



GEF-6 REQUEST FOR PROJECT ENDORSEMENT/APPROVAL

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

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PART I: PROJECT INFORMATION

Project Title: Renewable Energy Sector Project			
Country(ies):	Cook Islands	GEF Project ID: ¹	9067
GEF Agency(ies):	ADB (select) (select)	GEF Agency Project ID:	46453-002 (Loan 3193 / Grant 0415- COO)
Other Executing Partner(s):	Ministry of Finance and Economic Management of the Government of the Cook Islands	Submission Date:	2016-07-07
GEF Focal Area (s):	Climate Change	Project Duration (Months)	60
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/>	Corporate Program: SGP <input type="checkbox"/>	
Name of Parent Program	[if applicable]	Agency Fee (\$)	405,142

A. FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES²

Focal Area Objectives/Programs	Focal Area Outcomes	Trust Fund	(in \$)	
			GEF Project Financing	Co-financing
(select) CCM-1 Program 1 (select)	Accelerated adoption of innovative technologies and management practices for GHG emission reduction and carbon sequestration	GEFTF	4,264,654	25,590,000
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
Total project costs			4,264,654	25,590,000

B. PROJECT DESCRIPTION SUMMARY

Project Objective: To increase the Cook Islands' preparedness to meet the challenges of renewable energy scale-up by enhancing renewables-readiness.						
Project Components/ Programs	Financing Type ³	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Confirmed Co-financing
1. Solar photovoltaic (PV) module procurement & solar PV power system development	Inv	Increased renewables capacity & preparedness for continued scale-up	Up to 6 solar PV power plants, with the total installed capacity of over 3.0MW including storage and energy management system	(select)		22,465,703
2. Institutional	TA	a) increased demand-	a) Development of a	(select)		1,814,297

¹ Project ID number remains the same as the assigned PIF number.

² When completing Table A, refer to the excerpts on [GEF 6 Results Frameworks for GETF, LDCF and SCCF](#).

³ Financing type can be either investment or technical assistance.

strengthening & project management support		side energy efficiency; b) increased capacity; and c) updated load demand, technology choice and investment planning	energy efficiency policy implementation plan; b) Capacity building for renewable energy technology assessment and pricing; c) Updating the Cook Islands Renewable Energy Chart Implementation Plan (CIRECIP)			
3. Solar PV generation system including storage for the grid stability	Inv	Increased grid stability for system to prepare to absorb higher levels of renewables	Additional solar PV power plants on Rarotong and Aitutaki, including storage system for larger shares of renewables; Accelerated timeline for the southern group of islands to reach the 100% RES electricity target without negatively affecting the grid stability	(select)	4,264,654	1,310,000
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
Subtotal					4,264,654	25,590,000
Project Management Cost (PMC) ⁴				(select)		
Total project costs					4,264,654	25,590,000

C. CONFIRMED SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE

Please include evidence for co-financing for the project with this form.

Sources of Co-financing	Name of Co-financier	Type of Cofinancing	Amount (\$)
GEF Agency	Asian Development Bank	Loans	11,190,000
Others	European Union	Grants	7,260,000
Recipient Government	Government of the Cook Islands	In-kind	7,140,000
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	

⁴ For GEF Project Financing up to \$2 million, PMC could be up to 10% of the subtotal; above \$2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

Total Co-financing			25,590,000
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D. TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country Name/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee ^{a) (b)²}	Total (c)=a+b
ADB	GEF TF	Cook Islands	Climate Change	(select as applicable)	4,264,654	405,142	4,669,796
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
(select)	(select)		(select)	(select as applicable)			0
Total Grant Resources					4,264,654	405,142	4,669,796

a) Refer to the Fee Policy for GEF Partner Agencies

E. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS⁵

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	<i>hectares</i>
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	<i>hectares</i>
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	<i>Number of freshwater basins</i>
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	<i>Percent of fisheries, by volume</i>
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO _{2e} mitigated (include both direct and indirect)	<i>279101 metric tons</i>
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	<i>metric tons</i>
	Reduction of 1000 tons of Mercury	<i>metric tons</i>
	Phase-out of 303.44 tons of ODP (HCFC)	<i>ODP tons</i>
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	<i>Number of Countries:</i>
	Functional environmental information systems are established to support decision-making in at least 10 countries	<i>Number of Countries:</i>

F. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? (Select)

(If non-grant instruments are used, provide an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF Trust Fund) in Annex D.

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN WITH THE ORIGINAL PIF⁶

⁵ Update the applicable indicators provided at PIF stage. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the [GEF-6 Programming Directions](#), will be aggregated and reported during mid-term and at the conclusion of the replenishment period.

⁶ For questions A.1 –A.7 in Part II, if there are no changes since PIF, no need to respond, please enter “NA” after the respective question.

A.1. *Project Description*. Elaborate on: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2) the baseline scenario or any associated baseline projects, 3) the proposed alternative scenario, GEF focal area⁷ strategies, with a brief description of expected outcomes and components of the project, 4) [incremental/additional cost reasoning](#) and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and [co-financing](#); 5) [global environmental benefits](#) (GEFTF) and/or [adaptation benefits](#) (LDCF/SCCF); and 6) innovativeness, sustainability and potential for scaling up.

1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed:

The Cook Islands is a Pacific island country divided into two island groups, northern and southern, with an estimated total population of over 18,000 people. About 92% of the population lives in the southern group, which includes the main island of Rarotonga. Like many other island countries in the Pacific, the country faces dire and immediate consequences—from sea level rise and more frequent and stronger storms to the changing distribution of disease vectors—that are markedly disproportionate to its contribution to global greenhouse gas (GHG) emissions. Climate change can compromise their prosperity, stability, and security. The impacts on food production, land and marine resources use, as well as damage to infrastructure, water resources, and human health will result in economic losses that might cause large-scale migration, both internally and externally. Women and children especially are at greatest risk from these impacts.

Although their footprint to the global climate change impact is fairly marginal, the power sector of the country heavily relies on imported fossil fuels, particularly diesel. Diesel-powered generators constitute about 99% of the total electricity generating capacity. Changing diesel-based power generation to one based on renewable energy sources is expected to reduce diesel consumption for power generation by up to 95%, and will contribute to sustainable social and economic development. Lowering the Cook Islands' reliance on fossil fuels will also help free up government funds for other needs while improving national energy security and sustainability.

Like many other small island nations in the Pacific, the power generation from renewable energy resources has recently become a feasible solution because the up-front capital costs were high and there were high perceived and real technical risks. In addition, the cost of electricity storage technologies (e.g. battery, etc.) that are of the essence for grid stability was too high. For the past few years, some renewable energy technologies, especially wind power and solar PV, have become cost-effective compared to power generation using fossil fuels and the electricity storage industry has achieved the rapid cost reduction and technology improvement.

Therefore, transitioning to clean and sustainable energy systems is a key priority of the government, demonstrated by the adoption of 100% renewable energy targets in the power sector and the willingness to use the entire, flexible GEF-6 STAR allocation toward enhancing the Renewable Energy Sector Projects (RES Project) currently being funded by the Government of the Cook Islands, the Asian Development Bank (ADB) and the European Union (EU)

2) the baseline scenario and any associated baseline projects:

The total installed power generation capacity in the Cook Islands is over 11 megawatts (MW). Diesel-powered generators constitute about 99% of the total electricity generating capacity. Current electricity demand in the country is about 30.0 gigawatt-hours (GWh), and is forecast to grow modestly to 38.5 GWh by 2020. The southern group is the dominant load center, accounting for 98% of current and future load demand. In 2011, the government issued the Cook Islands Renewable Energy Chart, which sets a target of supplying 50% of inhabited islands with power from renewable sources by 2015, and 100% of the inhabited islands by 2020. It also launched the Cook Islands Renewable Energy Chart Implementation Plan (CIRECIP) in 2012, which incorporates a development schedule for electricity generation from renewable sources. Using 2012 as the baseline, 0% of the Cook Islands had converted the energy system from diesel fuel to renewable energy sources. New Zealand started solar photovoltaic (PV) power system development on the northern group of islands in 2012, and on Rarotonga in 2014. ADB, New Zealand, and EU have coordinated closely to support implementation of the CIRECIP.

⁷ For biodiversity projects, in addition to explaining the project's consistency with the biodiversity focal area strategy, objectives and programs, please also describe which [Aichi Target\(s\)](#) the project will directly contribute to achieving..

Under CIRECIP, the government has decided to develop the RES project on the southern group of islands, which will construct up to six solar PV power plants with a total installed capacity of about 3 megawatts-peak (MWp) coupled with storage, and rehabilitate the existing distribution network. The RES project will be implemented in phases starting with the four islands of Mangaia, Mauke, Mitiaro and Atiu and to be followed by projects on Aitutaki and Rarotonga. It will also (i) provide project management support, including capacity building, for design, implementation, and operation and maintenance (O&M); and (ii) help facilitate private sector participation by setting appropriate off-take tariffs for power purchase agreements, enhance demand-side energy efficiency, and update the CIRECIP for further renewable energy deployment by 2020.

The government has requested a loan and a grant totalling \$18.45 million equivalent to help finance the RES project. Financing will comprise (i) a loan of NZ\$12.98 million (equivalent to US\$11.19 million) from ADB's ordinary capital resources, and (ii) a grant of €5.30 million (equivalent to US\$7.26 million) from the EU. With the government's contribution of US\$7.14 million, the RES project cost is estimated at US\$ 24.28 million equivalent.

The Cook Islands' dependence on fossil fuels will be reduced under the RES project as it is expected to generate about 3.66 GWh of electricity. This will result in annual savings of 1.09 million liters of diesel consumption and annual reduction of 2,930 tons of carbon dioxide emission; the estimated lifetime of the project is 25 years. The outcomes of the project include increased energy security and sustainability in the Cook Islands. This RES project will assist the Cook Islands to fulfil its goal of delivering renewable energy to all of its islands by 2020. The project will also provide assistance to the government's Office of the Energy Commissioner and the Renewable Energy Development Division to develop their energy efficiency policy implementation plan. This includes capacity for the 10 staff in renewable energy technology assessments and tariff-setting in private-sector funded projects. The updated CIRECIP, which includes load demand, viable renewable energy technology choice and least-cost investing has been submitted to the government and is expected to be approved by 2017. The REC project complements the solar power project in the country's northern island group and on Rarotonga funded by from the Government of New Zealand.

3) the proposed alternative scenario, with a brief description of expected outcomes and components of the project:

The GEF grant amount is proposed to be increased to US\$4.26 million from US\$4.12 million; the grant amount indicated in the project identification form (PIF). The project preparation grant (PPG) of US\$0.14 million was approved together with PIF and was transferred to ADB. However, there is no grant account in USD under the RES project. Therefore, the Government of the Cook Islands (GCI) decided to use the ADB loan proceeds for the project preparation activities. GCI has recently requested to cancel the unused PPG and reallocated it to top-up to the GEF grant.

The additional GEF grant of US\$4.26, including the additional contribution from the government of US\$1.31 million, will increase the overall project investment by 23.0%, to US\$29.85 million from the current US\$24.28 million, on a cost-sharing basis. The GEF grant will allow installation of a battery energy storage system (BESS) with a preliminary capacity of 1.0 MW and 4.0 MWh, which will provide load shifting to offset renewable generation at the existing 1.0 MW solar PV facility at the Rarotonga Airport. The proposed BESS will allow 2.0 MW of additional solar PV generation, which is about 8% progress towards the total estimated renewable generation.

The RES project is expected to contribute about 10% to RES electricity in the Cook Islands, raising the total to between 20 and 25%, which is still far lower than the government target of 100% renewable power generation by 2020. Moreover, in a power system with high penetration of renewables, sufficient reserve capacity, e.g., spinning reserve for the electricity supply is needed to compensate for a rapid, unexpected loss in generation resources in order to keep the system balanced. The proposed BESS allows solar PV plants to supply reliable, predictable and dispatchable electricity at any time of the day. It also enables grid operators to schedule their dispatch economically, which consequently enhances the grid stability. Therefore, increasing system storage capacity such as the BESS will be essential in achieving higher shares of renewable energy without negatively affecting the grid stability in the future.

The impact of the RES project including the grant from GEF will be increased energy security in an environmentally sustainable manner. The outcome will be increased access to a higher share of electricity generated by renewable energy sources. In the PIF, it was proposed using the additional GEF grant for 1) additional solar PV generation and storage system procurement including the related energy management system, and 2) an EPC-based turnkey contract for solar PV system development. However, based on the comprehensive scoping study considering the latest grid, and supply and demand conditions, it is recommended that the investment costs of additional GEF grant include installation of BESS at the existing solar PV facility at the Rarotonga Airport. The benefits of the proposed alternative scenario to be financed by the GEF grant will include:

- Annual diesel fuel savings of approximately 575,000 litres
- Carbon dioxide reductions of approximately 1,540 tonnes per annum
- Enabling connection of 2.0 MW of additional solar PV generation, about 10% progress towards the total estimated renewable generation
- Demonstration of a key application of battery energy storage, with the potential to form a technical and commercial model for future installations, including IPP supply
- Improved reliability, and more flexibility to address reliability issues, relative to the base case
- Surety for local businesses and employers providing renewable energy supply and installation
- Confidence for a range of stakeholders in the viability of the Cook Islands renewable energy policy, by avoiding disruption.

This enhancement through the GEF funding will allow the Cook Islands to create enabling environment for additional solar PV generation and accelerate its timeline to meet 100% renewable energy goals for the southern island group. Furthermore, the Cook Islands will gain valuable experience that can be useful for other islands in the region that are sharing similar struggles on their trajectories to meeting renewable energy targets. Specifically, what will be gained is the operational know-how complemented by soft measure support to address the particular challenges associated with rapid, increasing shares of renewables in small developing island contexts. Through similar efforts by ADB and partners in the region, this project could be replicated on other islands in the Pacific facing similar challenges.

4) expected contributions from the baseline, GEF, co-financing:

The government has requested a loan and a grant totalling \$18.45 million equivalent to help finance the project. Financing will comprise (i) a loan of NZ\$12.98 million (equivalent to \$11.19 million) from ADB's ordinary capital resources, and (ii) a grant of €5.30 million (equivalent to US\$7.26 million) from the EU, which will be administered by ADB. The loan will have a 22-year term, including a grace period of 3 years, straight-line repayment method, an annual interest rate determined in accordance with ADB's London interbank offered rate-based lending facility.

The ADB loan will be used for the procurement of equipment and materials, civil works, services, related transportation, insurance, installation costs, and interest and commitment charges on the loan during construction for second phase projects on Aitutaki and Rarotonga. The ADB loan will also be used to finance consulting services and contingencies. The EU grant will be used for the procurement of equipment and materials, civil works, related transportation, insurance, and installation costs for first phase projects on Mauke, Mitiaro, Mangaia and Atiu. The government will finance (US\$7.14 million) land acquisition, environmental and social monitoring, taxes and duties, and solar photovoltaic module procurement.

The additional GEF grant will be used for installation of a battery energy storage system (BESS) with a preliminary capacity of 1.0 MW and 4.0 MWh, which will provide load shifting to offset renewable generation at the existing 1.0 MW solar PV facility at the Rarotonga Airport. The proposed BESS will allow 2.0 MW of additional solar PV generation, which is about 8% progress towards the total estimated renewable generation. The scoping assessment was undertaken as part of project preparation. The final design will incorporate adequate climate-resilience measures to protect the funded assets.

Procurement of goods, works, and services will be conducted through turnkey contracts. The turnkey contracts will include final design and engineering, supply and installation of equipment, construction works and commissioning, and an O&M knowledge transfer program.

5) global environmental benefits:

The RES project will result in annual savings of 1.09 million liters of diesel consumption and annual reduction of 2,930 tons of carbon dioxide emissions. The project lifespan is estimated at 25 years. The additional financing from GEF will result additional annual diesel fuel savings of approximately 575,000 litres (an average of 2.3 GWh of electricity per annum) and carbon dioxide reductions of approximately 1,370 tonnes per annum. The RES project including the additional GEF grant component would help to ensure that GHG emissions reductions are realized throughout the lifespan of the project through climate resilience measures and contribute to an accelerated timeline in the Cook Islands' efforts to meet its goals for decarbonization in the power sector without negatively affecting the grid stability in the future.

The total GHG emissions reductions from the RES project including additional financing from GEF are estimated at about 279,101 tonnes of CO₂ equivalent (CO₂e) with the direct GHG emission reduction of 111,640 tonnes of CO₂e throughout the lifespan (25 years). The project does not include activities that would result in direct post-project greenhouse gas emission reductions. Using the GEF bottom-up methodology, indirect emission reductions attributable to the RES project including the proposed BESS to be financed by the GEF grant are 167,461 tonnes of CO₂e using a replication factor of 1.5. Using the GEF top-down methodology, indirect emission reductions attributable to the project are 22,328 tonnes of CO₂e using a project causality factor of 40%.

6) innovation, sustainability and potential for scaling up:

Innovation- The RES project is ADB's first sector loan intervention for the energy sector of the Cook Islands. The sector loan approach is appropriate because it allows flexibility in subproject development, institutional strengthening, and capacity development to roll out renewable energy deployment on all islands. The current combination of loan and grant provide for the first phase of renewable energy projects to be completed on the islands of Mitiaro, Mauke, Mangaia and Atiu. In addition, the proposed sector loan approach can be replicated in other countries in the Pacific. Technically, the power outputs from the three phase 1 subprojects will be synchronized and integrated into the existing electricity grid using battery storage to make up for the intermittent nature of solar energy and ensure electricity supply even during the night. This will help make the electricity system sustainable, stable, and reliable, allowing it to supply clean electricity and meet more than 90% of electricity load demand. Moreover, the additional grant from GEF will provide widespread access to renewable energy, while maintaining affordability of supply and allow the government and the local grid-operator to build the know-how in operating the BESS for the large renewable energy penetration without negatively affecting the grid.

Sustainability –The project will provide institutional strengthening to the government for (i) developing the energy efficiency policy implementation plan including an energy audit and monitoring scheme to enhance demand-side energy efficiency practices for targeted major electricity consumer groups; (ii) developing the capacity to assess renewable energy technologies and set appropriate off-take tariffs for power purchase agreements in projects funded by the private sector; and (iii) updating the CIRECIP by reexamining the electricity load demand up to 2020, the renewable technology choices, and a least-cost investment plan. The consultants to be engaged under this component will be the project owner's engineer (POE) team, who will also provide project management support for the responsible

government agencies to help implement phase 1 and phase 2 subprojects including the proposed GEF grant in the southern islands. The turnkey contractor(s) of both phase 1 and 2 subprojects as well as the BESS to be funded by the GEF grant will provide specialized O&M knowledge transfer to ensure sustainable operation.

Scalin up: With the GEF-6 STAR allocation funding, activities at the second phase sites can be enhanced through improved renewable energy generation and storage as well as improved climate-resilience measures. Allowing for innovative technical and operational combinations, such as improved management, multiple storage technologies and pv generation, provides the Cook Islands with the means to meet its goals of 100% renewable energy for the southern island group in a timely manner and also without affecting the grid stability. Under the project scopes, the feasible renewable technology options to achieve the national goals of 100% renewable energy for the southern island group will be assessed, particularly the role of solar PV coupled with the BESS.

Likewise, many small islands in the Pacific are facing similar technical questions related to the transition from fossil fuels to renewables. In addition, the GEF funding may allow testing, for example of load/generation shifting and/or storage technologies, to find the most suitable and cost-effective options for the country and other similarly placed countries in the Pacific.

A.2. Child Project? If this is a child project under a program, describe how the components contribute to the overall program impact.

Not Applicable

A.3. Stakeholders. Identify key stakeholders and elaborate on how the key stakeholders engagement is incorporated in the preparation and implementation of the project. Do they include civil society organizations (yes /no)? and indigenous peoples (yes /no)?⁸

The project's executing agency is the Ministry of Finance and Economic Management (MFEM). The implementing agencies are the Renewable Energy Development Division (REDD) and the Rarotonga Power Authority (TAU). Especially, the proposed GEF grant will be implemented by TAU. Through technical assistance provided in the project preparation, consultations were held with women community groups, landowners, island officials, and representatives from key stakeholders of organizations including REDD, the Office of the Energy Commissioner (OEC), and TAU. The social safeguards specialist, one of the POE consultants, will ensure ongoing consultation with these stakeholders during project implementation, and develop a stakeholder consultation, participation, and communication plan. Through consultation, these stakeholders will provide inputs to the Project Management Unit (PMU) on implementation activities. The PMU will: 1) monitor and ensure participation by poor households and women in consultation activities; 2) contribute to gender awareness; 3) encourage targeted group participation in Project related contracts; and 4) collect poor household and gender-related data for monitoring and evaluation purposes.

During the project preparatory technical assistance, consultations were held with women community groups, landowners, island officials, and representatives from key stakeholders of organizations including REDD, OEC, CIIC, and TAU. The social safeguards specialist (one of the POE) will ensure ongoing consultation with these stakeholders during project implementation, and develop a stakeholder consultation, participation, and communication plan. These stakeholders will provide inputs to the PMU on implementation activities through these consultations. The PMU will also monitor and ensure the poor household's and the women's participation in consultation activities; provision of gender awareness to target groups; encouraging the poor household and the women participation in Project related contracts; and collection of the poor household and the gender related data for monitoring and evaluation purposes.

The population in the project area comprises the mainstream population of the Cook Islands. The project including the proposed BESS to be financed by the GEF grant is not expected to affect any distinct and vulnerable group of indigenous peoples as defined under ADB's Safeguard Policy Statement (2009). The project team will consider engaging with a Civil Society Organization, if necessary, in the further project design making process.

⁸ As per the GEF-6 Corporate Results Framework in the GEF Programming Directions and GEF-6 Gender Core Indicators in the Gender Equality Action Plan, provide information on these specific indicators on stakeholders (including civil society organization and indigenous peoples) and gender.

A.4. *Gender Equality and Women's Empowerment*. Elaborate on how gender equality and women's empowerment issues are mainstreamed into the project implementation and monitoring, taking into account the differences, needs, roles and priorities of women and men. In addition, 1) did the project conduct a gender analysis during project preparation (yes /no)?; 2) did the project incorporate a gender responsive project results framework, including sex-disaggregated indicators (yes /no)?; and 3) what is the share of women and men direct beneficiaries (women 51%, men 49%)?⁹

According to the 2012 Pacific Regional Millennium Development Goals tracking report by the Pacific Islands Forum Secretariat, poverty is not an issue for the Cook Islands. However, there is an issue over income inequality between Rarotonga and outer islands. A high per capita GDP is a result of expatriate residents and a tourist-based economy in Rarotonga. However, it conceals the subsistence lifestyle of the Pa Enua population, where development is lagging. GDP per capita is estimated at about \$10,000, and Cook Islanders have access to New Zealand to access its jobs, markets and welfare system. There is good access to education and health services, safe drinking water, and improved sanitation.

While women's overall labor force participation is 65%, it still trails men's (77%), according to the 2011 census report. The gender gap in labor force participation is especially great on the outer islands, where there are fewer jobs than on the main island, Rarotonga. The number of women employed in nonagricultural activities has increased steadily since 1990, but a certain degree of gender segregation persists in some occupations, where women are more likely to be engaged in sales and men more likely to be in construction jobs. The percentage of women in professional or managerial positions exceeds the percentage of men. Nevertheless, gender disparities are notable as women's annual income is only 78% of men's. Apart from fewer employment opportunities, men and women on the outer islands also suffer from irregular shipping services and the high cost of electricity.

Through technical assistance provided in the project preparation, consultations were held with women community groups, landowners, island officials, and representatives from key stakeholders of organizations including REDD, the Office of the Energy Commissioner, and TAU. The social safeguards specialist, one of the project owner's engineer consultants, will ensure ongoing consultation with these stakeholders during project implementation, and develop a stakeholder consultation, participation, and communication plan. Through consultation, these stakeholders will provide inputs to the PMU on implementation activities. Both PMU and TAU will: 1) monitor and ensure participation by poor households and women in consultation activities; 2) contribute to gender awareness; 3) encourage targeted group participation in Project related contracts; and 4) collect poor household and gender-related data for monitoring and evaluation purposes.

Gender considerations will be further taken into account during project preparation consistent with ADB's Policy on Gender and Development and ADB's Guidelines on Gender Mainstreaming and Categorization. The process will involve the use of "Energy Sector gender checklist", which have been prepared to help ADB staff, project partners and consultants address gender issues in the design of projects across different sectors.

A.5 *Risk*. Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

Risks identified in the early stages of the project included: Policy actions and development partner support are inadequate to implement the CIRECIP; Implementation can be delayed due to delays in Phase 2 subprojects preparation, land acquisition, and procurement; Support, performance, and coordination at REDD and TAU are weak/inadequate. Extreme weather events are an on-going and increasing risk for islands in the Pacific.

Mitigation actions include: establishment of a project steering committee consisting of relevant Ministry, REDD and TAU representatives and establishment within TAU and REDD of a project management unit to handle the day-to-day running of the projects.

⁹ Same as footnote 8 above.

The proposed BESS will allow 2.0 MW of additional solar PV generation, which is about 8% progress towards the total estimated renewable generation. Therefore, the GEF funding of second phase projects will help de-risk the entire project by furthering the CIRECIP goals and financing the next critical phase of renewables development. Through the RES project, ADB is offering ongoing capacity support to REDD and TAU. A rapid climate risk assessment was undertaken by ADB. The design will incorporate adequate climate-proofing measures to lessen the potential negative impacts of extreme weather events throughout the project life cycle.

A.6. Institutional Arrangement and Coordination. Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives. The project is coordinated with other initiatives including the regional goals of the GEF Secretariat, ADB and EU's activities in the Pacific and domestic targets for the Cook Islands. Lessons learned from renewable energy projects, financed by the New Zealand government, in the northern island group will be considered in the design and implementation of the RES project.

As there were no GEF-5 renewable energy projects in the Pacific, the project team will coordinate and/or draw lessons learned from the following ongoing GEF-4 funded renewable energy projects in the Pacific.

UNDP: Marshall Islands- Action for the Development of Marshall Islands Renewable Energies (ADMIRE)
World Bank: Kiribati- PAS: Grid Connected Solar PV Central Station Project
World Bank: Papua New Guinea- PAS: PNG Energy Sector Development Project
World Bank: Solomon Islands- SB Development of Community-based Renewable Energy Mini-Grids

Additional Information not well elaborated at PIF Stage:

A.7 Benefits. Describe the socioeconomic benefits to be delivered by the project at the national and local levels. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCE/SCCF)?

The project will improve access to more affordable power supply, and will also widen access to better social services and income-generating opportunities. The project will result in annual savings of 1.09 million liters of diesel consumption and annual reduction of 2,930 tons of carbon dioxide emission, for greater energy security and sustainability in the Cook Islands.

The benefits of the proposed alternative scenario to be financed by the GEF grant will include:

- Annual diesel fuel savings of approximately 575,000 litres
- Carbon dioxide reductions of approximately 1,540 tonnes per annum
- Enabling connection of 2.0 MW of additional solar PV generation, about 10% progress towards the total estimated renewable generation
- Demonstration of a key application of battery energy storage, with the potential to form a technical and commercial model for future installations, including IPP supply
- Improved reliability, and more flexibility to address reliability issues, relative to the base case
- Surety for local businesses and employers providing renewable energy supply and installation

- Confidence for a range of stakeholders in the viability of the Cook Islands renewable energy policy, by avoiding disruption.
- Demonstration of the BESS load shifting application in conjunction with renewable energy generation and curtailment; providing a model, and capacity building, for future such installations on Rarotonga
- Avoiding disruption to the progressive roll-out of renewable energy in Rarotonga, thereby preserving at least 3 local businesses reliant on this industry, preserving private investor confidence and community confidence in the renewable energy program, and supporting the GCI 100% policy for renewable electricity by 2020.

The RES project including the proposed BESS to be funded by the GEF grant will provide the useful lesson learnt to the Cook Islands and other small island countries whose economies heavily rely on imported fuels by demonstrating the feasibility and role of the BESS for those countries to move towards the low-carbon economy and address the global climate change threat.

A.8 Knowledge Management. Elaborate on the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives (e.g. participate in trainings, conferences, stakeholder exchanges, virtual networks, project twinning) and plans for the project to assess and document in a user-friendly form (e.g. lessons learned briefs, engaging websites, guidebooks based on experience) and share these experiences and expertise (e.g. participate in community of practices, organize seminars, trainings and conferences) with relevant stakeholders.

This project can serve as a model and lessons can be disseminated through networks such as Small Islands Developing States (SIDS Dock) and the Alliance Of Small Island States (AOSIS). The GEF Secretariat and other international organizations, such as the International Renewable Energy Agency, have activities targeted at renewable energy projects on Pacific islands. The ADB project team has already shared the proposed BESS and its expected impact with wider audience at the Applied Energy Symposium and Forum, REM2016: Renewable Energy Integration with Mini/Microgrid, which was held in Maldives on April 19-21, 2016. The full paper that the team has prepared will be included in the REM2016 Conference Proceeding to be published in Energy Procedia. ADB may also share project documentation and data as well as lessons through knowledge projects including ADB's project impact story and the Asian Clean Energy Forum. In addition, as the part of the RES project scopes, some capacity building workshops on tariff setting and creating the enabling environment for the private sector investment in the Pacific will be held. Finally, through the RES project including the GEF funding may allow the Government of the Cook Islands, especially the project management unit to enhance the capacity on managing the integration of large renewable energy penetration to the grid.

B. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

B.1 Consistency with National Priorities. Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions such as NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.:

The Government of the Cook Islands has set targets related to converting the islands from diesel to 100% renewable energy sources by 2020. The group of four southern islands is to be converted by 2018. The Cook Islands has formally submitted a Nationally Appropriate Mitigation Action under the United Nations Framework Convention on Climate Change for supporting implementation of 100% renewable electricity by 2020. Moreover, according to the Cook Islands 2nd National Communication (2012) under the United Nations Framework Convention for Climate Change, the government has set the following main energy sector goals:

- Rationalise the management of the energy sector by developing and implementing Cook Islands Energy Strategic Plan for all islands.
- Develop the Cook Islands Energy Strategic Plan consistent with strategies outlined in the Pacific Islands Framework for Regional Action on Climate Change, Climate Variability and Sea level Rise, 2006–2015, and, the Pacific Regional Energy Policy.

- Implement priorities related to energy in the Preventive Infrastructure Master Plan.
- Decreasing energy consumption by 20% per capita by increasing efficiency in energy use through the adoption of new technologies and energy conservation practices by 2012.
- Reducing the reliance on high GHG based fossil fuel by identifying and adopting technically feasible and financial viable alternative energy sources.

C. DESCRIBE THE BUDGETED M & E PLAN:

Project performance monitoring- The POE will establish a project performance and monitoring system within 6 months of project effectiveness. ADB and the government will agree on a set of indicators for monitoring and evaluating the project's performance in achieving its goals and objectives. These indicators may be refined and monitored during project implementation. The indicators will include data for monitoring economic development, reduction in transmission losses, and increase in solar power generation, decrease in diesel power generation, environmental impact, social impact, and institutional development. The PMU manager and POE will monitor and evaluate the indicators according to the agreed framework and determine the efficiency and effectiveness of the project. The baseline data at outcome and output levels will be updated and reported through quarterly reports and after each ADB review mission. These quarterly reports will be the bases of updating the ADB's project reporting system. Beneficiaries will be involved in project monitoring and evaluation.

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 EA's quarterly progress reports, (ii) discussed during PSC meetings, and (iii) reviewed during biannual project review missions.

Safeguards monitoring (Resettlement) - MFEM, TAU, and REDD, with support from the PMU manager and POE, will monitor all activities associated with land acquisition and resettlement. The monitoring will include reporting on progress of activities in the implementation of the RP with particular focus on public consultations, land acquisition, payment of compensation, and level of satisfaction among affected persons. MFEM, in cooperation with TAU and REDD, will prepare and submit semi-annual monitoring reports to ADB. The resettlement framework and resettlement plan provide detailed arrangements for monitoring and reporting.

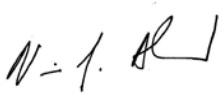
The PMU manager and the safeguard specialists of the POE will assist MFEM, TAU, and REDD in monitoring safeguard activities and preparation, and review and disclosure of safeguard monitoring reports. The checklist for safeguard supervision and the outline of safeguard monitoring report on resettlement for ADB missions, and MFEM, TAU, and REDD, respectively, are provided below.

The budgets of US\$0.43 million and US\$1.38 million have been allocated for the PMU manager and POE.

PART III: CERTIFICATION BY GEF PARTNER AGENCY(IES)

A. GEF Agency(ies) certification

This request has been prepared in accordance with GEF policies¹⁰ and procedures and meets the GEF criteria for CEO endorsement under GEF-6.

Agency Coordinator, Agency Name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Nessim J. Ahmad, Deputy Director General, Sustainable Development and Climate Change Department, Concurrently Chief Compliance Officer Asian Development Bank		07/07/2016	Woo Yul Lee, Energy Specialist	+632 683 1803	wylee@adb.org

¹⁰ GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF
GEF6 CEO Endorsement /Approval Template-Dec2015

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).
Please see the attached

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Please see the attached

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS¹¹

A. Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF: \$136,014			
<i>Project Preparation Activities Implemented</i>	<i>GEF/LDCF/SCCF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
Project Preparation Activities*	136,014	0	0
Total	136,014	0	0

*A PPG of \$136,014 was approved for the project (excluding agency fees). However, this budget could not be used as the national executing agency was not able to establish a new US dollar grant account in time to support preparation activities. As a result, the government agreed to use the existing ADB loan for project preparation activities.

ADB is now in the process of informing the GEF Trustee to cancel the PPG and return the funds. Instead of the PPG, the government has proposed to increase the project grant by the same amount. A new endorsement form has been issued by the GEF National Operational Focal Point to confirm this. The additional funds will be used to provide enhanced battery storage systems.

¹¹ If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue to undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities. Agencies should also report closing of PPG to Trustee in its Quarterly Report.

ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)

Provide a calendar of expected reflows to the GEF/LDCF/SCCF Trust Funds or to your Agency (and/or revolving fund that will be set up)

The GEF fund will be used as a grant and there will not be reflows GEF.