

**INTEGRATED SAFEGUARDS DATA SHEET
APPRAISAL STAGE**

Report No.: ISDSA6453

Date ISDS Prepared/Updated: 16-Nov-2014

Date ISDS Approved/Disclosed: 17-Nov-2014

I. BASIC INFORMATION

1. Basic Project Data

Country:	Tuvalu	Project ID:	P144573
Project Name:	Energy Sector Development Project (P144573)		
Task Team Leader:	Roberto Gabriel Aiello		
Estimated Appraisal Date:	18-Nov-2014	Estimated Board Date:	26-Jan-2015
Managing Unit:	GEEDR	Lending Instrument:	Investment Project Financing
Sector(s):	Other Renewable Energy (80%), Energy efficiency in Heat and Power (20%)		
Theme(s):	Other rural development (50%), Other urban development (50%)		
Is this project processed under OP 8.50 (Emergency Recovery) or OP 8.00 (Rapid Response to Crises and Emergencies)?			No
Financing (In USD Million)			
Total Project Cost:	9.10	Total Bank Financing:	7.00
Financing Gap:	0.00		
Financing Source			Amount
BORROWER/RECIPIENT			0.00
International Development Association (IDA)			7.00
Energy Sector Management Assistance Program			2.10
Total			9.10
Environmental Category:	B - Partial Assessment		
Is this a Repeater project?	No		

2. Project Development Objective(s)

The project development objective is to enhance the energy security of Tuvalu by reducing its dependence on imported fuel for power generation, and improving the efficiency and sustainability of its electricity system.

3. Project Description

The proposed project, which is estimated to cost a total of USD 9.1 million, will include the following three components to be implemented by Tuvalu Electricity Corporation (TEC).

Component 1: Renewable Energy (RE) Investments. Estimated cost: USD 7.4 million. This component will finance the supply and installation of power generation and grid management equipment to increase the contribution of renewable energy in Tuvalu's hybrid generation system and to reduce diesel generation. The component will include: (i) solar photovoltaics (PV) (about 925 kilowatts peak) and wind-power generation (about 200 kilowatts); (ii) batteries, sufficient for the hybrid system's storage requirements, including the expected energy spillovers from the New Zealand Ministry of Foreign Affairs and Trade (NZMFAT) and United Arab Emirates Pacific Partnership Fund / Masdar solar PV systems that are now being built without storage; (iii) battery inverters and an integrated power-control system to provide grid stability, and other ancillary services; and (iv) a satellite-based communications system on Funafuti and three of the seven outer islands to enable TEC—with the support of external contractors and advisors, as needed—to remotely monitor, control and improve the operation and maintenance of its hybrid power system and enhance customer service. The contract for the implementation of the RE subcomponent will be awarded using the Bank's standard bidding document for Plant Design, Supply and Installation. Bidders will be responsible for the final design of the RE package—including the optimal combination of solar- and wind-power generation and storage—in order to deliver an RE penetration target of about 40 percent, taking into consideration the cost and technical characteristics of the equipment to be supplied and local conditions.

Component 2: Energy Efficiency Investments. Estimated cost: USD 1.2 million. This component will complement Component 1 by reducing energy demand and postponing the need for more costly future investments in generation. It will finance: (i) the supply and installation of prepayment meters for all TEC consumers and smart meters in the largest electricity consumers. Besides helping consumers to more effectively manage their electricity use, this investment would help TEC's demand-side management planning and considerably improve its revenue collection and overall financial status; and (ii) the implementation of selected energy-efficiency investments and measures in various large energy-consuming sectors that have been identified in energy audits and consultant studies as having the highest potential for electricity savings.

Component 3: Technical Assistance and Project Management Support. Estimated cost: USD 0.5 million. This component will finance training courses and other capacity-building activities for TEC and other Government of Tuvalu staff to strengthen their capability to manage and implement the various activities under the Project. A training needs assessment will identify the specific training and skills-enhancement activities. The component will also finance the establishment of an information system to improve TEC business management control and the conduction of technical and energy studies essential to the implementation of some of the Project's activities.

4. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

Tuvalu is a group of nine inhabited islands (4 reef islands and 5 coral atolls) with a land area of 26 km² and maximum elevation of 4.5 meters. Few atolls are more than 800 meters wide. Roughly half the country's population of some 9,847 lives on the main atoll, Funafuti. On the outer islands three-quarters of the people still live in traditional-style housing. Transport to the Outer Islands is by boat, and may take a week or more for a round trip from Funafuti. Tuvalu is vulnerable to sea level rise, and currently experiences surface flooding in low areas during king tides.

The communications equipment (very small aperture terminal (VSAT) equipment, including a 1.8 or 2.4 meter antenna and ancillary equipment) will be installed in three of the outer islands and on Funafuti. The exact location is not currently known, although locations on Government leased land will be prioritized.

While choices for electricity generation sites are severely limited by the general lack of available space, the atoll soil characteristics and low elevation, some potential sites have been preliminarily identified for the solar PV and wind-turbine installations. For solar: (i) distributed sites in urban Fogafale, on Funafuti atoll (e.g., near the sports grounds, TEC's rooftop, a brackish pond near the hog pens that currently receives untreated effluent from the pigs); and (ii) central PV at the northern tip of Fogafale. For wind: (i) distributed sites in the wharf area, and (ii) the northern tip of Fogafale. The solar arrays will be facing north and tilted at an angle of about 20 degrees, at which position they are expected to receive an average solar insolation of about 5.4 kWh/m²/sec. They would be attached to a floating pontoon if located in the pond. More detailed assessments will be carried out during project implementation to select the final sites.

Energy efficiency investments will all occur within Government or commercial buildings or sites in Fogafale. Prepayment meters will be installed in all TEC accounts, including residential homes.

5. Environmental and Social Safeguards Specialists

Penelope Ruth Ferguson (GENDR)

Ross James Butler (GSURR)

6. Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/ BP 4.01	Yes	Screening has identified some activities that may have a social or environmental impact. These include the installation of communications infrastructure, solar and wind electricity generation, energy efficiency investments and batteries. Some of these investments will not be confirmed until project implementation. Therefore an Environmental and Social Management Framework (ESMF) has been prepared that will provide assessment methods and other tools to apply to activities as they are identified, and prior to implementation. For activities that have already been identified, Codes of Practice have been annexed to the ESMF. The project will ensure that the TOR for the Technical Assistance under Component 3 include, as relevant, safeguards policies considerations and processes for environmental and social safeguard compliance.
Natural Habitats OP/BP 4.04	No	The project can be designed to avoid investment in areas that may cause adverse impacts on any natural habitats.
Forests OP/BP 4.36	No	There are no forests in the project area of

		influence.
Pest Management OP 4.09	No	No use or procurement of pesticides is required.
Physical Cultural Resources OP/ BP 4.11	No	The project can be designed to avoid activities that could impact on physical cultural resources. A Code of Practice for Cultural Heritage (Physical Cultural Resources) forms part of the ESMF and includes chance-find procedures.
Indigenous Peoples OP/BP 4.10	No	There are no groups of people present in, or have collective attachment to, the project area that meet the criteria of this policy.
Involuntary Resettlement OP/BP 4.12	Yes	Improvements to the communications system and solar and wind electricity generation equipment will require installation of some physical infrastructure. Although the expected land requirement is very low, some land is likely to be required. Both voluntary land donations and involuntary land acquisition are provided for in the project safeguard documents. The ESMF provides a detailed process for Voluntary Land Donation including assessment against criteria established by the Voluntary Land Donation Protocol in the Environment & Social Instruments for the Pacific. The project Resettlement Policy Framework (RPF) was prepared and disclosed to the public in Tuvalu on August 16, 2013, and to the general public through the World Bank's InfoShop website on August 27, 2013 includes the activities for the Tuvalu Aviation Investment Project. The two projects were integrated into the one RPF due to the small nature of impacts for both projects and the ability to consult and disclose to the community at the same time. The RPF provides the detailed steps to be taken when any land is involuntarily acquired.
Safety of Dams OP/BP 4.37	No	This project does not include any dam structures.
Projects on International Waterways OP/BP 7.50	No	There are no international waterways within the area of influence of the project.
Projects in Disputed Areas OP/BP 7.60	No	This project is entirely in Tuvalu and there are no disputed areas.

II. Key Safeguard Policy Issues and Their Management

A. Summary of Key Safeguard Issues

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

<p>There are no potentially large scale, significant and / or irreversible impacts. The key issues are:</p> <ol style="list-style-type: none"> 1) The use of land for infrastructure. Land is scarce, particularly land that is considered 'fertile' or 'high' above sea level. There are many competing demands for land. The ESMF and RPF have detailed procedures for site selection and acquisition. Government leased land will be prioritized. The project design is addressing this issue by ensuring that there are multiple purposes to solar structures (such as animal shelters or recreational facilities) or that low value areas could be used (such as floating solar panels on the brackish ponds that currently receive animal effluent). 2) The source of aggregates for construction. There are no sustainable sources of aggregate on the Funafuti atoll. Recycled or imported aggregates will be used on the project, rather than sand or muds mined from beaches or the lagoon. 3) The production of waste. There is no sanitary landfill on Funafuti, and no safe way to dispose of wastes, particularly hazardous wastes. All waste, including infrastructure and equipment such as batteries at the end of their useful life and light bulbs from the energy efficiency upgrades, will be removed from the country for recycling or safe disposal. 4) Social acceptance of pre-pay meters. Consultation and education of consumers will happen through the project consultations, information supplied in the annual tariff review that TEC delivers to all consumers. Educating consumers on how they can reduce their energy consumption and have access to payment/top-up facilities will help encourage them to make the transition. Consumers will be incentivized by TEC providing the equivalent of one month's electricity use upfront when they transfer to the new system. 5) Improvements to the communications system and solar and wind electricity generation equipment will require installation of some physical infrastructure which will require some small land parcels. The project Resettlement Framework established detailed requirements for the preparation of Resettlement Plans where involuntary land acquisition is proposed. The ESMF established detailed procedures to be followed if voluntary land donation is proposed.
<p>2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:</p>
<p>None, other than as described above.</p>
<p>3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.</p>
<p>Many locations have been assessed for solar and wind electricity generation. The locations are constrained by the lack of 'spare' available land. Some roof top solar options have been ruled out because of lack of suitable structures. One solar site has been ruled out because of the need to connect to the Funafuti grid by cable across the reef.</p>
<p>4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.</p>
<p>The borrower will use the existing Project Management Unit (PMU) for the Tuvalu Aviation Infrastructure Investment Project, and the PMU will employ a part time Safeguards Advisor under this project. The Safeguards Advisor will assist the PMU and TEC to meet their responsibilities for safeguards. TEC currently has limited capacity to implement the tasks and processes described in the ESMF, RPF and Gender Action Plan, and therefore will require training in the initial phases of the Project and ongoing support by the World Bank task team (along with the support from the</p>

Safeguards Advisor).
5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.
<p>The key stakeholders are electricity consumers. People potentially affected by infrastructure investments have not been identified because the sites are yet to be selected.</p> <p>A Resettlement Policy Framework was prepared and disclosed to the public in Tuvalu on August 16, 2013, and to the general public through the World Bank's InfoShop website on August 27, 2013. A draft ESMF was prepared and provided to the Bank in November 2013.</p> <p>A public consultation workshop was held at the Vaiaku Lagi Hotel, Funafuti, on 6 August 2014. The purpose of the workshop was to present information on the project, the RPF, the ESMF and the Tuvalu Gender and Energy Scoping Study. Participants were staff of Government agencies, donor staff, NGO representatives and business owners / managers. A Public Information Bulletin (PIB) was prepared (in English and Tuvaluan) to describe the ESDP and how the environmental and social issues and impacts would be managed. This PIB was distributed to the attendees. English versions of the draft ESMF and final RPF were made available in hard copy. Feedback was generally supportive, although there were many questions about the prepayment system, the affordability, ensuring convenience of purchasing prepay cards, the benefits of avoiding late payment fees and the incentives for being efficient with energy. Participants were also interested in how land would be selected for infrastructure installation, and recommended that low fertility land should be prioritized.</p> <p>The feedback has been incorporated into project design, the Gender Action Plan and the final ESMF. The RPF did not need updating. The PIB was released to the Tuvalu News (Tuvalu Media Corporation) on August 9, 2014.</p>

B. Disclosure Requirements

Environmental Assessment/Audit/Management Plan/Other	
Date of receipt by the Bank	12-Nov-2014
Date of submission to InfoShop	17-Nov-2014
For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors	
"In country" Disclosure	
Tuvalu	17-Nov-2014
<i>Comments:</i> The draft ESMF was disclosed on August 6, 2014. The final ESMF was disclosed on November 17, 2014.	
Resettlement Action Plan/Framework/Policy Process	
Date of receipt by the Bank	19-Aug-2013
Date of submission to InfoShop	22-Oct-2013
"In country" Disclosure	
Tuvalu	19-Aug-2013
<i>Comments:</i>	
If the project triggers the Pest Management and/or Physical Cultural Resources policies, the respective issues are to be addressed and disclosed as part of the Environmental Assessment/Audit/or EMP.	

If in-country disclosure of any of the above documents is not expected, please explain why:

C. Compliance Monitoring Indicators at the Corporate Level

OP/BP/GP 4.01 - Environment Assessment			
Does the project require a stand-alone EA (including EMP) report?	Yes [<input checked="" type="checkbox"/>]	No [<input type="checkbox"/>]	NA [<input type="checkbox"/>]
If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?	Yes [<input checked="" type="checkbox"/>]	No [<input type="checkbox"/>]	NA [<input type="checkbox"/>]
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?	Yes [<input type="checkbox"/>]	No [<input type="checkbox"/>]	NA [<input checked="" type="checkbox"/>]
OP/BP 4.12 - Involuntary Resettlement			
Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared?	Yes [<input type="checkbox"/>]	No [<input type="checkbox"/>]	NA [<input checked="" type="checkbox"/>]
If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?	Yes [<input type="checkbox"/>]	No [<input type="checkbox"/>]	NA [<input checked="" type="checkbox"/>]
The World Bank Policy on Disclosure of Information			
Have relevant safeguard policies documents been sent to the World Bank's Infoshop?	Yes [<input checked="" type="checkbox"/>]	No [<input type="checkbox"/>]	NA [<input type="checkbox"/>]
Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?	Yes [<input checked="" type="checkbox"/>]	No [<input type="checkbox"/>]	NA [<input type="checkbox"/>]
All Safeguard Policies			
Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?	Yes [<input checked="" type="checkbox"/>]	No [<input type="checkbox"/>]	NA [<input type="checkbox"/>]
Have costs related to safeguard policy measures been included in the project cost?	Yes [<input checked="" type="checkbox"/>]	No [<input type="checkbox"/>]	NA [<input type="checkbox"/>]
Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?	Yes [<input checked="" type="checkbox"/>]	No [<input type="checkbox"/>]	NA [<input type="checkbox"/>]
Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?	Yes [<input checked="" type="checkbox"/>]	No [<input type="checkbox"/>]	NA [<input type="checkbox"/>]

III. APPROVALS

Task Team Leader:	Name: Roberto Gabriel Aiello	
<i>Approved By</i>		
Practice Manager/ Manager:	Name: Julia M. Fraser (PMGR)	Date: 17-Nov-2014