

**PROJECT PREPARATORY TECHNICAL ASSISTANCE
(SUPPORTING ELECTRICITY SUPPLY RELIABILITY IMPROVEMENT¹)**

Justification

1. The Sri Lanka Government's sector development framework² envisions sustainable development of energy resources, enabling access to and use of energy services by the entire population, and reliable delivery of such services at a competitive price. To increase access to electricity and achieve the goal of meeting the growing demand for electricity at sufficiently low cost and acceptable reliability to widen access to growth opportunities and attain sustainability in the long term, the government plans to increase supply capacity of the system including through raising share of renewable energy sources (e.g., hydro, wind, solar, etc.), reducing total technical and commercial losses of the transmission and distribution networks, and undertaking energy efficiency and conservation measures. To address investment needs in support of these plans, a project preparatory technical assistance (TA) is needed to prepare a relevant investment project for consideration by the Asian Development Bank (ADB).

Major Outputs and Activities

2. The major outputs and activities are summarized in Table A3.1.

Table A3.1: Summary of Major Outputs and Activities

Major Activities	Expected Completion Date	Major Outputs	Expected Completion Date
Conducting project technical, economic, financial, governance, resettlement and environmental due diligence	March 2016	Inception Report Interim Report Final Report	October 2015 January 2016 March 2016

Source: Asian Development Bank estimates.

3. The TA will also support an implementing agency in ensuring project readiness. In addition to a detailed engineering design and preparation of relevant bidding documents for the proposed hybrid renewable energy mini-grid systems in small isolated islands in Sri Lanka being undertaken by separate consulting services,³ PPTA consultants will assist the implementing agency in finalizing a preliminary detailed design and preparation of procurement packaging and bidding documents for medium and low voltage sub-projects to be financed under the project as part of advance contracting activities.

Cost Estimate and Proposed Financing Arrangement

4. The ADB will provide US\$225,000 equivalent in grant financing from ADB's Technical Assistance Special Fund (TASF-V). The Government of Sri Lanka will provide its counterpart support in the form of in kind contribution, including office accommodation and support facilities,

¹ Formerly Preparing Rural Electrification.

² Government of Sri Lanka, 2008. *National Energy Policy and Strategies of Sri Lanka*. Colombo.

³ The detailed engineering design of the proposed hybrid renewable mini-grid systems in small isolated islands to be financed under the investment project is being undertaken as part of the consulting services under regional technical assistance TA 7485: Effective Deployment of Distributed Small Wind Power Systems in Asian Rural Areas. It is expected that the detailed engineering design of the hybrid renewable energy mini-grids will be completed by November 2015.

counterpart staff, technical data, and other information. The detailed cost estimate is presented in Table A3.2.

Table A3.2: Cost Estimates and Financing Plan
(\$'000)

Item	Total Cost
Asian Development Bank^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants (4 person-months)	58.0
ii. National consultants (15 person-months)	99.0
b. International and local travel	24.0
c. Reports and communications	3.0
2. Workshops, training, seminars, and conferences ^b	5.0
3. Surveys ^c	20.0
4. Miscellaneous administration and support costs	1.0
5. Contingencies	15.0
Total	225.0

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

^b Workshops, training, seminars, and conferences

Purpose

Venue

Capacity building for communities

Mini-grid project areas, SRI

^c Environmental, social and other baseline condition studies and surveys

ADB = Asian Development Bank, TA = technical assistance

Source: Asian Development Bank estimates.

Consulting Services

5. Individual consultants will be recruited for the TA project with total positions and person-months as indicated in Table A3.3. The consultants will conduct technical, economic, financial, safeguards and governance due diligence, prepare project cost estimates, procurement plan and implementation schedule. Consultants will be recruited following *Guidelines on the Use of Consultants by ADB and Its Borrowers*, March 2013.

Table A3.3: Summary of Consulting Services Requirement

International Name of Positions	Person-months	National Name of Positions	Person-months
<i>Individual Consultants:</i>			
Power System Engineer and Economist	3.0	MV Network/Distribution Specialist	3.0
Procurement Specialist	1.0	Renewable Energy Specialist	2.0
		Economist	2.0
		Financial Specialist	2.0
		Environmental Specialist	3.0
		Social Development Specialist	3.0
Total:	4.0		15.0

MV = medium voltage

Source: Asian Development Bank Estimates.

6. The outline terms of references for the TA international and national consultants are described below:

Position	Summary Tasks	Qualification
Power System Engineer and Economist/Team Leader (international)	<ul style="list-style-type: none"> • Manage consulting team and ensure quality output • Prepare sector assessment • Conduct due diligence on medium voltage and distribution network, examine alternative solutions • Prepare composite cost estimates, procurement plan and implementation schedule • Estimate Green House Gas Reduction • Undertake project economic analysis • Climate Change impacts will be identified and properly addressed, if necessary 	Power engineer qualified to at least a university bachelor degree with 15 year of experience in power systems and/or power economics
Medium Voltage Network/Distribution Specialist (national)	<ul style="list-style-type: none"> • Conduct/review route surveys • Finalize the least-cost design for line routes and the cost estimates for a relevant component of ensuing project • Conduct load flow studies to optimally sizing the wire and develop an investment plan for upgrading/reinforcement • Prepare a procurement plan and implementation schedule for the component 	Power engineer qualified to at least a university bachelor degree with 10 year of experience in medium voltage network/distribution design
Renewable Energy (national)	<ul style="list-style-type: none"> • Support an implementing agency to adapt design hybrid renewable mini-grid sub-projects to local environment • Evaluate/check a load profile at each proposed site • Conduct capacity building training for communities on use of hybrid mini-grid systems 	Power engineer qualified to at least a university bachelor degree with 7 year of experience in renewable energy and/or mini-grid systems
Financial Specialist (national)	<ul style="list-style-type: none"> • Review CEB's financial performance and operating systems • Undertake project financial analysis 	At least a bachelor degree in economics/finance and 7 years of relevant experience in financial management assessment and/or financial analysis of projects
Economist (national)	<ul style="list-style-type: none"> • Support international Power System Engineer and Economist in undertaking project economic analysis • Assess social and gender impacts jointly with social development specialist 	At least a bachelor degree in economics/finance and 7 years of relevant experience in economic analysis of projects
Procurement Specialist (international)	<ul style="list-style-type: none"> • Conduct procurement capacity assessment • Provide support in preparation of procurement documents and advance contracting activities 	At least a bachelor degree in economics/finance/ engineering and 15 years of relevant experience in project management/ procurement
Environmental Specialist (national)	<ul style="list-style-type: none"> • Prepare an Initial Environmental Examination (IEE) report and/or, if necessary, an Environmental Impact Assessment (EIA) for project components • Prepare Environmental Management Plans (EMPs) • Conduct information disclosure and public consultation 	At least a bachelor degree in environmental science/ engineering and at least 10 years of experience in carrying environmental studies for projects, IEE and/or EIA preparation

Position	Summary Tasks	Qualification
Social Development Specialist (national)	<ul style="list-style-type: none"> • Conduct social and gender analysis • Prepare Resettlement Plans for project components • Identify appropriate compensation methodologies where required • Design a gender inclusive productive energy use program to maximize community economic development benefits as feasible • Conduct information disclosure and public consultation 	At least a bachelor degree in social development or related fields and at least 10 years of relevant experience

Implementation Arrangements

7. The Ministry of Power and Energy (MOPE) will be the executing agency, and Ceylon Electricity Board (CEB) will be the implementing agency for the TA. A dedicated project implementation unit (PIU), which will include experienced staff and be headed by a senior officer, will be set up in CEB to undertake day-to-day TA activities. CEB will provide in-kind contribution in the form of counterpart staff, project related data, office accommodation for consultants, and local transportation outside Colombo to visit project sites as feasible. Disbursements under the TA will be done in accordance with the *ADB's Technical Assistance Handbook* (May 2010, as amended).

8. The proposed TA processing and implementation schedule is listed in Table A3.4.

Table A3.4: Technical Assistance Processing and Implementation Schedule

Major Milestones	Expected Completion Date
Approval of concept paper	September 2015
Selection of individual consultants	September 2015
Inception Report	October 2015
Interim Report	January 2016
Final Report	March 2016
Physical completion	May 2016
Technical assistance financial closure	July 2016

Source: Asian Development Bank estimates.