

Validation Report
April 2020

Solomon Islands: Provincial Renewable Energy Project

Reference Number: PVR-664
Project Number: 46014-002
Loan Number: 3127
Grant Number: 0386



Raising development impact through evaluation

ABBREVIATIONS

ADB	– Asian Development Bank
km	– kilometer
kW	– kilowatt
kWh	– kilowatt-hour
MoFT	– Ministry of Finance and Treasury
PCR	– project completion report
PMU	– project management unit
PPMS	– project performance monitoring system
SIEA	– Solomon Islands Electricity Authority

NOTE

In this report, “\$” refers to United States dollars.

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PROJECT BASIC DATA

Project number	46014-002	PCR Circulation Date	17 Jul 2019	
Loan and grant numbers	3127 and 0386	PCR Validation Date	Apr 2020	
Program name	Provincial Renewable Energy Project			
Sector and subsector	Energy	Renewable energy generation—small hydro		
Strategic agenda	Environmentally sustainable growth			
	Inclusive economic growth			
Safeguard categories	Environment		B	
	Involuntary resettlement		B	
	Indigenous peoples		C	
Country	Solomon Islands		Approved (\$ million)	Actual (\$ million)
ADB financing (\$ million)	ADF: 12.00	Total project costs	15.00	0.43 ^a
	OCR: 0.00	Loan L3127	6.00	0.00
		G0386	6.00	0.35
		Borrower	3.00	0.09
		Beneficiaries		
		Others		
Cofinancier		Total cofinancing		
Approval date	12 May 2014	Effectiveness date	14 Sep 2014	16 Jun 2015
Signing date	16 Jun 2014	Closing date	31 Mar 2022	15 Oct 2018
Project officer	A. Maxwell	Location ADB headquarters	From May 2013	To Oct 2018
IED Review Director Team Leader	N. Subramaniam, IESP S. Ibrahim, Principal Evaluation Specialist, IESP ^b			

ADB = Asian Development Bank, ADF = Asian Development Fund, IED = Independent Evaluation Department, IESP = Sector and Project Division, OCR = ordinary capital resources, PCR = project completion report.

^a Actual costs when rounded off.

^b Team members: H. Hettige (Quality Reviewer), F. De Guzman (Senior Evaluation Officer), P. Choynowski and D. Gibson (Consultants).

I. PROJECT DESCRIPTION

A. Rationale

1. The infrastructure and economic activities in Solomon Islands were concentrated in the capital of Honiara, where 13% of the total population reside and with 64% access rate to grid-connected power.¹ In contrast, the province of Malaita had 25% of the total population, of which only 3% had access to grid-connected power. The low access stemmed from the high cost of diesel power generation, which led to the low incentive to expand the distribution network as generation and supply costs exceeded the electricity tariff. Likewise, there was lack of government commitment for grid extensions. The geography was also difficult with small, dispersed pockets of population and the capacity to pay for power was low.

2. Power tariffs in Solomon Islands were among the highest in the Pacific. In 2013, the tariff was \$0.85 per kilowatt-hour (kWh) for residential customers and \$0.91 per kWh for commercial customers. In 2011, the average domestic tariff across 21 utilities in the Pacific was \$0.46 per kWh. The provision of electricity was unreliable and marked by frequent outages due to diesel fuel supply and maintenance issues. The unmet demand was significant, and many people resorted to self-generation. The high cost of electricity and the limited reach of the distribution grid slowed economic growth in the provinces and hindered economic development, particularly agriculture and tourism.

3. The project aimed to construct the Fiu River hydropower plant and extend the distribution grid to peri-urban households in the main provincial center of Auki. Hydropower generation was to benefit the economy by reducing fossil fuel imports and lowering the cost of power generation. Likewise, it was intended to improve energy security and minimize tariff volatility. The use of renewable energy was also aimed at reducing greenhouse gas emissions.

4. The Asian Development Bank (ADB) assessed various financing modalities during project preparation, including project loan, multitranche financing facility, and sector loan. The project investment financing modality was selected since the project was a single site with a relatively short construction period. The multitranche or long-term sector loan modalities did not suit the project.

B. Expected Impacts, Outcomes, and Outputs

5. The expected impact of the project was increased economic activity in Auki, Malaita Province. The envisaged project outcome was increased supply of more reliable and cleaner power to Auki.²

6. The targeted outputs of the project were the construction of a (i) 750 kilowatt (kW) run-of-river hydropower plant with a 3.5 kilometer (km) access road,³ (ii) a 9.7 km and 11 kilovolt distribution line, (iii) an intake structure, (iv) a 1.55 km headrace canal, (v) a 250 meter steel penstock; and (vi) a powerhouse. Another output was the extension of the distribution grid to an additional 250 households with step-down transformers, distribution lines, house connections,

¹ ADB. 2011. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Grant to Solomon Islands for the Provincial Renewable Energy Project*. Manila.

² Footnote 1, Appendix 1.

³ Initially, only two 250 kW generators were to be installed. Another 250 kW generator was to be fitted into the spare generator bay once load growth increased. Installing two 250 kW generators had been deemed the most efficient way of meeting the 350 kW peak, and the anticipated short-term demand growth.

and provision of minimum supply kits, including prepayment meters. The third output was capacity building—comprising training of staff of the Solomon Islands Electricity Authority (SIEA)—in the operation of hydropower plants through a 3-year outsourced operation and maintenance contract, and advising newly connected households on options for electricity-based income generation, electricity safety, and household budget management. The final output was the establishment of a project management unit (PMU) that was to provide technical design, management, and supervision services.

C. Provision of Inputs

7. The project was approved in May 2014 and was to become effective in September 2014. The project completion report (PCR) stated that the actual effectivity was in June 2015.⁴ The delay between approval and effectiveness was due to protracted negotiations between the SIEA and the Ministry of Finance and Treasury (MoFT) over the subsidiary loan agreements. This pushed the schedule back by 13 months. The expected loan closing date was in March 2022 but the actual closing date happened much earlier—in October 2018.

8. The Malaita provincial government conducted significant land acquisition works prior to requesting ADB for financing as part of the provincial government's de-risking of priority investment sites. In 2013, two memoranda of agreement were signed between the landowners and the provincial government to allow the project assessment to proceed. Land acquisition followed the national process mandated under the Land and Titles Act, including consultation with landowners at regular intervals.

9. After the appeals period expired in May 2014, an additional claimant lodged an objection to the landowner identification process. The claimant was not identified as a landowner under the original survey and did not raise an opinion during the public submissions period. The Malaita Magistrates' Court in Auki reviewed the claim and subsequently overturned the objection. The claimant then took the case to the High Court in Honiara, which heard the case in November 2016. Despite repeated inquiries from various levels of government, the High Court did not deliver a finding. Therefore, the Commissioner of Lands did not proceed with the lease agreement.

10. SIEA met with all land claimants and advised that if land acquisition was not settled, the project would not proceed. In parallel, SIEA began assessing alternative sites for renewable energy supply to Auki township. In October 2017, the Minister of Finance and Treasury requested ADB to revise the project site—from the Fiu River Hydropower to the Kwainamoro Solar Plant site. ADB tentatively agreed to this proposal since the proposed change in scope was consistent with the original project impact and outcome targets.

11. SIEA screened numerous sites near Auki for a solar farm and selected 3 hectares at the Kwainamoro site, which was a freehold (not a customary land), where land trustees supported its use as a solar farm, and the site was adjacent to the transmission infrastructure. The site was privately held by five trustees. However, following the death of one trustee, the remaining trustees and the family of the deceased could not agree on a revised land ownership agreement and, therefore, could not proceed with the lease to SIEA. Due to extended delays in land acquisition at the Kwainamoro site, the MoFT subsequently requested ADB to cancel the financing for the project in August 2018.

⁴ ADB. 2019. *Completion Report: Provincial Renewable Energy Project in Solomon Islands*. Manila.

12. The expected project was estimated to cost \$15 million. The government requested a loan in various currencies equivalent to SDR3,886,000 (\$6 million) from ADB's Special Funds resources to help finance the project. The government also requested for a grant of \$6 million from the Special Funds resources of ADB. The government and SIEA were to finance the remaining \$3 million of the project cost, including taxes and duties and land acquisition costs. The foreign exchange risk was to be borne by the government. From the proceeds of the Asian Development Fund loan and grant, the government was to relend \$10.5 million equivalent to SIEA and make \$1.5 million equivalent available as a grant in local currency under a subsidiary financing agreement—to cover the community service obligations of SIEA. The relending terms were to include an interest rate of 4.0% per annum for over \$6 million equivalent, an interest rate of 1.0% per annum for over \$4.5 million equivalent, and a repayment period of 20 years, inclusive of a grace period of 7 years or until the project is completed, whichever came earlier.

13. A total of \$434,193 was spent on the project, including \$88,504 expenditure by SIEA and ADB disbursements of \$345,689. There were no major contracts signed for the project and no cost overrun was incurred. At financial closing, the loan amount of \$5,410,944 was cancelled.

14. ADB recruited design and supervision consultants on behalf of SIEA. However, due to land acquisition delays, the contract was terminated in September 2017 after the completion of the preliminary design work. At appraisal, the project was categorized B for environment, B for involuntary resettlement, and C for indigenous peoples. The project was classified as effective gender mainstreaming. A gender action plan was prepared and approved in May 2014. Since the project did not proceed to procurement of civil works contracts or construction, the gender performance targets set out in the plan were not achieved.

D. Implementation Arrangements

15. The Ministry of Mines, Energy, and Rural Electrification was the executing agency and SIEA was the implementing agency for the project. SIEA established the PMU to implement the project and provided the services of two project engineers, a finance officer, and an administrative assistant. The project financed additional consultants, equipment, and office furnishings to support the PMU. The PMU was responsible for procurement of all civil works and goods contracts. A project steering committee oversaw implementation, monitored progress, and provided guidance to the executing agency. The project was to be implemented over 7.25 years, including a 3-year operation and maintenance period. Implementation arrangements remained as envisaged at appraisal. No major changes were made in the implementation arrangements.

16. The project included 42 covenants, which were complied with or were not due, except for the project website, which was partially complied with. The project webpage was set up. However, basic data on procurement of small topographic and geotechnical contracts were not uploaded. Land acquisition and involuntary resettlement were not complied with. The inability to complete the land acquisition ultimately led to project cancellation.

17. This validation finds that there was a third covenant related to project performance monitoring system (PPMS) that was not complied with (discussed in paras. 34 and 35). This covenant required that within 6 months after effective date, SIEA—with the support of consultants—was to establish a PPMS in line with the targets and indicators set in the project design and monitoring framework. Within 12 months after the effective date, the baseline data corresponding to indicators and targets set out in the project status report was to be disaggregated by income levels and gender, as required. After the initial baseline survey, the SIEA, with the

support of the consultants, was to conduct annual survey and quarterly monitoring of indicators and submit quarterly reports to ADB throughout project implementation.

18. No covenants were required to be modified during project implementation since the loan and grant were cancelled. Compliance with safeguard monitoring and periodic progress reporting covenants was deferred due to lack of progress in the detailed design and construction activities. Audited project financial statements were submitted as required.

II. EVALUATION OF PERFORMANCE AND RATINGS

A. Relevance of Design and Formulation

19. The PCR rated the project relevant at appraisal and at financial closure. It noted that power generation in Auki was 100% diesel generation, which contributed to high generation costs and tariffs. The province of Malaita had an exceptionally low access to the electricity grid. The design of the project and loan modality were appropriate. Although delays in land acquisition were not immediately foreseeable, a more conservative project design could have included an advanced land acquisition—completed prior to the ADB Board's approval.

20. The project was aligned with the country program and national sector frameworks and development strategies of ADB. The project was included in the country partnership strategy for 2012–2016⁵ and in the country operations business plan for 2014–2016⁶ of ADB for Solomon Islands. The country partnership strategy envisaged a pilot project in energy financed by grant funds. The project was aligned with Solomon Islands' National Development Strategy 2011–2020, which prioritized the development of reliable and affordable power supply to urban centers from renewable energy and the expansion of access to electricity.⁷ The project was included as a priority investment in the Solomon Islands National Infrastructure Investment Plan.⁸ It also supported Solomon Islands' National Energy Policy Framework of 2007⁹ and the draft National Energy Policy Framework of 2013,¹⁰ which prioritized the development of renewable energy. The project also supported the draft Solomon Islands Renewable Energy Investment Plan 2013.¹¹

21. This validation finds that the project addressed significant constraints to the economic development of Solomon Islands and was consistent with the strategies of the government and ADB. This validation assesses the project relevant although groundwork was not completely done to enable a successful land acquisition process, which was crucial for the project's progress.

⁵ ADB. 2012. *Country Partnership Strategy: Solomon Islands, 2012–2016*. Manila. The strategy recognized that access to clean and affordable power is needed to allow producers on the outer islands to diversify production and improve livelihoods.

⁶ ADB. 2013. *Country Operations Business Plan: Solomon Islands, 2014–2016*. Manila.

⁷ Government of Solomon Islands, Ministry of Development Planning and Aid Coordination. 2011. *National Development Strategy, 2011 to 2020*. Honiara.

⁸ Government of Solomon Islands, Ministry of Development Planning and Aid Coordination. 2013. *Solomon Islands National Infrastructure Investment Plan*. Honiara.

⁹ Government of Solomon Islands, Ministry of Mines, Energy and Rural Electrification. 2007. *Solomon Islands' National Energy Policy Framework*. Honiara.

¹⁰ Government of Solomon Islands, Ministry of Mines, Energy and Rural Electrification. 2013. *Draft Solomon Islands' National Energy Policy Framework*. Honiara.

¹¹ Government of Solomon Islands, Ministry of Mines, Energy and Rural Electrification. 2013. *Draft Solomon Islands Renewable Energy Investment Plan*. Honiara.

B. Effectiveness in Achieving Project Outcomes and Outputs

22. The PCR rated the project ineffective as the expected outcomes were not achieved. Outputs were also not achieved as the project did not proceed due to land acquisition delays. Gender benefits were ineffective as the gender action plan indicators were not met. This validation assesses the project ineffective.

C. Efficiency of Resource Use

23. The PCR rated the project inefficient since project economic benefits will not be realized. This validation finds that the project economic benefits were likely high, given evidences of willingness to pay from other parts of Asia.¹² A substantial portion of the project economic costs were also not realized. It should also be noted that the project was assessed to be the least-cost baseload generation option for Auki. The technical assistance, Promoting Access to Renewable Energy in the Pacific,¹³ screened renewable energy sites in Solomon Islands and completed pre-feasibility studies for five prioritized hydropower sites. This formed the basis for selecting the Fiu River Hydropower site for investment. Therefore, the project was likely efficient ex ante. Nevertheless, this validation assesses the project inefficient.

D. Preliminary Assessment of Sustainability

24. The PCR rated the project unsustainable since project financial benefits will not be realized. This validation finds that some attempt could have been made to calculate a financial internal rate of return and weighted average cost of capital based on the expected tariff and an estimate of the capital cost. A sensitivity analysis could have also been undertaken to test the impact of alternative capital cost values and tariff levels—to assess the likelihood of sustainability. A financial performance assessment of SIEA in terms of its income statement, balance sheet, and funds flow statement could have also been undertaken to provide additional insight to the likely sustainability of the project. Therefore, this validation assesses the project unlikely sustainable.

III. OTHER PERFORMANCE ASSESSMENTS

A. Preliminary Assessment of Development Impact

25. The PCR rated the development impact of the project unsatisfactory since this was not realized. The targets identified in the contribution to the ADB results framework will not be achieved. This validation assesses the development impact of the project unsatisfactory.

B. Performance of the Borrower and Executing Agency

26. The PCR rated the performance of the borrower and executing agency less than satisfactory due to delays in achieving effectiveness and for the land acquisition issues that could not be resolved. However, SIEA showed strong ownership over the project and allocated staff and counterpart financing for consulting, legal, and travel fees relating to land acquisition costs. It also provided office space and communications for consultants. The delays between loan and grant signing and effectiveness was due to protracted negotiations between the MoFT

¹² Given that only 3% of Auki households are connected to the grid, it was not appropriate to value all project benefits at appraisal in terms of resource cost savings. Electricity consumption of new consumers and incremental consumption of existing consumers should have been valued in terms of willingness to pay or consumers' surplus.

¹³ ADB. 2009. *Technical Assistance for Promoting Access to Renewable Energy in the Pacific*. Manila.

and the SIEA over allocation of responsibilities in the subsidiary loan agreement. The steering committee met regularly and provided oversight and guidance on key issues. The provincial government also demonstrated strong ownership over the land acquisition process. The SIEA allocated land acquisition staff and facilitated dialogue with landowners.

27. Once the land dispute entered the courts, the executing agency, the provincial government, and the SIEA had no authority to influence or expedite the court decision, which resulted in the termination of the project. The executing agency complied with ADB's safeguard and auditing requirements, although these were minimal due to limited implementation progress. This validation finds that the termination of the project was caused by events beyond the executing agency's control. Nevertheless, this validation assesses the performance of the borrower and executing agency less than satisfactory, as concerned agencies of the government could have initially done a more comprehensive work.

C. Performance of the Asian Development Bank and Cofinanciers

28. The PCR rated the performance of ADB satisfactory. Although the project ultimately failed due to land acquisition delays, the resolution of the court case, which prevented land acquisition, was beyond the control of ADB. Land acquisition due diligence at the time of project design was considered adequate. ADB provided adequate support to the PMU, including training for the finance manager and the technical staff, and delegated the procurement of design and supervision consultants on behalf of SIEA. It conducted advance land acquisition activities ahead of the ADB Board's approval and conducted numerous safeguard reviews to assess progress on land acquisition by ADB safeguard specialists and independent consultants. ADB kept regular communication with other stakeholders, including development partners and the provincial government. It maintained flexibility in the design's scope, including a willingness to assess an alternative site, once it was clear that the land acquisition issues at Fiu River were intractable. ADB fielded 12 missions from 2013 to 2019, including project preparation, loan fact finding, loan negotiations, and review missions. This validation assesses the performance of ADB satisfactory.

IV. OVERALL ASSESSMENT, LESSONS, AND RECOMMENDATIONS

A. Overall Assessment and Ratings

29. The PCR rated the project unsuccessful. It rated the project relevant, ineffective, inefficient, and unsustainable. This validation assesses the project relevant, ineffective, inefficient, and unlikely sustainable. Overall, the project was unsuccessful.

Overall Ratings

Validation Criteria	PCR	IED Review	Reason for Disagreement and/or Comments
Relevance	Relevant	Relevant	
Effectiveness	Ineffective	Ineffective	
Efficiency	Inefficient	Inefficient	
Sustainability	Unsustainable	Unlikely sustainable	
Overall Assessment	Unsuccessful	Unsuccessful	
Preliminary Assessment of impact	Unsatisfactory	Unsatisfactory	

Validation Criteria	PCR	IED Review	Reason for Disagreement and/or Comments
Borrower and executing agency	Less than satisfactory	Less than satisfactory	
Performance of ADB	Satisfactory	Satisfactory	
Quality of PCR		Satisfactory	Para. 36.

ADB = Asian Development Bank, IED = Independent Evaluation Department, PCR = project completion report.
Source: ADB (IED).

B. Lessons

30. The PCR identified four lessons. First, land acquisition is a major barrier to infrastructure development in Solomon Islands. To reduce the risk of delayed or canceled projects, energy projects should consider completing land acquisition prior to the ADB Board's consideration and selecting only project sites that do not have land disputes and non-customary sites wherever possible. Second, compensation payments should be made directly to individual clan members, which may partially remove disincentives for clan leaders to delay or block project progress. Third, payment of attendance fees should be stopped since these create incentives to hold more meetings and delay decisions. Fourth, initial landowner dialogue should include independent advice on indicative compensation package sizes that will deflate landowner perceptions of project benefits and ease interclan coordination and overall compensation negotiation.

31. This validation offers one more lesson. On the PCR's lesson in getting approval from customary landowners during land acquisition, land could also be leased from the landowners with an annual lump sum payment by the utility or government or a payment on a per kWh output basis. This alternative would give the landowners a vested interest in the project.

C. Recommendations for Follow-Up

32. The PCR suggested three recommendations. First, land acquisition should be completed before proceeding to ADB Board approval for greenfield energy sector projects on customary land in Solomon Islands. This could require up-front allocation of additional technical assistance to support land acquisition. Second, for future energy projects in Solomon Islands, models that are currently being tested—where compensation is paid directly to individual clan members—should be considered. Third, the subsidiary loan agreement should be signed prior to ADB Board approval for energy sector projects where the power utility has no experience with subsidiary loan agreements.

33. This validation offers one more recommendation. Since the Fiu River hydropower site is least cost option and another hydropower project will be needed in the near future, ADB should encourage the government to continue to resolve the issues regarding this site—by obtaining a decision from the High Court on the complaint of an individual claiming to be a landowner.

V. OTHER CONSIDERATIONS AND FOLLOW-UP

A. Monitoring and Reporting

34. Loan covenants required that within 6 months after the effective date, which was 16 December 2015, SIEA with the support of consultants were to establish a PPMS in line with the targets and indicators set in the project design and monitoring framework. Within 12 months after the effective date, which was 16 June 2016, baseline data corresponding to indicators and targets set out in the project status report were to be disaggregated by income levels and gender. After the initial baseline survey, SIEA, with the support of the consultants, were to conduct annual surveys and quarterly monitoring of indicators and submit quarterly reports to ADB throughout project implementation.

35. The PCR stated that this covenant was not due since the project did not proceed to the procurement of main civil works contracts. This validation finds this incorrect since the covenant was not complied with. The project was terminated in 2018 and the consultant's contract was terminated in September 2017. The dates when the PPMS was to be established were well before the termination of the project and the consultant's contract. Therefore, this covenant was not complied with.

B. Comments on Project Completion Report Quality

36. The PCR evaluated the project according to ADB guidelines and was candid regarding the issues that led to the project's termination. Therefore, this validation assesses the quality of the PCR satisfactory.

C. Data Sources for Validation

37. Data sources included the report and recommendation of the President, the PCR, mission reports, the country partnership strategy, and the national development strategy.

D. Recommendation for Independent Evaluation Department Follow-Up

38. Since the project did not proceed to construction, this validation notes that there is no need to prepare a project performance evaluation report.