

TUVALU

Energy Sector Development Project (P144573) Implementation Support Mission

May 3 - 6, 2022

AIDE-MÉMOIRE

Team Leader(s): Leopold Sedogo
Country: Tuvalu

Key Project Data

Project Number	P144573	Grant Numbers	IDA-D0290, TF-18949	Closing Date	30-Sep-2022
Total Financing	US\$9.06 m	Counterpart Financing	US\$0	Total Disbursements	US\$4.42 m
Board Approval Date	26-Jan-2015	Date of Last Mission	24-Nov-2021	Mission Start Date	3-May-2022
Effectiveness Date	06-May-2015	Site Visit Date	NA	Mission End Date	6-May-2022

Project Development Objective

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.

Introduction

1. A World Bank (WB) energy sector mission¹ was conducted virtually with various stakeholders from Funafuti, Tuvalu, from May 3 to 6, 2022. The mission’s objectives were to assess and discuss: (i) the ongoing impact of COVID-19 on the progress of the Project; (ii) the status of implementation of the 768kW Solar Photovoltaic (PV) plant and prepayment meters; (iii) the proposed site for the solar arrays; and (v) agree on an action plan to keep the Project moving towards the achievement of the PDO by the closing date; (vi) project extension

2. The WB team virtually met with the Acting CEO of the Ministry of Finance and Economic Development (MFED) and the Acting CEO of the Ministry of Transport, Energy and Tourism

¹ The mission comprised; Mr. Leopold Sedogo (Task Team Leader, Senior Energy Specialist), Mr. Hiroaki Yamada (Senior Power Engineer), Mr. Nicholas Williams (Acting Procurement Specialist), Mr. Qingyuan Wang (Energy Consultant), Ms. Sharon Louise Riley (Implementation Support Specialist), Ms. Fiona Bingham (Team Assistant), Mr. Muzaffar Ahmad (Environment Specialist), Mr. Ian Hay (Consultant - social risk management and standards), and Mr. Fakavae Taomia (Liaison Officer for Tuvalu).

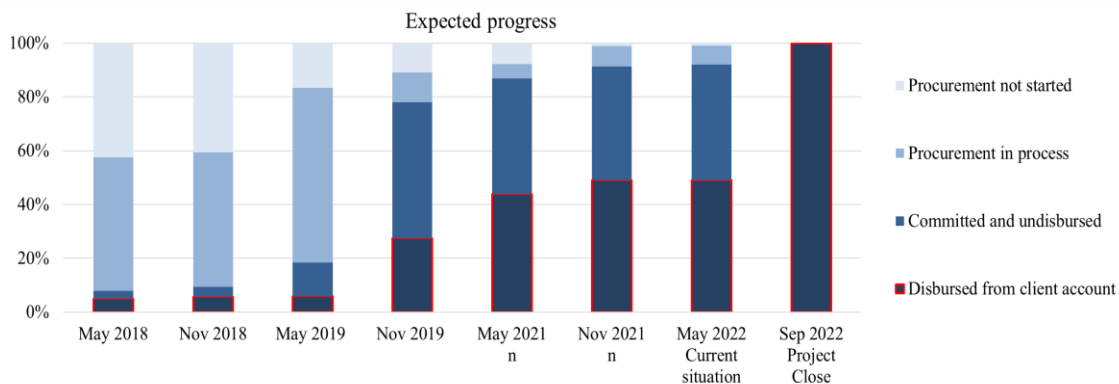
(MTET), among others. A list of persons virtually met is attached as Annex 1. The WB wishes to express its appreciation for the cooperation, support and hospitality extended during the mission.

3. **Overall Progress of Implementation:** COVID-19 continues to impact the implementation progress with the borders still closed. The latest information from the Government of Tuvalu (GoT) was that the earliest possible date for border opening will be in August 2022. The equipment for Battery Energy Storage System (BESS), the solar PV panels and the PV structures are all now in Tuvalu in secure storage. Along with prepayment meters, these two contracts comprise 65 percent of the total budget, and with activity currently halted, it has and will continue to make a significant impact on the annual disbursement rate until the work can get underway. Cabinet officially endorsed the site for the PV facility on March 23, 2022, which is a positive step and it means that once borders are open work can quickly commence. This final decision on the site means work can now start on the final design of the facility and work is already underway on updating the Environmental and Social Management Plan (ESMP).

4. This Aide Memoire provides a summary of conclusions reached during the mission.

Key Issues

5. **Disbursement:** The disbursement rate is 50.49%, and the commitment rate is over 80 percent. The Small Islands Developing States Initiatives Grant Trust Fund (SIDSDOCK TF) co-funding the project with US\$2.1 million closed in November 2019 and was 100% disbursed. The IDA funding disbursement rate remains at 35.27%. Repatriation flights commenced in May 2022 but the earliest date for the borders to re-open according to current Ministry of Health forecasts is late August with quarantine requirements. This should see an increase in the disbursement rate as materials and specialists are able to enter Tuvalu and resume work.



6. **Progress of Key procurements:** As noted above, the two major procurement activities, the prepayment meters and the PV Solar facility contracts are in place, but Tuvalu based work is currently on hold until the borders are open. Negotiations with the contractor (Infratech) are ongoing in respect to the delay in installation and any variations that may be required to ensure installation commences as soon as borders are opened. With the site now approved by Cabinet, Infratech can commence further design and finalise once a site visit can be conducted.

7. **Land for solar PV:** The previous mission agreed to prioritize a final decision on the site for the PV facility with a strong preference for an alternative plot of land on the ocean side of the island which is owned by the GoT. Cabinet has already approved this site and a Cabinet Decision was provided to the task team (detailed location in Annex 3). The ESMP is being updated to summarise a site options assessment with respect to safeguards issues to ensure all options including involuntary resettlement (economic displacement) have been fully investigated and assess the impact on the site. This activity may take some time, but the new Safeguards Specialist is now working closely with the Project Officer in Tuvalu. The main issue that may arise is that around a hundred of pig pens are currently located in this area which will need to be relocated temporarily during the construction and will require resettlement support, including compensation to fully restore or improve standards. Discussions with owners is currently underway.

8. **Project closing date extension:** Given the prolonged impact of COVID-19 and travel restriction on border, the construction work for solar PV on-site has not started yet. Furthermore, it is expected that additional time will be required for the preparation of the site for PV installation such as environmental and social activities and detailed design of the PV facilities. The project closing date is currently at the end of September 2022. The GoT has already submitted a request for an extension of 18 months from the Bank on 3 June 2022 to ensure the PDO is achieved before the new proposed closing date of 20 March 2023. To assess the detail and realize project extension, the client is currently working on the following actions: i) conduct a preliminary environmental and social studies to ensure the viability of the new agreed site to update ESMP; ii) promote detailed design and identify technical challenges and measures; iii) provide written evidence that the site is confirmed by Cabinet by obtaining an official document from the GoT; iv) undertake consultations with stake holders; v) update project implementation schedule and budget; and vi) prepare sufficient documents and information on the justification for project restructuring.

9. **Project Management:** The Project Management Unit (PMU) is now fully staffed with the necessary specialists following the engagement of a new Safeguards Specialist early this year. The Safeguards Adviser with the newly established Central Project Management Office (CPMO) was able to provide two possible candidates and one is already on board. The CPMO has been established within the MFED to provide advice, training and standard reporting in financial

management, procurement, environmental and social safeguards and monitoring and evaluation to all WB projects in Tuvalu. The Director of the CPMO took an active part in the mission and noted that they have already conducted training in Financial Management (FM) which the Project Bookkeeper took part in.

Implementation Status by Components

8. Component 1: Renewable Energy (RE) Investments

- a) 768 kW solar PV and 2 MWh battery storage. This component is for the design, supply, and build of a 768 kW Solar PV Facility with a 2 MWh BESS. This will be the largest RE facility in the country and increase the country's RE penetration ratio from 8 percent to 20 percent. The contract for the solar PV facility is with a New Zealand based contractor, Infratech. The BESS and communications system equipment has been landed in Tuvalu along with 12 containers of solar panels and 4 containers with the PV support structure. Due to the closed borders, a large amount of major installation works is currently on hold until such time as border restrictions are eased. Tuvalu Electricity Corporation (TEC) have completed the first charge of BESS working under remote instruction from the contractor to ensure the warranty is kept effective. It is hoped this will not be necessary again but due to ongoing border closures may be required. TEC continues to negotiate with the Contractor in terms of possible cost increases due to impacts of COVID-19.
- b) Radio communication systems in outer islands. All equipment was received in late 2019 just before border closure and is now securely stored. Installation by the contractor cannot occur until the border between Tuvalu and Fiji is open which is expected in late 2022.
- c) Feasibility Study – Floating Solar PV on the Funafuti lagoon
Ciel and Terre, a specialist floating PV consultant, has been engaged to undertake this activity and have submitted a Progress Report in October 2021 which also identifies an appropriate site. Site visits will be conducted, and the feasibility study completed upon the opening of borders as agreed in the contract. For reference, Asian Development Bank (ADB) is conducting a relative study at regional level, while the study from the WB is more country specific and detailed. ADB is also implementing 100 kW floating solar PV pilot project at the pond on Funafuti Island, expecting to deploy similar scheme to the lagoon in the future. A mapping exercise may need to be undertaken to ensure activities are not duplicated.

9. Component 2: Energy Efficiency (EE) Investments

- a) Supply and installation of prepayment meters: No further progress has been made since the last mission in November 2021 and the Project is currently waiting for the borders to open to finish the Outer Islands installation, software, and training.
- b) Window tinting for Energy efficiency in the Government Building and the Hospital: The Government Building window tinting contract is completed. All materials for the tinting of additional sites - the convention centre, the hospital, and the tower and VIP room at the new airport terminal – are in Tuvalu awaiting the commencement of flights to enable the contractors to arrive from Fiji.
- c) E-mobility: A contract has now been signed for the supply of 12 electric motorcycles. The motorcycles are expected to arrive during the third quarter of 2022. The E-mobility activity was agreed as a Pilot Project under the current project and will be comprised of 12 electric motorcycles, 12 sets of batteries, and two battery charging stations. Considering the large volume use of gasoline for motorcycles and the country’s renewable energy resources, e-mobility investment can contribute to further renewable energy usage and energy efficiency in Funafuti. Leveraging e-mobility for development and climate is also aligned with the WB strategy on lending operations.
- d) Additional Procurement
A forecast of total expenditure is updated on a regular basis. Due to current forecast savings of almost USD0.5million in the concluded and projected procurements, there is room for additional procurements to enhance value to the current activities in line with the PDO. TEC have proposed several small-scale procurements which have been approved by the WB. These include the supply of testing equipment and funding for a Study Tour to Niue on solar PV system management at a combined cost of USD60k. Given that there will be additional costs incurred under existing contracts due to delays in work and changing conditions, close budget monitoring is needed until work recommences and actual costs become clearer.

10. Component 3. Technical Assistance and Project Management Support.

- a. The PMU is made up of TEC’s General Manager acting as Project Manager, a Procurement Adviser, a Safeguards Adviser, an Implementation Support Adviser, an Energy Specialist, a Project Implementation Officer, and the shared Bookkeeper. The newly established CPMO within the MFED, continuously provide advice, training and standard reporting in

financial management, procurement, environmental and social safeguards and monitoring and evaluation to all WB projects in Tuvalu. The CPMO pointed out that they had already been in discussions with the Office of the Auditor General and hoped all Audited Annual Financial Statement would be submitted to the WB on time.

- b. **Financial Management (FM):** The current FM rating is “Moderately Satisfactory”. The part-time bookkeeper is currently contracted to the MICRO Project and will continue to work on both Projects as agreed. All Interim Financing Reports (IFRs) are now up to date. The audited Annual Financial Statements for 2021 have been prepared and will be submitted to the WB once the audit has been completed.
- c. **Designated Account (DA):** Three Withdrawal Applications (WA) have been made from the IDA account since the last mission. One was a replenishment of the DA and the other two were direct payments. This ensures that the DA remains as active. The TF closed on November 30, 2019 with a 100% disbursement rate. The details of disbursement from each fund are below.

Source of funds	Currency	Amount	Amount disbursed	% of funds disbursed.
IDA D0290	USD ²	7.00M	2.36M	35.3
TF 18949	USD	2.06M	2.06M	100

Safeguards

11. Environment: The project is being implemented in accordance with the ESMP. A new Safeguards Adviser has now commenced as part of the PMU. They are currently working on a revised ESMP for the new site. This work needs to be completed as soon as possible while allowing for ongoing border closures. The mission noted that the temporary relocation and reconstruction of piggeries will need to be at a certain acceptable standard to address environmental concerns. Also, the piggeries proposed under the panels will need further evaluation to assess impact of permanent shading and associated land rehabilitation aspects. This will be included in the updated ESMP.

12. Social: The new site for the solar PV is on GoT leased land. The preferred site for the PV array raises a number of complicated, social safeguards issues with substantial impacts including economic displacement of food and income assets. The proposed mitigation/management measures of co-locating piggeries and solar PV arrays is as not yet tested and still unknown if it can be effective. The ESMP requires further site options assessment to fully investigate and exhaust all options that avoid involuntary resettlement. Specifically, the mission was requested to

² Original amount in XDR - 4,800,000. Equivalent amount in USD at 1 December 2021 is USD6.71M.

revisit the Tuvalu sports field option using a design, wherein the PV array can be re-installed on a future stadium building if and when this project is proceeding.

Action Plan

Action	Responsibility	Date
Prepayment Meter		
Complete meter installation	TEC	30 December 2022
Solar PV Site relocation and Installation		
Obtain endorsement from the Government	TEC	Complete
Detailed design of the facility	TEC	30 September 2022
Preliminary Environmental and Social study for updating ESMP	TEC	30 June 2022
Prepare sufficient documents for potential project restructuring	TEC	30 June 2022
Engineering Service and Study for Renewable		
Feasibility Study report review	TEC	30 June 2022
Energy Efficiency Investment		
Electric Motorcycles delivered	TEC	31 December 2022
Radio installation	TEC	30 September 2022
Window tinting installation	TEC	30 September 2022
Project Management and Technical Assistance		
Safeguards Adviser Contract	TEC	Complete

List of Annexes:

Annex 1: List of persons met

Annex 2: Mission agenda

Annex 3: Presentation from the Client

ANNEX 1: List of Persons Met

Persons met virtually

Name	Institution and Title
Mr. Mafalu Lotolua	General Manager, Tuvalu Electricity Corporation
Mr. Nuiatui Nuiatui	Acting CEO, Ministry of Finance
Mr. Vavau Fatuuga	CEO, Ministry of Transport, Energy and Tourism
Mr. Simona Kilei	Acting CEO, Ministry of Transport, Energy and Tourism
Ms. Siulai Elisala	Director, Central Project Management Office
Ms Amalinda S Tala	Procurement Specialist, CPMO
Mr. Feagaiga Penivao	Safeguards Specialist, CPMO
Mr. Siava Tekafa Niko	Deputy Director, Central Project Management Office
Ms. Lulu Zuniga-Carmine	Safeguards Specialist
Mr. Trevor Fry	Energy Specialist
Mr. Jorge Cavero	Procurement Adviser
Mr. Rurunteiti Kaiarake	Project Implementation Officer
Mr. Isimasi Apisai	Bookkeeper

WB mission members

Name	Title	Contact Info	Unit
Mr. Leopold Sedogo	Task Team Leader, Senior Energy Specialist	lsedogo@worldbank.org	IEAE1
Mr. Hiroaki Yamada	Senior Power Engineer	hyamada1@worldbank.org	IEAE1
Ms. Sharon Louise Riley	Implementation Support Specialist	sriley@worldbank.org	IEAE1
Mr. Qingyuan Wang	Energy Consultant	qwang5@worldbank.org	IEAE1
Mr. Fakavae Taomia	Liaison Officer for Tuvalu	ftaomia@worldbank.org	EACNF
Mr. Nicholas Williams	Acting Procurement Specialist	mosborne@worldbank.org	EEAR2
Mr. Ian Hay	Social Safeguards Consultant	ihay@worldbank.org	SEAP1
Ms. Ciliaka Gitau	FM Specialist	vmomoivalu@worldbank.org	SEAP1
Ms. Fiona Bingham	Team assistant	fbingham@worldbank.org	EACNF
Mr. Muzaffar Ahmad	Environment Specialist	mahmad17@worldbank.org	SEAE1

ANNEX 2: Mission Agenda

Schedule (Funafuti Time)	Topic	Participants
May 03, Tuesday		
9:00 am – 11:00am	<u>Kick-off and Procurements</u> <ul style="list-style-type: none"> • Mission Schedule • Solar PV and battery storage • Site allocation • Battery • Communication (HF radios) • Prepayment Meter • Window tinting • Electric Motorbike • TTA’s Consultancy Tasks 	TEC (Mafalu, Taaku, Trevor, Jorge, Rapa, Safeguard Consultant & PIO), WBT
May 04, Wednesday		
09:00am – 10:00 am	<u>Meeting with Energy Ministry</u> <ul style="list-style-type: none"> • Energy Sector Development Project • Energy Resilience Project 	Mr. Vavau Fatuuga, Secretary, MTET, Mr Simona Kilei, Ag. Secretary & Tele Siamua, Energy Department, TEC and WB
1:00pm – 2:00pm	<u>Meeting with Ministry of Finance</u> <ul style="list-style-type: none"> • Energy Sector Development Project • Energy Resilience Project 	Mr. Taufia Patolo, Secretary, Ministry of Finance, Ms Siulai F Elisala, Director of CPMO, TEC, and WB
May 05, Thursday		
2:00pm- 3:00pm	<u>Meeting with Infratec</u>	TEC and WB (Mafalu and Leopold)
May 06, Friday		
2:00pm- 3:30pm	<u>Safeguards & Financial Management</u>	TEC (Mafalu, Taaku, Rapa, Isimasi, Lulu, Kate Walker, PIO), WB
3:00 pm- 4:00 pm	<u>Wrap Up</u>	TEC (Mafalu, Taaku, Rapa, Isimasi, PIO), WB

ANNEX 3: Presentation from the Client

[Presentation Progress report v10](#)