

Project Administration Manual

Project Number: 43452 (49450-006 financed under the Pacific Renewable Energy Investment Facility)

July 2018

Kingdom of Tonga: Outer Island Renewable Energy
Project (including Additional Financings)

CONTENTS

	Page
ABBREVIATIONS	
I. PROJECT DESCRIPTION	1
II. IMPLEMENTATION PLANS	2
A. Project Readiness Activities (Additional Financing)	2
B. Overall Project Implementation Plan	3
III. PROJECT MANAGEMENT ARRANGEMENTS	4
A. Project Implementation Organizations – Roles and Responsibilities	4
B. Key Persons Involved in Implementation	5
C. Project Organization Structure	5
IV. COSTS AND FINANCING	7
A. Project Financing Plan	8
B. Detailed Cost Estimates by Expenditure Category	10
C. Allocation and Withdrawal of Grant Proceeds	11
D. Detailed Cost Estimates by Financier	15
E. Detailed Cost Estimates by Year	16
F. Contract and Disbursement S-curve (Overall Project)	17
V. FINANCIAL MANAGEMENT	19
A. Financial Management Assessment	20
B. Summary of Financial Management Assessment of Tonga Power Limited	21
C. Financial Management Internal Control and Risk Assessment	21
D. Disbursement	23
E. Accounting	24
F. Auditing	24
VI. PROCUREMENT AND CONSULTING SERVICES	25
A. Procurement of Goods, Works and Consulting Services	25
B. Advance Contracting	27
C. Procurement Plan	27
D. Consultants' Terms of Reference	32
VII. SAFEGUARDS	40
A. Environment	40
B. Involuntary Resettlement and Indigenous Peoples	40
VIII. GENDER AND SOCIAL DIMENSIONS	40
IX. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION	48
A. Design and Monitoring Framework	48
B. Monitoring	48
C. Evaluation	54
D. Reporting	54
E. Stakeholder Communication Strategy	55
X. ANTICORRUPTION POLICY	55
XI. ACCOUNTABILITY MECHANISM	55
XII. RECORD OF PAM CHANGES	56

Project Administration Manual Purpose and Process

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with the Government of Tonga (government) and Asian Development Bank (ADB) policies and procedures. The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The government through the Ministry of Finance and National Planning (MFNP), and Tonga Power Limited (TPL) are wholly responsible for the execution of ADB financed projects, as agreed jointly between the recipient and ADB, and in accordance with Government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by MFNP and TPL of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At Loan and Grant Negotiations, the recipient and ADB shall agree to the PAM and ensure consistency with the loan agreement and grant agreements. Such agreement shall be reflected in the minutes of the loan and grant negotiations. In the event of any discrepancy or contradiction between the PAM and the government, the provisions of the Loan Agreement and the Grant Agreements shall prevail.

After ADB Board approval of the project's report and recommendation of the President (RRP), changes in implementation arrangements are subject to agreement and approval pursuant to relevant government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval, they will be subsequently incorporated in the PAM.

ABBREVIATIONS

ADB	– Asian Development Bank
ADF	– Asian Development Fund
AFS	– Audited Financial Statements
AusAID	– Australian Agency for International Development
AUS-DFAT	– Australian Department of Foreign Affairs and Trade
EA	– executing agency
ECOs	– electricity cooperative societies
ED	– Energy Department
EMP	– Environmental Management Plan
EMCs	– Electricity Management Committees
EU	– European Union
FM	– financial management
FMA	– financial management assessment
GAAP	– generally accepted accounting practices
GEF	– Global Environment Facility
GAP	– gender action plan
GOT	– Government of Tonga
IAs	– implementing agencies
IEC	– International Electro technical Commission
IEEE	– Institute of Electrical and Electronics engineers
MEIDECC	– Ministry of Energy, Information, Disaster Management, Climate Change and Communications
MFNP	– Ministry of Finance and National Planning
MOU	– Memorandum of Understanding
MPE	– Ministry of Public Enterprises
O&M	– operation and maintenance
PAM	– project administration manual
PMC	– Project Management Consultant
PMU	– project management unit
SDCFREEERA	– Second Danish Cooperation Fund for Renewable Energy and Energy Efficiency for Rural Areas
SHS	– Solar Home System
SPS	– Safeguards Policy Statement
TA	– technical assistance
TERM	– Tonga Energy Road Map
TERM-IU	– Tonga Energy Road Map Implementation Unit
TPL	– Tonga Power Limited

WEIGHTS AND MEASURES

kWh	– kilowatt-hour
kWp	– kilowatt- peak
MW	– Megawatt
MWp	– megawatt-peak

NOTES

In this report, "\$" refers to US dollars.

I. PROJECT DESCRIPTION

1. **Project Rationale.** The overall project including additional financing will construct and install solar power systems with a preliminary capacity of 1.32 megawatt-peak (MWp) on 9 outer islands in Tonga. This capacity will be provided as follows: (i) a total of 0.75 MWp on 'Eua and Ha'apai including a repair program on Vava'u; (ii) a total of 0.39 MWp on the four Ha'apai outer islands of 'Uiha, Nomuka, Ha'ano, and Ha'afeva; and (iii) 0.15 MWp of connection of solar power system to a newly installed mini-grid on Niuatoputapu and 0.03MW of solar home systems (SHS) on Niuafu'ou. In addition, the project will update the existing electricity distribution network completely on 'Eua and by 50% on Vava'u. The ongoing project has hired project management consultants (PMC) to (i) draft the final designs of equipment, (ii) support the bidding process, (iii) conduct training on the operation and maintenance (O&M) of solar equipment, and (iv) provide efficient project implementation and management services for at least 5 years after the plants are commissioned.¹
2. **Impact and Outcome.** The impact of the ongoing project is reduced dependence on imported fossil fuel for power generation. The outcome of the project is (i) optimized use of on-grid and off-grid generation systems, and increased consumer access to electricity generated by solar power due to a reduction in cost. The aggregate impact and outcome of the overall project will be enhanced as a result of the additional financing by increasing reliability and efficiency of power on the supply side of TPL's outer islands.
3. The outputs of the overall project are as follows:
 - (i) **Solar power.** The project will construct and install solar power systems with a total capacity of 1.32 MWp on 9 outer islands of Tonga by:
 - a) **On-grid:** connecting solar photovoltaic generators to existing electricity distribution networks (0.2MWp on 'Eua, 0.55 MWp on Ha'apai, and repair program on Vava'u);
 - b) **Mini-grid:** connecting solar photovoltaic generators to existing community-owned and community-managed electrical mini-grids including service lines on four Ha'apai outer islands (100 kWp on 'Uiha, 70 kWp on Nomuka, 70 kWp on Ha'ano, and 150 kWp on Ha'afeva);
 - c) **Off-grid:** expanding existing SHS capacity by 0.3 MWp SHS in Niuafu'ou and connecting 0.15MWp solar power system to a newly installed distribution system (mini-grid) on Niuatoputapu;
 - (ii) **Grid-Rehabilitation:** upgrading of existing power distribution networks completely on 'Eua and by 50% on Vava'u;
 - (iii) **Operation and maintenance knowledge transfer training:** a manual for solar electric equipment is finalized. Knowledge of solar electric and hybrid equipment is transferred during 5 years after commissioning of systems; and
 - (iv) **Efficient and effective project implementation and management.** The project will provide consulting services through the appointment of the PMC. The team will comprise an electrical engineer to act as project manager, a solar technical expert to act as field engineer, a financial and procurement specialist, and a safeguards specialist. The team will conduct capacity building training for 5 years after the systems are commissioned.

¹ The Asian Development Bank (ADB) provided project preparatory technical assistance. ADB. 2012. *Technical Assistance to Tonga for Preparing the Outer Island Renewable Energy Development Project*. Manila (TA 7940- TON, \$500,000 approved on 2 December 2011, financed by the Japan Fund for Poverty Reduction).

II. IMPLEMENTATION PLANS

A. Project Readiness Activities (3rd Additional Financing)

Indicative Activities	2018							
	2017 Nov	Jul	Aug	Sep	Oct	Nov	Dec	Responsibility
GEF Endorsement	√							
ADB Management approval		√						ADB
Loan and Grant signing			√					GOT and ADB
Government legal opinion provided			√					GOT and ADB
Loan and Grant effectiveness				√				GOT and ADB

ADB = Asian Development Bank, EA = executing agency, GOT = Government of Tonga, IAs = implementing agencies.

Source: Asian Development Bank estimates.

B. Overall Project Implementation Plan

	2014			2015				2016				2017				2018				2019				2020			
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Grant Effective Date	Original						AF1					AF2						AF3									
Bidding process																											
<u>Solar on-grid turnkey package</u>																											
Preparation of bidding documents and advertisement																											
Bid Evaluation and Contract Award																											
Install, test, and commission systems, including trial operation																											
<u>Solar mini/off-grid turnkey package</u>																											
Preparation of bidding documents and advertisement																											
Bid Evaluation and Contract Award																											
Install, test, and commission systems, including trial operation																											
<u>Electricity distribution network upgrade equipment trial</u>																											
Carry out tender process																											
Install, test, and commission systems, including trial operation																											
PMC: Procurement assistance and O&M programs																											
Contract of PMC																											
Design, implementation capacity-building program																											
Design and implementation O&M program																											

AF = Additional Financing, O&M = operations and maintenance, PMC = project management consultants, Q = quarter.

Source: Asian Development Bank estimates.

III. PROJECT MANAGEMENT ARRANGEMENTS

A. Project Implementation Organizations – Roles and Responsibilities

Project organizations	Management Roles and Responsibilities
Government of the Kingdom of Tonga (Recipient) through MFNP, the Executing Agency.	Receive and review withdrawal applications from the PMU, assisted by PMC and submit to ADB. Review financial reports, including the annual audit report and financial statements, from the PMC and submit to ADB.
PSC	<p>The PSC will have the following members; Chair: MFNP. Members: CEO, MEIDECC; Head, ED; CEO, MPE; CEO, TPL; and Head, TERM-IU. ADB, AUS-DFAT and EU will participate in the PSC meetings as observers.</p> <ul style="list-style-type: none"> • Oversee project implementation and progress. • Rectify issues hindering project progress. • Guide executing and implementing agencies.
Energy Department under Ministry of Energy, Information, Disaster Management, Climate Change and Communications (MEIDECC) and Tonga Power Limited, the Implementing Agencies	<p>ED is the cross-cutting energy sector coordination entity, as appointed by the Government. TPL is a power utility.</p> <ul style="list-style-type: none"> • Lead final technical designs, bidding processes, including preparation of bidding evaluation report and contract of bidder, assisted by PMC and supervised by ADB. • Lead social and environmental safeguards, and GAP through PMU, assisted by PMC and supervised by ADB. • Supervise construction conducted by the contractors assisted by PMC, and reviewed by ADB. • Conduct O&M, assisted by PMCs from year 1 to 5. From year 6-20 with own capacities. Lead decommissioning.
Project Management Consultant	Assist TPL / ED in preparing an overall implementation plan and annual budgets. overall interagency coordination; management of capacity development activities, safeguards, GAP, document preparation and plan implementation, financial management consolidation, annual audit report and financial statements, monitoring and evaluation of project outputs and results.
Project Management Unit	Composed of TPL / ED staff. Will lead project activities and prepare withdrawal applications. Assisted by PMCs.
Asian Development Bank	Support technical specification designs; tender documents, and procurement plan, including all project goods, works and services. Clear and approve bidding evaluation report and bidder contracting. With AUS-DFAT and EU: conduct regular grant review missions and coordination and advisory support

ADB = Asian Development Bank, AUS-DFAT = Australian Department of Foreign Affairs and Trade, ED = Energy Department, EU = European Union, GAP = gender action plan, MEIDECC = Ministry of Energy, Information, Disaster Management, Climate Change and Communications, MFNP = Ministry of Finance and National Planning, MPE= Ministry of Public Enterprises, PMU = project management unit; PMCs = project management consultants; PSC = project steering committee, TERM-IU = Tonga Energy Road Map-Implementation Unit, TPL = Tonga Power Limited.

Source: Asian Development Bank estimates.

B. Key Persons Involved in Implementation

Executing Agency	Government of the Kingdom of Tonga through its Ministry of Finance and National Planning Officer's Name: Ms. Pilimilose Balwyn Fa'otusia Position: Chief Executive Officer Telephone: +676 23066 Email address: bfaotusia@finance.gov.to
Implementing Agency	Energy Department under Ministry of Energy Ministry of Energy, Information, Disaster Management, Climate Change and Communications Officer's Name: Mr. Tevita Tukunga Position: Director Telephone: +676 8880005 Email address: ttukunga@gmail.com
Implementing Agency	Tonga Power Limited Officer's Name: Mr. Robert Matthews Position: Chief Executive Officer Telephone: +676 7863202 Email address: rmatthews@tongapower.to
ADB	Transport, Energy and Natural Resources Division (PATE) Pacific Department Staff Name: Olly Norojono Position: Director Telephone No.: +63 2 632 4444 Email address: onorojono@adb.org
Mission Leader	Staff Name: David Fay Position: Project Administration Unit Head, SPSO Telephone No.: +63 2 632 4444 Email address: dfay@adb.org

C. Project Organization Structure

4. The government will be the borrower and the grant beneficiary. The executing agency (EA) will be MFNP. Regarding the merger of the TERM Agency into the Energy Department (ED), all staff and resources of the Tonga Energy Road Map (TERM) Agency were absorbed by ED. The government proposed continuing the implementation of the mini/off-grid component by ED.² Both on-grid and grid-rehabilitation parts will be implemented by Tonga Power Limited (TPL). Both on-grid and mini/off-grid components will be implemented with assistance from PMC and the project management unit (PMU).

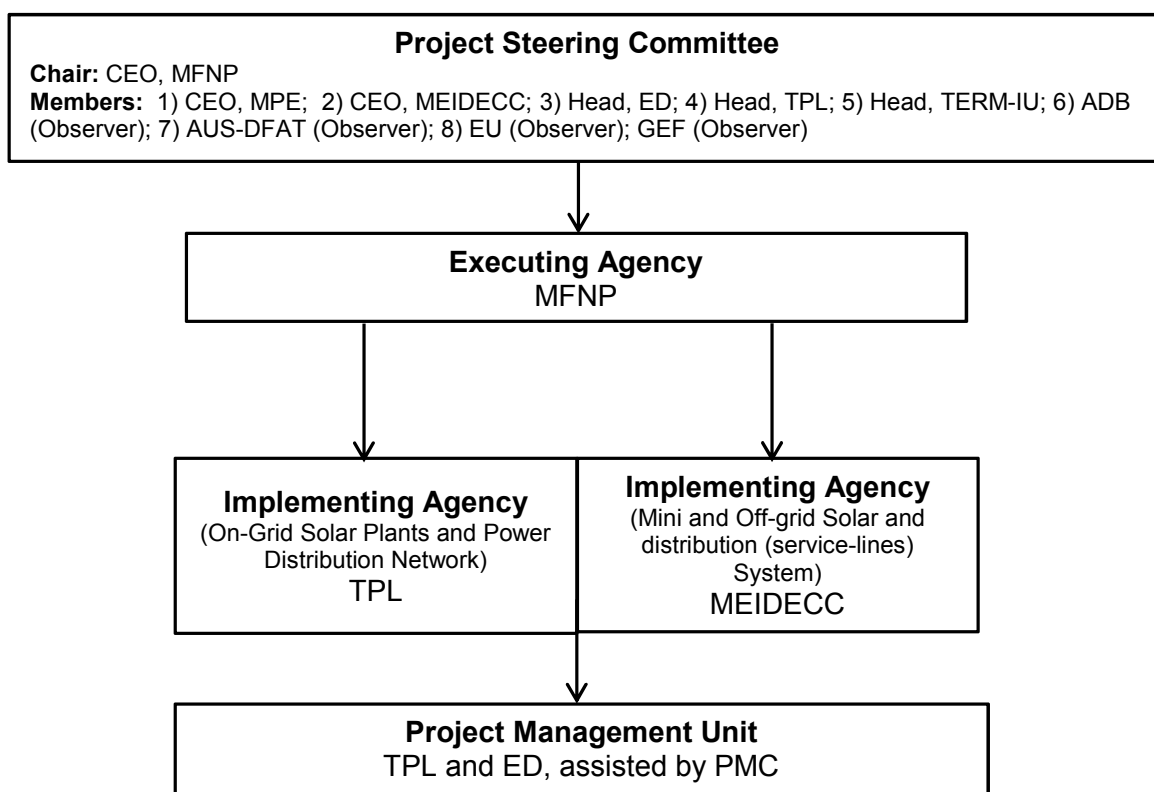
5. TPL has hands-on expertise important to the project due to its power engineering knowledge and includes the project management unit. Such project activities as the final technical design and bidding process for both on-grid and power distribution network component will be

² The minor change in implementation arrangement for the ongoing project was approved on 5 June 2015.

conducted by TPL, assisted by PMU and PMC. Social and environmental safeguards will be conducted by PMU, assisted by PMC and periodically reviewed by ADB. Contractors will undertake the construction, supervised by PMU and PMC, and periodically reviewed by ADB.

6. To ensure that the project effectively assists all stakeholders and beneficiaries, the PMC has been recruited. The PMC will help all parties understand O&M procedures for on-grid, mini- and off-grid solar power plants for 5 years after completion of the project. PMU will be assisted by the PMCs during detailed engineering. The project component will allow PMU to acquire key knowledge and further develop its own solar power O&M capacity. A project steering committee chaired by the MFNP and composed of the MEIDECC, EPU, Ministry of Public Enterprises, TPL, and ED will oversee the project, support sustainability, and ensure effective assistance to all project stakeholders and beneficiaries. ADB, AUS-DFAT, and EU will participate in the project steering committee meetings as observers. The indicative administrative structure of the project is described in Graph 1.

Graph 1: Project Organizational Structure



ADB = Asian Development Bank, AUS-DFAT = Australian Department of Foreign Affairs and Trade, EA = executing agency, ED = Energy Department, EU = European Union, MEIDECC = Ministry of Energy, Information, Disaster Management, Climate Change and Communications, MFNP = Ministry of Finance and National Planning, MPE = Ministry of Public Enterprises, PMU = project management unit; PMC = project management consultants, TERM-A = Tonga Energy Road Map-Implementation Agency, TERM-IU = Tonga Energy Road Map-Implementation Unit, TPL = Tonga Power Limited. Source: Asian Development Bank estimates.

IV. COSTS AND FINANCING

7. As per the Electricity Amendment Act 2010 dated 24 September 2010, all plant and machinery required for setting up a power plant in Tonga is exempted from all kinds of taxes and duties. The exact verbatim is as follows: "All plant, machinery, mechanical appliances, iron and steel works, cement, concrete, engines, boilers, dynamos, motors, generator sets, conductor cable, transformers, poles, insulators, inverters, photovoltaic modules, metering equipment and all materials, apparatus and equipment (including related parts) of any kind whatsoever imported into the Kingdom by, or on behalf of, a concessionaire or a person carrying on an activity referred to in section 19(2)(c) {Extract of Section 19(2)(c) - "any generation, distribution or supply of electricity for the purpose of supplying electricity to a concessionaire"}, and in either case imported into the Kingdom for the purpose of generating, distributing or supplying electricity in the Kingdom, shall be free of all customs duties, excise duties and any other taxes imposed by any Act in relation to the importation of those goods."

8. The Outer Island Renewable Energy Project is estimated to cost \$27.71 million.³ It comprise (i) a loan of \$2.50 million and grants of \$11.44 million from ADB's Special Funds resources,⁴ (ii) a grant of AU\$5.50 million (\$5.24 million equivalent) from the Government of Australia, (iii) a grant of €3.00 million (\$3.57 million equivalent) from the European Union, (iv) a grant of \$0.75 million from the Second Danish Cooperation Fund for Renewable Energy and Energy Efficiency for Rural Areas (SDCFREEERA), and (v) a grant of \$2.64 million from the Global Environment Facility (GEF), administered by ADB to help finance the project. The government will provide the equivalent of \$1.57 million as an in-kind contribution toward land-related and administrative costs through ED and TPL. The government will make the proceeds of the loan and the grants available to TPL under subsidiary grant agreements upon terms and conditions satisfactory to ADB. Detailed cost and financing tables are presented herein.

³ Finance will include all goods, works, associated services for erecting, commissioning, start-up, and trial period of the solar photovoltaic equipment of the project, and for the project management consultants. All sea, air, and land transportation (national and international), including cost insurance and freight to project site and warehouse.

⁴ A country's eligibility for ADF grants under the revised grant framework is determined by its risk of debt distress. The latest debt sustainability analysis determined that Tonga had a high risk of debt distress and was therefore eligible to receive 100% of its ADF allocation as grants as of year 2018.

A. Project Financing Plan

9. The third additional financing will be provided through (i) the grant of \$5.50 million from ADB's Special Funds resources; (ii) the grant not exceeding \$2.64 million from GEF; and (iii) the grant not exceeding AU\$1.00 million (\$0.74 million equivalents) from the Government of Australia. These will raise investments by about 47% from the \$18.83 million for the current project to \$27.71 million for the overall project. The revised investment plans are in Tables 1 and 2.

Table 1: Revised Investment Plan
(\$ million)

Item	Current Amount ^a	Additional Financing ^b	Total
A. Base Cost^c			
1. Goods, works, and services (solar power capacity for nine outer islands and project management consultant)	6.17	1.70	7.87
2. Administrative costs, including land lease cost	0.30	0.00	0.30
3. Goods, works, and services (power distribution network)	10.91	6.22	17.13
Subtotal (A)	17.38	7.92	25.30
B. Contingencies^d	1.28	0.92	2.20
C. Financial Charges	0.17	0.04	0.21
Total			
(A+B+C)	18.83	8.88	27.71

^a Comprising (i) \$2.50 million loan from ADB's concessional loan; (ii) \$11.44 million grants from ADB's Special Funds resources; (iii) A\$5.50 million (\$5.24 million equivalent) grant from the Government of Australia, administered by ADB; (iv) €3.00 million (\$3.57 million equivalent) grant for the European Union, administered by ADB; (v) \$0.75 million grant from the Second Danish Cooperation Fund for Renewable Energy and Energy Efficiency for Rural Areas; (vi) \$2.64 million grant from the Global Environment Facility, administered by ADB and (vi) the government's contribution of \$1.57 million as an in-kind contribution. Excludes taxes and duties, because as per the Electricity Amendment Act 2010 dated 24 September 2010, all plant and machinery required for setting up a power plant in Tonga is exempted from all kinds of taxes and duties.

^b ADB will provide a grant of \$5.50 million. The Government of Australia will provide a grant of A\$1.0 million. GEF will provide a grant of \$2.64 million.

^c In mid-2018 prices.

^d About 9% contingency has been allocated for the overall project.

Source: Asian Development Bank estimates.

Table 2: Revised Financing Plan
(\$ million)

Source	Current ^a		Additional Financing		Total	
	Amount	Share of Total (%)	Amount	Share of Total (%)	Amount	Share of Total (%)
Asian Development Bank	8.44	44.8	5.50	61.9	13.94	50.3
ADF (Grant)	5.94	31.5	5.50	61.9	11.44	41.3
Ordinary capital resources (concessional loan)	2.50	13.3	0.00	0.0	2.50	9.0
Government of Australia ^b	4.50	23.9	0.74	8.3	5.24	18.9
European Union ^c	3.57	19.0	0.00	0.00	3.57	12.9
Second Danish Cooperation Fund for Renewable Energy and Energy Efficiency for Rural Areas	0.75	4.0	0.00	0.0	0.75	2.7
Global Environment Facility ^d	0.00	0.0	2.64	29.7	2.64	9.5
Government of Tonga ^e	1.57	8.3	0.00	0.0	1.57	5.7
Total	18.83	100.0	8.88	100.0	27.71	100.0

ADF = Asian Development Fund.

^a Refers to the original amount and any previous additional financing.

^b Administered by ADB. This amount includes ADB's administration fee, audit cost, and bank charges to the extent that these items are not covered by the interest and investment income earned on this grant, or any additional grant contribution by the Government of Australia.

^c Administered by ADB. This amount includes ADB's administration fee, audit cost, and bank charges to the extent that these items are not covered by the interest and investment income earned on this grant, or any additional grant contribution by the European Union. Based on exchange rate on 7 January 2015.

^d Administered by ADB.

^e Government in-kind contribution, \$0.30 million, will be in administration costs. Tonga Power Limited will provide \$1.27 million as its in-kind contribution for additional financing.

Source: Asian Development Bank estimates.

B. Detailed Cost Estimates by Expenditure Category

No.	Item	Million \$		Total Cost	% of Total Base Cost
		Foreign Currency	Local Currency		
	A. Investment Costs				
1	Civil Work Cost (Solar Power system) ⁵	6.42		6.42	23.2
2	Project Management Consultants ⁶ (operational phase for 5 years)	1.40	-	1.40	5.1
	Project Management Consultants II	0.70		0.70	2.5
3	Civil Work Cost (Power Distribution Networks)	4.65	-	4.65	16.8
	Civil Work Cost (Power Distribution Networks II)	4.33		4.33	15.6
4	Civil Work Cost (Mini-grid and Service Lines)	6.22	-	6.22	22.4
	Subtotal (A)	23.73	-	23.73	85.6
	B. Government Contribution				
4	Administrative ⁷ costs including upfront land lease costs	-	1.57	1.57	5.7
	Subtotal (B)	-	1.57	1.57	5.7
	C. Contingencies				
5	Unallocated ^{8 9}	2.20	-	2.20	7.9
	Subtotal (C)	2.20	-	2.20	7.9
6	D. Financing Changes				
	Interest During Construction / Co-Financing Fees	0.21		0.21	0.8
	Subtotal (D)	0.21		0.21	0.8
	Total Project Cost (A+B+C)	26.14	1.57	27.71	100.0

Source: Asian Development Bank estimates.

⁵ Including all goods, works, associated services for erecting, commissioning, start up, and trial period of the solar photovoltaic equipment scope of the project. Also all sea, air and land transportation (national and international): including cost insurance and freight (CIF) up to project site and/or project warehouse.

⁶ Including office equipment, control and monitoring system, and one (1) lot of special replacement parts.

⁷ The Electricity Amendment Act 2010 dated 24th September 2010 states that entire plant and machinery required for setting up a power plant is exempted from all kinds of taxes. Government in kind contribution will be in administration costs such as those for office space and materials, counterpart time, telecommunications and logistics; included exemption from income taxes (other than citizens or nationals of the recipient country) on salaries, consulting fees and benefits. In addition, the 1% fee of project capital cost under the Environmental Impact Assessment regulation 2010 will also be waived.

⁸ This amount includes ADB's administration fee, audit cost, and bank charges to the extent that these items are not covered by the interest and investment income earned on this grant, or any additional grant contribution by the European Union and Government of Australia.

⁹ The amount considers 5% of base cost excluding the administrative expenses, and international inflation 5% of (base cost + physical contingency) and local inflation of 6.1% for local component.

C. Allocation and Withdrawal of Grant Proceeds

C.1 Ongoing Project

a) Asian Development Bank Grant

Category			ADB-ADF Financing
No.	Item	Total amount allocated for ADB financing (Million \$)	Percentages for withdrawal from the Grant Account
1	Civil Work Cost (Solar Power Plants)**	1,660,000	30.63% of total expenditure claimed*
2	Project Management Consultants**	230,000	30.67% of total expenditure claimed*
3	Unallocated	110,000	-
	Total	2,000,000	

ADB = Asian Development Bank, ADF = Asian Development Fund.

* Excluding taxes and duties imposed within the territory of the Recipient.

** Subject to the condition for withdrawal described in paragraph 5 of Schedule 2.

Source: Asian Development Bank.

b) COFINANCIER Grant* (Government of Australia through DFAT)

Category			Cofinancing
No.	Item	Total amount allocated for cofinancing (Million \$)	Percentages for withdrawal from the Grant Account
1	Civil Work Cost (Solar Power Plants)**	3,760,000	69.37% of total expenditure claimed*
2	Project Management Consultants**	520,000	69.33% of total expenditure claimed*
3	Unallocated***	220,000	-
	Total	4,500,000	

* Excluding taxes and duties imposed within the territory of the Recipient.

** Subject to the condition for withdrawal described in paragraph 5 of Schedule 2.

*** Administered by the Asian Development Bank. This amount includes a provision of 5% of ADB's administration fee, audit costs, bank charges, and a provision for foreign exchange fluctuations (if any), to the extent that these items are not covered by the interest and investment income earned on this grant, or any additional grant from the Government of Australia.

Source: Asian Development Bank estimates.

C.2 Additional Financing I

c) Asian Development Bank Grant

Category			ADB-ADF Financing
No.	Item	Total amount allocated for ADB financing (Million \$)	Percentages for withdrawal from the Grant Account
1	Civil Work Cost (Power Distribution Networks)**	1,330,000	28.64% of total expenditure claimed*
2	Unallocated	110,000	-
	Total	1,440,000	

ADB = Asian Development Bank, ADF = Asian Development Fund

* Excluding taxes and duties imposed within the territory of the Recipient.

** Subject to the condition for withdrawal described in paragraph 5 of Schedule 2 of the Grant Agreement (Special Operation).

Source: Asian Development Bank.

d) COFINANCIER Grant* (European Union)

Category			Cofinancing
No.	Item	Total amount allocated for cofinancing (Million \$)	Percentages for withdrawal from the Grant Account
1	Civil Work Cost (Power Distribution Network)**	3,320,000	71.36%% of total expenditure claimed*
2	Unallocated***	250,000	-
	Total	3,570,000	

* Excluding taxes and duties imposed within the territory of the Recipient.

** Subject to the condition for withdrawal described in paragraph 5 of Schedule of the Grant Agreement (Externally Financed) for the grant from the European Union.

*** Administered by the Asian Development Bank. This amount includes a provision of 7% of ADB's administration fee, audit costs, bank charges, and a provision for foreign exchange fluctuations (if any), to the extent that these items are not covered by the interest and investment income earned on this grant, or any additional grant from the European Union.

Source: Asian Development Bank estimates.

e) Second Danish Cooperation Fund for Renewable Energy and Energy Efficiency for Rural Areas

Category			Cofinancing
No.	Item	Total amount allocated for ADB financing (Million \$)	Percentages for withdrawal from the Grant Account
1	Project Management Consultants	650,000	100.00% of total expenditure claimed*
2	Unallocated	100,000	-
	Total	750,000	

ADB = Asian Development Bank, ADF = Asian Development Fund.

* Excluding taxes and duties imposed within the territory of the Recipient.

Source: Asian Development Bank.

C.3 Additional Financing II

f) Asian Development Bank Grant

Category			ADB -ADF Financing
No.	Item	Total amount allocated for ADB financing (Million \$)	Percentages for withdrawal from the Grant Account
1	Civil Work Cost (Power Distribution Networks II)**	2,500,000	57.65% of total expenditure claimed*
	Total	2,500,000	

ADB = Asian Development Bank, ADF = Asian Development Fund

* Excluding taxes and duties imposed within the territory of the Recipient.

** Subject to the condition for withdrawal described in paragraph 6 of Schedule 3 of the Grant Agreement (Special Operation).

Source: Asian Development Bank.

g) Asian Development Bank Loan

Category			ADB -ADF Financing
No.	Item	Total amount allocated for ADB financing (SDR)	Percentages for withdrawal from the Loan Account
1	Civil Work Cost (Power Distribution Networks II)**	1,331,000	42.35% of total expenditure claimed*
2	Interest and Commitment Charge	123,000	100.00% of amounts due
3	Unallocated	355,000	-
	Total	1,809,000	

ADB = Asian Development Bank, ADF = Asian Development Fund

* Excluding taxes and duties imposed within the territory of the Recipient.

** Subject to the condition for withdrawal described in paragraph 6 of Schedule 3 of the Grant Agreement (Special Operation).

Source: Asian Development Bank.

C.4 Additional Financing III

h) Asian Development Bank Grant

Category			ADB -ADF Financing
No.	Item	Total amount allocated for ADB financing (Million \$)	Percentages for withdrawal from the Grant Account
1	Civil Work Cost (Solar Power Plants)**	1,000,000	100.0% of total expenditure claimed*
2	Civil Work Cost (Mini-grid and Service Lines)	3,580,000	57.56% of total expenditure claimed*
3	Unallocated	920,000	
	Total	5,500,000	

ADB = Asian Development Bank, ADF = Asian Development Fund

* Excluding taxes and duties imposed within the territory of the Recipient.

** Financing allocated to this item under the Original Grant Agreement and the Original Externally Financed Grant Agreement will be utilized first until it has been disbursed in full. Thereafter, financing allocated to this item under this Grant Agreement will be utilized at 100% of every claim.

Source: Asian Development Bank.

i) COFINANCIER Grant* (Government of Australia through DFAT)

Category			Cofinancing
No.	Item	Total amount allocated for cofinancing (Million \$)	Percentages for withdrawal from the Grant Account
1	Project Management Consultants II	700,000	100.00% of total expenditure claimed*
2	Unallocated**	40,000	-
	Total	740,000	

* Excluding taxes and duties imposed within the territory of the Recipient.

** This amount also serves as a reserve for (i) currency fluctuations; and (ii) payment of ADB's administration fees and bank charges or other charges pursuant to the Cofinancing Agreement.

Source: Asian Development Bank estimates.

j) COFINANCIER Grant* (Global Environment Facility)

Category			Cofinancing
No.	Item	Total amount allocated for cofinancing (Million \$)	Percentages for withdrawal from the Grant Account
1	Civil Work Cost (Mini-grid and Service Lines)	2,639,269	42.44% of total expenditure claimed*
	Total	2,639,269	

* Excluding taxes and duties imposed within the territory of the Recipient.

Source: Asian Development Bank estimates.

D. Detailed Cost Estimates by Financier

Item		Total Cost	ADB ADF Grant		Government of Australia Grant ¹⁰		ADB ADF Grant (Additional Financing I)		ADB ADF Grant (Additional Financing II)		ADB ADF Loan (Additional Financing II)		European Union ¹¹		SDCFREEERA		ADB ADF Grant (AF III)		Global Environment Facility ¹²		Government of Australia (AF III) ¹⁰		Government of Tonga ¹³	
		Mill \$	Mill \$	%	Mill \$	%	Mill \$	%	Mill \$	%	Mill \$	%	Mill \$	%	Mill \$	%	Mill \$	%	Mill \$	%	Mill \$	%	Mill \$	%
A	Investment Costs ¹⁴																							
1	Civil Work Cost (Solar Power Plant)	6.42	1.66	25.9	3.76	58.5											1.00	15.6						
2	Project Management Consultants	1.40	0.23	16.4	0.52	37.1									0.65	46.4								
3	Project Management Consultants II	0.70																			0.70	100.0		
4	Civil Work Cost (Power Distribution Networks) I	4.65					1.33	28.6					3.32	71.4										
5	Civil Work Cost (Power Distribution Networks) II	4.34							2.50	57.6	1.84	42.4												
6	Civil Work Cost (Mini-grid and Service Lines)	6.22															3.58	57.6	2.64	42.4				
	Subtotal (A)	23.73	1.89	8.0	4.28	18.0	1.33	5.6	2.50	10.5	1.84	7.7	3.32	14.0	0.65	2.7	4.58	19.3	2.64	11.1	0.70	3.0		
6	Administrative ¹⁵ costs including upfront land lease costs	1.57																					1.57	100.0
	Subtotal (B)	1.57																					1.57	100.0
C	Contingencies																							
7	Unallocated ¹⁶	2.20	0.11	5.0	0.22	10.0	0.11	5.0			0.49	22.2	0.25	11.3	0.10	4.5	0.92	41.9						
	Subtotal (C)	2.20	0.11	5.0	0.22	10.0	0.11	5.0			0.49	22.2	0.25	11.3	0.10	4.5	0.92	41.9						
D	Financing Changes																							
	Interest During Construction	0.21									0.17	82.0									0.04	19.0		
	Subtotal (D)	0.21									0.17	82.0									0.04	19.0		
	Total (A+B+C+D)	27.71	2.00	7.2	4.50	16.2	1.44	5.2	2.50	9.0	2.50	9.0	3.57	12.9	0.75	2.7	5.50	19.8	2.64	9.5	0.74	2.7	1.57	5.7

¹⁰ Administered by the Asian Development Bank. This amount includes ADB's administration fee, audit cost, and bank charges to the extent that these items are not covered by the interest and investment income earned on this grant, or any additional grant contribution by the Government of Australia.

¹¹ Administered by ADB. This amount includes ADB's administration fee, audit cost, and bank charges to the extent that these items are not covered by the interest and investment income earned on this grant, or any additional grant contribution by the European Union

¹² Administered by ADB.

¹³ In kind contribution towards land related and other administrative costs.

¹⁴ Including all goods, works, associated services for erecting, commissioning, start up, and trial period of the solar photovoltaic equipment scope of the project. Also all sea, air and land transportation (national and international): including cost insurance and freight (CIF) up to project site and/or project warehouse.

¹⁵ Government's contribution of \$0.30 million including administration costs, such as those for office space and materials, counterpart time, telecommunications, and logistics; and exemption from all kind of taxes. TPL will provide \$1.27 million as its in-kind contribution for additional financing. Any cost overrun or cash shortfall will be borne by the government.

¹⁶ Considered as 5% of base cost excluding the administrative expenses, and international inflation 5% of (base cost + physical contingency) and local inflation of 6.1% for local component.

ADB = Asian Development Bank, ADF = Asian Development Fund, SDCFREEERA = Second Danish Cooperation Fund for Renewable Energy and Energy Efficiency for Rural Areas.

Source: Asian Development Bank.

E. Detailed Cost Estimates by Year

Item	Total Cost						
	Million \$	2015**	2016**	2017**	2018**	2019**	2020**
A. Investment Costs ¹⁷							
1 Civil Work Cost (Solar Power Plant)	6.42		1.09	3.25	0.54	1.54	
2 Project Management Consultants	1.40	0.21	0.46	0.41	0.12	0.20	
3 Project Management Consultants II	0.70					0.35	0.35
4 Civil Work Cost (Power Distribution Networks) I	4.65		2.32	1.8	0.53		
5 Civil Work Cost (Power Distribution Networks) II	4.34			1.45	1.45	1.45	
6 Civil Work Cost (Mini-grid and Service Lines)	6.22					6.22	
Subtotal (A)	24.65	0.21	3.87	6.91	2.64	9.76	0.35
B. Government Contribution							
5 Administrative costs including upfront land lease costs ¹⁸	1.57	0.30	0.67		0.60		
Subtotal (B)	1.57	0.30	0.67		0.60		
C. Contingencies							
6 Unallocated ¹⁹	2.20	0.44	0.44	0.44	0.44	0.44	
Subtotal (C)	2.20	0.44	0.44	0.44	0.44	0.44	
D. Financial Charges							
Interest During Construction	0.21			0.05	0.05	0.05	0.05
Subtotal (D)	0.21			0.05	0.05	0.05	0.05
Total Project Cost (A+B+C)	27.71	0.95	4.98	7.40	3.73	10.25	0.40
% of Total Project Costs	100.0%	3.4%	18.0%	26.7%	13.5%	37.0%	1.5%

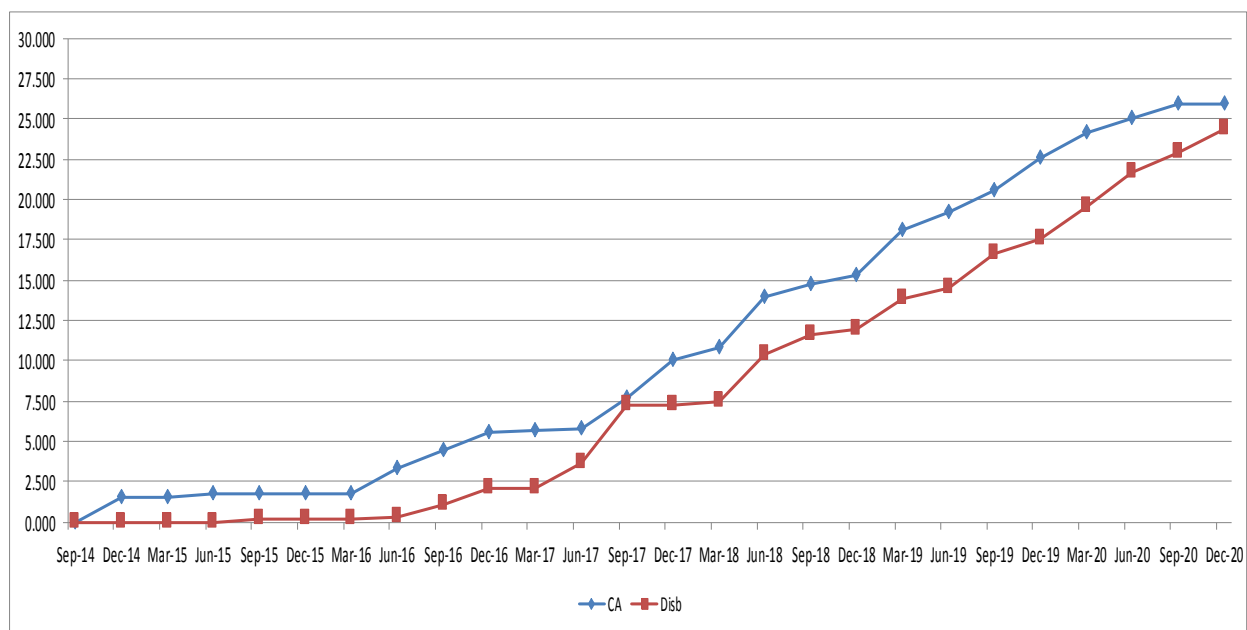
**Fiscal year ending 30th June (e.g. 2015 = Fiscal year ending 30 June 2015).

Source: Asian Development Bank.

¹⁷ Administered by the Asian Development Bank. This amount includes a provision of 5% of ADB's administration fee, audit costs, bank charges, and a provision for foreign exchange fluctuations (if any), to the extent that these items are not covered by the interest and investment income earned on this grant, or any additional grant from the Government of Australia.

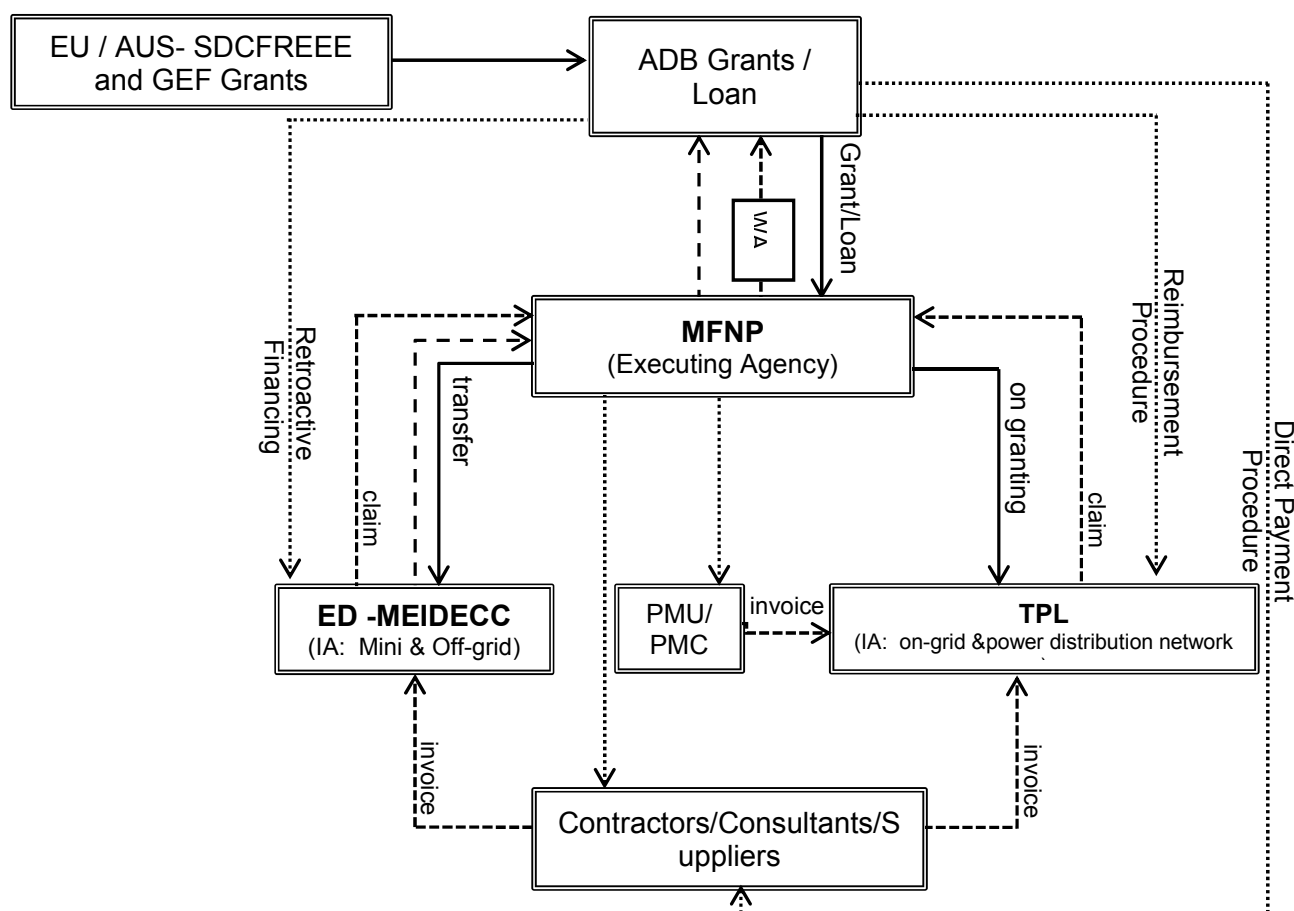
¹⁸ The Electricity Amendment Act 2010 dated 24th September 2010 states that entire plant and machinery required for setting up a power plant is exempted from all kinds of taxes. Government in kind contribution will be in administration costs such as those for office space and materials, counterpart time, telecommunications and logistics; included exemption from income taxes (other than citizens or nationals of the recipient country) on salaries, consulting fees and benefits. In addition, the 1% fee of project capital cost under the Environmental Impact Assessment regulation 2010 will also be waived.

¹⁹ Considered as 5% of base cost excluding the administrative expenses, and international inflation 5% of (base cost + physical contingency) and local inflation of 6.1% for local component.

F. Contract and Disbursement S-curve (Overall Project)

Fund Flow Diagram

→ Funds flow → Disbursement - - -> Repayment -----> Document Flow



ADB = Asian Development Bank, AUS-DFAT = Australian Department of Foreign Affairs and Trade, ED = Energy Department, EU = European Union, GEF = Global Environment Facility, MFNP = Ministry of Finance and National Planning, PMU = project management unit; PMC = project management consultant, TPL = Tonga Power Limited.

^a Include the grant from the Danish Cooperation Fund for Technical Assistance.

Source: Asian Development Bank estimates.

10. The bills rose by MEIDECC and TPL in the outer islands of Ha'apai and EMCs in the Niua islands, will be endorsed by PMU assisted by PMC for direct payments.

11. The PMC appointed by ADB is structured as follows:

- (i) 1 electrical solar engineer (project manager);
- (ii) 1 power electric planning and field engineer (deputy project manager);
- (iii) 1 social safeguard specialist; and
- (v) 1 financial specialist

12. The financial specialist will maintain all requisite financial reports for remote outer islands of Ha'apai and the two Niua islands and shall coordinate with the project accountant of TPL for the financial reports in the islands of Vava'u, 'Eua and Ha'apai.

13. The PMC will communicate with ADB, MFNP and the Project Steering Committee. ADB will then release requisite funds to MFNP which in turn shall be released to TPL / ECO's in the outer islands of Ha'apai and the EMCs in the Niuas.

14. The PMU established under MEIDECC is expected to be structured as follows:

- (i) 1 PMU manager;
- (ii) 2 project managers; one from MEIDCEE and one from TPL
- (iii) 1 legal expert;
- (iv) 1 financial specialist or project accountant;
- (v) 1 procurement expert; and
- (vi) 1 safeguard expert

15. The Project Steering Committee will act as an oversight body and monitor the physical and financial progress of the project and will be comprised of the following members:

- (i) Chair, Representative from MFNP
- (ii) CEO, MEIDECC
- (iii) CEO, MPE
- (v) CEO, TPL
- (vi) Head, TERM-IU
- (vii) Representatives: ADB, AUS-DFAT and EU (observers)

V. FINANCIAL MANAGEMENT

16. A financial management assessment (FMA) was carried out in TPL according to ADB's *Financial Management and Analysis of Projects (The Guidelines)* (2005).²⁰ The financial management capacity of individual implementing agencies, TPL and MEIDECC, has been newly assessed²¹ and found to be adequate to ensure that loan and grant funds are utilized for intended purposes.

17. In the remote outer islands of Ha'apai namely, Nomuka, 'Uiha, Ha'afeva and Ha'ano, the electricity generation and distribution is looked after by the local Electricity Cooperative Societies (ECOs). The four ECOs have been able to operate and maintain the electricity system without additional financial support from the government or other donors. Some have built up a cash reserve (such as Nomuka). However, Ha'afeva and Ha'ano have been struggling financially until recently. The mechanism for enforcing cost recovery has been via prepayment meters, monthly contributions and the community willingness to pay a monthly fee for electricity services. O&M responsibilities are clearly defined within the ECOs constitution. Lack of locally skilled maintenance staff has created timely maintenance difficulties for the ECOs.

18. In Niuatoputapu, current electricity generation is done independently at household level and there is no grid available for local distribution of electricity; whereas in Niuafo'ou, the households have 167 sets of solar home systems supplied under the New Zealand Aid Programme in 2006, where the EMCs are responsible for the O&M and replacement of parts.

19. Since the project shall be supervised by PMCs appointed by ADB for tenure commencing

²⁰ It was conducted when the original project was processed.

²¹ In accordance with ADB. 2005. *Financial Management and Analysis of Projects*. Manila; and ADB. 2009. *Financial Due Diligence A Methodology Note*. Manila.

from start of implementation date till end of 5 years of commercial operation, it can be expected that through training programs, building local capacity can be achieved, and the ECOs as well as the EMCs shall be self-sustainable thereafter.

A. Financial Management Assessment

20. Tonga has made solid progress in improving public financial management since achieving internal self-governance in 1984, particularly in government financial accounting and reporting. Public finance legislative frameworks are judged to be reasonably sound. Public financial management (PFM) in Tonga is legislated under the Public Financial Management Act of 2002 where the Minister of Finance is responsible for management of public finance and preparation of expenditure estimates and statements of anticipated revenue. The Public Audit Act 2007 established the position of Auditor General (AG) to audit Ministries, government agencies and public enterprises. Under the Act, the AG submits his report nine months after the end of the financial year, i.e. 31 March to the Speaker and the Prime Minister.

21. The Public Expenditure and Financial Accountability (PEFA) assessment concluded that Tonga had a solid legal and regulatory framework setting out budgeting, expenditure and accountability structures with oversight by the Legislative Assembly. The PEFA report concluded that Tonga had a solid legal and regulatory framework setting out budgeting, expenditure and accountability structures with oversight by the Legislative Assembly. The conclusions are as follows. **(i) budget credibility** received an 'A' rating up from a 'C' rating except for the expenditure outturn which received a 'C' rating due to significant variances and the use of the Contingency Fund rather than formal supplementary estimates. The budget is the mechanism for controlling expenditure and estimating income and implementing the budget as planned is important in delivering the government's policy objectives. **(ii) Comprehensiveness and transparency.** PEFA noted that budget documentation and fiscal information was generally clear but that further financial information on public enterprises and auditing needed to be strengthened. **(iii) multi-year budgeting to be improved.** At the time of the PEFA, the capacity of government ministries and departments in preparing multi-year Corporate Plans was being built and at the time of writing, Corporate Plans are well developed. **(iv) controls in execution of the budget.** PEFA noted that the system of tax administration was operating properly. Expenditure controls for salary and non-salary expenses were effective but that auditing needed to be improved although it was legislated under the Public Finance Management Act and Audit Act. The last audited GoT financial statements for FY15/16, included a statement of receipts and payments, income and expenditure, changes in fund balance and assets and liabilities. These were prepared on a cash basis, in accordance with International Public-Sector Accounting Standards (IPSAS), and not accrual basis. **(v) external scrutiny and audit.** PEFA noted that there were long lags in auditing which has since improved with only a one-year delay in auditing.

22. The financial management assessment (FMA) was carried out for individual implementing agencies, TPL and MEIDECC, has been newly assessed²². The FMA was undertaken as follows: (i) ADB's Financial Management Assessment Questionnaire (FMAQ) was administered to elicit information and responses; (ii) the responses and information was analyzed, and any potential risks identified; (iii) identified ways of mitigating risks (if any).

²² In accordance with ADB. 2005. *Financial Management and Analysis of Projects*. Manila; and ADB. 2009. *Financial Due Diligence A Methodology Note*. Manila.

23. PMU, with assistance from PMC, will carry out all project implementation activities and will be responsible for the project implementation. PMU, with assistance from PMC, will submit a quarterly progress report to facilitate the monitoring of the physical progress of the project.

B. Summary of Financial Management Assessment of TPL and MEIDECC

24. Key findings of the financial management assessment undertaken for the TPL are as described in Table 1:

Table 1: Summary of Financial Management Assessment of TPL and MEIDECC

Particulars	Conclusion
A. Funds Flow Arrangement	Funds flow arrangements are reliable, predictable and secure. TPL and MEIDECC have enough capability to smoothly work under the proposed investment program.
B. Staffing	TPL delegates will compose the project management unit (PMU) to conduct all project relevant activities. PMC will assist the PMU at all times. TPL have financial staff to manage projects according to ADB financial management procedures. MEIDECC has limited technical staff in remote islands.
C. Accounting Policies and Procedures	The TPL's accounting policy is based on the International Financial Reporting Standards (IFRS) and MEIDECC uses IPSAS.
D. Internal and External Audits	There is no internal audit function at TPL or MEIDECC, but there is an internal audit and risk committee within the TPL. As per the recommendation of the audit and risk committee, the Board outsources internal audit to different auditing firms depending on scope and expertise. The TPL was externally audited by KPMG. TPL has been issued with an unqualified opinion. There is no internal or external auditing on behalf of MEIDECC. MEIDECC is part of the Government of Tonga where the consolidated government financial statements are audited by the Auditor General (AG) of Tonga.
E. Reporting and Monitoring	Financial statements are prepared for the entity in accordance with IFRS, Company Act, 1995 and Public Enterprises Act, 2002.
F. Information systems	At TPL, the financial management system is computerized, which suits well with the project requirements and procedures.

25. Actions required to be taken by ED and TPL are as follows:

- (i) ED and TPL specialists as well as financial staff must undergo training on ADB financial management and disbursement procedures to further strengthen capacity;
- (ii) ED and TPL should maintain separate accounts for each of the projects in the outer islands under the investment program and have such accounts audited annually, in accordance with appropriate auditing standards consistently applied by independent auditors whose qualifications, experience, and terms of reference are acceptable to ADB.

C. Financial Management Internal Control and Risk Assessment

26. The results of the financial management, internal control and risk assessment, and the financial management action plan are summarized in Tables 2 and 3. Financial management risks shall need to be considered and updated throughout the life of the investment program. Risk mitigation measures shall also be updated accordingly.

**Table 2: Financial Management Internal Control and Risk and
Financial Management Action Plan**

Risk Type	Risk Assessment Rating	Risk Description	Mitigation Measures
Inherent Risk			
1. Country-specific Risks	High	The PEFA assessment has shown improvement from the past. The weakness has been significant variances in expenditure. The audits are also done on a timely manner. The high-risk rating is due to debt distress and expenditure which can be caused by natural disasters	GOT has taken action for prudent financial management including containing the public-sector wage bill.
2. Entity-specific Risks	Moderate	There is no internal audit function at TPL	Keep outsourcing internal audit to different auditing firms depending on scope and expertise.
Overall Inherent Risk	Moderate		
Project Risk			
1. Implementing Entity	Low	TPL is a State-owned enterprise and MEIDECC is a government ministry.	
2. Funds Flow	Low	A direct payment method has been used.	
3. Staffing	Moderate	TPL is generally well staffed but MEIDECC has limited technical staff in remote islands.	The current project finances both project supervision consultants and project management unit manager.
4. Accounting Policies and Procedures	Low	TPL and MEIDECC use international standards; TPL uses IFRS and MEIDECC, IPSAS.	
5. Internal Audit	Moderate	There is no internal audit function at TPL	Keep outsourcing internal audit to different auditing firms depending on scope and expertise.

6. External Audit	Low	Financial statements of all entities are up to date and audited. TPL has been issued with an unqualified opinion whereas MEIDECC is part of GOT finances.	
7. Reporting and Monitoring	Low	Financial statement production is on time and monthly reporting to the Board on time. MEIDECC report, though limited, is also on time.	
8. Information systems	Low	Automated systems are functioning well at TPL and MEIDECC.	
Overall Project Risk	Moderate		
Overall (Combined) Risk	Moderate		

ADB = Asian Development Bank, TPL = Tonga Power Limited.

Source: Asian Development Bank estimates.

Table 3: Financial Management Action Plan

Weakness	Mitigation Actions	Responsibility	Timeframe
There is no internal audit function at TPL	Outsourcing internal audit to different auditing firms depending on scope and expertise.	TPL	Within 3 months from each fiscal year end
MEIDECC projects are more difficult to manage due to remoteness and lack of technical skills	Both project management unit manager and project accountant will be recruited.	MEIDECC	Within 3 months from Effective Date
TPL is generally well staffed but MEIDECC has limited technical staff in remote islands.	Both project management unit manager and project accountant will be recruited.	MEIDECC	Within 3 months from Effective Date

ADB = Asian Development Bank, TPL = Tonga Power Limited.

Source: Asian Development Bank estimates.

D. Disbursement

27. The loan and grant proceeds including ADB administered the Government of Australia, the European Union, the Global Environment Facility, and the Second Danish Cooperation Fund

for Renewable Energy and Energy Efficiency for Rural Area will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2017, as amended from time to time), and detailed arrangements agreed upon between the government and ADB. Online training for project staff on disbursement policies and procedures is available at: http://wpqr4.adb.org/disbursement_elearning. Project staffs are encouraged to avail of this training to help ensure efficient disbursement and fiduciary control.

28. To facilitate cash flow during project implementation, MFNP, the executing agency, will approve withdrawal applications coming from the PMU, assisted by PMC, and submit them to ADB for direct payment and/or reimbursement for all goods, works and consultancy services of the project. Disbursements of loan and grant funds under the project will be to procure goods, works, and related services.

29. Before submission of the first withdrawal application, the executing agency should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the executing agency, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is in accordance with the Loan Disbursement Handbook. Individual payments below this amount should be paid by the EA/IA and subsequently claimed to ADB through reimbursement, unless otherwise accepted by ADB. The borrower/recipient should ensure sufficient category and contract balances before requesting disbursements. Use of ADB's Client Portal for Disbursements (CPD) system is encouraged for submission of withdrawal applications to ADB.

30. All disbursements under government financing will be carried out in accordance with regulations of the government and ADB.

E. Accounting

31. The TPL/PMU, in coordination with MFNP and assisted by the PMC, will maintain separate project accounts and records by funding source for all expenditures incurred on the project. Project accounts will follow international accounting principles and practices, in line with the NZ-originated Generally Accepted Accounting Practices (GAAP) accounting standard, and adhere to sound financial management requirements during the implementation of the proposed project. The TPL/PMU will maintain separate project records and accounts adequate to identify the: (i) goods and services financed from loan and grant proceeds; (ii) financing resources received; (iii) expenditures incurred on the components of each project component; and (iv) counterpart and co-financer funds received and expended.

F. Auditing

32. The TPL/PMU, in coordination with MFNP and assisted by the PMC, will cause the detailed consolidated project documentation to be audited in accordance with International Standards on Auditing and in accordance with the government's audit regulations by an auditor acceptable to ADB.

33. The audited accounts, certified copies of such audited project accounts and the report of the auditors relating thereto (including the auditors' separate opinions on the use of the loan and grant proceeds and compliance with the financial covenants of the financing agreements and the grant agreement), will be submitted by the PMU assisted by the PMC in English language to ADB in any event not later than 6 months after the end of each related fiscal year (year ending June 30).

34. The MFNP, ED, TPL, and PMU assisted by PMC will provide ADB all information concerning project auditing as requested, in accordance with ADB's policies and procedures. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

35. The Government, MFNP, ED, and TPL have been made aware of ADB's policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited project financial statements.²³ ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the borrower), or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

36. Public disclosure of the project financial statements, including the audit report on the project financial statements, will be guided by ADB's Public Communications Policy (2011). After review, ADB will disclose the project financial statements for the project and the opinion of the auditors on the financial statements within 14 days of the date of their receipt by posting them on ADB's website. The Audit Management Letter will not be disclosed.

VI. PROCUREMENT AND CONSULTING SERVICES

A. Procurement of Goods, Works and Consulting Services

37. The procurement capacity assessment of TPL indicates that Tonga's procurement regulations and procedures are comprehensive and TPL has a functioning procurement unit, however with limited experience and qualifications to procure solar equipment. Procurement of goods, works and related services under the project will be processed through MEIDECC/TPL (in conjunction to their respective off-grid and on-grid scopes), oversight and approved by ADB and will be carried out in accordance with ADB's *Procurement Guidelines* (2015, as amended from time to time). For this purpose, TPL and MEIDECC, with the assistance from PMC, supervised by ADB, will prepare technical specifications and bidding documents of the solar power plants according to ADB's own format, and prepare bidding evaluation forms. For the ongoing project, MEIDECC/TPL, with the assistance from PMC, will conduct the bidding process for their respective scopes, both supervised by ADB. TPL has recruited the PMC through a firm using fixed budget selection (FBS) due to the complexity of the technological endeavor in accordance with ADB's *Guidelines on the Use of Consultants* (2015, as amended from time to time). Advance contracting will be undertaken in conformity with ADB's Procurement Guidelines. Minor goods

²³ ADB Policy on delayed submission of audited project financial statements:

- When audited project financial statements are not received by the due date, ADB will write to the executing agency advising that (i) the audit documents are overdue; and (ii) if they are not received within the next six months, requests for new contract awards and disbursement such as processing of new reimbursement, and issuance of new commitment letters will not be processed.
- When audited project financial statements have not been received within 6 months after the due date, ADB will withhold processing of requests for new contract awards and disbursement such as processing of new reimbursement and issuance of new commitment letters. ADB will (i) inform the executing agency of ADB's actions; and (ii) advise that the loan may be suspended if the audit documents are not received within the next six months.
- When audited project financial statements have not been received within 12 months after the due date, ADB may suspend the loan.

and services, up to \$300,000 equivalent, will be procured by the implementing agency using shopping procedures.

38. MEIDECC will undertake the procurement for the component to be funded by the proposed third additional financing. For the third additional financing, the following procurement methods are newly proposed:

- The use of shopping for one package for Goods: *'House Wiring, Switches, Lights, Sockets, RCDs etc. (including ship to TBU) for all 5 islands'* is allowed to reduce the complexity of the procurement involved, given the estimated cost is \$350,000, and the fact that the Goods are non-complex in nature.
- With respect to construction of the mini-grid and the upgrade of the service lines, MEIDECC has identified TPL as the suitable entity to undertake this work due to the following reasons: i) as the work is scattered amongst a number of isolated islands, international firms are unlikely to be interested in bidding at reasonable costs for the work. Conversely TPL has the ability to mobilize plant, materials and labor more efficiently, effectively and economically than international firms; ii) TPL has experience in undertaking this type of work on ADB funded projects in Tonga both on the current OIREP project and on the past emergency response projects; iii) a long-term maintenance contract is expected to be made between the government and TPL for those outer islands to be funded by the proposed additional finance; and iv) on previous phases of the OIREP project, TPL exceeded a target gender balance of 30% of female staff engaged in construction activities. Utilizing TPL will allow such safeguards components to be extended to this additional financing.
- As TPL is a government entity, they will be engaged via a Force account for Works (FAW) approach formalized through an agreement between MEIDECC and TPL. The value of the FAW detailed in the Procurement plan covers all plant, labor and ancillary costs incurred by TPL. Materials will be purchased separately as outlined in the procurement plan.
- Direct contracting will be used for house-wiring test works to be done by government's certified entity, Electrical Commission (EC), at an estimated cost of \$30,000. Direct contracting in this instance is justified as the engagement is low value and the EC is the only certified entity in Tonga that can undertake this work.
- The use of direct contracting and force account methods have been justified based on the relevant sections of ADB's Procurement Guidelines 2015 (as amended from time to time).

39. An estimated 59 person-months of international and 36 person-months of national consultant to be allocated as part of the PMC are required to (i) facilitate project management and implementation; and (ii) provide an O&M program to strengthen the operational capacity of TPL, ED, ECU, ECOs, EMCs and other beneficiaries, and provide knowledge transfer. Consultants will be engaged using FBS (considered justified due to technical complexity of the solar generation equipment units). A summary is presented below:

Specialists	Person-months (International)	Person-months (International)
Solar electric power engineer (Project Manager)	12	
Power electric planning and field engineer (Deputy Project Manager)	14	
Financial specialist	2	6
Social Development Specialist (Community and Gender)		
Project Management Unit Manager	24	
Project Accountant		24
O&M Preparation Expert	7	
Total	59	36

Source: Asian Development Bank estimates.

B. Advance Contracting

40. All advance contracting will be undertaken in conformity with ADB's Procurement Guidelines and Guidelines on the Use of Consultants. The issuance of invitations to bid under advance contracting will be subject to ADB approval.

C. Procurement Plan

Basic Data

Project Name: Outer Island Renewable Energy Project

Country: Kingdom of Tonga

Executing Agency: Ministry of Finance and National Planning

Loan/Grant Amount: \$17.26 million

Grant/Loan Number: 0347/0348/0444/0445/0446/0528/3509

Date of First Procurement Plan:

Date of this Procurement Plan: June 2018

Source: Asian Development Bank estimates

1. Process Thresholds, Review and 12-Month Procurement Plan

41. Except as ADB may otherwise agree, the following prior or post review requirements apply to the various procurement and consultant recruitment methods used for the project.

Procurement Method	Prior or Post	Comments
Procurement of Goods and Works		
International Competitive Bidding for Works	Prior	Over \$3,000,000
International Competitive Bidding for Goods	Prior	Over \$1,000,000
National Competitive Bidding for Works	Prior	\$300,000 up to \$3,000,000
National Competitive Bidding for Goods	Prior	\$300,000 up to \$3,000,000
Direct Contracting for Goods and associated services	Prior	< \$30,000 or other special circumstances PAI 3.06/3.07
Force Account for Works		Within NCB threshold for Works

Procurement Method	Prior or Post	Comments
Shopping for Works	Post	Less than \$300,000
Shopping for Goods	Post	Less than \$300,000
Recruitment of Project Management Consultants		
Fixed Budget Selection (firm)	Prior	

Source: Asian Development Bank estimates.

2. Goods and Works Contracts Estimated to Cost More Than \$1 Million

42. The following table lists goods and works contracts for which procurement activity is either ongoing or expected to commence within the next 18 months.

No.	Description	Value (\$ million)	Procurement /Recruitment Method	Prequalification of Bidders (Y/N)	Anticipated Advertising Date	Comment
1	Ground-mounted solar PV plants for 2 outer islands (0.75 MWp)	2.55	ICB (Turnkey)	N	Q2-2015	Completed
2	Mini and off-grid solar system for 6 outer islands (0.57 MWp)	2.83	ICB (Turnkey)	N	Q3-2015	Contracted with cost overruns of \$0.87 million
Subtotal of ADB Funded		5.38				

ICB: International Competitive Bidding.
Asian Development estimates

3. Consulting Services Contracts Estimated to Cost More Than \$100,000

43. The following table lists consulting services contracts for which procurement activity is either ongoing or expected to commence within the next 18 months.

General Description	Contract Value (\$ million)	Recruitment Method	Advertisement Date (quarter/year)	International or National Assignment	Comments
PMC	\$1.05 ^a	FBS	Q3 2013	International	Recruited and In-Service
PMU Manager	\$0.65 ^b	Individual	Q1 2016	International	Recruited and In-Service
Financial Management & Accounting Consultant	\$0.10	Individual	Q3 2018	National	
Gender & Safeguards Monitoring and Evaluation Consultant	\$0.10	Individual	Q3 2018	National	
O&M Individual Consultant	\$0.20	Time-based	Q3 2018	International	

FBS = fixed budget selection, PMC = project management consultants.

^a The contract value is \$0.75 million as of May 2014. The remaining \$0.30 million is expected to be used to support the additional scope of the project including the power distribution network upgrade to be co-financed by the Danish Cooperation Fund.

^b The current contract value is \$0.35 million as of May 2017. The remaining \$0.30 million is expected to be used to extend the contract period until the project completion date of 31 December 2019 to be co-financed by the grant from the Government of Australia.

Asian Development Bank estimates.

4. Goods and Works Contracts Estimated to Cost Less than \$1 Million and Consulting Services Contracts Less than \$100,000

44. The following table groups smaller-value goods, works and consulting services contracts.

#	Package No.	Description	Value of Contracts cumulative (\$ million)	Number of Contracts	Procurement Method	Advertisement Date (Quarter/year)	Comments
General							
1	SHO-TPL-Gen-01	Solar Equipment	0.100	1	Shopping	Q4 2016	-
2	SHO-TPL-Gen-02	Mini-grid Inspection	0.100	1	Shopping	Q1 2016	Contracted
3	SHO-ED-SHS-01	Batteries and associated equipment	0.200	1	Shopping	Q4 2016	Contracted
	Sub-Total (General)	0.400					
'Eua (Additional Financing I)							
3	NCB-TPL-Eua-01	LV Poles /HV Poles/ Vava'u HV Poles (inc. ship)	1.030	1	National Competitive Bidding (NCB)- 3 lots	Q4 2015	Completed
4	DC-TPL-Eua-01	LVABC Conductor (inc. ship)	0.373	1	Direct Contracting	Q4 2015	Completed
5	DC-TPL-Eua-02	LVABC associated materials (inc. ship)	0.445	1	Direct Contracting	Q4 2015	Completed
6	DC-TPL-Eua-03	Transformer Boxes & Structures (inc. ship)	0.194	1	Direct Contracting	Q4 2015	Completed
7	SHO-TPL-Eua-01	Boundary & Comms Cable Surveys	0.083	1	Shopping	Q4 2015	Completed
8	DC-TPL-Eua-04	Pole Foundation Materials (inc. ship)	0.032	1	Direct Contracting	Q4 2015	Completed
9	SHO-TPL-Eua/ Vav-02	Machinery Hire for Poles (inc. ship)	0.079	1	Shopping	Q1 2016	Completed
10	SHO-TPL-Eua-03	PPE and Tools	0.043	1	Shopping	Q4 2015	Completed
11	SHO-TPL-Eua-04	Shipping (general)	0.039	1	Shopping	Q1 2016	Completed
12	DC-TPL-Eua-05	HV Crossarm Assemblies (inc. ship)	0.057	1	Direct Contracting	Q1 2016	Completed
13	DC-TPL-Eua-06	Step-Up Transformer	0.070	1	Direct Contracting	Q1 2016	Completed

#	Package No.	Description	Value of Contracts cumulative (\$ million)	Number of Contracts	Procurement Method	Advertisement Date (Quarter/year)	Comments
		at Power Station (inc. ship)					
14	FA-TPL-Eua-01	Force Account	0.310	1	Force Account	-	Completed
15	SHO-TPL-Eua-04	Fly Conductor (inc. ship)	0.200	1	Shopping	Q4 2016	Completed
Sub-Total ('Eua)			2.954				
Vava'u (Additional Financing I)							
16	DC-TPL-Vav-01	HVABC Conductor (inc. ship)	0.538	1	Direct Contracting	Q4 2016	Completed
17	DC-TPL-Vav-02	Transformer Boxes & Structures (inc. ship)	0.795	1	Direct Contracting	Q1 2017	Completed
18	SHO-TPL-Vav-01	Boundary & Comms Cable Surveys	0.021	1	Shopping	Q4 2016	Completed
19	DC-TPL-Vav-03	Pole Foundation Materials (inc. ship)	0.009	1	Direct Contracting	Q1 2017	Completed
20	SHO-TPL-Vav-03	Shipping (general)	0.031	1	Shopping	Q2 2017	Completed
21	DC-TPL-Vav-04	HV Crossarm Assemblies (inc. ship)	0.081	1	Direct Contracting	Q3 2017	Completed
22	DC-TPL-Vav-05	Step-Up Transformer at Power Station (inc. ship)	0.070	1	Direct Contracting	Q4 2017	Completed
23	FA-TPL-Vav-01	Force Account	0.310	1	Force Account	-	Completed
Sub-Total(Vava'u-AF I)			1.855				
'Eua (Additional Financing II)							
24	DC-TPL-Eua-07	Service Lines (inc. ship)	0.420	1	Direct Contracting	Q4 2016	Completed
25	SHO-TPL-Eua-05	Trenching works for underground service lines	0.070	1	Shopping	Q4 2016	Completed
Sub-Total('Eua-AF II)			0.490				
26	NCB-TPL-Vav-01	HV and LV Poles (inc. ship)	0.800	1	NCB	Q4 2016	Contracted
27	ICB-TPL-Vav-06	Service Materials, LVABC Conductor, LVABC	2.300	1	ICB	Q4 2016	Contracted

#	Package No.	Description	Value of Contracts cumulative (\$ million)	Number of Contracts	Procurement Method	Advertisement Date (Quarter/year)	Comments
		associated Materials, PPE and Tools, HV Conductor, HV Crossarm assemblies (including shipping)					
28	SHO-TPL-Vav-04	Boundary & Comms Cable Surveys	0.050	1	Shopping	Q1 2017	Contracted
29	SHO-TPL-Vav-05	Pole Foundation Materials (inc. ship)	0.050	1	Shopping	Q1 2017	Contracted
30	SHO-TPL-Vav-06	Machinery Hire for Poles (inc. ship)	0.070	1	Shopping	Q4 2016	Contracted
31	SHO-TPL-Vav-07	Trenching works for underground service lines	0.130	1	Shopping	Q2 2017	Contracted
32	FA-TPL-Vav-02	Force Account	0.440	1	FAW	-	Engaged
Sub-Total Vava'u-AF II)			3.840				
Additional financing III (Mini and off-grid solar system for 6 outer islands (0.57 MWp))							
33	ICB-P4-CONDUCTOR-01	Phase 4 Conductors, Transformers and other electrical materials (1 Package, 3 lots)	2.77	3 Lots	ICB	Q3 2018	Prequalification of Bidders: N Domestic Preference: N Type of Bidding Document: Goods 1S1E
34	SHO-P4-METERS-01	Supply of Dual Tariff 1-Phase and Dual Tariff 3-Phase Pre-Paid Meters incl. accessories	0.23	1	Shopping	Q4 2018	-
35	FC-P4-TPL-01	TPL Services and Products	2.21	1	FAW	Q3 2018	As per MEIDECC/TPL MoU
36	SHO-P4-01	Third Party Boundary Surveys for the HV and LV on NTT	0.03	1	Shopping	Q4 2018	

#	Package No.	Description	Value of Contracts cumulative (\$ million)	Number of Contracts	Procurement Method	Advertisement Date (Quarter/year)	Comments
		(no surveys needed on the existing network on the HOI's)					
37	SHO-P4-02	Shipping General (e.g. getting the equipment from TBU to the 5 outer islands)	0.20	1	Shopping	Q1 2019	
38	SHO-P4-03	Supply of House Wiring, Switches, Lights, Sockets, RCDs etc. (inc. ship to TBU) for all 5 islands	0.35	1	Shopping	Q3 2018	
39	SHO-P4-04	Third Party to Install the House Wiring, Switches, Lights, Sockets, etc. (certified electricians from TBU) for all 5 islands	0.18	1	Shopping	Q4 2018	
40	DC-P4-01	Third Party "Electrical Commission" from TBU Sign-Off on the House Wiring, etc. for all 5 islands	0.03	1	Direct Contracting	Q4 2018	
Sub-Total (AF III)			6.00				

Asian Development Bank estimates.

D. Consultants' Terms of Reference

45. **Expertise of the firm.** Will demonstrate substantial experience and track record of (i) developing and conducting simulation of island distribution grids and hybrid power systems (PV-diesel); (ii) development of concepts for battery storage; and (iii) implementing solar photovoltaic power systems off and grid connected, including associated power electronics, low and middle voltage switchgear.

46. **Solar electric power engineer/project team leader** (international, 12 person-months over 60 months, intermittent). The consultant will demonstrate substantial experience developing solar power projects (on/off-grid-connected) within context of remote areas, solar and electric power electric engineering with the design, specification and implementation of middle and low voltage systems, control, protection and monitoring. Knowledge of international technical standards (IEC, UL, IEEE, NEMA) is preferred. The consultant should have demonstrated skills in training relatively skilled persons in the proper installation of rural grid equipment and wiring. The activities to be undertaken will include but not limited to the following:

- (i) Create a technical- financial project handbook, which will be used as a technical guideline during project implementation.
- (ii) Prepare technical schedules (lots; list of parts and pieces) and undertake whole project implementation up to turn-key, according to ADB guidelines.
- (iii) Prepare and assess complete logistic chain, from ex-works shipment to on-site delivery for all goods and services to be procured and installed under the project.
- (iv) Prepare the acceptance process when the shipment arrives, ensuring compliance with specifications and quantities.
- (v) Administrate, manage, and supervise implementation of goods and services until trial test of the complete scope of the project.
- (vi) During installation, work closely with contractors and authorized personnel of the utility.
- (vii) Design and draft project manual, training materials and program for O&M in line with the scope of the project. The training should include theory and practical sections, electrical design, protection, monitoring, control, testing, measuring and working safety and electrical hazards.
- (viii) Deliver capacity building and O&M programs for a period of at least five years as defined in the design and monitoring framework of this project.

47. **Solar electric power planning and field engineer** (international, 14 person-months over 60 months, intermittent). The consultant will demonstrate substantial experience developing power projects (on/off-grid-connected), within context of remote areas and have the following qualifications: experience in power electric or mechanical engineering with the design, specification and implementation of middle and low voltage systems in the international context and knowledge of international technical standards related with rural distribution networks. Skills must include the detailed analysis of rural networks (simulation tools) for power distribution and the preparation of tenders for purchasing of the necessary works and goods, training and supervision of relatively unskilled persons. The activities to be undertaken will include but not limited to the following:

- (i) Manage interconnection of solar power into the grid, grid stability factors, including control, protection and monitoring, and design of grids and switchgear.
- (ii) Oversee the installation of equipment according to contracted lots.
- (iii) Assist in the acceptance of materials as they are received, ensuring that they are the correct materials and show no shipping damage.
- (iv) Act as interface between the supply and installation process to ensure that all aspects of the installation are well coordinated.
- (v) Perform operational acceptance tests of the systems and work with the installing contractor to solve problems as they arise.
- (vi) Deliver capacity building and O&M programs for a period of at least five years as defined in the design and monitoring framework of this project.

48. **Social Development Specialist (gender and community development)** (national, 6 person- months over 12 months, intermittent). The consultant will have substantial and

demonstrated experience working in developing-country environments, with a degree in social science and relevant experience ideally in projects funded by the international development community. The activities to be undertaken will include but not limited to the following:

- (i) Assist in the implementation of project GAP including all trainings and knowledge sharing activities with regard to gender needs and benefits, and provide guidance on their revision if needed;
- (ii) Lead in the development and delivery of effective community consultations and meetings during implementation and ensure the broad participation of women;
- (iii) Assist in monitoring the contractor's compliance with their responsibilities under the GAP;
- (iv) Assist in monitoring grievances particularly relevant to women and measures to address the grievances in a timely and appropriate manner;
- (v) Lead and manage the development of comprehensive documentation to enable robust monitoring of gender indicators and results on the OIREP based on the Design and Monitoring Framework (DMF) and Gender Action Plan (GAP), in collaboration with respective PMU members;
- (vi) Coordinate with other project team members in MEIDECC and MLSNR to identify areas where gender-inclusive and socially inclusive provisions can be strengthened under the OIREP;
- (vii) Assist the revision of OIREP project component's involuntary resettlement and environment safeguard activities as deemed appropriate for proposed works including the compilation of safeguard due diligence reports in line with ADB's Safeguard Policy Statement (SPS) 2009;
- (viii) Facilitate disclosure of relevant information to APs and local stakeholders on grievance redress mechanism.
- (ix) Recommend necessary inputs, if needed, to other project implementation documents (e.g. bidding documents) on resettlement aspects.

49. **Financial Specialist** (international, 2 person-months over 24 months, intermittent). The consultant will have substantial and demonstrated experience working in procurement and contract administration of infrastructure projects. The activities to be undertaken will include but not limited to the following:

- (i) Assess complete logistic chain, from ex-works shipment to on-site delivery for all goods and services to be procured and installed under the project.
- (ii) Assist TPL preparing techno-financial reporting and evaluation during project implementation and operation.
- (iii) With TPL, manage schedule of procurement process, approvals, facilitate communications and processes between ADB, government and beneficiaries.

50. **Project Manager** (international, 24 person-months over 24 months, intermittent).

Contract	International - Project Manager		
Project	No.43452-023: Outer Island Renewable Energy Project (OIREP)		
Expertise	Energy Specialist / Project Manager		
Source	International	Category	Individual

51. **Objective / Purpose of the Assignment:**

Responsible for the overall direction, coordination, implementation, execution, control, and reporting on OIREP, and to provide all reasonable assistance on the preparation of the Green

Climate Fund (GCF) application for the Tonga Renewal Energy Project (TREP).

52. Scope of Work:

Manage all aspects of OIREP including: (i) design and preparation of bid documents; (ii) supervision of project management consultant (PMC); (iii) construction and contract supervision; (iv) project budgeting and accounts; (v) reporting, monitoring and evaluation; and (vi) monitoring and reporting on: resettlement and environmental mitigation activities, the Gender Action Plan, and Operations and Management (O&M) issues. Provide logistics support and design advice as requested during the preparation of TREP.

52.2 Detailed Tasks:

52.1.1: Manage implementation schedule:

- Lead the PMU of OIREP, which is part of MEIDECC, and is accountable to the Project Steering Committee (PSC) chaired by CEO MFNP.
- Together with MEIDECC, MFNP, and TPL develop and implement the Strategic Procurement and Project Plan of OIREP.
- Participate in PSC meetings and take all actions necessary to meet the OIREP implementation schedule, subject to PSC direction and endorsement.
- Advise CEOs of MEIDECC, TPL and MFNP on implementation schedule and suggest improvements to meet or accelerate implementation as appropriate.
- Regularly visit the project sites to ensure timely implementation of project activities.
- Communicate with all stakeholders including the cooperative and incorporated solar societies to encourage community supports and acceptance of project implementation.
- Coordinate between development partners, government authorities, and implementing agencies to achieve the desired project outcome and implement the project outputs.
- Develop the project implementation schedule and monitor progress, reporting regularly on actions necessary to mitigate potential delays.
- In consultation with Asian Development Bank (ADB), update the project administration manual when considered appropriate.

52.1.2: Manage OIREP funds:

- Facilitate the disbursement of project funds with the cooperation of ADB, MFNP and TPL.
- Provide assistance to the Government of Tonga auditor, MFNP and MEIDECC, to facilitate preparation of project and corporate audit reports consistent with the requirements of the Project agreements.
- Provide oversight support to monitor financial compliance with applicable fiduciary policies and government financial management procedure and processes.
- Provide management, financial, and administrative support to ensure that government contractual obligations are discharged in a timely manner

52.1.3: Manage OIREP consultants and contractors:

- Review and refine project designs.
- Manage bidding procedures including: advertising, preparation and issuance of bid documents, facilitate bidder site inspections, respond to bidder queries and clarifications, and evaluate bids and prepare bid evaluation reports.
- Lead all procurement and contracting activities, and supervise and oversee the contractors, suppliers for construction and commissioning of solar facilities and grid-

rehabilitation works under OIREP.

- Manage and oversee all paperwork, field works and contract(s) under OIREP inclusive of managing the supply, install and construction phases including, sending letters of acceptance and notices to proceed, monitoring implementation of the contractors' quality assurance plans and environmental management plans, monitoring consultant / contractor programs and progress, processing progress claims, reviewing change orders and extensions of time, providing employer / owner sign-off at hold points, reviewing contractors' construction drawings for compliance with the design intent and specifications, coordinating environmental and social safeguard (land acquisition and resettlement) activities, overview commissioning, and providing oversight of contract completion and administration activities.
- With the assistance from the PMC, manage the contractors' works to achieve timely implementation.

2.1.4.: Reporting to higher authorities of the government:

- Report and provide support to the PSC that will comprise officials of the Government of Tonga, TPL, DFAT, and ADB.
- Prepare quarterly progress reports, semi-annual safeguard monitoring reports and annual progress reports as required by ADB.
- Report to stakeholders, in particular the PSC, and thus provide support in relation to financial and contractual matters of the project.
- Assist government stakeholders to prepare project audit reports, and corporate audit reports as required by ADB.
- Prepare Project Completion Reports.

2.1.5: Coordinate project implementation with relevant government agencies:

- Prepare project implementation strategies.
- Identify and possibly contract and manage shipping and freight services to support timely delivery of project supplied materials and equipment to the Contractor(s).
- Conduct any other duties as directed by the PSC from time to time and as agreed by all PSC members in advance.

2.1.6: Manage relationship with the public:

- Liaise with Government, TPL, private sector, civil society and donor agencies to promote and maintain effective communication amongst all project stakeholders.
- Coordinate and actively manage and participate in project training activities for MEDIECC & TPL counterparts.

2.1.7: Monitor and evaluate achievements:

- Monitor and control the quality of project outputs.
- Supervise and be accountable for the day-to-day project operations.
- Lead, under the oversight of the PSC, resettlement and social safeguards monitoring during the design and implementation of the project in accordance with the ADB's Safeguard Policy Statement and relevant laws of the Kingdom of Tonga.

52.3. Output/Reporting Requirements:

Quarterly Project Reports shall succinctly report on the status of the following subprojects:

1. OIREP Phase 1 'Eua (centralised PV).
2. OIREP Phase 1 Ha'apai (centralised PV and storage).
3. OIREP Phase 1 Vava'u (SCADA fine tuning).
4. OIREP On-Grid Grid Rehabilitation 'Eua (major network works).
5. OIREP On-Grid Grid Rehabilitation Vava'u (minor network works).
6. OIREP Phase 2 Nomuka (centralised PV and storage).
7. OIREP Phase 2 Ha'afeva (centralised PV and storage).
8. OIREP Phase 2 Uiha (centralised PV and storage).
9. OIREP Phase 2 Ha'ano (centralised PV and storage).
10. OIREP Phase 2 Niuatoputapu (centralised PV and storage).
11. OIREP Phase 2 Niuafu'ou (Distributed SHS PV and storage).
12. OIREP Mini-Grid Grid Rehabilitation Nomuka (major network works).
13. OIREP Mini-Grid Grid Rehabilitation Ha'afeva (major network works).
14. OIREP Mini-Grid Grid Rehabilitation Uiha (major network works).
15. OIREP Mini-Grid Grid Rehabilitation Ha'ano (major network works).
16. OIREP Mini-Grid New Grid Niuatoputapu (major network works).

QPR's shall also document the assistance provided to the preparation of TREP in the quarter gone, and define the assistance anticipated in the next quarter.

53. **Projects Accountant** (national, 24 person-months over 24 months, intermittent).

Contract	Projects Accountant and Contracts Administrator		
Project	No.43452-023: Outer Island Renewable Energy Project (OIREP) ¹		
Expertise	Financial Management		
Source	National	Category	Independent

Objective/Purpose of the Assignment:

As a member of Project Management Unit(s) the Projects Accountant (PA) will manage, compile, record and process all project payments, balance project accounts and provide financial reports periodically for the nominated projects in the ADB project folio.

Scope of Work:

The PA will be responsible to the Project Director(s) for the compilation and security of all records of receipts and payments, and records management. The PA will process all project payments, in accordance with the guidelines under the Asian Development Bank's (ADB) Loan Disbursement Guidelines, for approval by the approved Authorizing Officer and will also be responsible for the preparation and balancing of project accounts and periodic reporting.

Detailed Tasks:

- a) Prepare and maintain imprest account ledgers and monthly bank reconciliations for ADB and Government imprest accounts in a timely manner;
- b) Prepare and maintain contract logs/monitoring for consultants and civil works contractors;
- c) Prepare and maintain ledgers for each grant category in a timely manner;
- d) Prepare vouchers and checks for disbursements from ADB and Government Imprest Accounts;
- e) Prepare withdrawal applications and the necessary documentation required for direct payment and reimbursement disbursement procedures and for the replenishment of Imprest accounts, as per ADB Guidelines;
- f) Monitor and report on withdrawal application processing periods.
- g) Prepare and maintain adequate accounting records, proper internal control systems, and ensure timely reporting to management;
- h) Prepare monthly, quarterly and annual project financial reports;
- i) Assist the Implementing agencies (IAs) and MFNP in their preparation of annual audits in compliance with the relevant Project agreements and consistent with ADB guidelines.
- j) Other duties as may be required by the Project Director, the Program Coordinator, the Project Manager or the respective ADB project officer.

Output/Reporting Requirements:

- a) Provide day to day reporting to each IA Project/Division Director / Project Manager on the status of each projects budget adequacy
- b) Quarterly progress report also made available to DFAT
- c) Annual report also made available to DFAT
- d) Final report also made available to DFAT

54. **O&M Contract Preparation Consulting Services Expert** (International, 7 person-months, intermittent).

- **Phase 1 Scoping**

- **Review conclusions from July 2015 DFAT report.** Undertake discussions with Tonga Power Limited (TPL), Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communication (MEIDECC), Ministry of Commerce and Labour (MCL), Ministry of Public Enterprises (MPE) and representatives of island community groups²⁴ to determine whether the observations

²⁴ Where Island community group representatives are not available, through Island Group Governors and representative Members of Parliament

concerning O&M and status of power infrastructure on outer islands is still valid and whether there has been any material change.

- **Provide status update**
- **Recognising that there are 4 different configurations** – (a) TPL on grid²⁵ (b) Diesel mini-grid supported by Co-operative Societies O & M (c) Solar Home Systems (SHS) supported by Incorporated Societies O & M; and (d) SHSs not supported by community based O&M and drawing upon the findings of the July 2015 study and update discussions, outline options for O &M support for each configuration and discuss options with stakeholders identified in (1)
- **Provide recommendations on options to support governance and fund operational and maintenance costs** to ensure the infrastructure is adequately maintained and operated within an appropriate governance structure to maximise the useful life of the assets and provide safe and reliable power to the customer communities.
- **Provide outline of how recommendations can be implemented**, through community service obligation or other arrangement, and identify any barriers to implementation.
- **Phase 2 Design and implementation**
 - Detailed design of support arrangements addressing governance, operations and maintenance for each of the 4 configurations and taking into consideration planned capital investments to ensure design is optimised for current assets and planned investments. The design should also focus on how to develop a fair and sustainable user pay structure for each configuration.
 - Undertake initial high-level costing of each design outcome from (1)
 - Stakeholder discussion on design for each configuration including consultation visits to outer island communities to discuss how the design outcome will operate in practice. Seek stakeholder input.
 - Design adjustment as required
 - Detailed costing of preferred support arrangement
 - Develop performance-based contracts to implement support arrangements (would include development of community service obligation contract, may also include contracts with private sector providers).
 - Government confirm funding to support contracts developed in (6).

²⁵ This configuration is included as July 2015 report notes that Tonga Power Limited's concession contract may not cover the O & M costs of these assets and a community service obligation contract may be required to cover any funding gap.

- Contracts – preferably multi-year – executed. Contracts may include remedial support as required.

VII. SAFEGUARDS

A. Environment

55. The overall project, including the additional financing project, is classified as category B for environment following ADB's Safeguard Policy Statement 2009 (SPS). The main potential impacts identified include (i) limited impacts on flora and fauna during construction, (ii) limited visual impact. Adequate mitigation measures have been incorporated into the environmental management plan, which will form part of the solar PV plants. A climate change adaptation risk evaluation was conducted and considered in infrastructure design. The PMU will lead the environmental supervision.

B. Involuntary Resettlement and Indigenous Peoples

56. Both original and additional financing projects have been classified as category C for involuntary resettlement and category C for indigenous peoples following ADB's SPS. The project does not involve physical displacement of people or structures, nor impact on indigenous peoples. The project will be implemented in a culturally appropriate and participatory manner.

VIII. GENDER AND SOCIAL DIMENSIONS

57. The overall project's GAP will be implemented and lead by the PMU which will include PMC's social development specialist with relevant gender-related experience. The specialist will be responsible for incorporating the gender mainstreaming measures into project planning and implementation. The PMU will report the progress of GAP activities in its quarterly progress reports on overall project activities to ADB and the government.

GENDER ACTION PLAN

Components and Outputs		Performance Targets and Activities	Responsibility	Timeline	Updates
Output 1. Construction and installation of 1.32 MWp solar capacity in 9 outer islands of Tonga					
This will include: Solar power. The project will construct and install solar power systems with a total capacity of 1.32 MWp on 9 outer islands of Tonga by (i) connecting solar photovoltaic generators to existing electricity distribution networks (0.2MWp on 'Eua and 0.55 MWp on Ha'apai) including a repair, documentation, training and improvement program for Vava'u. Ha'apai will include services lines and meters in households to be funded by the Additional Financing; (ii) connecting solar photovoltaic generators to existing community-owned and community-managed electrical minigrids on four Ha'apai outer islands (100 kWp on 'Uiha, 70 kWp on Nomuka, 70 kWp on Ha'ano, and 150 kWp on Ha'afeva); (iii) connecting 0.183 MWp of solar home system capacity in Niuafu'ou and Niuatoputapu; (iv) At least 65 households are female headed ('Eua, Ha'apai and Vava'u: 50 households and Ha'apai outer islands and Niua: 15 households). (Baseline: 350 households were TPL customers in 2011 and about 50 households not electrified)	During design and implementation, all community consultations will have a target of at least 50% female participation.	Implementing Agency (TPL and MEIDECC)	Phase 1 (on-grid generation) completed in Q1 2017; Phase 2 (mini-grid generation) scheduled commencement in Q4 2017 and completion in Q4 2018.	Consultation done for Phase 1 and 2 done in Sep 2014 and again in Mar 2016 with 50% female participation.	
	Contractors, whenever culturally appropriate, will be encouraged to provide work for unskilled and semi-skilled labor for local people (30% women).	Principal contractor	Phase 1 (on-grid generation) completed in Q1 2017; Phase 2 (mini-grid generation) scheduled commencement in Q4 2017 and completion in Q4 2018.	Phase 1 engaged 3 females (30%) during implementation in 2016. Phase 3 engaged 8 females (50%) in 2016 and will carry this into 2017, 2018 and 2019.	
	Requirement for hiring of women (10% target) will be included in the local construction contracts for solar power installations.	Principal contractor	Phase 1 completed. Phase 2 from Q4 2017 to Q4 2018.	Now that the Phase 2 scope will start soon (Q3 or 4 2017), we are in a good position to remind the successful bidder to reach their GAP target. This would be more achievable if the Phase 1 contractor became the successful Phase 2 bidder since they have achieved their GAP target in the past and can easily repeat that., especially since we cannot "force" the	

	Provide services lines and meter to at least 20% female-headed households	Principal contractor	Phase 3 on 'Eua and Vava'u. Phase 4 on Nomuka, Ha'afeva, 'Uiha, Ha'ano and NTT.	Phase 2 contractor to meet a certain GAP target. The Phase 4 contractor will be TPL, who will continue their high GAP achievements from Phase 3 into Phase 4.
	Ensure the existing toilet and sanitation facilities are women-friendly by providing reliable water supply, proper lock and lighting..	Principal contractor	Phase 1 done and Phase 2 during implementation.	Phase 3 done on 'Eua in 2016/17 and shall be done on Vava'u between May 2017 to May 2019.
	Ensure equal pay for equal work between male and female workers.	Principal contractor	Phase 1 (Q2 2016 to Q1 2017) Phase 2 (Q4 2017 to Q4 2018) Phase 3 (Q2 2016 to Q2 2019) Phase 4 (Q2 2019 to Q4 2019)	Phase 4 shall be done during implementation from May 2019 to Dec 2019.
	Provide business skills training on income opportunities from increased electricity supply with 50% women participation	Implementing Agency	Q4 2017	Phase 1 done and we shall implement for Phase 2 (Q4 2017 to Q4 2018). Phase 1 done. Phase 2 will be scrutinized but it will be easier if the Phase 1 contractor is the Phase 2 successful bidder as they can repeat. Phase 3 is TPL and is transparent. Phase 4 will be TPL and they will be transparent.

				<p>Awareness raising on business opportunities from increased electricity supply done for Phase 1 (done in Q2 2015) with 50% women participation.</p> <p>Phase 2 (done in Q3 2014 and again in Q1 2016) with 50% women participation.</p> <p>Phase 3 (done in Q3 2014 and again in Q1 2016) with 50% women participation.</p> <p>Phase 4 (done in Q3 2014 and again in Q1 2016) with 50% women participation.</p>
Output 2. Operation and Maintenance (O&M) Program				
<p>(i) Finalized program manual for solar electric equipment.</p> <p>(ii) Knowledge of solar electric and hybrid equipment transferred during a period of 5 years after commissioning.</p>	<p>Conduct at least three yearly training on project planning and asset management maintenance (one for each of 3 project regions) for MEIDECC, TPL staff and the community electric societies with a minimum of 50% female participants.</p>	<p>Executing Agency</p>	<p>Phase 1 and 3 with TPL not required due to their existing capacity.</p> <p>Phase 2 and 4 shall be done in Q1 2019 and Q3 2019.</p>	<p>Trainings for MEIDECC and community from principal contractor. STR to come once a year to make sure that O&M is happening and train new staff if necessary. O&M Training provision built into the contracts of principal contractors and STR contract.</p>

	Conduct at least three yearly workshops with a minimum of 50% female participants for MEIDECC and TPL staff on procurement, anticorruption and safeguards.	Executing Agency (with support from ADB)	Ongoing until 2017.	Procurement training (July 2016 and August 2016); Safeguards training (August 2016) to target 50% female participation.
	Conduct at least 1 consumers' training on power budget management with a minimum of 50% female participation for each nine outer islands prior to project implementation.	Implementing Agency	Roll-out training prior to commissioning.	Initial activity such as awareness building done with 50% women participation: Phase 1 done in Q2 2015; Phase 2 done in Q1 2016. Phase 3 done in Q2 2016. Phase 4 done in Q1 2016.
	Conduct at least 9 workshops with a minimum of 50% female participation on demand side management for community electric societies' customers.	Implementing Agency	Roll-out workshop prior to commissioning	Initial activity such as awareness building done with 50% women participation. Phase 1 done in Q2 2015; Phase 2 done in Q1 2016. Phase 3 done in Q2 2016. Phase 4 done in Q1 2016.
	Enhance community electric societies' management capacities through facilitation of inclusion of women in EMCs (50% female).	Implementing Agency	Phase 3. Phase 4.	Done with 50% women members in the EMCs. Phase 3 done in Q1 2016. Phase 4 done in Q1 2016.

	Conduct at least 1 business skills training related to solar power-related business opportunities with 50% women participation in each of nine project sites.	Implementing Agency	Roll-out training prior to commissioning	Initial awareness building done with 50% women participation. Phase 1 done in Q2 2015. Phase 2 done in Q1 2016. Phase 3 done in Q2 2016. Phase 4 done in Q1 2016.
Output 3. Efficient and Effective Project Management				
Appointed Project Management Consultant (PMC) team, consisting of 1 electrical solar engineer to act as project manager, 1 power electric planning and field engineer to act as deputy project manager, 1 financial/procurement specialist, and 1 social safeguards specialist. Capacity building program conducted over a period of at least five years after commissioning. Content of the program: (i) Project planning and asset management maintenance (one for each group of islands) for ED, TPL staff and the community electric societies with minimum 50% female participants (At least three yearly training); (ii) Procurement, anticorruption, safeguards, and O&M of solar-diesel hybrid energy systems (one for each group of islands, at least three yearly training) with a minimum of 50% female participants for ED and TPL staff; (iii) Asset management concepts, theories and practical project applications (At least one staff for each island trained yearly);	Include a gender and safeguards specialist in the project team who will manage implementation of gender action plans, organize awareness activities	Implementing Agency	Q2 2015	Project Manager undertaking the role with assistance from Gender Focal Points from TPL and MEIDECC. A National Social and Gender Specialist to be engaged by Q2 2017. Satisfactory GAP implementation ongoing with the current set-up.
	Provide gender awareness training to all PMC/project staff.	Implementing Agency	Q2 2017	To be done in Q3 2017 after the Gender Specialist starts.
	Establish all project performance indicators disaggregated by gender, collect them regularly, and include them in the baseline, progress, monitoring, and evaluation reports.	Implementing Agency	Q1 2015 until project completion which is estimated as Dec 2019.	This info is reported in every single QPR, Annual Report and the Semi-Annual Safeguards report.
	Develop a project performance system that includes indicators measuring implementation and progress of the gender action plan.	Implementing Agency		Reporting done on quarterly basis. Some DMF

<p>(iv) Asset management program for TPL and community electric societies with a minimum of 10% female participants; (v) Efficient management & utilization of solar power services TPL customers (At least one staff for each island trained yearly); (vi) Consumers' training on power budget management with a minimum of 50% female participants for each nine outer islands and (vii) DSM with a minimum of 50% female participants for TPL and community electric societies' customers.</p>	<p>Enhance capacity by MEIDECC and TPL management to include gender perspective into its operations through yearly gender awareness training and institutional development assistance e.g. annual/monthly planning and reporting for all management personnel and interested staff.</p> <p>Include at least one female member to the project team in-charge of community consultation, information and training activities.</p> <p>Conduct project briefing of traditional women and men leaders (9 outer islands) on the project including gender targets and their rationale.</p>	<p>Executive Agency and Implementing Agency</p> <p>Implementing Agency</p> <p>Implementing Agency</p>	<p>Q1 2015 until project completion which is estimated as Dec 2019.</p> <p>Q2 2017</p> <p>Q2 2015</p> <p>All outer islands completed by Q1 2017.</p>	<p>indicators are not requiring gender disaggregation.</p> <p>GAP implementation ongoing with project/performance quarterly being monitored</p> <p>Awaiting engagement of gender specialist in Q2 2017.</p> <p>Gender Focal Points identified from the Implementing Agencies. Briefing done with 50% women participation. Phase 1 done in Q2 2015. Phase 2 done in Q1 2016. Phase 3 done in Q2 2016. Phase 4 done in Q1 2016.</p>
Output 4. Improvement of Energy Efficiency by Upgrading the Existing Distribution Network*				
<p>Upgrading power distribution network entirely on 'Eua and up to 50% on Vava'u</p>	<p>During design and implementation, all community consultations will have a target of at least 50% female participation.</p>	<p>Implementing Agency</p>	<p>Q1 2017</p>	<p>Community consultations done with 50% women participation. Phase 1 done in Q2 2015. Phase 2 done in Q1 2016. Phase 3 done in Q2 2016. Phase 4 done in Q1 2016.</p>

	Contractors, whenever culturally appropriate, will be encouraged to provide work for unskilled and semi-skilled labor for local people (30% women).	Principal Contractor	Phase 3 ('Eua and Vava'u). Q2 2016 to Q2 2019.	Phase 3 engaged 8 females (50%) in 2016 and will carry this into 2017, 2018 and 2019.
	Requirement for hiring of women (10% target) will be included in the local construction contracts for network rehabilitation.	Principal Contractor	Phase 4 (Nomuka, Ha'afeva, 'Uiha, Ha'ano and NTT) Q2 2019 to Q4 2019.	Phase 4 shall engage females in 2018 and will carry this into 2019.
	Ensure the existing toilet and sanitation facilities are women-friendly by providing reliable water supply, proper lock and lighting .	Principal Contractor	Phase 3 ('Eua and Vava'u) Q2 2016 to Q2 2019.	Separate restroom were implemented for Phase 3 on 'Eua and will be carried through to Phase 3 on Vava'u.
	Ensure equal pay for equal work between male and female workers.	Principal Contractor	Phase 4 (Nomuka, Ha'afeva, 'Uiha, Ha'ano and NTT) Q2 2019 to Q4 2019.	Phase 4 will also be done by TPL so they will carry their practices through to the end of Phase 4.
<p>Implementation Arrangements: The activities proposed under the additional financing will not require changes in the existing GAP for the overall project. The project management consultant (PMC) /Social Development Specialist will continue to implement the GAP with gender focal points from TPL and MEIDECC. Gender mainstreaming as per the proposed activities and targets will be ensured during project implementation. The current reporting on progress of GAP activities will remain in quarterly project progress report for submission to ADB and the government.</p>				

MWp = megawatt peak, kWp = kilowatt peak, ED = Energy Department, EMCs = electricity management committees, GAP = gender action plan, TPL = Tonga Power Limited, MEIDECC= Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications.

* Output 4 was combined with Output 1 in the DMF. It's a separate output under GAP to differentiate gender activities and better monitor its progress.

Source: Asian Development Bank.

IX. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

A. Design and Monitoring Framework

Impact the Project is Aligned with: Current project Reduction of Tonga's dependence on imported fossil fuel for power generation. Overall project Unchanged			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
Outcome Current project On-grid and off-grid generation systems are optimized and provide increased consumer access to electricity generated by solar power at a reduced cost.	Current project By 2020: At least 2,103 MWh of solar electricity supplied to customers: 1,314 MWh on 'Eua and Ha'apai Va'vau, and 789 MWh on Ha'apai outer islands and Niuas. About 2,010 tons of annual carbon dioxide emissions are avoided: 'Eua and Ha'apai – 1,380 tons; Ha'apai outer islands and Niuas – 630 tons. (Baseline: None).	TPL annual report TPL annual report	The site selection process is politicized. Environmental issues delay implementation.
Overall project Unchanged	Overall project Overall, about 2,483 MWh of solar electricity (2,103 Mwh original project + 380 MWh additional financing) supplied to customers annually. Overall, about 2,310 tons (2,010 tons original project + 300 tons additional financing) of annual carbon dioxide emissions are avoided.		

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
<p>Outputs</p> <p>Output 1</p> <p>Current project The project will construct and install solar power systems with a total capacity of 1.32 MWp on nine outer islands of Tonga, and the existing grid network on the islands of Vava'u and 'Eua rehabilitated by TPL.</p>	<p>1a.</p> <p>Current project By the end of 2017: (i) solar photovoltaic generators are installed and connected to existing electricity distribution networks (0.2 MWp on Eua, repair program on Vava'u and 0.55 MWp on Ha'apai); (ii) solar photovoltaic generators are installed and connected to existing community-owned and community-managed electrical mini-grids on four Ha'apai outer islands (100 kWp on 'Uiha, 70 kWp on Nomuka, 70 kWp on Ha'ano, and 150 kWp on Ha'afeva); (iii) installation of 23 kWp SHS capacity in Niufo'ou and 160 kWp SHS in Niuatoputapu; (iv) rehabilitation of 80% of existing grid networks on 'Eua and 20% on Vava'u. At least 65 households headed by women in Ha'apai outer islands (50 households) and Niuas (15 households) will benefit from the project. (Baseline: all 350 existing households) Women make up a targeted 30% of the workforce for local construction contracts for solar power installations.</p>	<p>1a.</p> <p>Project progress reports</p> <p>TPL annual report</p> <p>ADB's project completion report</p>	<p>The price of raw materials and power plant components increases unexpectedly.</p> <p>Government approval processes for procurement are slow.</p> <p>The procurement process is weak.</p> <p>The project management unit is not established in a timely manner and has rapid staff turnover.</p> <p>Counterpart staff lack of interest in O&M training.</p> <p>Counterpart staff and communities lack interest in the training program.</p> <p>Counterpart support, performance, and coordination are weak and inadequate.</p>
<p>Overall project In addition to the current project output 1, the rehabilitated grid network portions on Vava'u and</p>	<p>Overall project By the end of 2019: Output 1: Original Project: Construct and install 1.32 MWp solar system (output indicators (i)-(iii) on nine outer islands</p>		

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
'Eua are expanded.	Additional Financing: Construction of new mini-grid on Niuatoputapu and upgrade of the existing service lines on Ha'apai. Women make up 30% of workforce for construction and O&M of the new mini-grid on Niuatoputapu and upgrade of existing service lines on Ha'apai.		
Output 2 Current project O&M knowledge transferred through training.	2a. Current project: By the end of 2019: (i) the manual for solar electric equipment is finalized; (ii) knowledge of solar electric and hybrid equipment is transferred in the 5 years after commissioning of the systems.	2a. Project progress reports, TPL annual report, training attendance sheets, and ADB's project completion report Annual asset maintenance plan	
Overall project Unchanged	Overall project Unchanged		
Output 3 Current project Project implemented and managed efficiently.	3a. Current project By the end of 2019: (i) consultancy services provided through the appointment of the PMC team, comprising one electrical solar engineer to act as project manager, one power electric planning and field engineer to act as deputy project manager, one financial and procurement specialist, and one social safeguards specialist; (ii) continuous capacity building program conducted for each group of islands for	3a. Project progress reports, TPL annual report, semiannual safeguards monitoring reports, training attendance sheets, and ADB's project completion report	

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
	<p>5 years after systems commissioned.</p> <p>Training includes:</p> <p>(i) project planning and asset management and maintenance for the staff of the Energy Department and TPL and existing community electric societies (with an expected minimum 50% female participants);</p> <p>(ii) procurement, anticorruption, safeguards, and O&M training for solar–diesel hybrid energy systems (expected minimum of 50% female participants);</p> <p>(iii) asset management concepts, theories, and practical project applications for the staff of TPL and electric societies;</p> <p>(iv) asset management program for staff of TPL and electric societies (expected minimum of 10% female participants);</p> <p>(v) efficient use by management of solar power services for customers of TPL and electric societies;</p> <p>(vi) consumer training on power budget management for each of the nine outer islands (expected minimum of 50% female participants); and</p> <p>(vii) demand-side management for customers of TPL and electric societies (expected minimum of 50% female participants).</p>		
Overall project Unchanged	Overall project Unchanged		

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
Key Activities with Milestones 1. Install and commission 1.32 MWp solar power capacity in the project areas. 1.1 Carry out tender process for turnkey contract (package 1) for 0.75 MWp on-grid solar photovoltaic plants (Jan–May 2015) (complete) 1.2 Carry out tender process for turnkey contract (package 2) for 0.57 MWp mini off-grid solar photovoltaic system (Sep 2016–Jan 2017) (complete) 1.3 Evaluate and report on bids, and award contracts: package 1 (Jun–Jan 2015) (complete) 1.4 Evaluate and report on bids, and award contracts package 2 (Jan 2017–Apr 2018) (complete) 1.5 Install, test, and commission systems, including trial operation of on-grid solar photovoltaic plants (Jan 2016 –May 2017) (complete) 1.6 Install, test, and commission systems, including trial operation of mini and off-grid solar photovoltaic system (May 2018–Apr 2019) (changed) 1.7. Carry out tender process for rehabilitation of power distribution network on ‘Eua and Vava’u: (Jan 2016–Dec 2017) (complete) 1.8 Install, test, and trial operation of the rehabilitated power network on ‘Eua and Vava’u (Jan 2016–Dec 2019) (changed) 1.9. Carry out tender process for construction of mini-grid on Niuauputapu and rehabilitation of service lines on Ha’apai: (Jan 2018–Dec 2019) (changed) 1.10 Install, test, and trial operation of construction of mini-grid on Niuauputapu and rehabilitation of service lines on Ha’apai (Jun 2018–Dec 2020) (changed) 2. Conduct O&M training. 2.1 Design O&M program 2.2 Conduct O&M training for solar electric and hybrid equipment for 5 years after commissioning (Q1 2017–Q4 2020) (changed) 3. Provide efficient project implementation and management. 3.1 Recruit and field PMC team (Q1 2014) (complete) 3.2 Prepare detailed project implementation schedule, technical designs, safeguards, and gender action plan components (Q3 2014–Q2 2019) (changed) 3.3 Develop and implement a capacity-strengthening program for staff of Energy Department, TPL, community electricity societies, and TPL customers (every year until 2020). 3.4 Evaluate training programs and report (once a year until 2020) 3.5 PMC teams prepare final report after 5 years of activities (Q4 2020)			
Inputs ADB: \$5.94 million (current - Grants) \$2.50 million (current - Loan) \$13.94 million (overall) Government of Australia: \$4.50 million (current) \$0.74 million (additional) \$5.24 million (overall)			

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
<p>European Union:</p> <p>\$3.57 million (current) \$0.00 million (additional) \$3.57 million (overall)</p> <p>Second Danish Cooperation Fund for Renewable Energy and Energy Efficiency for Rural Areas:</p> <p>\$0.75million (current) \$0.00 million (additional) \$0.75 million (overall)</p> <p>Global Environment Facility:</p> <p>\$0.00 million (current) \$2.64 million (additional) \$2.64 million (overall)</p> <p>Government of Tonga:</p> <p>\$1.57 million (current) \$0.00 million (additional) \$1.57 million (overall)</p>			

ADB = Asian Development Bank, kWp = kilowatt-peak, MWh = megawatt-hour, MWp = megawatt-peak, O&M = operation and maintenance, PMC = project management consultant, Q = quarter, SHS = solar home system, TPL = Tonga Power Limited.

Source: Asian Development Bank.

B. Monitoring

58. **Project performance monitoring.** PMU, in coordination with MFNP and assisted by PMC, will prepare quarterly monitoring reports, including disaggregated baseline data for output and outcome indicators. The quarterly reports will provide information necessary to update ADB's project performance reporting system. The two annual loan and grant reviews and the quarterly monitoring reports will include environmental and social safeguard monitoring reports.

59. **Compliance monitoring.** In addition to the standard assurances, compliance with the specific assurances will be monitored. Implementation of covenants will be (i) summarized in the quarterly progress reports, (ii) discussed during PMU meetings, and (iii) reviewed during biannual loan and grant review missions. The executing and implementing agencies will cause the detailed consolidated project accounts to be audited in accordance with International Standards on Auditing by an auditor acceptable to ADB. The audited accounts will be submitted in the English language to ADB within 6 months of the end of the fiscal year by the executing agency. The government has been made aware of ADB's policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited accounts. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures. For revenue generating projects only, ADB requires audited financial statements (AFS) for each EA and IAs associated with the project.

60. **Safeguards monitoring.** Environment and social safeguards will be monitored by international and national specialists within the PMU, assisted PMC, in accordance with the initial environmental examination and the resettlement plan. The results of the safeguard monitoring will be reported in the PMU quarterly reports. Additionally, the two annual review missions will report on safeguard compliance.

61. **Gender and social dimensions monitoring.** The project's GAP will be implemented by the PMU which will include a social development specialist with relevant gender-related experience. The specialist will be responsible for incorporating social and gender mainstreaming measures into project planning and implementation, including awareness activities and establishment of gender-disaggregated indicators for project performance and monitoring. PMU assisted by PMC will report the progress of activities in its quarterly progress reports on overall project activities to ADB and the government.

B. Evaluation

62. ADB and the EA assisted by PMU will conduct two annual reviews throughout the implementation of the project as well as a mid-term loan/grant review for project. The review will monitor (i) project output quality, (ii) implementation arrangements, (iii) implementation progress, and (iv) disbursements. Within 3 months of physical completion of the project, the EA will submit a project completion report to ADB.²⁶

C. Reporting

63. PMU will provide ADB with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key

²⁶ Project completion report format is available at: <http://www.adb.org/Consulting/consultants-toolkits/PCR-Public-Sector-Landscape.rar>

implementation issues and solutions; (c) updated procurement plan, (d) updated implementation plan for the next 12 months; and (iii) a project completion report within 3 months of physical completion of the project. To ensure that projects continue viability and sustainability, project accounts and the executing agency AFS, together with the associated auditor's report, should be adequately reviewed.

D. Stakeholder Communication Strategy

64. PMU will prepare a stakeholder communication strategy and submit to ADB for review by the end of month 3 after loan/grant effectiveness. All communication will be in language suitable for the specific audience and will follow the ADB Public Communication Policy. The stakeholder strategy will incorporate the following components:

- (i) Compilation of stakeholder communication activities already undertaken.
- (ii) Role of PSC in coordinating and communicating with relevant government stakeholders.
- (iii) Public communication plan for disseminating information regarding project development to the public who may be impacted by the proposed projects.

X. ANTICORRUPTION POLICY

65. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the project.²⁷ All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all project contractors, suppliers, consultants and other service providers. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the project.²⁸

66. To support these efforts, relevant provisions are included in the loan agreement and grant agreements and the bidding documents for the project. Additionally, the government will (a) comply with ADB's Anticorruption Policy (1998, as amended to date), and cooperate fully with any investigation by ADB and extend all necessary assistance, including providing access to all relevant books and records for the satisfactory completion of such investigation; (b) ensure that relevant staff are trained in ADB's Anticorruption Policy; (c) ensure that the audited annual project accounts under the project, project progress, and procurement activities are disclosed on relevant government entities; and (d) allow and facilitate ADB's representatives to conduct spot and random checks on (i) flow of funds and their use for the projects in accordance with the legal agreements; (ii) work-in-progress; and (iii) project implementation under the project.

XI. ACCOUNTABILITY MECHANISM

67. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still

²⁷ Anticorruption Policy: <https://www.adb.org/sites/default/files/institutional-document/32026/anticorruption.pdf>

²⁸ ADB's Anticorruption and Integrity Office website: <http://www.adb.org/site/integrity/main>

dissatisfied, should they approach the Accountability Mechanism.

XII. RECORD OF PAM CHANGES

	Date Changed	Section Changed	Changes made
1.	Fact-Finding Mission: 22 May 2015	<ul style="list-style-type: none"> • Project Rationale (para. 1) • Section II. Implementation Plans, A and B: Project Readiness Activities, and Overall Project Implementation Plan • Section III. A. Project Management Arrangements • Section III.B. Key Persons Involved in Implementation • C. Project Organization Structure including Figure 1 • Section IV. Cost and Financing • Section IV. B-F • Fund Flow Diagram (FFD) • FFD, paragraph 8 • FFD, paragraph 12 • FFD, paragraph 13 • FFD, paragraph 34 • Section VIII. Gender Action Plan • Section IX. Performance Monitoring, Evaluation, Reporting and Communication 	<ul style="list-style-type: none"> • The project scopes are updated based on Review and Fact-Finding Mission MOU. • EU is included as a member (observer) of PSC and the PSC members are updated. • The Key persons of ED, TPL and ADB are updated. • ED is the implementing agency in lieu of TERM-AGENCY. • Updated, including cofinancing from ADB, EU and SDCFREEERA. • Grants from ADB, EU and SDCFREEERA are added • The EU grant is added • The Environment Specialist position is added • The list of PMU staff is updated. • The PSC members are updated. • The Environment Specialist position is added • Updated including the proposed power distribution network component • Updated based on the latest implementation plan, including the proposed power distribution network component
2.	Fact-Finding Mission: 12 Aug 2016	<ul style="list-style-type: none"> • Paragraph 3 (ii), Impact and Outcome • Section II. Implementation Plans, A. Project Readiness and B. Overall Project Implementation Plan • Section III. Project Management Arrangements, B. Key Persons Involved in Implementation • Section IV. Costs and Financing, paragraph 8 	<ul style="list-style-type: none"> • The project scopes are updated based on Joint Review and Fact-Finding Mission MOUs. • Additional output for Grid Rehabilitation. • Revised to reflect new timeline for the additional financing. • Reflected the current CEO of the Ministry of Financing and National Planning on behalf of the Government of the Kingdom of Tonga.

-
- A. Project Financing Plan, paragraph 9, including Table 1: Revised Investment Plan, 2: Revised Financing Plan
 - C. Detailed Cost Estimates by Expenditure Category
 - D. Allocation and Withdrawal of Grant Proceeds/C.3 Additional Financing II
 - E. Detailed Cost Estimates by Financier
 - F. Detailed Cost Estimates by Year
 - G. Contract and Disbursements S-Curve (Overall Project)
 - Section V. Financial Management, A. Financial Management Assessment, paragraph 22
 - B. Summary of Financial Management Assessment of Tonga Power Limited, paragraphs 24, Table 1, 25; C. Financial Management Internal Control and Risk Assessment, paragraph 26, Table 2
 - D. Disbursement, paragraph 29
 - Section VI. Procurement and Consulting Services, C. Procurement Plan
 - VII. Gender Action Plan
 - IX. Performance Monitoring, Evaluation, Reporting and Communication, A. Design and Monitoring Framework
- Updated to include information on additional financing of grant and loan from ADB.
-