach and assumptions across the financial and economic analyses, the economists will carry out, but not be limited to, the following tasks:

- (i) Assist the team leader to conduct demand assessment and business plan assessment of the IA and FI/PFIs, as relevant;
- (ii) Conduct in-depth economic feasibility study for sample subprojects;
- (iii) Evaluate the direct and indirect environmental impacts for sample subprojects, and carry out economic analysis of these impacts in terms of net present value and internal rates of return in accordance with ADB's Handbook on Economic Evaluation of Environmental Impacts;
- (iv) Assist the team leader to prepare selection criteria for subsequent subprojects;
- (v) In consultation with the social development specialist, incorporate poverty reduction impacts in accordance with ADB's Handbook on Integrating Poverty Impact Assessment in the Economic Analysis of Projects;
- (vi) Assess various stakeholders' willingness to pay and ability to pay for expected various services under the proposed project;
- (vii) Improve all the spreadsheet models developed for the economic analysis of sample subprojects to make them transparent and self-explanatory before handing over the same to ADB at the end of the assignment;
- (viii) Prepare necessary documentation to assist the team leader to identify potential financing through the Clean Development Mechanism (CDM) or sales of Verified Emissions Reduction Credits in non-CDM carbon markets;
- (ix) Help the ADB project officer in any other aspect of the loan processing, including government consultation and dialogue; and
- (x) Perform other functions as may be assigned or delegated by the team leader from time to time during the assignment.

14. Financial Specialist (national, 4 months). The consultant should have at least bachelor's degree in finance with minimum 6 years work experiences in energy sector in Nepal. In

accordance with ADB's *Guidelines for the Financial Management Analysis of Projects*, the financial consultant will undertake financial management analysis of the proposed projects and assess their financial viability. Working in collaboration with the economic specialist to ensure the use of consistent approach and assumptions across the financial and economic analyses, the financial consultant will carry out, but not be limited to, the following tasks:

- (i) Assist the team leader to conduct demand assessment and business plan assessment of the proposed project, as relevant;
- (ii) Conduct in-depth financial feasibility study for the projects;
- (iii) Assist the team leader to prepare selection criteria for subsequent subprojects;
- (iv) Assist the team leader to carry out each of the tasks under his/her terms of reference, focusing on mini-micro hydropower subprojects;
- (v) Help the ADB project officer in any other aspect of the loan processing, including government consultation and dialogue; and
- (vi) Perform other functions as may be assigned or delegated by the team leader from time to time during the assignment.

15. Social Safeguard Specialist (national, 3 person months). The specialist should have at least bachelor's degree in relevant disciplines and with at least 6 years of related work development experience on social development in the energy sector in Nepal. The specialist should be familiar with Nepal's regulatory framework on land acquisition and involuntary resettlement as well as ADB's Safeguard Policy Statement. The specialist should be familiar with issues of "vulnerability", "accessibility" and "affordability" related to energy resources and services. The specialist will carry out, but not be limited to, the following tasks:

- (i) Conduct social impact assessments of the sample subproject in accordance with ADB's Handbook on Social Analysis (2007);
- (ii) Assist international environment specialist to prepare an environment and social management system (ESMS) and Environmental Assessment and Review Framework (EARF) in accordance with the ADB's Safeguard Policy Statement 2009;
- (iii) Provide assistance to the team leader in preparing the poverty and social analysis report, preliminary design and monitoring framework for the project, memorandum of understanding (or aide memoire) of the mission, and any other documentation related to the mission;
- (iv) In coordination with other team members as required, assist in determining benefit streams for economic evaluations of sample subprojects—both qualitative and quantitative;
- (v) Produce a poverty and social analysis (PSA) and a summary of poverty reduction and social strategy (SPRSS) as a core appendix for RRP and any action or mitigation plans or other measures as appropriate, in accordance with the Handbook on Social Analysis (2007);
- (vi) Ensure timely and correct project classification—discussing with the team leader any IR concerns in accordance with the IR checklist and key impacts on IP, completing the IR and IP checklists, and filling in project categorization forms for endorsement by ADB;
- (vii) Identify issues related to pro-poor and gender-inclusive access to energy resources and services;
- (viii) Identify modalities through which the project can effectively promote the poor, vulnerable groups and women's greater access to energy resources, services and opportunities;
- (ix) Prepare Gender Action Plan;

- (x) Help the ADB project officer in any other aspect of the loan processing, including government consultation and dialogue; and
- (xi) Perform other functions as may be assigned or delegated by the team leader from time to time during the assignment.

16. Environment Specialist (national, 3 person months). The specialist needs to have at least a bachelor's degree in environmental science or other related disciplines and with 5 years of related work experience, and is intimately knowledgeable of Nepal's environmental condition, policy and regulatory framework, and approval requirements related to environmental clearances for industries with negative environment impact. The specialist should have experience in preparing environmental impact assessments and initial environmental examinations of projects financed by international financial institutions. In accordance with relevant guidelines and policies for environmental assessment, the specialist will carry out, but not be limited to, the following tasks:

- (i) Assist the international environment specialist to assess institutional capacities of EA/IA and FI/PFIs for the management and mitigation of environmental and social impacts of their investments;
- (ii) Assist the international environment specialist to prepare an environment and social management system (ESMS) and Environmental Assessment and Review Framework (EARF) in accordance with the ADB's Safeguard Policy Statement 2009 and Nepal environmental regulations;
- (iii) Collect and compile baseline data on air quality, water quality, geological and soil conditions, flora and fauna, and demographics in the prospective project areas;
- (iv) Support the ADB project officer in any other aspect of the loan processing, including government consultation and dialogue; and
- (v) Perform other functions as may be assigned or delegated by the team leader from time to time during the assignment.

E. Implementation Arrangements

17. MoEnv will be the EA and AEPC will be IA. They will provide in-kind contributions in the form of office space for the consultants and counterpart staff. All disbursement under the TA will be made in accordance with the ADB's Technical Assistance Disbursement Handbook (2010, as amended from time to time). The TA will be implemented over 8 months, from June 2012 to March 2013.

18. The proposed TA processing and implementation schedule is listed in Table 5.4.

Table 5.4: Proposed Technical Assistance Processing and Implementation Schedule

Major Milestones	Expected Completion Date
Approval of SREP Investment Plan	November 2011
VP approval of the project concept paper	May 2012
Recruitment of Consultants	May 2012
Mobilize consultants	June 2012
PPTA completion	March 2013

ADB = Asian Development Bank; PPTA = project preparatory technical Assistance; SREP = Scaling Up Renewable Energy Project

Source: Asian Development Bank staff estimates