



RESTRUCTURING PAPER
ON A
PROPOSED PROJECT RESTRUCTURING
OF
ENERGY SECTOR DEVELOPMENT PROJECT
APPROVED ON JANUARY 26, 2015
TO
GOVERNMENT OF TUVALU

ENERGY & EXTRACTIVES

EAST ASIA AND PACIFIC

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BASIC DATA

Product Information

Project ID P144573	Financing Instrument Investment Project Financing
Original EA Category Partial Assessment (B)	Current EA Category Partial Assessment (B)
Approval Date 26-Jan-2015	Current Closing Date 31-Mar-2019

Organizations

Borrower Government of Tuvalu	Responsible Agency Tuvalu Electricity Corporation
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Project Development Objective (PDO)

Original PDO

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

Summary Status of Financing

Ln/Cr/Tf	Approval	Signing	Effectiveness	Closing	Net Commitment	Disbursed	Undisbursed
IDA-D0290	26-Jan-2015	25-Feb-2015	06-May-2015	31-Mar-2019	7.00	.42	6.40
TF-18949	25-Feb-2015	25-Feb-2015	06-May-2015	31-Mar-2019	2.10	.12	1.98

Policy Waiver(s)

Does this restructuring trigger the need for any policy waiver(s)?

No



1. PROJECT STATUS AND RATIONALE FOR RESTRUCTURING

A. Project Status

1. The project, the first World Bank (WB) energy project in Tuvalu, was approved on January 26, 2015, with two sources of funding: (i) International Development Association (IDA) grant equivalent to US\$7 million; and (ii) Small Island Development States Initiative (SIDS DOCK) grant in the amount of \$2.1 million (TF018949). The project became effective on May 6, 2015.
2. Project performance and overall status: The rating of progress towards achievement of PDO is Moderately Satisfactory. Implementation progress, however, was until December 2018 rated Moderately Unsatisfactory due to the amount of time required to recruit the Project Implementation Unit (PIU) staff and conclude major procurement activities which are illustrative of the difficulty of implementation in such a small and remote market. The WB team arranged with the PIU various remedy measures that have improved implementation, including: (i) a palliative agreement with the WB Tuvalu Aviation Investment Project (TvAIP) to cover the project's fiduciary aspects; (ii) the recruitment of an international additional part-time implementation support officer since September 2018; and (iii) relaxing technical and financial requirements in the procurement process to the extent of the WB procurement procedures and guidelines. Given the progress in 2018, the rating of implementation progress was upgraded from Moderately Unsatisfactory to Moderately Satisfactory in December 2018.
3. The slow and poor quality of procurement documents has been observed since an early phase of the implementation. While procurement remains a significant area of weakness in the project implementation, there has been promising progress since late 2018 including on the two major procurements packages: (i) the contract for the procurement of prepayment meters is ready and expected to be signed in February 2019 ; (ii) the WB has provided the No Objection (NO) to the Bid Evaluation Report (BER) for the solar power plant, submitted in December 2018, the selected bidder was notified in January 2019, and the contract is expected to be signed in March 2019. While the project has only disbursed 6 percent of the total budget, by signing these two contracts the commitment rate will reach 60% of the project funds. The implementation of the activities under these contracts will require additional time to compensate for initial delays.
4. **Progress by component.**
 - a) **Component 1: Renewable Energy (RE) Investments.** The major RE investment is the design, supply, and build of 700 kW Solar PV Facility with 1 MWh storage system. The bidding was held in May 2018, and the evaluation was completed in December 2018. The current timeline envisages the successful bidder mobilizing in May 2019. The construction will take ten months.
 - b) **Component 2: Energy Efficiency (EE) Investments.** The major EE investment is the supply and installation of prepayment meters. The initial shopping exercise for the procurement of the prepayment meters was abandoned in June 2017. A second attempt was made in late 2017 and was also unsuccessful. The specifications were comprehensively reviewed, and the technical requirements were relaxed to encourage more bidders and improve the possibility of compliance. The prepayment meters were advertised for the third time in July 2018, and the successful bidder was finally notified of the contract award in November 2018. The contract is expected to be signed in February 2019.
 - c) **Component 3. Technical Assistance and Project Management Support.** The local project implementation officer has been on leave due to illness. The role was aimed at providing back up to the Project Manager during periods of absence due to Tuvalu Electric Company (TEC) work commitments. The international



implementation officer, who was recruited in September 2018, takes this role and has been accelerating the procurements. In addition, TEC plans to recruit a local implementation supporter, who will become increasingly important as the major contracts under the project go into the implementation phase.

5. **Safeguards.** Overall safeguards rating is moderately satisfactory. The Project was approved as a category B project for environmental and social safeguard purposes. An Environmental and Social Management Framework (ESMF) has been developed, and the project has been implemented in accordance with the ESMF and the WBG's environmental and social safeguards policies and requirements. TEC's safeguard adviser is currently finalizing an Environmental and Social Management Framework (ESMP) to inform the solar PV contractor of the specific mitigation measures required.
6. **Fiduciary capacity and support.** Financial Management (FM) rating is now Moderately Satisfactory. This is an improvement in the past performance rating which had been rated Moderately Unsatisfactory due to lack of progress in reporting. Since the establishment of the agreement with TvAIP to provide FM support, continued improvements have been noted. There are no overdue Audit or Interim Financial Reports. The designated account of IDA D0290 has been inactive for 7 months, and that of TF018949, 34 months. The advanced payments for the prepayment meters and solar PV facility are expected to be made in March and April 2019 through the designated accounts of IDA D0290 and TF018949 respectively. Although procurement rating is Moderately Unsatisfactory, the new international implementation officer is working on the improvement in this area. Once such improvements are confirmed in the following procurements, the upgrade of procurement rating will be discussed.
7. **Legal Covenants.** The project is in full compliance with legal covenants.

B. Rationale for restructuring

8. The first restructuring extended the closing date of the SIDS DOCK trust fund (TF018949) grant from its original closing date of December 31, 2017, to March 31, 2019 to align it with the current closing date of the IDA grant (P144573). SIDS DOCK funds represent 23 percent of total project funding (US\$2.1 million) while the IDA grant represents the remaining 77 percent (US\$7 million).
9. The Mid-Term Review (MTR), which was conducted in July 2018, determined that additional time would be needed for the completion of the renewable energy investments that account for 80% of the project budget. The Project Implementation Unit (PIU) has suffered several setbacks over the course of project implementation due to the lack of experience and availability of staff. The second restructuring proposes to extend the project closing date for 18 months from March 31, 2019, to September 30, 2020, to allow for the implementation and completion of project activities. The IDA and SIDS DOCK grants will be extended by 18 months and eight months respectively.
10. The budget allocation and result framework will also be revised to account for the changes.

2. DESCRIPTION OF PROPOSED CHANGES

A. Summary of proposed changes

11. **Extension of the project closing date.** The proposed change includes an 18-month extension of the project closing date from March 31, 2019, to September 30, 2020. While the IDA grant will be extended equally by 18 months as the project, the SIDS Dock grant will be extended only by eight months to November 30, 2019, considering that the



activity under the SIDS Dock grant is scheduled to be completed more than ten months earlier than the proposed project closing date.

12. **Budget reallocation between components.** US\$0.5 million will be shifted from component 2 to component 3. There is no change in disbursement categories.
13. **Revision of the result framework.** The indicators and target values will be revised to reflect the changes.
14. **Revision of disbursement estimates** to align with the revised implementation schedule.

B. Detailed description of the proposed changes

15. **18-month extension of the project and IDA grant.** Since the MTR determined that an extension would be required, an assessment of the time needed to complete implementation was conducted during the mission in November 2018. It appears that: (i) the construction of the solar and storage facilities will begin in May 2019 and is expected to be completed in March 2020; (ii) the installation of the pre-payment meters will begin in June 2019 and is expected to be completed in September 2019; and (iii) the construction of the remaining additional renewable energy or/and battery storage capacity will begin in September 2019 and is expected to be completed in June 2020. Considering potential delays in procurements and implementation, an 18-month extension of the closing date to September 2020 was requested by the client. This is the first extension of the project closing date and IDA grant.
16. **Eight-month extension of SIDS Dock grant.** The undisbursed fund of the SIDS Dock Grant will be used for the advanced payment and the second payment of the solar and storage facilities contract. The advanced and the second payment amounts respectively to US\$2 million and US\$0.5 million and are expected to be made in April 2019 and September 2019. Considering potential delays during construction, an eight-month extension to November 30, 2019 is proposed for the grant closing date. The cumulative extension period for SIDS Dock grant will be 23 months.
17. The Project Development Objective continues to be relevant and achievable. An action plan to complete the implementation has been agreed with the implementing agency. The performance of the implementing agency remains Moderately Satisfactory, and the measures to improve the project management and performance of procurement are in place and effective. This restructuring does not require any changes to the existing safeguard instruments, which remain relevant.
18. **Budget reallocation from Component 2 to 3.** The proposed change is summarized in the following table.

Table 1. Component and Budget

Component		Current budget (US\$M)	Revised budget (US\$M)	Remarks
1	Renewable Energy Investments	7.4	7.4	-
2	Energy Efficiency Investments	1.2	<u>0.7</u>	Saving from the successful bidding of the prepayment meters and the utilization of another fund source for cool rooms



3	Technical Assistance and Project Management Support	0.5	<u>1.0</u>	For the longer implementation period and additional project implementation supporter
Total		9.1	9.1	-

19. **Changes in the PDO Indicators.** The third indicator “*projected lifetime fuel savings*” will be deleted because the value of fuel saving is essentially equivalent to the fourth indicator “*projected lifetime energy savings*”. The end target of the projected lifetime energy savings will be revised from 1.724 MWh to 13,140 MWh. The original end target was calculated based on two-year output since only two years of measurement was anticipated over the four-year project lifetime (two-year construction and two-year monitoring). However, considering the common and generally accepted definition of a lifetime data measurement and the fact that the long-term energy savings can be projected based on the result of commissioning tests and available solar radiation data, it is more suitable to cover the lifetime of the erected facilities. End of project target dates will be adjusted accordingly to the extended closing date.

Table 2. PDO Indicators

Original PDO Indicators and End Target		Revised PDO Indicators and End Target	
Direct project beneficiaries	1,500 households	Direct project beneficiaries	1,500 households
Female beneficiaries	50 %	Female beneficiaries	50 %
Projected lifetime fuel savings	15,693,382 MJ	<u>Deleted</u>	-
Projected lifetime energy savings	1,724 MWh	Projected lifetime energy savings	<u>13,140 MWh</u>
Debtor days	10 days	Debtor days	10 days

20. **Changes in the Intermediate Indicators.** The first indicator is equivalent to one of the Corporate Result Indicators (CRIs) used today. It will be converted to the CRI. The end target value will also be adjusted considering that the battery storage is implemented together with renewable energy power plants. Technical and economic analysis indicated that the power system of Tuvalu needs battery storage to reduce the curtailment of solar PV output and maximize the energy saving from the use of new and the existing solar power plants. Therefore, it confirms and contributes more to the achievement of the PDO to set a target of the storage capacity of the battery and monitor it rather than focusing only on generation capacity.

Table 3. Intermediate Indicators

Original Intermediate Indicators and End Target		Revised Intermediate Indicators and End Target	
Generation Capacity of Renewable Energy (other than hydropower) constructed	1.13 MW	<u>Renewable energy generation capacity (other than hydropower) constructed under the project (CRI)</u>	<u>0.75 MW</u>



		<u>Storage capacity of battery constructed</u>	<u>1 MWh</u>
Enable remote monitoring of RE Projects in 3 outer islands	100 %	Enable remote monitoring of RE Projects in 3 outer islands	100 %
Percentage of customers with prepaid meters	100 %	Percentage of customers with prepaid meters	100 %
Prepaid Customers Feedback	50 %	Prepaid Customers Feedback	50 %
Achievement of agreed Training Plan	100 %	Achievement of agreed Training Plan	100 %

21. **Change in Disbursement Estimates.** Disbursement estimates will be updated as part of this restructuring based on the past disbursements made and future disbursements projected according to the procurement plan for the remaining project activities.

3. SUMMARY OF CHANGES

	Changed	Not Changed
Results Framework	✓	
Components and Cost	✓	
Loan Closing Date(s)	✓	
Disbursement Estimates	✓	
Implementation Schedule	✓	
Implementing Agency		✓
DDO Status		✓
Project's Development Objectives		✓
Cancellations Proposed		✓
Reallocation between Disbursement Categories		✓
Disbursements Arrangements		✓
Overall Risk Rating		✓
Safeguard Policies Triggered		✓
EA category		✓
Legal Covenants		✓



Institutional Arrangements		✓
Financial Management		✓
Procurement		✓
Other Change(s)		✓
Economic and Financial Analysis		✓
Technical Analysis		✓
Social Analysis		✓
Environmental Analysis		✓

IV. DETAILED CHANGE(S)

COMPONENTS

Current Component Name	Current Cost (US\$M)	Action	Proposed Component Name	Proposed Cost (US\$M)
Renewable Energy Investments	7.40	No Change	Renewable Energy Investments	7.40
Energy Efficiency Investments	1.20	Revised	Energy Efficiency Investments	0.70
Technical Assistance and Project Management Support	0.50	Revised	Technical Assistance and Project Management Support	1.00
TOTAL	9.10			9.10

LOAN CLOSING DATE(S)

Ln/Cr/Tf	Status	Original Closing	Revised Closing(s)	Proposed Closing	Proposed Deadline for Withdrawal Applications
IDA-D0290	Effective	31-Mar-2019		30-Sep-2020	30-Jan-2021
TF-18949	Effective	31-Dec-2017	31-Mar-2019	30-Nov-2019	30-Mar-2020

DISBURSEMENT ESTIMATES

Change in Disbursement Estimates

Yes



The World Bank

Energy Sector Development Project (P144573)

Year	Current	Proposed
0000	0.00	0.00
2015	100,000.00	0.00
2016	1,900,000.00	481,594.00
2017	6,000,000.00	0.00
2018	1,000,000.00	56,459.30
2019	100,000.00	2,140,486.68
2020	0.00	3,852,876.02
2021	0.00	2,568,584.00



Results framework

COUNTRY: Tuvalu

Energy Sector Development Project

Project Development Objectives(s)

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

Project Development Objective Indicators by Objectives/ Outcomes

Indicator Name	DLI	Baseline	Intermediate Targets			End Target
			1	2	3	
To enhance Tuvalu's energy security by reducing its dependence on imported fuel for power generation						
Direct project beneficiaries (Number)		0.00	200.00			1,500.00
Action: This indicator has been Revised	Rationale: End of project target date is adjusted accordingly to the extended closing date.					
Female beneficiaries (Percentage)		0.00				50.00
Action: This indicator has been Revised						
Projected lifetime fuel savings (Mega Joules (MJ))		0.00	0.00	0.00	7,064,047.00	15,693,382.00
Action: This indicator has been Marked for Deletion	Rationale: The third PDO indicator "projected lifetime fuel savings" is deleted because the value of fuel saving is essentially equivalent to the forth indicator "projected lifetime energy savings".					



Indicator Name	DLI	Baseline	Intermediate Targets			End Target
			1	2	3	
Projected lifetime energy savings (Megawatt hour(MWh))		0.00	12,264.00			13,140.00
Action: This indicator has been Revised	Rationale: <i>The original end target was calculated based on two-year output since only two years of measurement was anticipated over the project four years lifetime (two-year construction and two-year monitoring). However, considering the common and generally accepted definition of a lifetime data measurement, the end target is recalculated as below: 750kW x 8760hours x 10% capacity factor x 20years</i>					
Debtor days (Days)		100.00	80.00	30.00		10.00
Action: This indicator has been Revised	Rationale: <i>End of project target date is adjusted accordingly to the extended closing date.</i>					

Intermediate Results Indicators by Components

Indicator Name	DLI	Baseline	Intermediate Targets			End Target
			1	2	3	
Component 1. Renewable Energy Investments						
Generation Capacity of Renewable Energy (other than hydropower) constructed (Megawatt)		0.00	0.00	0.00	1.13	1.13
Action: This indicator has been Marked for Deletion	Rationale: <i>This indicator is converted to the essentially equivalent Corporate Result Indicator.</i>					



Indicator Name	DLI	Baseline	Intermediate Targets			End Target
			1	2	3	
Generation Capacity of Renewable Energy constructed – Wind (Megawatt)		0.00	0.00	0.00	0.20	0.20
Action: This indicator has been Marked for Deletion						
Generation Capacity of Renewable Energy constructed- Solar (Megawatt)		0.00	0.00	0.00	0.93	0.93
Action: This indicator has been Marked for Deletion						
Enable remote monitoring of RE Projects in 3 outer islands (Percentage)		0.00				100.00
Action: This indicator has been Revised	Rationale: End of project target date is adjusted accordingly to the extended closing date.					
Generation capacity of energy constructed or rehabilitated (CRI, Megawatt)		0.00	0.70			0.75
Action: This indicator is New	Rationale: The original indicator is converted to the Corporate Result Indicator. The target value is also adjusted considering that the battery storage is implemented together with renewable energy power plants.					
Renewable energy generation capacity (other than hydropower) constructed under the project (CRI, Megawatt)		0.00	0.70			0.75



Indicator Name	DLI	Baseline	Intermediate Targets			End Target
			1	2	3	
Action: This indicator is New						
Storage capacity of battery constructed (Megawatt hour(MWh))		0.00				1.00
Action: This indicator is New						
Component 2. Energy Efficiency Investments						
Percentage of customers with prepaid meters (Percentage)		0.00	50.00			100.00
Action: This indicator has been Revised	Rationale: End of project target date is adjusted accordingly to the extended closing date.					
Prepaid Customers Feedback (Percentage)		0.00				50.00
Action: This indicator has been Revised						
Component 3. Technical Assistance and Project Management Support						
Achievement of agreed Training Plan (Percentage)		0.00	30.00	65.00		100.00
Action: This indicator has been Revised	Rationale: End of project target date is adjusted accordingly to the extended closing date.					



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