

Te Tarai Vaka Activity Progress Report: ADB Loan 3193/Grant 0415-COO Renewable Energy Sector Project

Summary

Activity information

Activity Title	Cook Islands Renewable Energy Sector Project
Goal	Increased energy security in an environmentally sustainable manner
Intended outcomes	The outcome will be increased access to a higher share of electricity generated from renewable energy sources

Funding information

Start and end dates	9 February 2015 – 31 December 2017 ¹
Total cost	NZD33.22 million* Note that all reported costs will be in NZD millions
Reporting period	1 October – 31 December 2016

* conversion rate (19/6/2015)

Progress report preparation

Prepared by	Entura Team
Others involved or consulted during this reporting period	REDD staff, MFEM, DCD staff, ADB, Project Steering Group, Aitutaki Island Government, Aronga Mana, land owners and various stakeholders, TAU staff and Board of Directors, Environment Service, Ministry of Justice, CIIC Staff and Board of Directors, Ged McCombie, Willis New Zealand (Government Insurers), Woo Lee, ADB Energy Specialist ADB Joint Review and Inception Mission Woo Yul Lee, Energy Specialist, PATE (Mission Leader); and Aivy Katherine Dizon, Associate Project Analyst, PATE (Mission Member) ² . NETcon Group & Infratec (Infratec), Phase 1 Contractors ³ , Micah Sherman, Nicky Atkinson, Dave Armstrong, Tuairi
Date of report	December 2016

Key Conclusions and Necessary Actions

This seventh Progress Report has been prepared by Entura, Project Owners Engineers, (POE) in cooperation with the Cook Islands Government (CIG), Project Management Unit (PMU), Project Steering Group (PSG) for the ADB funded Loan 3193/Grant 0415-COO Renewable Energy Sector Project. The Progress Report provides an update to the ADB and all relevant stakeholders on project progress between 1 October (commencement of reporting period) and 31 December 2016 (end of reporting period).

Activities undertaken in this reporting period focused on tender clarifications, bid openings and preparation of Bid Evaluation Reports (BER's) for the Invitation to Bid (ITB) for battery energy storage

¹ ADB Fact-finding Mission in April reached an in principle agreement with the Government to extend the original loan and grant closing date from 31 December 2017 to 31 December 2019

² Mission held 21 – 25 November 2016

³ Southern Group site visits and consultations held 12 – 21 November 2016

system (BESS) on Rarotonga which closed on 3rd November 2016, and grid-rehabilitation package for Mitiaro and Mauke which closed on 4th November 2016. As well finalising and advertising the ITB for the Phase 1 Southern Group Civil Works package on 9th December 2016 with the closing date 27th January 2017. During this period the payment for land to affected landowners on Mangaia and Mitiaro was concluded.

Initial site visit for Infratec team to commence community engagement, first aid training and confirm logistics with local staff as well as accommodation.

Review of Progress to Date

A. Project Implementation

1. Administration

The POE works directly with the Implementing Agency, REDD, and during this reporting period the POE local team used the REDD office intermittently. Project Owners Engineer, Chris Blanksby, visited during the ADB Joint Review and Inception Mission 21st – 25th November and other international staff were working from their home offices.

The PMU is staffed by the Project Manager, Finance Specialist (2 days per week) and PEC fund Coordinator who are taking on the major responsibility for the project with oversight by the REDD Director in close consultation with the POE.

2. Procurement

The Phase 1 solar turnkey contractor, Infratec, was signed on the 17th August 2016 and the contract became effective during this reporting period, 9th October 2016.

Mitiaro and Mangaia land agreements have been confirmed and payments to landowners commenced this period.

The Bid opening for the power distribution network package (grid package) was held on 4 November 2016. The minutes of the pre-bid meeting were prepared and sent to all registered bidders. There were eight (8) clarifications issued that responded to all 32 questions received and these were sent to all registered bidders. The deadline for the submission of bids was extended from 18th October to Friday 4 November 2016 (Clarification 7) and the receipt of bids at the Renewable Energy Division of the Office of the Prime Minister was closed at 12.00 pm local time on Friday 4th November 2016. Out of 35 firms that received the bidding documents, four (4) bidders submitted bids. The Bid Evaluation Report (BER) is expected to be submitted to ADB for review by the end of this quarter. All four bids for the grid package are about NZ\$1.4 to over NZ\$3.3 million higher than the estimated budget.

The Bid opening for the BESS package was held on 4 November 2016 with 4 out of the 8 bids were below the estimated budget in the procurement plan. POE is seeking further clarifications from bidders prior to finalizing the BER. The BER will be submitted early in the next quarter.

The Phase 1 Civil Works ITB was advertised on the 9 December 2016 and the deadline for submissions will be 27 January 2017. Concerns were raised by Infratec during the ADB mission that potential delay of procurement of the civil works contract would delay the overall implementation of Phase 1 solar plants and cause additional costs. To mitigate these risks, the PMU should award the contract by early

March 2017, and civil works for the first island under Phase 1 is completed by the second week of June 2017.

Phase 2 Aitutaki feasibility study report was cleared by ADB on 9 November 2016 and confirmed that the subproject selection criteria in Section C of the project administration manual (PAM) and ADB's guidelines are fully complied with. The Aitutaki subproject therefore has been officially included in Phase 2. Both the initial environmental examination and social safeguards due diligence report (Resettlement Plan) were updated to include Aitutaki. The procurement activity however will be put on hold until contracts for both civil works and grid packages under Phase 1 are awarded. It is expected to resume in the second quarter of 2017 only if there is sufficient budget available under the Project to finance the Aitutaki subproject. Otherwise, the Aitutaki subproject may be omitted from the Project scope. The Government has expressed its intention to seek an additional grant of about \$3.0 million from the Clean Energy Financing Partnership Facility (CEFPF)⁴ to finance the Aitutaki subproject if it is eligible. The Mission will discuss with the CEFPF secretariat whether the Aitutaki subproject would meet the eligibility condition of the CEFPF grant financing. If it is, GCI will submit an official request to apply for the CEFPF grant.

On 21 November 2016 the Government submitted a letter of request to omit the solar PV power system subproject to be developed on Rarotonga (Rarotonga solar subproject) from the non-core subprojects, or Phase 2. It is mainly because funds have been fully allocated towards Phase 1 (Mauke, Mitiaro, Mangaia, Atiu) and Aitutaki in Phase 2, with no substantial amount left aside from the contingency. ADB is expected to proceed with a minor change in scope to officially omit the Rarotonga solar subproject by the end of this quarter.

3. Financial disbursements.

The financial disbursements recorded below provides an update to the ADB and all relevant stakeholders for the CIRES from 9th February 2015 to 22 December 2016.

1. Four Phase 1 subprojects on Atiu , Mangaia, Mauke, and Mitiaro islands	\$0.79
2. Turnkey Contract Solar PV System Development ⁵	\$4.55
3. One Phase 2 Battery Energy Storage System on Rarotonga Island	\$-
4. Institutional strengthening and project management support	\$0.19
Total Expenditure as at 22 December 2016	<u>\$5.53</u>

Appendix A: Progress Against Agreed Work-plan and Budget (table) reflects financial disbursements for the quarter September 2016 to December 2016

⁴ The CEFPF was established in 2007 to help improve energy security in developing member countries and decrease the rate of climate change. It will do this by financing the deployment of new, more efficient and less polluting supply and end-use technologies, through either grant or non-grant resources. The Governments of Australia, Canada, Norway, Spain, Sweden, the United Kingdom, and Japan, and the Global Carbon Capture and Storage Institute support the grant.

⁵ Turnkey Contract Solar PV System Development \$4.43 reflects the total PEC expenditure to date included as part of the CIGov. Contribution

4. Field work.

Field investigations during this period included:

- First community consultation visit to Mangaia, Mitiaro, Atiu and Mauke by NETcon Group & Infratec (Infratec) Community Liaison personnel from 31 October to 18 November
- Site visits and consultations with Island Council and energy personnel on Mangaia, Mitiaro, Atiu and Mauke by NETcon Group & Infratec (Infratec) personnel, local staff contracted by Infratec, Entura local consultants and PMU staff was carried 15 – 19 November 2016
- PMU Project Manager and Entura Monitoring Consultant supervised the commencement of clearing of the site on Mitiaro from 23 – 25 November 2016

5. Safeguards and monitoring

The second Semi-Annual Safeguard Monitoring Report for the CIRESP will be submitted by the end of this reporting period. The report will cover the period 30 June – 31 December 2016. The purpose of the report is to document social and environmental safeguard monitoring activities.

6. ADB Turnkey Tender Packaging

In early November, the Phase 1 solar turnkey contractor, NETcon Group & Infratec (Infratec), submitted a draft civil works design for Phase 1 solar plants to the project management unit (PMU). The civil works design was reviewed by both PMU and Entura and confirmed during this reporting period. Infratec made a presentation on the latest status of Phase 1 solar subproject implementation and further implementation plan during the ADB Mission in November. Progress to date included the following areas:

- Site Visits and consultations with community and stakeholders, central government, island councils and representations as well as local businesses.
- Technical mapping and site familiarization
- Procurement of long lead items underway (Batteries, Inverters, generators)

7. Cook Islands Renewable Energy Chart Implementation Plan (CIRECIP)

The CIRECIP is a document that continues to guide the work of the REDD office.

Progress against Results Measurement Table

The Results Measurement Table Appendix B shows progress of the activity against the intended outcomes and outputs and has been updated to mirror the changes in the Project Administration Manual (PAM) April 2016 carried out during the ADB Fact-Finding mission in April 2016. Finalisation of a Results Measurement Table is identified as an action for further discussion at PSG meetings.

Project Specific Covenants

Project specific covenants Appendix D are those covenants that have been included in specific legal agreements, the Loan Agreement between the Government of the Cook Islands and ADB. The ADB Mission 21 – 25 November undertook a compliance review and all covenants are either being complied with or not yet due.

Changes to Activity Context in the Reporting Period

ADB is expected to proceed with a minor change in scope to officially omit the Rarotonga solar subproject by the end of this quarter.

Relationship between Implementing Agencies, Beneficiaries and Other Stakeholders

Pacific Environmental Community (PEC) Procurement

No additional activity with regard to PEC occurred during this reporting period however the PEC fund solar panel allocation was confirmed as follows:

Island	Final	Spare
Aitutaki	3774 (1MW)	100
Mangaia	1800	20
Atiu	1560	20+40
Mauke	864	20
Mitiaro	600	20
Rarotonga	1.3 MW	

Co-financing from GEF

The co-financing from GEF has supported the government's effort to increase power generation from renewable sources and enhance the government's institutional capacity for implementing the Cook Islands Renewable Energy Chart Implementation Plan (CIRECIP), 2012–2020, which sets a target of supplying electricity from renewable energy sources on all inhabited islands by 2020. The proposed additional financing is included as a firm 2016 project in ADB's country operations business plan, 2016–2018 for the Cook Islands.⁶ The financing has enabled the ITB for a battery energy storage system (BESS) to be installed at the Te Mana Ra Solar PV facility on the island of Rarotonga for integration into the existing power system infrastructure. The BER is currently being prepared and will be submitted to ADB in January 2017 with a contract signed by end of February 2017.

Co-financing from the Green Climate Fund (GCF)

ADB has submitted on behalf of Government a fully developed proposal including a feasibility study to request a \$12.0 million grant from GCF. The proposal was approved during the GCF Board meeting held in Apia, Samoa on 14–15 December 2016. The GCF grant is expected to be used for the installation of three BESS units in two different locations with a preliminary capacity of 3.0 MW and

⁶ ADB. 2015. *Country Operations Business Plan: Cook Islands, 2016–2018*. Manila.

12.0 MWh.⁷ These will enhance grid stability and provide load shifting⁸ to allow TAU to connect more intermittent electricity generated by solar and wind power without negatively affecting the grid. The Mission expressed its ‘in-principle’ no-objection on the proposal but ADB’s final acceptance is subject to the result of detailed due diligence, which is expected to be undertaken in the second quarter of 2017. The detailed TOR for required due diligence works are expected to be jointly prepared by GCI, TAU and ADB. The indicative additional financing processing schedule/milestones is as follows:

Milestone	Expected Completion Date
Due Diligence	Dec 2016–Mar 2017
Co-financing Fact-finding Mission	April 2017
Staff Review Meeting	May 2017
Grant Negotiations	Jun 2017
Management Approval	Jul 2017
Grant Signing	Aug 2017
Grant Effectiveness	Oct 2017

Updates to Key TTV Activity Management Documents

The Activity Results Framework is replaced with the Indicative Implementation Plan for this section. The updated Indicative Implementation Plan for the next 18 months is provided in the Table below.

The **Table 1** includes key deliverables due during the next reporting period (highlighted) with the activities above having been completed during this reporting period.

Table 1: Indicative Project Implementation Action Plan for the Next 18 Months

Activity	Responsibility	Target Date/Completed
Completed Q4 2016		
Progress Report 7	PMU/Entura	Oct 16
Signed Land Agreements for Mitiaro, Mangaia	PMU/CIIC	Nov16
Site clearance commences on Mitiaro	PMU/Island Governments	Nov 16
ADB Review Visit	ADB	Nov 16
Tender closing Rarotonga BESS	PMU/Entura	Nov-16
Tender closing Power distribution upgrade	PMU/Entura	Oct-16
Submission of BER Power distribution upgrade	PMU/Entura	Dec-16
Approval of BER Power distribution upgrade	ADB/MFEM	Dec-16
Supply of Final detailed designs and documents	NetCon	Dec-16
Submission Bidding Documents Civil Works Phase 1	ADB/PMU	Dec-16
Approval of ITB Civil Works Phase 1	PMU/Entura	Dec-16

⁷ Two units of 1 MW and 4 MWh BESS are expected to be located in the Rarotonga Airport and one use of 1 MW and 4 MWh BESS is expected to be located in TAU’s diesel power station. The Mission visited both sites on November 24.

⁸ Load shifting is where (renewable) energy is stored for relatively long periods, for use when generation is not available. Typically, in the case of solar PV systems, this relates the daily cycle of charging during daylight and discharging overnight. Many grid stabilization systems also store energy; however, these may store energy from milliseconds to a few minutes, whereas load shifting is optimized for storing energy for several hours (or even days).

Activity	Responsibility	Target Date/Completed
Advertise of ITB Civil Works Phase 1	ADB/MFEM	Dec-16
Financial Audit Report approved Auditor	ADB/MFEM	Oct-16
Financial Audit Report 9 Feb-15 –FYE 30 Jun-16	MFEM/ADB	Dec-16
Quarterly Report 7	PMU/Entura	Dec-16
Land Completion Report	PMU/Entura	Dec-16
Semi-annual Safeguard Monitoring Report	PMU/Entura	Dec-16
Q 4 2016 Next reporting period		
Site clearance commences on Mangaia	PMU/Island Government	Jan-17
Site clearance commences on Atiu and Mauke	PMU/Island Governments	Feb-17
Contract Negotiations Power distribution upgrade	PMU/Entura	Jan-17
Contract Award Power distribution upgrade	PMU/ADB	Jan-17
Submission of BER Rarotonga BESS	PMU/Entura	Jan-17
Approval of BER Rarotonga BESS	ADB/MFEM	Jan-17
Contract Negotiations Rarotonga BESS	PMU/Entura	Feb-17
Contract Award Rarotonga BESS	PMU/ADB	Mar-17
Closing of ITB Civil Works Phase 1	PMU/Entura	Jan-17
Submission of BER Civil Works Phase 1	PMU/Entura	Jan-17
Approval of BER Civil works Phase 1	ADB/MFEM	Feb-17
Contract Negotiations Civil Works Phase 1	PMU/Entura	Feb-17
Contract Award Civil Works Phase 1	PMU/ADB	Feb-17
Commencement of Civil Works Phase 1	PMU/Contractor/Entura/Infratec	Mar-17
Power distribution upgrade commence work	Contractor/PMU/Infratec	Feb-17
Civil Works Upgrade commence work	Contractor/Infratec	Mar-17
Quarterly Progress Report 8	PMU/Entura	
Subsequent Activities		
Review/Fact-finding mission for GCF	ADB	Pri-17
BESS contract completion	PMU/Entura/PMU	Jun-17
Commencement of Phase 1 solar installation	PMU/Infratec/Entura	Jun-17
BESS commissioning	TAU/PMU/Contractor	July-17
Phase 1 Project commissioning	PMU/Intratec	Dec-17
Power distribution upgrade Commissioning	PMU/Contractor	Dec-17
Aitutaki Phase 2	PMU/APS/Contractor	TBD

Costed work-plan

A preliminary detailed costed work-plan has been prepared as provided by the POE. The following expenditures are planned in the 01 Jan 2017 to 31 March 2017 (Q1 2017)

- | | |
|---|---------|
| 1. Four Phase 1 subprojects on Atiu , Mangaia, Mauke, and Mitiaro islands | \$10.73 |
| 1.2. One Phase 2 subproject on Aitutaki island | \$- |
| 1.3. One Phase 2 subproject on Rarotonga island | \$- |
| 2. Turnkey Contract Solar PV System Development | \$0.69 |
| 3. One Phase 2 Battery Energy Storage System on Rarotonga island | \$- |

Commented [CB1]: don't recall us providing this in this format. Is this where the report outlines expected expenditure in the next quarter? If so, I think this table needs to come from PMU in future. Broadly though the numbers are OK and align with the Appendix, however, as commented in the appendix, I don't recall where item '2.' Comes from - doesn't seem to make sense.

Hi Chris,
This was the same format from previous quarter and updated the figures for next quarter. The classifications are also in line with PAM Page 16 and as per Theresa's comments about TAU.

Commented [TT2R1]:

4. Institutional strengthening and project management support	\$0.11
Total Planned Expenditure to 31 December 2016	\$11.53
5. Land Acquisition (CIGovt Contribution) ⁹	\$0.00

Risk management

Key risks identified for the project, including current actions, are identified in Appendix C. During this reporting period Infratec raised the concern that potential delay of procurement of the civil works contract would delay the overall implementation of Phase 1 solar plants and this would cause additional costs because Infratec would not meet its 240 day contract requirement to commence work on the 9 June 2017. They noted that the independent civil contract means a very tight timeframe for both themselves and the civil contractor.

Governance and management arrangements

The PSG oversees the implementation arrangements of the Southern Group Renewable Energy Project. The members of the PSG were confirmed as Chair, Elizabeth Wright-Koteka (OPM), Tangi Tereapii (REDD), Joseph Mayhew (NZHC), Garth Henderson (MFEM), Apii Timoti (TAU), Andreas Demmke (DCD), Tamarii Tutangata (CIIC) and Romani Katoa (PMU), Chris Blanksby (Entura), Woo Lee (ADB), Vanessa Jenner (ADB Cook Islands Office)

The Project Manager of the PMU is responsible for the fortnightly PSG meetings. Four PSG meetings were held in the last quarter with the meeting on the 24 November combined with the ADB Mission final wrap-up. The PMU and Entura provides secretariat services for the PSG.

Authorisation

I declare that the information contained in this report is true and correct and confirm:

- Funds were received and used only for the agreed purpose(s); and
- All conditions attached to Funding have been met; and
- Funds have been fully utilised for the intended purpose

Full Name (in block capitals)

Title / Position

Signature

Date

• _____
⁹ The Land Acquisition amount is the total sum allocated and agreed by the assembled landowners on the islands of Mauke, Mangaia, Mitiaro and Atiu.

Appendices

This report includes the following appendices:

- Appendix A: Progress Against Agreed Work-plan and Budget (table)
- Appendix B: Progress against Results Framework (table)
- Appendix C: Risk matrix (table)
- Appendix D: Project specific covenants - as displayed in legal agreements (table)

Appendix A: Progress Against the Agreed Work plan and Budget

Output	Planned Expenditure	Actual Expenditure 31 Dec 2016	Variance with Actual	Reason for Variance
1. Four Phase 1 subprojects on Atiu , Mangaia, Mauke, and Mitiaro islands				
1.1 Bidding for single turnkey contract completed (by Q1 2016) (completed)		0.21		
1.2 Turnkey contract awarded (by Q2 2016) (changed)				
1.3 Start of civil works and installation (by Q2 2017) (changed)	2.44			
1.4 Systems commissioning, including test run (by Q2 2018) (changed)	1.29			
1.5 O&M training by turnkey contractor completed (by Q2 2017) (changed)				
Total of Four phase 1 subprojects	3.73	\$0.21	3.51	
1.2. One Phase 2 subproject on Aitutaki island				
1.21 Feasibility studies completed (by Q2 2016) (changed)				
1.22 Bidding for one turnkey contract completed by (Q2 2016) (changed)				
1.23 Turnkey contracts awarded (by Q3 2016) (changed)				
1.24 Start of civil works and installation (by Q4 2016) (changed)				
1.25 Systems commissioning, including test run (by Q3 2017) (changed)				
1.26 O&M training by turnkey contractor completed (by Q2 2017) (changed)				
Total of One Phase 2 subproject on Aitutaki Island	\$0.00	0	- \$0.00	
1.3. One Phase 2 subproject on Rarotonga island				
1.31 Feasibility studies completed (by Q4 2016) (changed)				
1.32 Bidding for one turnkey contract completed (by Q1 2017) (changed)				
1.34 Turnkey contracts awarded (by Q2 2017) (changed)				
1.35 Start of civil works and installation (by Q2 2017) (changed)				
1.36 Systems commissioning, including test run (by Q2 2018) (changed)				
Total of One Phase 2 subproject on Rarotonga Island	\$0.00	0	0.00	
2. Turnkey Contract Solar PV System Development	0.00	\$0.00	\$0.00	No spend
3. One Phase 2 Battery Energy Storage System on Rarotonga island				
3.1 Feasibility studies completed (by Q1 2016) (completed)				
3.2 Bidding for one turnkey contract completed by (Q3 2016)(changed)				
3.3 Turnkey contracts awarded (by Q4 2016) (changed)				
3.4 Start of civil works and installation (by Q1 2017) (changed)				
3.5 Systems commissioning, including test run (by Q4 2017) (changed)				
3.6 O&M training by turnkey contractor completed (by Q1 2018) (changed)				
Total of One Phase 2 Battery Energy Storage System on Rarotonga Island	\$0.00	0	\$0.00	no actual spending
4. Institutional strengthening and project management support				
4.1 Selection of consultants and award of contracts (by Q1 2015) (completed)				
4.2 Project management support completed (by Q1 2019) (changed)	\$0.28	0.07		
4.3 Update of the CIRECIP completed (Q2 2019) (changed)				
4.4 Implementation of the environmental and social safeguard actions (2015-2019)				
Total Institutional strengthening and project management support	\$0.28	\$0.07	\$0.21	savings
5.Land Acquisition	0.00	0.00	0.00	No planned expenditure and no spending

Commented [CB3]: I'm not really sure what this one is. All the PV contracts are wrapped up in the above...

Commented [A4R3]: This is as per PAM Page 16. Please note the items above are for Solar Photovoltaic module procurement. Item 2 on PAM states Turn Key Contract- Solar Photovoltaic system development. Unless the items labelled 1.1, 1.2 and 1.3 should be labelled as 2.1 and so on.

Total

\$4.00

\$0.28

\$3.73

Appendix B: Progress Against Results Framework

This table shows progress of the Activity against the intended outcomes and outputs defined in the (draft) Results Framework and has been updated from the Project Administration Manual (PAM) April 2016. Note that this framework still requires finalisation with the Steering Group Committee.

Note: Planned and actual indicators and targets should be sex-disaggregated where possible.

<i>From agreed Results Measurement Table in the Activity Design Document</i>				<i>Data up to and including this reporting period</i>	
Outcomes and outputs	Planned indicators	Planned targets	Planned methodology and data sources	Actual measurement against targets (using indicators)	Actual methodology and data sources
Impact Increased energy security in an environmentally sustainable manner	100% of islands convert energy system from diesel fuel to renewable energy source. (baseline: 0% in 2012)	By 2020	Government Statistics	6 of 15 islands commissioned with renewable energy generation systems	Project completion reports held by REDD
Medium-term outcome Increased access to a higher share of electricity generated by renewable energy sources	Four islands in the Southern group fully convert energy system from diesel fuel to renewable energy. (Baseline: 0% in 2012)	By end of 2018	Government statistics Project Completion Report		
Short-term outcome					
Output 1. Solar PV power system for four (4) subprojects developed on Mangaia, Mauke, Mitiaro and Atiu islands.	Solar PV power system of Phase 1 subprojects (with 1.24 kW installed capacity) connected to the existing power grid on Mangaia, Mauke, Mitiaro and Atiu islands. (Baseline: 0% in 2012)	By the end of 2017	Project Progress Reports Project Completion Report		
Output 2. Solar PV power system for Phase 2 subprojects developed on Aitutaki, and Rarotonga. Installation of a battery energy storage system (BESS) with a preliminary capacity of the 1.0 MW and 4.0 MWh	Solar PV power system of non-core subprojects (2400kW) connected to the existing power grid on Aitutaki, and Rarotonga islands. (Baseline 0% in 2012) About 2.0 MW of additional solar PV without negatively affecting the grid. This will result in fuel savings and carbon dioxide reduction of about 0.575 million liters and of 1,370 tons per annum	By end-2017 By end – 2018	Project Progress Reports Project Completion Report		
Output 3. Institutional and project management capacity strengthened.	Energy efficiency policy implementation plan is developed (2012 baseline 0%) Capacity of OEC and REDD (10 staff in total) for renewable energy technology assessments and tariff setting in private sector-funded developed (2012 baseline: 0%) The updated CIRECIP which incorporates load demand update, viable renewable technology choice, and least-cost investment plan, developed. (2012 baseline: 0%) Project management support for REDD and TAU to implement core and non-core subprojects (6 in total) completed (2012 baseline: 0%)	By end-2019	Project Progress Reports Project Completion Report		

Appendix C: Project Risk Table

ID	Discipline	Category	Risk description	Prior to implementing mitigating actions			Mitigation	After mitigating actions implemented			Risk Status
				Likelihood	Consequence	Risk ranking		Likelihood	Consequence	Risk Ranking	
1	Project management	Human resources management	PMU Recruitment not commenced on time and delays implementation or reduces effectiveness	C. Possible	3. Moderate	M	Early completion of recruitment process by Tender Evaluation Committee and and contract negotiation by OPM REDD and POE agrees to provide further support as necessary.	C. Possible	2. Minor	L	✓
2	Project management	Contract procurement management	Approval of PEC tender documents is delayed or insufficient capacity to finalise contracts.	C. Possible	2. Minor	L	Crown Law and Tender Committee gives priority to confirming PEC documents and evaluation. POE provides necessary capacity during contract negotiation	C. Possible	2. Minor	L	✓
3	Project management	Contract procurement management	Solar Modules insurance and storage delayed and delivery delayed.	C. Possible	3. Moderate	M	Contract negotiations include Government insurers and CIIC confirms storage prior to modules being shipped.	C. Possible	2. Minor	L	✓
4	Project management	Time management	Land payment confirmation report cannot be completed due to delays in land acquisition payments. Impact on preparation of site and civil works and turnkey contract timing (and liquidated damages)	C. Possible	4. Major	H	Emphasis on completing payments	C. Unlikely	4. Major	M	🌐
5	Project management	Time management	Atiu sub-project due diligence not approved in time for bidding documents	C. Possible	3. Moderate	M	Atiu feasibility progressing satisfactorily, hence risk reducing. Enable Atiu to be removed from bidding documents if necessary (tender separately) Accommodate small delays in issue of bidding documents (<1 month); taking into account safeguards may form critical path for construction.	D. Unlikely	2. Minor	L	✓
6	Engineering	Social and cultural	Island Project Site Preparation is delayed due to capacity on island	C. Possible	3. Moderate	M	PMU to oversee site preparation and engineering implementation plans. Include procurement of local civil engineer Island councils are consulted and understand requirements	C. Possible	3. Moderate	M	🌐

7	Project management	Contract procurement management	Selection of ADB Works Procurement Packages for turnkey work - use of two envelope approach increases evaluation time and reduces technical flexibility to evaluate performance or compatibility preferences	C. Possible	3. Moderate	M	Risk acknowledged and incorporated into bidding documents and schedule to the extent possible. One envelope approach now being used	C. Possible	2. Minor	L	✓
8	Project management	Risk management	If selecting turnkey packages for individual islands: High premium paid for relatively low value individual ICT works contracts	C. Possible	4. Major	H	Steering Committee gives priority to managing the smaller ICT packages with POE and PMU/REDD. One turnkey package being used Possible likelihood of fewer funds for Phase 2.	C. Possible	2. Minor	L	✓
9	Project management	Risk management	Key equipment is incompatible if a turnkey tender is offered for each island	C. Possible	4. Major	H	Procurement of critical set of components such as batteries, battery inverters and controllers as a single lot, which would require them to be compatible. One turnkey package is being used	C. Possible	2. Minor	L	✓
10	Science	Political	Local contractors do not have sufficient opportunity to participate in works	C. Possible	3. Moderate	M	REDD undertake early discussions with private sector informing them of the proposed works contracts Chamber of Commerce is involved in supporting local contractors through the business mentor programme CITTI commences training programme prior to procurement packages being advertised. Skills set of local staff on each island to be provided to international bidders	C. Possible	3. Moderate	M	🔄
11	Project management	Contract procurement management	Scoping work for distribution rehabilitation not included in ICT process due to schedule constraints	C. Possible	2. Minor	L	Prepare alternative procurement structure for distribution works.	C. Possible	2. Minor	L	🔄

12	Project management	Contract/procurement management	Equipment performance testing is not possible as required if separate works and goods contracts are let	B. Likely	4. Major	E	Preference for Turnkey contract. If not turnkey, detailed contractual backing and conventional system specification is required. Detailed quality and workmanship auditing -for Works also required to ensure best practice is followed. Include time based warranties where possible. One turnkey package being used	C. Possible	2. Minor	L	
13	Project management	Contract/procurement management	System performance and equipment integration is unlikely to be able to have a full market test of the least cost system configuration if separate goods and works contracts are let.	B. Likely	4. Major	E	Preference for Turnkey contract. POE will base equipment specifications on the latest understanding of the market and market test will occur within each equipment specification. Novate civil works contract under turnkey contract.	C. Possible	3. Moderate	M	
14	Project management	Contract/procurement management	Compatibility of equipment may not be achievable if separate goods and works contracts are let	B. Likely	4. Major	E	Preference for Turnkey contract. POE will make every effort to provide full and complete specification. Consider plant contract to integrate diesel in powerhouse. One turnkey contract is now being used	C. Possible	2. Minor	L	
15	Engineering	Electrical - Primary	Connection of solar PV hybrid systems to remote grids has unforeseen technical difficulties	C. Possible	4. Major	H	Ensure grid assessment reviews the issues and risks and ensure contractual clauses in place for these eventualities in Turnkey contract.	C. Possible	3. Moderate	M	
16	Engineering	Renewable energy	Turnkey contractors designs, construction and commissioning have unforeseen difficulties on site	C. Possible	4. Major	H	Ensure sites assessment reviews the issues and risks and ensure contractual clauses in place for these eventualities in contract for Turnkey suppliers	C. Possible	3. Moderate	M	
17	Project management	Scope management	Environmental & Social Safeguards scope or site visits highlights significant issues arising or mitigation required.	C. Possible	3. Moderate	M	Ensure sites assessment reviews the issues and risks early, and mitigations are put in place through EMP.	C. Possible	3. Moderate	M	
18	Technical	Environment	Environmental issues are not identified resulting in environmental impacts	D. Unlikely	4. Major	M	Use local expert support through the POE; follow NES and ADB requirements	D. Unlikely	2. Minor	M	

19	Project management	Contract procurement management	REDD and TAU has sufficient capacity to implement and maintain the project.	C. Possible	3. Moderate	M	The government adopts policy actions recommended under the institutional strengthening and project management that will support the performance and service delivery of TAU and REDD.	D. Unlikely	3. Moderate	L	🕒
20	Project management	Human resources management	To deliver project may require assistance from others outside of the project team that is not currently costed .	C. Possible	3. Moderate	M	PMU recruitment underway. Consideration and requests in-place for capacity support between government departments	D. Unlikely	2. Minor	L	🕒
21	Financial Management	Currency risk	Phase 1 bid in NZD exposes forex risk for payments over implementation period from grant in EURO.	C. Possible	3. Moderate	M	Request bidder to increase EURO component. Consider allowing increased contingency when planning for other subprojects	C. Possible	3. Moderate	M	🕒

KEY

Risk status (column L)

Symbol	Definition
✓	Satisfactory - everything necessary and possible is being done
🕒	Some concerns - actions are in place but are not fully implemented or effective - close monitoring required Unsatisfactory - current actions are not sufficient, or actions still to be commenced - immediate attention required
✗	

KEY

Risk trend (column M)

Symbol	Definition
↓	Risk is likely to reduce
→	Risk is likely to remain the same
↑	Risk is likely to become moderately worse
↑	Risk is likely to become significantly worse

Appendix D: Project specific covenants - as displayed in legal agreements

Product	Schedule	Para No.	Description	Remarks/Issues	Type
Loan 3193	Article IV	1	(a) The Borrower shall cause the Project to be carried out with due diligence and efficiency and in conformity with sound applicable technical, financial, business, and development practices.	Being complied with.	Others
Loan 3193	Article IV	2	The Borrower shall make available, or cause to be made available, promptly as needed, and on terms and conditions acceptable to ADB, the funds, facilities, services, land and other resources, as required, in addition to the proceeds of the Loan, for the carrying out of the Project.	Being complied with.	Others
Loan 3193	5	2	The Borrower shall ensure, and shall cause the Implementing Agencies and other involved agencies to ensure, that the preparation, design, construction, implementation, operation and decommissioning of the Project, and that all Project facilities comply with (a) all applicable laws and regulations of the Borrower relating to environment; (b) the Environmental Safeguards as set out in the SPS; and (c) all measures and requirements set forth in the IEE, the EMP, the EARF, and any corrective or preventative actions (i) set forth in a Safeguards Monitoring Report, or (ii) as subsequently agreed among ADB, the Borrower, and the Implementing Agencies.	Being complied with.	Safeguards
Loan 3193	Article IV	3	The Borrower shall ensure that the activities of its departments and agencies with respect to the carrying out of the Project and operation of the Project facilities are conducted and coordinated in accordance with sound administrative policies and procedures.	Being complied with.	Others
Loan 3193	5	3	The Borrower shall ensure and cause the Implementing Agencies to ensure that all land and all rights-of-way required for the Project are made available to the Works contractors in a manner and within timeframes compliant with the RP, the RF and all land acquisition and resettlement activities are implemented in compliance with (a) all applicable laws and regulations of	Being complied with.	Safeguards

Product	Schedule	Para No.	Description	Remarks/Issues	Type
			the Borrower relating to land acquisition and involuntary resettlement; (b) the Involuntary Resettlement Safeguards; and (c) all measures and requirements set forth in the RP and the RF, and any corrective or preventative actions (i) set forth in the Safeguards Monitoring Report, or (ii) as subsequently agreed among ADB, the Borrower, and the Implementing Agencies.		
Loan 3193	5	4	Without limiting the application of the Involuntary Resettlement Safeguards or the RP, the Borrower shall ensure, or cause the Implementing Agencies to ensure, that no physical or economic displacement takes place until: (a) compensation and other entitlements have been provided to the displaced persons under Involuntary Resettlement Safeguards as described in and in accordance with the RP and the RF, and (b) a comprehensive income and livelihood restoration program has been established in accordance with the RP and the RF.	Being complied with.	Safeguards
Loan 3193	Article IV	4	The Borrower shall enable ADB's representatives to inspect the Project, the Goods and Works, and any relevant records and documents.	Being complied with.	Others
Loan 3193	Article IV	5	(b) ADB shall disclose the annual audited financial statements for Parts B and C the Project and the opinion of the auditors on the financial statements within 30 days of the date of their receipt by posting them on ADB's website.	waiver on requirement approved as no financial disbursements in financial year ending 30 June 2015. 2016 audit report underway.	Financials
Loan 3193	5	5	The Borrower shall ensure and cause the Implementing Agencies to ensure that the provisions of the IEE, EMP and RP as well as any requirements under the SPS also apply to the portion of the Project to be financed by the Borrower.	Being complied with.	Safeguards
Loan 3193	Article IV	5	(c) The Borrower shall enable ADB, upon ADB's request, to discuss the financial statements for Parts B and C of the Project and the Borrower's financial affairs where they relate to Parts B and C of the Project with the auditors appointed pursuant to subsection (a)(iii) hereinabove, and shall		Financials

Product	Schedule	Para No.	Description	Remarks/Issues	Type
			authorize and require any representative of such auditors to participate in any such discussions requested by ADB. This is provided that such discussions shall be conducted only in the presence of an authorized officer of the Borrower, unless the Borrower shall otherwise agree.		
Loan 3193	Article IV	5	(a) The Borrower shall (i) maintain accounts and records for Parts B and C of the Project (separate from those for Part A, which will be maintained by TAU); (ii) prepare annual financial statements for Parts B and C of the Project in accordance with accounting principles acceptable to ADB; (iii) have such financial statements audited annually by independent auditors whose qualifications, experience and terms of reference are acceptable to ADB, in accordance with international standards for auditing or the national equivalent acceptable to ADB; (iv) as part of each such audit, have the auditors prepare a report (which includes the auditors' opinion on the financial statements and use of the Loan proceeds) and a management letter (which sets out the deficiencies in the internal control of Parts B and C of the Project that were identified in the course of the audit, if any); and (v) furnish to ADB, no later than 6 months after the end of each related fiscal year, copies of such audited financial statements, audit report and management letter, all in the English language, and such other information concerning these documents and the audit thereof as ADB shall from time to time reasonably request.	Being complied with	Financials
Loan 3193	4	6	The Borrower shall ensure that the Implementing Agencies shall not award any Works contracts until all land and related rights for the construction of the Project facilities, to be handed over to the contractor before construction commences, have been acquired or rights to access and use the land for the purposes of constructing and operating the Project facilities on an ongoing basis have been secured by the Borrower. (d) reinstate pathways and other local infrastructure to at least their pre-project condition as soon as possible and no later than the completion of construction.	Being complied with.	Safeguards

Product	Schedule	Para No.	Description	Remarks/Issues	Type
Loan 3193	Article IV	7	(a) The Borrower shall exercise its rights under the Subsidiary Loan Agreement in such a manner as to protect the interests of the Borrower and ADB and to accomplish the purposes of the Loan. (b) No rights or obligations under the Subsidiary Loan Agreement shall be assigned, amended, abrogated or waived without the prior concurrence of ADB.	Subsidiary Loan Agreement not yet finalized/effective.	Others
Loan 3193	4	8	(a) The Borrower shall cause the Implementing Agencies to ensure that all Goods and Works procured (including without limitation all computer hardware, software and systems, whether separately procured or incorporated within other goods and services procured) do not violate or infringe any industrial property or intellectual property right or claim of any third party. (b) The Borrower shall cause the Implementing Agencies to ensure that all contracts for the procurement of Goods and Works contain appropriate representations, warranties and, if appropriate, indemnities from the contractor or supplier with respect to the matters referred to in subparagraph (a) of this paragraph.	Being complied with.	Others
Loan 3193	5	8	The Borrower shall do, or cause the Implementing Agencies to do, the following: (a) submit Safeguards Monitoring Reports to ADB: (i) in respect of implementation of and compliance with Environmental Safeguards and the EMP, annually during construction and the implementation of the Project and the EMP until the issuance of ADB's project completion report unless a longer period is agreed in the EMP; and (ii) in respect of implementation of and compliance with Involuntary Resettlement Safeguards and of the RP, semi-annually during the implementation of the Project, and the RP until the issuance of ADB's project completion report unless a longer period is agreed in the RP; and disclose relevant information from such reports to respective affected people under Environmental Safeguards, Involuntary Resettlement Safeguards, and Indigenous Peoples Safeguards promptly upon submission; (b) if any unanticipated environmental and/or social risks and impacts arise during construction, implementation, or operation of the Project that were not	Being complied with.	Safeguards

Product	Schedule	Para No.	Description	Remarks/Issues	Type
			<p>considered in the IEE, the EMP and the RP, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; and</p> <p>(c) report any actual or potential breach of compliance with the measures and requirements set forth in the EMP or the RP promptly after becoming aware of the breach.</p>		
Loan 3193	4	9	The Borrower shall cause the Implementing Agencies to ensure that all ADB-financed contracts with consultants contain appropriate representations, warranties and, if appropriate, indemnities from the consultants to ensure that the Consulting Services provided do not violate or infringe any industrial property or intellectual property right or claim of any third party.	Being complied with.	Others
Loan 3193	5	10	The Borrower shall cause the Implementing Agencies to ensure that Works contracts include provisions to require the contractors (a) not to discriminate against people seeking work on the basis of age, provided they are capable of doing such work; (b) to provide equal pay for equal work, regardless of gender or ethnicity; (c) to comply with core labour standards and the applicable labour laws and regulations, including stipulations related to employment, such as health, safety, welfare, the workers' rights and anti-trafficking laws; (d) not to force the labour to work against their will; and (e) not to employ child labour.	Being complied with.	Social
Loan 3193	5	11	The Borrower shall cause the Implementing Agencies to ensure that the Works contractors (a) implement HIV/AIDS and STIs awareness and prevention training for all employees; (b) provide necessary measures to ensure the safety and health of their employees; and (c) together with the local centers of disease control, disseminate information on the risks, hazards, impacts and prevention know-how on HIV/AIDS and STIs among the staff, workers on the construction sites and the local community by means of information disclosure, education and consultation.	Being complied with.	Social
Loan 3193	5	12	The Borrower shall ensure to provide Counterpart Funds in a timely manner, including any additional Counterpart Funds required for any	Being complied with.	Financials

Product	Schedule	Para No.	Description	Remarks/Issues	Type
			shortfall of funds or cost overruns. The Borrower shall also ensure to ensure that O&M of all Project facilities is fully funded without any delay.		
Loan 3193	5	13	The Borrower shall, and shall cause the Implementing Agencies to, establish and maintain sound financial management systems in accordance with ADB's Financial Management and Analysis of Projects (July 2005), including the establishment of separate Project accounts.	Being complied with.	Financials
Loan 3193	5	14	The Borrower shall, and shall cause the Implementing Agencies to, (a) comply with ADB's Anticorruption Policy (1998, as amended to date); (b) acknowledge ADB's right to investigate, directly or through its agents, any alleged corrupt, fraudulent, collusive or coercive practices relating to the Project; and (c) agree to cooperate, and shall cause the Implementing Agencies and all other government offices, organizations and entities involved in implementing the Project to cooperate, fully with any such investigation, and to extend all necessary assistance, including providing access to all relevant books and records, as may be necessary for the satisfactory completion of any such investigation. In particular, the Borrower shall ensure, or cause to be ensured, that (i) periodic inspections of the Project contractors' activities related to fund withdrawals and settlements are carried out; (ii) relevant provisions of ADB's Anticorruption Policy (1998, as amended to date) are included in all bidding documents for the Project; and (iii) contracts, financed under the Project, include provisions specifying the right of ADB to audit and examine the records and accounts of the Implementing Agencies, contractors, suppliers, consultants, and other service providers as they relate to the Project.	Being complied with.	Others
Loan 3193	5	15	In the event of (a) any change in ownership of the Project facilities, or (b) any sale, transfer or assignment of shares or interest or other change of control in the Implementing Agencies is anticipated, the Borrower shall consult with ADB at least 6 months prior to the implementation of such change. The Borrower shall ensure that such change be carried out in a lawful and transparent matter. The Borrower shall further ensure that the new controlling management of Implementing Agencies complies with (a) all	Being complied with.	Others

Product	Schedule	Para No.	Description	Remarks/Issues	Type
			Project-related agreements executed between ADB or the Borrower and the Implementing Agencies; and (b) the policies of ADB relevant to the Project.		
Loan 3193	5	16	Within 90 days following effectiveness of the Loan Agreement and Grant Agreement, the Borrower shall establish and maintain a Project website which will be regularly updated to include information on the following general matters: (a) bidding procedures, bidders and contract awards for Works, Goods, and Consulting Services; (b) physical progress of the Works and procurement of Goods; and (c) audited Project financial accounts, Project review reports (e.g. mid-term review), and quarterly progress reports, consolidated annual reports and post-completion report, in each case promptly after submission to ADB (unless, in the case of Project review reports and quarterly progress reports, ADB considers these to be exempt from disclosure under ADB's Public Communications Policy (2011)).	Project website established Government procurement website utilised (www.procurement.gov.ck)	Others
Loan 3193	5	17	The Borrower shall cause the Implementing Agencies to ensure that (a) the Project facilities are installed in accordance with design specifications and construction norms; and (b) construction supervision, quality control and contract management are performed in accordance with best international industry practices. The Borrower shall cause the Implementing Agencies to install, equip, operate, maintain and manage the project facilities in compliance with applicable standards and best international practices. The Borrower shall cause the Implementing Agencies to operate and maintain, and continue to operate and maintain, the Project facilities in accordance with an O&M framework that is satisfactory to ADB.		Sector
Loan 3193	5	18	The Borrower shall cause the Implementing Agencies to do the following: (a) acquire all rights necessary to use the parcels of land constituting the Project site at least 30 days prior to the award of the turnkey contract; and (b) install or otherwise secure road access sufficient for the purposes of the Project at least 30 days prior to the award of the turnkey contract.	Being complied with.	Sector

Product	Schedule	Para No.	Description	Remarks/Issues	Type
Loan 3193	5	19	The Borrower shall ensure ongoing operational financial sustainability of the Project, either through adjustment of electricity tariffs, or budgetary allocations.	Being complied with.	Sector
Loan 3193	5	20	The Borrower shall cause the Implementing Agencies to ensure that adequate staffing will be planned and allocated for the implementation and O&M of the Project facilities, and that relevant staff members will attend training provided under the Project in relation to O&M.	Being complied with.	Sector