

PROJECT PREPARATION TECHNICAL ASSISTANCE

A. Justification

1. A regional project preparatory technical assistance (R-PPTA) is required to prepare the Pacific Renewable Energy Investment Facility (Facility).²⁰ The R-PPTA will;

- (i) Prepare projects in Cook Islands and Tonga, including due diligence and feasibility studies. Due diligence will include technical, economic, financial, governance (financial management, procurement, anticorruption and project management), safeguards (social and environment), social, gender and climate change. Framework documents will be prepared for the facility implementation, as required.
- (ii) Implement projects in Cook Islands, Tonga and Republic of Marshall Islands, including (a) detail design, and (b) subproject procurement,
- (iii) Support energy sector reform in participating SIDS. Sector reform will include (a) sector planning (roadmaps and grid integration studies), (b) power utility management reform and capacity building, (c) tariff review and reform, (d) review and revision of regulatory and policy frameworks, and (e) promotion of the private sector by identifying opportunities for independent power providers (IPP's) across the SIDS, providing initial transaction advice, designing guarantee products, and facilitating ADB private sector department (PSOD) investment. Dissemination of best practices and lessons learnt will be facilitated across the region. Reform discussions will be held early with all participating SIDS, which will allow for early engagement and adequate time for reform implementation prior to investment decisions.

B. Major Outputs and Activities

Table A4.1: Summary of Major Outputs and Activities

Major Activities	Completion Date	Major Outputs	Completion Date
Consultants mobilization	Feb 2017	Establish Regional FSU	June 2017
Prepare Facility Administration Manual	July 2017	Advertise main RMI bidding documents	June 2018
Prepare Safeguard Framework Documents (if required)	July 2017	Advertise main Tonga bidding documents	June 2018
Prepare Cook Islands Feasibility Studies, RRP and linked documents	August 2017	Identify private sector opportunities	June 2017
Prepare Tonga Feasibility Studies, RRP and linked documents	August 2017	Conduct sector reform dialogue in all SIDS	June 2017
Advertise main Cook Islands bidding documents	June 2018		

FAM = Facility Administration Manual, FSU = Facility Support Unit, RMI = Republic of Marshall Islands
Source: Asian Development Bank.

C. Cost Estimate and Proposed Financing Arrangement

2. The PPTA is estimated to cost \$5 million of which \$ 2 million will be financed on a grant basis by ADB's Technical Assistance Fund-V and \$3 million from the Clean Energy Fund²¹

²⁰ The R-PPTA will initially support project preparation and detailed design in Republic of Marshall Islands, Tonga and Cook Islands, geographical scope may be expanded later to include additional countries, depending on TA financing availability.

²¹ Financing partners: the governments of Australia, Norway, Spain, Sweden, and the United Kingdom.

under the Clean Energy Financing Partnership Facility and administered by ADB. The Governments of Cook Islands, Tonga and Republic of Marshall Islands will provide counterpart staff, office supplies, secretarial assistance, domestic transportation, provision of office space, communication facilities for consultants, and other in-kind contributions. The detailed cost estimate is presented below.

Table A4.2 Cost Estimates and Financing Plan (\$'000)

Item	Amount
A. Asian Development Bank^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants	1,150.0
ii. National consultants	140.0
b. International and local travel	30.0
2. Equipment ^e	10.0
3. Training, seminars, and conferences ^d	60.0
4. Surveys and studies ^c	400.0
5. Miscellaneous administration and support costs	10.0
6. Contingencies	200.0
Subtotal (A)	2,000.0
B. Clean Energy Fund under the Clean Energy Financing Partnership Facility^b	
1. Consultants	
a. Remuneration and per diem	
i. International consultant	1,650.0
ii. National consultants	210.0
b. International and local travel	70.0
2. Equipment ^e	20.0
3. Training, seminars, and conferences ^d	140.0
4. Surveys and studies ^c	600.0
5. Miscellaneous administration and support costs	10.0
6. Contingencies	300.0
Subtotal (B)	3,000.0
Total (A+B)	5,000.0

^a Financed by the Asian Development Bank's Technical Assistance Special Fund (TASF-V).

^b Financing partners: the governments of Australia, Norway, Spain, Sweden, and the United Kingdom. Administered by the Asian Development Bank. Cofinancing will be disbursed on a pro-rata basis.

^c Surveys and studies will include social surveys, sector roadmaps, grid integration studies, tariff reviews, utility reform reviews, and revision of regulatory frameworks. Procurement of surveys and studies will be through consultancy contracts.

^d Procurement of training, seminars and conferences will be through consultancy contracts.

^e Equipment will include computers, printers, scanners, projectors and monitoring equipment.

Source: Asian Development Bank estimates.

D. Consulting Services

3. The R-PPTA will require 11 international consultants (111 months) and 3 national specialists (68 months). A consulting firm will be engaged for project preparation, detail design and procurement support using the quality- and cost-based selection (QCBS) method with a quality-cost ratio of 90:10. Three international positions (Facility Design Specialist, Power Engineer and Private Sector Specialist), will be engaged through individual consultant selection. All consultants will be recruited in accordance with ADB's *Guidelines on the Use of Consultants* (2013, as amended from time to time). Usage of a framework agreement or indefinite delivery

contracts will also be considered. The proceeds of the TA will be disbursed in line with ADB's *Technical Assistance Disbursement Handbook* (2010, as amended from time to time). The QCBS contracts for subprojects in Cook Islands, Tonga and Republic of Marshall Islands will be implemented between November 2016 and November 2019, including project preparation, detailed engineering and procurement support. The R-PPTA will be implemented between November 2016 and November 2026, including (i) sector reform for all countries, and (ii) detail design and procurement support for all project contracts. A summary of the anticipated consulting services required is summarized below:

Table A4.3 Summary of Consulting Services

International Specialists		Months
1.	Facility Design Specialist	2
2.	Power Engineer	36
3.	Private Sector Specialist	12
4.	Renewable Energy Engineer (Team Leader)	26
5.	Financial Specialist	2
6.	Economist	2
7.	Transmission and Distribution Specialist	6
8.	Social Safeguard Specialist	6
9.	Environment Specialist	6
10.	Procurement Specialist	6
11.	Financial Management Specialist	4
Total		111
National Specialists¹		
1.	Power Engineer(s)	28
2.	Social Safeguard Specialists	20
3.	Environment Specialists	20
Total		68

¹ National specialists will be recruited in Cook Islands, Tonga and Republic of Marshall Islands.
Source: ADB estimates.

4. **Facility Design Specialist.** The facility design specialist (international, 2 person months), will be based in Manila and will support PARD in design of the investment facility. The specialist will have at least 10 years' experience in development of multilateral development bank infrastructure investment facilities. Experience with ADB projects would be an advantage. The specialist engineer will spend 100% in Manila and will be engaged through individual consultant selection.

6. **Power Engineer.** The international power engineer (36 person months), will be based in Manila and will support PARD in design and implementation of the facility. The engineer will have at least 10 years' experience in development of power sector infrastructure projects, preferably including Pacific experience. The international engineer will spend a minimum of 50% in the field and will be engaged through individual consultant selection. The power engineer will be responsible for leading the regional project support unit. The power engineer will assist PARD energy sector specialists to (i) recruit and manage consultants, (ii) review and quality assure technical reports, (iii) monitor project implementation, and (v) trouble shoot project delays and implementation issues. The power engineer will design and implement the regional components of the facility. The power engineer will support ADB team leaders in dialogue and design of sector reform in all participating SIDS. The power engineer will manage consultants to implement the sector reform studies including (i) sector planning (roadmaps and grid integration studies), (ii) power utility management reform and capacity building, (iii) tariff review and reform,

and (iv) review and revision of regulatory and policy frameworks. The power engineer will review subproject project design between feasibility study phase and detail design to ensure technical quality.

7. **Private Sector Specialist** (International 12 person-months). The specialist will have a minimum of 15 years background in development of private sector projects in developing countries, preferably in the energy sector and in the Pacific. The specialist will be engaged through individual consultant selection. The specialist will (i) identify opportunities for independent power providers (IPP's) across the participating SIDS to invest in renewable energy generation, including options for bundling transactions, (ii) identify and design transaction advisory services to SIDS Governments/utilities, (iii) design guarantee products which will primarily provide breach of contract coverage for power purchase agreements with national utilities for IPP's, and (iv) work closely with ADB private sector investment department and assist in designing a regional investment facility, if suitable.

8. **Renewable Energy Engineer (Team Leader)**. The solar power engineer (26 person months) and national power engineer (combined 28 person months) will have at least 10 years' experience in development of power sector infrastructure projects, including 5 years' experience with renewable energy power projects, including solar power. The international engineer will spend a minimum of 80% in the field. As team lead the international engineer will be responsible for managing the Consultant team and coordinating the overall project implementation as well as all reporting activities, and liaison with stakeholders. The team leader will (i) carry out least cost power sector planning, as required, (ii) assess levelized cost of generation, (iii) prepare and implement a consultation and participation plan, (iv) manage consultation with stakeholders, (v) prepare the detailed work program and implementation schedule, (vi) coordinate preparation of the deliverables, (vii) prepare the detailed design and monitoring framework (DMF), (viii) prepare the project procurement plan and cost estimates, and (ix) prepare the project implementation schedule. As the technical specialist, the international engineer will (i) prepare the project technical design, (ii) conduct grid integration analysis, (iii) undertake a procurement capacity assessment of the relevant utility, and (iv) prepare terms of reference for survey packages. During detail design, the international engineer will (i) prepare technical specifications suitable for inclusion into bidding documents, (ii) assist in preparing bid evaluation reports, and (iii) conduct equipment inspection. The national specialist will assist the international specialist deliver the above terms of reference.

9. **Financial Specialist** (International 2 person-months). The specialist will have a minimum of 15 years background in financial analysis of energy projects in developing countries, preferably in the Pacific. The specialist will be experienced in ADB financial analysis procedures. The specialist will, (i) review previous financial analysis and update where required, including calculation of the financial internal rate of return and weighted average cost of capital, (ii) identify project revenue and commercial risks, conduct relevant sensitivity analyses, (iii) prepare a financing plan, (iv) review audited utility financial statements, (v) prepare projected financial statements for the Implementing Agency (IA) for 10 years, including a sensitivity analysis, (vi) complete relevant sections of the Report and Recommendation to the President (RRP), (vii) review tariffs, (viii) conduct financial management assessment of the utility.

10. **Economist** (international, 2 person-months). The specialist will have a minimum of 10 years background in economic analysis of energy projects. Experience in developing countries, including the Pacific will be an asset. The specialist will be familiar with ADB economic analysis procedures. The specialist will (i) carry out an economic analysis for the project specifically

including (a) power demand analysis, (b) least-cost analysis, and (c) economic viability analysis using the methodology outlined in the ADB Guidelines of the Economic Analysis of Projects, (ii) discuss the assumptions and economic parameters used in the economic analysis, (iii) calculate an economic internal rate of return (EIRR) for the project (including subprojects), (iv) undertake risk and sensitivity analysis with respect to the economic internal rate of return in accordance with ADB's Handbook for Integrating Risk Analysis in the Economic Analysis of Projects, and (v) complete relevant sections of the (a) Report and Recommendation to the President, including linked documents, and (b) Project Administration Manual.

11. **Transmission and distribution engineer** (international, 6 person-months). The engineer will have a minimum of 10 years demonstrated experience in design and implementation of transmission and distribution projects, including in developing countries. The engineer will spend a minimum of 80% in the field. The engineer will (i) review relevant background grid data, (ii) prepare the transmission and distribution technical design, including but not limited to station switching arrangements, system voltage, conductor size, voltage regulation and reactive power compensation, transformers, auto-reclosing, control and protection and remote monitoring, (iii) conduct grid stability analysis, (iv) prepare cost estimates for all transmission/distribution components, schedules for transmission/distribution components and assist in preparation of procurement plan, (v) prepare system diagrams and plans (using AutoCAD or similar package), showing existing and proposed transmission and distribution alignments (including overlays on aerial/satellite photography). The plans should clearly show expansion proposals, (vi) prepare technical specifications, (vii) prepare relevant sections of the bidding documents.

12. **Social Safeguard Specialists.** The international social safeguard specialist (6 person months) and national social safeguard specialists (20 person months) will have at least 10 years' experience in social assessment of infrastructure projects, preferably in the power sector. The international social safeguard specialists will spend a minimum of 80% in the field. The specialists will undertake necessary due diligence/assessment on involuntary resettlement and indigenous peoples according to ADB's Safeguard Policy Statement. If the project requires land acquisition/resettlement, the specialists will: (i) review the country systems on land acquisition/resettlement, and identify any gaps and gap-filling measures between ADB requirements and the country systems; (ii) assess land acquisition/resettlement impacts including census of affected persons, inventory of losses, socio-economic survey; and (iii) prepare a resettlement plan. If the project impacts indigenous peoples, the specialists will also prepare an indigenous peoples plan. The Consultant will (i) collect available background data, (ii) organize and conduct surveys, (iii) develop and implement a stakeholder and community consultation plan, (iv) assess the pro-poor impacts of the project, (v) assess the gender impact of the project, (vi) prepare Poverty and Social Assessments (PSA) and Summary Poverty Reduction and Social Strategy (SPRSS), (vii) assess vulnerabilities and risks associated with HIV/AIDS and other possible health impacts, (viii) prepare socioeconomic monitoring and management plans, (ix) prepare gender action plan, (x) assess SIEA human resource policies regarding gender, and (xi) assist the EA undertake consultations. During implementation, the specialists will (i) take the overall responsibility of resettlement and social safeguards during the design, implementation and monitoring of the project in accordance with the ADB's Safeguard Policy Statement (SPS) and relevant national laws, (ii) develop and implement stakeholder consultation and communication programs to ensure the full awareness and participation of affected communities and stakeholder agencies, (iii) assist in establishing and implementing the project's grievance redress mechanism, (iv) update the resettlement plan (RP) in compliance with the SPS, (v) facilitate disclosure of the RP to affected communities, (vi) supervise and monitor

implementation of the RP, (vii) prepare semi-annual monitoring reports on the resettlement and social safeguards, (viii) implement and monitor the gender action plan. The Consultant will prepare a resettlement framework and Indigenous Peoples planning framework for the investment facility, if required.

13. **Environment Specialists.** The international environment specialist (6 person months) and national environment specialists (20 person months) will have at least 10 years' experience in environmental assessment of infrastructure projects, preferably in the power sector. The international environment specialists will spend a minimum of 80% in the field. The environment specialists will prepare the initial environmental examination (IEE) for each project ensuring it conforms to all relevant national regulatory requirements and ADB's Safeguard Policy Statement (2009). The environment specialists will also (i) conduct site visits to assess environmental conditions. Identify whether flora and fauna surveys are required as part of the environmental baseline. If required, prior to undertaking the surveys, prepare the TOR and submit to ADB for approval, (ii) consult with relevant stakeholders, including environmental non-government organizations and civil society organizations. Incorporate comments into project design and include the report of consultation process and outcomes in the IEE, (iii) working with the engineers, assess climate and disaster-related risks and assist the design engineers in incorporating appropriate climate proofing and mitigation measures into the project design, (iv) as part of the EMP, identify appropriate monitoring parameters suitable for incorporation into the project performance monitoring system. During implementation, the specialist will (i) ensure relevant provisions from the IEE are included in the tender/contract documentation, (ii) review the contractor's environment management plan (CEMP), (iii) establish an environmental monitoring and reporting system within the national PIU and contribute to Quarterly Progress Reports, (iv) monitor the contractor's compliance with CEMP, and (v) undertake training of the national PIU. The specialists will prepare the environment framework documents for the investment facility, if required.

14. **Procurement Specialist.** The international position (6 person-months) will have a minimum of 10 years demonstrated experience in preparation of procurement documents and will be familiar with ADB procurement systems. The specialist will (i) carry out a procurement capacity assessment of each power utility, (ii) prepare standard bidding documents, (iii) review and finalize tender documents and submit to the national PIU for approval, (iv) coordinate the tendering process on behalf of the respective PIU, including but not limited to advertising, bid opening, tender evaluation report, and assisting in negotiations and contract award, (v) assess project administration capacity, (vi) assist the respective PIU to process invoice and prepare withdrawal application in accordance with ADB requirements, and (vii) establish procurement related administration processes such as goods tracking and documentation, variations, invoice approvals, auditing, documentation, and other project tracking and quarterly reporting issues. The specialist will prepare (i) the Project Procurement Risk Assessment to both EA and IA, (ii) the master bidding documents, (iii) the draft Procurement Plan and (iv) trainings in ADB procurement and consulting services procedures.

15. **Financial Management Specialist** (international, 4 person months). The financial specialist will have post graduate qualifications in finance, and at least 10 years of experience in project financing. The specialist will be familiar with ADB fund flow mechanisms. The specialist will assist in setting up the respective PIU financial management systems and train the relevant PIU financial staff on ADB requirements. The financial management will design the fund flow and disbursement mechanisms of each project.

E. Implementation Arrangements

16. The R-PPTA will be implemented over a 10-year period between November 2016 and November 2026. The R-PPTA will finance one or more consulting firms and individual consultants to complete the works. The R-PPTA will require a total of 111 person-months of international consultants and 68 person-months of national consultants to be hired through quality- and cost-based selection (QCBS) with a quality–cost ratio of 90:10, and individual consultant selection. All consultants will be recruited by ADB in accordance with ADB's *Guidelines on the Use of Consultants (2013, as amended from time to time)*. Advance consultant recruitment will be undertaken. The respective executing and implementing agencies will be involved in the consultant recruitment in accordance with an agreed responsibility matrix, however, ADB will sign all consultant contracts for project preparation, detail design and procurement.²² The consultant will report to the implementing agency for technical issues (with ADB oversight) and to ADB on contractual issues. The regional project support unit will provide technical review between the feasibility study and detail design stage. A project steering committee (PSC) in Cook Islands, Tonga and Republic of Marshall Islands will oversee implementation, monitor progress, and provide guidance to the implementing agency. The PSC will meet at least quarterly and will be chaired by the national executing agency. The respective national PIU will host the project steering committee and will act as the secretariat.

17. Equipment and materials financed under the technical assistance will be procured in accordance with *ADB's Procurement Guidelines (2015, as amended from time to time)*. At completion of the project, equipment and materials will be transferred to participating Pacific Island countries. Training and workshops will be implemented through the consultants' contracts. The proceeds of the TA will be disbursed in line with ADB's *Technical Assistance Disbursement Handbook (2015, as amended from time to time)*.

18. Project Implementation Units (PIU's) will be established within each implementing agency to implement the subprojects. The national PIU's will provide the services of counterpart staff where available. The national PIU's will be responsible for procurement of all civil works and goods contracts. The R-PPTA will finance additional consultants and equipment to support the PIU in implementing the outputs. The R-PPTA will also establish a regional FSU, which will:

- (i) provide centralized technical and procurement support to the national PIU's established in each participating SIDS;
- (ii) engage and manage consultants for project preparation and detailed engineering, and support for sector reform;
- (iii) conduct early sector reform discussions with all participating SIDS and provide technical assistance, which will allow for early engagement and adequate time for reform implementation prior to investment decisions;²³
- (iv) disseminate technical and procurement lessons learnt between national PIU's;
- (v) identify options for bulk procurement (equipment, civil works and independent power providers), and
- (vi) identify opportunities for private sector investment.

19. The proposed TA processing and implementation schedule is listed in Table A4.4.

²² The proposed arrangement is provided as an option for the executing and implementing agencies under the R-PPTA. Options will be discussed with each executing and implementing agencies during project preparation, including engagement and financing of detail engineering separately to the R-PPTA.

²³ Medium to long term engagement on sector reform by a centralized project support unit with medium to long term financing through a facility is considered preferable to project by project short term engagement on sector reform.

Table A4.4: Technical Assistance Processing and Implementation Schedule

Major Milestones	Expected Completion Date
Investment Facility	
Concept Paper approval	November 2016
Informal Board seminar	January 2017
Management Review Meeting	March 2017
Board Approval	March 2017
Cook Islands	
Loan Fact Finding	May 2017
Staff Review Meetings	July 2017
President Approval	Sep 2017
Advertise Bidding Documents	Nov 2017
Award main contract	June 2018
Tonga	
Loan Fact Finding	Aug 2017
Staff Review Meetings	Sep 2017
President Approval	Dec 2017
Advertise Bidding Documents	Feb 2018
Award main contract	Apr 2018
Republic of Marshall Islands	
Advertise Bidding Documents	Feb 2018
Award main contract	Apr 2018

Source: Asian Development Bank.