

Project Information Document

Project Name:	Renewable Energy for Rural Economic Development – Additional Financing
Country:	Sri Lanka
Region:	South Asia
Sector:	Energy
Project:	P076702
Borrower(s):	Government of Sri Lanka
Implementing Agency:	Ministry of Finance and Planning, Govt. of Sri Lanka
Environmental Category:	B
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Country Sector and Background

1. About 75% of the households in Sri Lanka have access to electricity, and the demand for electricity is expected to grow at a rate of 8-10% per year over the next decade. Improving access and meeting the rapidly growing demand for power is a key priority of the Government of Sri Lanka (GoSL) as reflected in the development plans. Renewable energy is expected to play an important role in the future energy scene as noted in the National Energy Policy and the ten year development strategy which sets a target of increasing the share of non-conventional renewable energy (NCRE) sources for on-grid power generation to 10% by 2015. This is a challenging goal in view of the fact that currently non-conventional renewable supply is only about 3.5% of the power sector output. The Government acknowledges that complements to grid electricity are therefore needed, both to step-up access rates and diversify energy sources. In 2005, thermal plants – mainly based on imported diesel – accounted for about 60% of the electricity generated. Scaling-up the development of indigenous, renewable resource based power generation has taken on a greater importance given the macroeconomic and energy security implications of Sri Lanka's high level of dependence on highly volatile and expensive imported oil for power generation.

2. Presently, well over 100,000 rural homes are electrified through off-grid renewable energy solutions, mostly through solar home systems, and (to a lesser degree) independent mini grids powered by community based micro hydropower schemes. These account for about 2% of households in Sri Lanka accessing electricity services through the World Bank and GEF-funded Energy Services Delivery (ESD) and Renewable Energy for Rural Economic Development (RERED) Projects. The National Energy Policy of GoSL envisages that 6% of remote rural households will be electrified through off-grid solutions by 2010.

3. Through a strategy launched a decade ago, and supported by the World Bank and GEF under the Energy Services Delivery (ESD) Project (1997-2002), and the Renewable Energy for Rural Economic Development (RERED) Project since late 2002, Sri Lanka has made impressive strides in promoting on-grid and off-grid renewable energy development and energy conservation/efficiency. To illustrate, the RERED project in its fourth year of implementation has achieved the following results (Dec 2006) in terms of expansion in generation capacity and access to rural power: (i) Against the grid-connected expected capacity addition of 85 MW (by Credit closing in FY08), the generation capacity added to the national grid through renewable energy technologies by the private sector has exceeded 59 MW. Another

50 MW of generation capacity is under construction, exceeding the project target. (ii) A total of 83,995 additional households in rural areas have access to off-grid electricity services, against the target of 100,000 by Credit closing date and (iii) About 750 additional rural small scale and medium enterprises (based on an early-2006 survey) have access to electricity services, against the target of 1000 expected by Credit closing date.

4. Furthermore, the project has yielded significant positive impacts in terms of increases in power generation capacity with active private sector involvement, improvements in energy access in rural areas, and socioeconomic developments reflected in the creation of income generation activities and raising income levels. A vibrant industry spearheaded by the private sector has been created, and the capacity of private developers has been enhanced. As a result, several Sri Lankan developers have been able to venture overseas to undertake renewable energy projects in other countries, as well as providing necessary technical advice in the development of such projects.

5. While the Government played an enabling role, the private sector, rural communities, community-based stakeholder organizations and NGOs have been instrumental in the development of renewable energy markets. The Government is now keen to make renewable energy an important part of its overall rural electrification and economic development strategy and has initiated several actions to promote renewable energy development. These include: (i) constitution of a Working Group (set up by the Ministry of Power and Energy), to guide the drafting, by consultants, of the renewable energy policy framework and tariff setting methodology; (ii) creation of the Renewable Energy Cluster under the National Council for Economic Development to provide a platform in which issues pertaining to the renewable energy industry are discussed and decisions taken; (iii) initiative to create the Sustainable Energy Authority to promote renewable energy development, energy efficiency, energy policy analysis and fund management; (iv) approval by Cabinet of Ministers to finance from Government's resources the augmentation of grid substations with co-financing from developers which will allow the system to absorb a further generation capacity of 225 MW; and (v) the commissioning of two studies - the first entitled 'Evaluation of Capital Market Constraints to Financing Renewable Power Projects in Sri Lanka', with the main objectives to identify sector funding needs, constraints and the evaluation of the concept of a Renewable Energy Bond (REB), and other options to raise financing for renewable energy services in the absence of external financing; and the second, entitled 'Private Sector, Small-scale, Grid-connected Renewable Power Generation in Sri Lanka' which reviews, among other things, the renewable energy development experience in Sri Lanka of the past decade including the policy aspects, as well as internationally, and based on the review suggest changes to enhance the development effectiveness of renewable energy development.

6. Some existing policy and institutional barriers to renewable energy development are being addressed and with this, Sri Lanka thus has the basic foundation and the right conditions for sustainable development of next generation renewable energy initiatives. The RERED Additional Financing Project seeks to build on these strengths and the momentum gained through the ESD and the RERED Projects to extend support for developing renewable energy as a significant source of rural electricity provision and promoting its productive use for rural economic development and quality of life improvements, as well as adding capacity to the national grid.

Project Objective

7. Sri Lanka's development objectives for the proposed project are to (i) increase off-grid rural electricity access to promote economic growth and social development, and (ii) diversify and expand on-grid power generation through renewable resources. The Government intends to achieve these objectives

by enhancing the vibrant renewable energy market established by the ESD and the RERED Projects, with emphasis on private sector and community based solutions, enabling increased energy access, higher productive consumption of electricity and greater dependence on indigenous renewable resources for power generation. This would enable Sri Lanka to invigorate its rural economy, empower and build assets of the poor and promote rural economic development and well-being, in an environmentally responsible fashion.

8. While Sri Lanka has made strong progress in terms of promoting private investments in renewables and rural energy, and the foundations have been laid for sustainable growth of the renewable energy industry in Sri Lanka, the limited availability of long- term investment capital to the private sector remains a major constraint. Developments of domestic capital markets that will permit private banks to raise all the required capital on their own account seem remote in the near and medium term. Therefore, in the absence of certainty about the availability of additional financing of the type provided under the RERED Project (after the closing of this project), Participating Credit Institutions (PCIs) are expected to either postpone loan approvals for new projects, and/or offer shorter term (four year) loans, which will effectively render projects unviable. At present the Administrative Unit at DFCC Bank, that implements the Project, has imposed a moratorium on approving loans for grid- connected projects, since the RERED funds for this sub-sector are fully committed. These applications for loans are being placed in a queue until supplementary funds are made available. Any further delay in signaling to the industry the availability of additional finance could slow-down the momentum built up through the RERED Project. This threatens to interrupt the development of the pipeline of future renewable energy investments, compromising the GoSL's objective of improving access to clean, renewable sources of energy.

9. In line with the objectives of RERED, the additional financing project would continue to address the long-term funding constraints of the local capital markets, by providing a maturity period that matches the payback period of renewable energy investments (7-9 years). This would facilitate the development of the renewable energy sector thereby contributing to the GoSL's renewable energy development goal. There is no intention to follow-up this Additional Financing operation with another Credit for the same purpose in the future, since this operation is designed to pave the way for an exit strategy for IDA funding. While the additional financing operation will seek to develop long-term capital market instruments for renewable energy expansion, it should be noted that renewables energy development require government subsidies even in industrial countries and it should be expected that such programs in Sri Lanka will continue to require government subsidies for a long while, well beyond the period of the Additional Financing.

Implementation Strategy

10. At the request of the Government of Sri Lanka, this Project is being prepared as an Additional Financing operation to preclude any break in support to the renewable energy industry. This is possible because considerable learning has taken place under the ESD Project and the ongoing RERED Project, and a wealth of analytical and strategic information is available to undertake project preparation. A key focus of the Project is on enhancing the rural economic development that renewable energy has stimulated and supported under the RERED Project. It is expected that the greater benefits flowing to the rural areas as a result of this choice would continue to increase the rural communities' interest in and support for renewable resource based electricity services.

11. In line with the RERED Project, the Additional Financing implementation strategy envisages a common coordination point for all renewable initiatives – the Administrative Unit (AU) set up within DFCC Bank – a private licensed specialized bank. The AU has successfully managed the implementation of the ESD and RERED Projects and will continue to manage the implementation of the Additional Financing. The Unit is well staffed and professionally managed under the leadership of a Senior Vice

President of DFCC Bank. It has established an excellent professional track record in project implementation and earned the respect of all stakeholders under the ESD and the RERED Projects. Institutions such as the Solar Industries Association, Grid Connected Small Power Developers Association, Bio Energy Association of Sri Lanka, Federation of Electricity Consumer Societies (off-grid village hydros), Participating Credit Institutions, Provincial Councils, and a number of NGOs including advocacy groups, non-profit and for-profit renewable energy firms and consultants are expected to continue to play an important role in implementation of the Project.

12. The AU would be responsible for (i) administration of the IDA Line of Credit amounting to USD 40 million, (ii) administration of the approximately USD 3.2 million of unutilized IDA credit for Technical Assistance under the RERED Project, and (iii) administration of the roughly USD 1.1 million of the unutilized GEF grant under the RERED Project. Detailed operating policy guidelines and proposed on-lending arrangements for the RERED Credit Program are in place and have been demonstrated to work well with adequate safeguards for accountability purposes. These will be enhanced and strengthened as necessary. These guidelines define the onlending mechanism, including the onlending rate, the terms and conditions, the responsibility of the Administrative Unit, procurement procedures, disbursement procedures, and audit requirements. The RERED eligibility criteria for PCIs (that include commercial banks, licensed specialized banks (development finance institutions), merchant banks, leasing companies, micro finance institutions and finance companies) have been reviewed for compliance with OP 8.30 – as applied to financial intermediation projects. The proposed changes are listed as follows and will be discussed and agreed with the AU and the GoSL during project appraisal/negotiations and the changes would be reflected in the Memorandum to the Board.

(i) *The eligibility criteria for PCIs and its application.* While the review has found that the criteria themselves meet fully the requirements of OP 8.30, it has proposed a few minor adjustments to make the criteria more realistic and their application more effective. The items identified for revision include: lowering the current maximum permissible non performing loan ratio of 20% (infection ratio) to 10%; increasing the cash collection ratio of 80% (total as well as for principal) to 85-90%, or provide justification for the current collection ratios (of 80%); and eliminating debt equity ratios, while putting greater emphasis on meeting the minimum capital adequacy ratios.

(ii) *The implicit subsidy associated with the rate at which the GoSL on lends funds to participating credit institutions (PCIs).* There appears to be an implicit subsidy provided to the PCIs, and one way proposed by the reviewer to correct this distortion is to use average cost of time deposits (instead of all deposits) and add a premium (say 1.5%) for longer-term maturity.

(iii) *Development of the long-term financing market for renewable energy project.* The review proposed initiating a strategy for the development of long term financing market for renewable energy development and suggested that proposals being evaluated under the Capital Market Constraints to Financing Renewable Power Projects in Sri Lanka study (referred to in para 5), such as renewable energy bond could form the basis for such a strategy. The process of developing a strategy for long term financing market for renewable energy has been initiated under the above mentioned study, and the appropriate options evaluated under this study would be further developed and implemented by the GoSL. The IDA team will provide advise in structuring and implementing the strategy. The IDA team will agree with the GoSL on the next steps for developing and implementing such a strategy over the course of Additional Financing implementation period.

Rationale for Bank's Involvement

13. The additional financing would enhance the economic impact of the RERED Project and further Bank involvement is justified in a number of ways including: First, there is strong evidence that access to energy has positive impact on the lives of people, demonstrated through its beneficial impacts on health, education, productivity, and general well being of the people. These objectives are consistent with the country assistance strategy of Sri Lanka and the broader goals of reducing poverty. Second, by deepening the involvement of the private sector it broadens the range of electrification options, thereby creating alternatives to monopolistic, state-led provision of electricity services. Third, although our engagement in the renewables energy sector provides limited opportunities to influence significant policy changes in the overall energy sector, a continued IDA involvement could pave the way for the Bank to also contribute to the broader development of Sri Lanka's power sector. Finally, preliminary economic analysis of the project demonstrates positive economic rates of returns on investments, especially for mini hydro projects where the rate of return exceeds 20%.

14. Furthermore, apart from being the source of IDA funds and a channel for GEF funds, the Bank is recognized and accepted in Sri Lanka as a key catalyst, in partnership with other donors such as UNDP, for renewable energy development and energy efficiency. Another value-added of Bank involvement stems from its ability to bring to bear a vast repertoire of world-wide knowledge and practical experience related to the development of the renewable energy sector. In particular, the RERED Additional Financing Project team brings together professionals with a range of country and sector expertise – with experience of renewable and rural energy projects in Afghanistan, Bangladesh, Nepal and India, besides Sri Lanka. The team also has access to experts across the Bank who are able to bring to and adapt for Sri Lanka, established international best practice as well as emerging concepts that are being developed in the context of other countries.

Project Description

15. In line with the objectives of the RERED, the Additional Financing Project would facilitate the development of the renewable energy sector thereby contributing to the GoSL's renewable energy development goal. The Additional Financing would be used for the implementation of activities which would scale-up impact and development effectiveness of the project. It will largely maintain the same project components as RERED further supporting the following six activities: (i) grid-connected power generation projects from renewable sources of energy; (ii) solar photo voltaic for household, commercial and institutional use; (iii) independent grid systems to further support commercialization of village hydro and other community based systems; (iv) energy efficiency and demand side management (DSM) with credit support for further private sector development for the provision of energy efficiency services; (v) cross-sectoral energy applications by providing credit support to rural enterprises to realize direct and indirect economic benefits of electrification and stimulating demand for electricity services; and (vi) technical assistance for various components of the project including support for the institutional and policy reform agenda of the Government. An indicative financing plan is as follows:

Indicative Financing Plan*

Amounts in US\$ million

Category	Indicative total		IDA	IDA balance	GEF balance	Co-financing**		
	Value	%				Sub-borrower	PCI	GoSL
Grid-connected RE power generation	60.0	58.5	28.0	0.0	0.0	25.0	7.0	0.0
Solar PV investments	35.5	34.6	11.0	0.0	0.1	3.0	15.9	5.5
Independent mini grid systems	1.7	1.7	0.5	0.0	0.8	0.3	0.1	0.0
Energy efficiency and DSM	1.0	1.0	0.5	0.0	0.0	0.4	0.1	0.0
Cross-sectoral energy applications	0.5	0.5	0.0	0.2	0.0	0.2	0.1	0.0
Technical assistance	3.8	3.7	0.0	3.0	0.2	0.6	0.0	0.0
Total	102.5	100	40.0	3.2	1.1	29.5	23.2	5.5

Note *: IDA is expected to provide US\$ 40 million for the Additional Financing Operation. However, by June 2007, an additional unutilized balance of roughly US\$ 4.3 million (US\$ 1.1 million GEF funds and US\$ 3.2 million IDA Credit) would also be available from the RERED project to support technical assistance activities and would be utilized over the implementation period of the Additional Financing.

Note**: Co-financing from Government of Sri Lanka, Sub Borrowers and PCIs- See Basic Project Data table.

Lessons Learned

16. The RERED Project took into account a rich menu of knowledge acquired from similar projects and reviews. These include the *Sri Lanka Energy Services Delivery Project*, as well as, *Rural Electrification: A Hard Look at Costs and Benefits; OED Précis, May 1995; Rural Energy and Development (World Bank Development in Practice, September, 1996; India Renewable Resources Development, Indonesia Solar Home Systems, Indonesia Renewable Energy Small Power and Energy, Poverty and Gender in Indonesia and Sri Lanka, May 2001*. The guiding principles for success that emerge from these studies are: providing consumer choice, ensuring cost reflective pricing, overcoming high first cost barrier, encouraging local participation, and implementing sound sector policies. Other lessons in respect of promoting renewables are notable: (i) encouraging greater non-utility participation; (ii) strategic mix of investments and capacity building seems essential to expand renewable energy use to a significant scale and be sustainable; and (iv) long-term commitment by Government and donors is required to mainstream renewable energy.

17. Leveraging on the accumulated RERED experience, the Additional Financing project further takes into account the following lessons learnt: (i) the availability of a local facility (NERD Centre) to test micro hydro turbines and induction generator controllers (IGCs) as well as solar home systems (SHS) components has helped the industries to improve quality standards, and avoid costly mistakes; (ii) formalization of systems, procedures and controls, the setting up of a specialized Village Hydro Working

Group (that represents a cross-section of stakeholders) and technical assistance for capacity building of developers, Electricity Consumers Societies (ECSs) and Federation of Electricity Consumer Societies (FECS) have led to significant improvements in the quality and sustainability of off grid village hydro (OGVH) projects. Non-PCIs have now become an important source of credit for OGVH; and (iii) the introduction of Finance Companies as a new category of PCIs, that meet the PCI criteria, has broadened the access to micro credit for SHS consumers.

Environmental and Social Safeguards

18. The safeguard category is B since the experience in the RERED project has shown that there are no significant adverse environmental and social issues in sub-projects financed under the credit line. Since the Additional Financing will be for similar sub-projects, it is not anticipated that there will be any significant adverse environmental and social issues. Most of the anticipated impacts are local, reversible and are proposed to be mitigated/minimized by addressing them through good environment and social management practices as being done under the RERED project. However, all sub-projects will undertake project specific EAs based on the Environmental and Social Safeguards Assessment & Management Framework (ESSAMF). The Framework is consistent with World Bank Safeguard policies and the National Environmental Act of Sri Lanka. The sub-project proponent will be responsible for preparing the EAs with assistance from consultants. The EAs will be reviewed by the Central Environmental Authority (CEA) or the project clearance agency (PCAs), as designated by the CEA as well as by the Environmental Consultants of the AU. EAs of mini hydro projects exceeding 5 MW and wind energy projects exceeding 10 MWs as well as biomass projects will be reviewed by IDA to ensure conformity with World Bank safeguard policies and concurred with prior to disbursement of funds from the credit line for these projects. In Sri Lanka the CEA and PCAs have a good record of environmental and social responsibility. The CEA also has the responsibility of monitoring EMPs. The ESSAMF, publicly disclosed in Sri Lanka in 2002 (for the RERED project) will again be placed in the public domain and comments from public consultation will be solicited.

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