Report and Recommendation of the President to the Board of Directors

Project Number: 46455-002
October 2014

Proposed Grant, Technical Assistance Grant, and Administration of Grant
Nauru: Electricity Supply Security and Sustainability Project

Asian Development Bank

CURRENCY EQUIVALENTS
(as of 13 September 2014)

Currency unit	–	Australian dollar (A$)		
A$1.00	=	$0.91	or	€0.70
$1.00	=	A$1.10	or	€0.77
€1.00	=	$1.29	or	A$1.42

ABBREVIATIONS

ADB	–	Asian Development Bank
ADF	–	Asian Development Fund
DSC	–	design and supervision consultant
EU	–	European Union
kWh	–	kilowatt-hour
MW	–	megawatt
NUC	–	Nauru Utilities Corporation
PMU	–	project management unit
TA	–	technical assistance

NOTE

In this report, "$" refers to US dollars, unless otherwise stated.

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Director General	X. Yao, Pacific Department (PARD)
Director	R. Guild, Transport, Energy, and Natural Resources Division, PARD
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PROJECT AT A GLANCE

1. Basic Data — **Project Number:** 46455-002

Project Name	Electricity Supply Security and Sustainability	**Department /Division**	PARD/PATE
Country	Nauru	**Executing Agency**	Ministry of Finance
Borrower	Nauru		

2. Sector

	Subsector(s)	ADB Financing ($ million)
✓ Energy	Energy utility services	2.23
	Total	**2.23**

3. Strategic Agenda

	Subcomponents	Climate Change Information	
Inclusive economic growth (IEG)	Pillar 1: Economic opportunities, including jobs, created and expanded	Climate Change impact on the Project	Low
Environmentally sustainable growth (ESG)	Eco-efficiency		

4. Drivers of Change

	Components	Gender Equity and Mainstreaming	
Governance and capacity development (GCD)	Institutional systems and political economy	No gender elements (NGE)	✓
Knowledge solutions (KNS)	Knowledge sharing activities		
Partnerships (PAR)	Bilateral institutions (not client government) Official cofinancing		
Private sector development (PSD)	Public sector goods and services essential for private sector development		

5. Poverty Targeting

		Location Impact	
Project directly targets poverty	No	Nation-wide	High

6. Risk Categorization: Low

7. Safeguard Categorization **Environment:** B **Involuntary Resettlement:** C **Indigenous Peoples:** C

8. Financing

Modality and Sources	Amount ($ million)
ADB	**2.23**
Sovereign Project grant: Asian Development Fund	2.00
Sovereign Capacity development technical assistance: Technical Assistance Special Fund	0.23
Cofinancing	**2.70**
European Union	2.70
Counterpart	**0.84**
Government	0.84
Total	**5.77**

9. Effective Development Cooperation

Use of country procurement systems	No
Use of country public financial management systems	No

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on (i) a proposed grant, and (ii) proposed administration of a grant to be provided by the European Union (EU), both to Nauru for the Electricity Supply Security and Sustainability Project.[1] The report also describes proposed technical assistance (TA) for Tariff and Subsidy Policy Reform, and if the Board approves the proposed grant, I, acting under the authority delegated to me by the Board, approve the TA.

2. The project will improve the quality and reliability of electricity service of the Nauru Utilities Corporation (NUC), Nauru's sole electricity utility. This will be achieved through the delivery and installation of new diesel-fired generation to provide reliable base-load power for the NUC, allowing it to retire older generation assets and perform scheduled refurbishment of existing units to extend the service life of such units. The project will also repair the roof of the existing structure housing the NUC's generators to shield them from the elements and provide a safer working environment for NUC employees.[2]

II. THE PROJECT

A. Rationale

3. Nauru is a Pacific island country with a total population of 10,000 people. Access to grid electricity is universal but the supply is unreliable because of underinvestment in, and poor maintenance of, generation and distribution assets. The cost of generation is also extremely high because of the poor condition and inefficiency of the NUC's generators. The powerhouse (physical structure) is also in poor condition, which represents a vulnerability to Nauru's electricity supply security.

4. Installed generation currently comprises eight units with a total nominal capacity of 12.90 megawatts (MW). However, Nauru's current available capacity is only 3.70 MW because two units are inoperable and the output of the remaining units is reduced because of their poor condition. Current peak load is 3.75 MW. Scheduled service outages (rationing) are a constant feature of electricity service in Nauru. Unscheduled outages due to faults are frequent.

5. As in other Pacific developing member countries, Nauru has established ambitious targets for increasing the share of renewable energy generation in its system. But, as in other parts of the Pacific where significant intermittent renewable energy generation sources are being introduced into legacy diesel-based systems, Nauru will remain reliant on reliable and efficient thermal generation (i.e., diesel) for its base load, and for system stability and reliability, for the foreseeable future. Nauru's current diesel generation equipment is neither reliable nor efficient.

6. Addressing reliability and efficiency shortcomings in Nauru's current diesel generation equipment is of first-order priority to improve service reliability and mitigate the risk of catastrophic failure of the NUC's power generation. The NUC's investment priorities include introducing 3.0 MW of new diesel-fired generation under the project to replace existing generation, improve efficiency and reliability, and reduce fuel costs. The NUC estimates that this

[1] The design and monitoring framework is in Appendix 1.

[2] The Asian Development Bank (ADB) provided project preparatory technical assistance for Electricity Supply Security and Sustainability (TA 8524-NAU).

will result in a 20% improvement in generation efficiency from the existing 3.4 kilowatt-hours (kWh) generated per liter of diesel consumed to 4.1 kWh.

7. The consequences of the failings of Nauru's power system are far-reaching. The high cost of power generation is a significant burden on the state budget in the form of fuel subsidy to the NUC (at least $7.0 million per year – 24% of the 2011-2012 national budget of $29.5 million). Development assistance resources are consistently diverted to support the NUC, including for capital investments that would not be necessary (at least in such volumes) if the NUC's assets were better maintained. Nauru's consumers are frequently forced to endure power outages and some customers, especially commercial customers, have to resort to high-cost independent generation. The diversion of government funding to prop up the NUC's operations away from more productive social and infrastructure investments (e.g., education and health care) and the high cost of independent generation (where available) has negative impacts on Nauru's development and the quality of life of its inhabitants.

8. For the NUC to operate sustainably while avoiding diversion of scarce government funding to subsidize its operations, it must be able generate sufficient revenue to cover its long-term costs, including a prudent maintenance and capital investment program. The adoption of an appropriate tariff structure, with due consideration of the legitimate needs of some of Nauru's poorer residential customers, is crucial for the NUC's transition from being a perennial burden on the government budget to becoming a solvent, efficient power utility.

9. Providing for this transition and improving the NUC's operations will generate significant benefits to Nauru's people and economy. The reduced burden on the state budget will allow its limited resources to be directed towards more productive public investments (e.g., education, health care, or other infrastructure). The benefits of improved service reliability for household and commercial consumers of electricity are self-evident. Finally, provision of reliable base load generation will allow eventual integration of intermittent generation from renewable sources that would not be possible with the current unreliable system.

B. Impact and Outcome

10. The project's impact will be increased economic activity—all NUC customers will enjoy more dependable supply with fewer outages, and the NUC will resume supply to commercial and industrial customers. The project's outcome will be increased reliability, lower cost, and greater sustainability of power generation in Nauru. The incidence of power outages is expected to decrease by 50% by June 2016, and generation efficiency is expected to increase from 3.4 kWh per liter of fuel consumed to 4.1 kWh.

C. Outputs

11. The project will have three outputs:

(i) **New diesel-fired generation put into service.** A new, medium-speed, 2.6–3.0 MW diesel generator will be installed at the NUC, together with related auxiliary equipment; NUC personnel will be trained on its operation and maintenance.

(ii) **Repair and/or replacement of existing roof and structural reinforcements of NUC's powerhouse.** The NUC powerhouse roof will be rehabilitated and all asbestos will be removed and safely disposed of.

(iii) **Efficient project implementation.** The NUC will be assisted by the design and supervision consultants (DSCs) during project implementation.

D. Investment and Financing Plans

12. The project is estimated to cost $5.54 million (Table 1).

Table 1: Project Investment Plan
($ million)

Item			Amount[a]
A.	**Base Cost**[b]		
	1.	Efficient generation installed at the Nauru Utilities Corporation	3.23
	2.	Nauru Utilities Corporation powerhouse roof repaired	0.79
	3.	Efficient project implementation	0.41
		Subtotal (A)	**4.43**
B.	**Government In-Kind Contributions**		0.03
	1.	General administrative and audit costs	0.09
	2.	Site preparation	0.20
	3.	Water collection and oil separation	0.10
	4.	Demolition of water tower	0.08
	5.	Environmental monitoring	0.07
	6.	Post-commissioning operation and maintenance contract	**0.57**
		Subtotal (B)	**0.54**
C.	**Contingencies**[c]		**5.54**
Total (A+B+C)			

[a] Includes taxes and duties of $0.27 million to be financed from government resources in the form of taxes and duties exemptions.
[b] In mid-2014 prices.
[c] Physical contingencies computed at 10.0%. Price contingencies computed at 2.5% on foreign exchange costs and 5.0% on local currency costs. Includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.
Source: Asian Development Bank estimates.

13. The government has requested a grant not exceeding $2.00 million from the Special Funds resources of the Asian Development Bank (ADB) to help finance the project. [3]

14. The financing plan is in Table 2. The project will be financed by a grant from ADB's Special Funds resources (Asian Development Fund [ADF]) of $2.00 million, and a grant cofinancing of €2.00 million ($2.70 million equivalent), to be provided by the EU, and fully administered by ADB. ADB and the EU will conclude a cofinancing agreement and will finance project costs on a pro rata basis.[4] The government will provide contributions in-kind equivalent to $0.57 million, and in taxes and duties exemptions of $0.27 million. The government will make the proceeds of the grants available to the NUC under a subsidiary grant agreement upon terms and conditions satisfactory to ADB.

[3] A country's eligibility for Asian Development Fund (ADF) grants under the revised grant framework is determined by its risk of debt distress. The latest debt sustainability analysis determined that Nauru had a high risk of debt distress and was, therefore, eligible to receive 100% of its ADF allocation as grants.
[4] ADB and EU financing may finance local transportation and insurance costs.

Table 2: Financing Plan

Source	**Amount** ($ million)	**Share of Total** (%)
Asian Development Bank		
Special Funds resources (grant)	2.00	36.1
European Union	2.70[a]	48.7
Government	0.84	15.2
Total	**5.54**	**100.0**

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

Source: Asian Development Bank estimates.

E. Implementation Arrangements

15. The Ministry of Finance will be the executing agency, and the NUC will be the implementing agency. A project steering committee will be appointed to oversee project administration and implementation, identify and remedy issues impeding project implementation, and provide guidance to the implementing agency. The project steering committee will comprise (i) the secretary of the Ministry of Finance (chair), (ii) the deputy secretary for planning and aid of the Ministry of Finance, (iii) an advisor to the minister of finance, (iv) the chief executive officer of the NUC, and (v) representatives from ADB and the EU.

16. The NUC will be responsible for implementation of the project and establish a project management unit (PMU) that will be composed solely of NUC personnel. The PMU will be responsible for day-to-day implementation of project components, including

(i) preparing an overall implementation plan and annual budgets;
(ii) overall interagency coordination;
(iii) participating in bid evaluations and award of contracts funded by the grant proceeds;
(iv) preparing project safeguards document and implementing safeguard plans;
(v) project financial management and reporting;
(vi) consolidating, reviewing, and submitting regular progress and financial reports to the executing agency, including the annual audit report and financial statements;
(vii) monitoring and evaluating project outputs and results; and
(viii) preparing withdrawal applications for the executing agency.

17. All procurement of goods and works will be carried out in accordance with ADB's Procurement Guidelines (2013, as amended from time to time). Except as ADB may otherwise agree, procurement of goods and works will be conducted through international competitive bidding procedures using ADB's standard bidding documents.[5] The relevant sections of ADB's Anticorruption Policy (1998, as amended to date) will be included in all documents and contracts.

18. Efficient project implementation support to the PMU will be provided by a DSC, serving as the project owner's engineer, to be selected in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended form time to time). The DSC will prepare detailed engineering designs and bidding documents for all lots to be funded by ADB and EU grants; conduct bidding; respond to clarification requests; prepare a bid evaluation report; assist in negotiations; and supervise supply, construction, and commissioning.

[5] As the project will be financed with ADB-administered cofinancing resources, universal procurement will apply (ADB. 2013. *Blanket Waiver of Member Country Procurement Eligibility Restrictions in Cases of Cofinancing for Operations Financed from Asian Development Fund Resources.* Manila).

19. To expedite project implementation, the executing and implementing agencies have requested that all procurement actions up to the contract award to be funded under the grants be managed by the DSC, and that ADB initiate advance procurement for the selection and appointment of the DSC. However, no contractual or financial obligations will be created until the project has been approved by the ADB Board of Directors and the grants become effective. The government, executing agency, and implementing agency have been advised that initiation of preliminary consultant recruitment actions does not commit ADB (or the EU) to finance the project.

20. The project will be implemented over a period of 18 months, from January 2015 through June 2016. No additional financing is contemplated at this time. Implementation arrangements are summarized in Table 3 and described in detail in the project administration manual.[6]

Table 3: Implementation Arrangements

Aspects	Arrangements		
Implementation period	January 2015–June 2016		
Project completion date	30 June 2016		
Grant closing date	31 December 2016		
Management	Project steering committee: (i) secretary, Ministry of Finance (chair); (ii) deputy secretary for planning and aid, Ministry of Finance; (iii) advisor to the minister of finance, Ministry of Finance; (iv) chief executive officer, NUC; (v) ADB; and (vi) the European Union.		
(i) Oversight body			
(ii) Executing agency	Ministry of Finance		
(iii) Implementing agency	NUC		
(iv) Implementation unit	A project management unit will be established within the NUC, comprising its chief executive officer, finance director, and generation manager.		
Procurement	ICB	Two lots: (i) diesel generator, and (ii) powerhouse roof repair	$3.76 million
Consulting services (design and supervision consultant)	Fixed budget selection	18 months (intermittent)	$0.41 million
Advance contracting	Preliminary recruitment of design and supervision consultant; no contract will be awarded until grant effectiveness.		
Disbursement	All grant proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2012, as amended from time to time) and detailed arrangements agreed upon between the government and ADB.		

ADB = Asian Development Bank, ICB = international competitive bidding, NUC = Nauru Utilities Corporation.
Source: Asian Development Bank.

III. TECHNICAL ASSISTANCE

21. To complement the project's investments in the NUC's generation facilities, and to enhance the long-term sustainability and viability of the NUC as an electricity utility, ADB will provide TA to develop recommendations for a revision to existing tariff and subsidy policy.[7]

22. Consistent with the Government of Nauru's public financial management reform priorities, the NUC's tariffs were recently raised across all customer classes. Nevertheless, tariffs still remain far below cost-recovery levels and are highly distortionary. As the government pursues gradual reduction of direct and indirect subsidy to the NUC's power operations, the corporation's revenues from tariffs will need to become sufficient to maintain its operations over the long term. The proposed TA will help the government and NUC prepare a schedule of gradual tariff adjustments to support this, with a target of 50% cost-recovery from tariffs by December 2016.

[6] Project Administration Manual (accessible from the list of linked documents in Appendix 2).
[7] Attached Technical Assistance (accessible from the list of linked documents in Appendix 2).

23. To support the NUC's long-term viability and the sustainability of the investments under the proposed project, ADB will provide TA to the NUC and the Government of Nauru to develop policy options for ensuring that the NUC's revenues from power sales are sufficient to cover the cost of power service to its customers.

24. The TA will (i) analyze and confirm the NUC's long-run marginal cost of electricity service, consistent with established best practices for determining a utility's rate base, fixed costs (including prudent maintenance and reinvestment costs), and marginal operating costs (e.g., fuel); (ii) identify and value all existing subsidies provided to the NUC from the Government of Nauru, between and among the NUC's distinct operations (power, water, and fuel tank management operations) and to and among different classes of electricity customers; (iii) propose options for rebalanced power tariffs that provide for revenue sufficient to recover the NUC's power operations costs and that eliminate embedded cross-subsidies between consumer classes and between the NUC's distinct areas of operations (e.g., between power and water); and (iv) propose options for provision of a subsidy to residential customers to provide for basic power service on a means-tested or proxy-means-tested basis, for which means-testing approaches will be elaborated and assessed for practicality of implementation.

25. The findings of the TA will be presented to the Government of Nauru, NUC, and other stakeholders in a report and presentation containing a recommended policy framework for adoption by the government and a practical implementation schedule. The TA will be implemented by ADB through consultants selected in accordance with its Guidelines on the Use of Consultants.

26. The TA is estimated to cost $225,000, of which $225,000 will be financed on a grant basis by ADB's Technical Assistance Special Fund (TASF-V).

IV. DUE DILIGENCE

A. Technical

27. The proposed investments in diesel generation and powerhouse roof repair have been assessed to be technically viable and appropriate to the NUC's needs. The optimal size and performance characteristics of the diesel generator have been determined. The necessary scope of work for repair of the powerhouse roof has been elaborated. A 2-year post-commissioning operation and maintenance and training contract will be concluded between the NUC and the diesel-generator supplier to provide capacity development of NUC staff to improve long-term sustainability of the investment.

B. Economic and Financial

28. **Economic.** The project's economic internal rate of return is 48.30%, with a project economic net present value of $10.50 million using a discount rate of 12.00% over a 25-year project life cycle. Economic benefits accrue from a reduction in operational expenses (including reduced fuel consumption), increased revenue from serving un-served load (reduced incidence of forced outages), and reduced reliance on more expensive self-generation by industrial and commercial customers. Sensitivity analyses were performed assuming increases of 20.00% in capital and operational expenses and decreases of 10.00% and 20.00% in tariff and fuel-efficiency levels, respectively. Under all plausible sensitivity scenarios, the project's economic internal rate of return is robust, ranging from 18.80% to 44.70%.

29. **Financial.** The project has a financial internal rate of return of 11.50% and a financial net present value of $3.69 million using a financial discount rate equal to the weighted average cost of capital of 7.32%. Sensitivity analysis indicates that an increase in capital and operational expenditures of 20.00% decreases the financial internal rate of return to 9.80%. The project's financial performance is most sensitive to a decrease in tariffs. Though highly unlikely, a 10.00% decrease in tariffs would produce a financial internal rate of return of 0.74% and a negative financial net present value.

C. Governance

30. Sensitivity to tariff levels underscores the importance of tariff rationalization, which the government has begun to implement through a 70.00% tariff increase effective July 2014. The attached technical assistance will address further tariff and subsidy policy reform to support financial sustainability of the NUC.

31. **Financial management.** To facilitate cash flow during project implementation, the implementing agency will approve and submit to ADB withdrawal applications from the PMU, assisted by the DSC, for direct payment procedure for all project goods, works, and services funded under proceeds of the grants. A financial management assessment of the NUC was undertaken. While the executing agency's financial management practices and procedures were deemed adequate for the implementation and operational phases of the project, those of the implementing agency require urgent improvements that have been a covenanted condition of the grant. The NUC does not currently have all the necessary capability for energy accounting or financial management. While the PMU will be responsible for project financial management and accounting, the DSC will assist the executing and implementing agencies in accounting for all project transactions, including in-kind and other contributions from the government. (Simultaneously, ADB TA is being mobilized, managed separately from the proposed grant, to assist the NUC in development of its asset management practices and systems.)

32. **Procurement.** In the interest of time and efficiency, procurement activities funded through grants proceeds will be conducted by the DSC. The PMU will participate in the preparation of the bid documents and evaluation of the bids. Signing contracts and contract management responsibilities will remain with the grant recipient.

33. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the government and the Ministry of Finance. The specific policy requirements and supplementary measures are described in the project administration manual (footnote 7).

D. Poverty and Social

34. The present erratic power supply is a constraint on economic and socioeconomic development. The entire population of Nauru will benefit from the project through more reliable electricity supplies, and Nauru's economy will benefit from more efficient power generation.

E. Safeguards

35. **Environment** (category B). The project works will have impacts that are site specific; none of the foreseen environmental impacts are irreversible or cannot be readily mitigated. An initial environmental examination has been undertaken.[8] The project will undertake (i) delivery and installation of a new diesel generator, (ii) decommissioning and disposal of generators to be

[8] Initial Environmental Examination (accessible from the list of linked documents in Appendix 2).

retired, and (iii) repair and/or demolition of existing structures at the NUC's powerhouse and disposal of waste material. These activities are expected to create only a small range of impacts, which are largely contained within the site owned and managed by the NUC and which can be mitigated through the measures set out in the initial environmental examination and environmental management plan. The NUC have assigned staff to the PMU, which will be responsible for overall project implementation, including the environmental management plan. The DSC will support the PMU as the owner's engineer, and will also assist in implementation of the environmental management plan.

36. **Involuntary resettlement** (category C). The project is not expected to involve any physical displacement or relocation of people. All activities will be undertaken at the existing site of NUC's powerhouse, and will not require additional land acquisition. No resettlement plan is required per ADB's Safeguard Policy Statement (2009).

37. **Indigenous peoples** (category C). The majority of the population in the project area is not considered to be distinct from the mainstream society. The project is not expected to affect any distinct and vulnerable group of indigenous peoples as defined by ADB's Safeguard Policy Statement, and does not require an indigenous peoples plan. The project outputs will be delivered in a culturally appropriate manner.

F. Risks and Mitigating Measures

38. Major risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.[9] The integrated benefits and impacts are expected to outweigh the costs.

Table 4: Summary of Risks and Mitigating Measures

Risks	Mitigating Measures
Government procurement agency arrangement is inefficient and subject to inappropriate outside influence	All grant-funded procurements will be managed by design and supervision consultants (DSC).
Executing and implementing agencies' accounting for in-kind government contributions is deficient, inaccurate	DSC will support accounting for government in-kind contributions; implementing agency has competent in-house financial management experts who are developing finance department's capacity. However, grant covenants are required to ensure that the implementing agency implements adequate financial management policies and procedures as a matter of urgency, and undertakes commensurate capacity development of its staff. In addition, the DSC will be tasked to assist in the development of these financial management policies and procedures, and also to provide related capacity development.
Tariff and subsidy policies do not align to allow the Nauru Utilities Corporation to generate sufficient revenues from its customer base to cover costs. If these policies are not properly aligned, the financial performance of the project could be at risk.	Government of Nauru has acknowledged the urgency of revising tariff and subsidy policies. The attached technical assistance will support revision of these policies to ensure that the Nauru Utilities Corporation is able to meet its revenue requirement through tariffs (and explicit budget transfers, as appropriate.)

ADB = Asian Development Bank, DSC = design and supervision consultant

Source: Asian Development Bank.

[9] Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

V. ASSURANCES AND CONDITIONS

39. The government and the Ministry of Finance have assured ADB that implementation of the project shall conform to all applicable ADB policies including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, and disbursement as described in detail in the project administration manual and grant documents.

40. The government and the Ministry of Finance have agreed with ADB on certain covenants for the project, which are set forth in the grant agreements and project agreement.

41. In addition, the government, the Ministry of Finance, and the NUC have agreed with ADB that the preparation of the project site for the installation of the new generator will be a condition for awarding civil works contracts as set forth in the grant agreements.

VI. RECOMMENDATION

42. I am satisfied that the proposed grant would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve

(i) the grant not exceeding $2,000,000 to Nauru, from ADB's Special Funds resources, for the Electricity Supply Security and Sustainability Project, on terms and conditions that are substantially in accordance with those set forth in the draft grant and project agreements presented to the Board; and

(ii) the administration by ADB of the grant not exceeding €2,000,000 to Nauru for the Electricity Supply Security and Sustainability Project, to be provided by the European Union.

Takehiko Nakao
President

16 October 2014

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
Impact Increased economic activity	By December 2019: 10% increase in average monthly consumption (June 2015 baseline: to be confirmed during implementation) 20% increase in peak load (2014 baseline: 3.75 MW)	NUC billing records and performance logs	**Assumption** NUC supply will be sufficiently reliable and more economical than self-generation for residential, commercial, and industrial consumers. **Risk** Deterioration of performance of NUC's distribution network causes an increase in widespread service outages not related to generation faults.
Outcome Increased reliability, lower cost, and greater sustainability of power generation in Nauru	By December 2016: 1. Frequency and duration of unplanned generation outages: reduced by 50%[a] (baseline: January–June 2015) 2. Fuel efficiency of NUC's generators increased to 4.1 kWh/liter of diesel consumed (2013 baseline: 3.4 kWh/liter of diesel consumed) 3. Tariffs cover 50% operational costs (2012 baseline: tariffs cover 20% operational costs)	NUC service logs	**Assumptions** New plant will be appropriately sized for integration with existing system. NUC plant operators will be competent to operate new generation assets. Powerhouse structure will prove sound. Distribution network will be sufficiently reliable. **Risk** Cessation of delivery of government-subsidized fuel to NUC while NUC unable to generate revenue to purchase fuel on commercial basis
Outputs 1. New diesel-fired generation put into service	By December 2016: 2.6–3.0 MW of new diesel-fired generation commissioned (2014 baseline: not installed)	Progress and/or completion reports of DSC; acceptance report of NUC	**Assumption** Appropriate units are available on the market for purchase and timely delivery.

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
			Risk Site preparation delayed because of unforeseen complications.
2. Repair and/or replacement of existing roof and structural reinforcements of NUC's powerhouse	By December 2016: Roof will be repaired. (2014 baseline: roof is in poor condition and leaks during rain)	Progress/completion reports of DSC; acceptance report of NUC	**Assumption** Preliminary assessment of extent of needed repair to structure is accurate. **Risk** More extensive repair requirements discovered; hazardous material problems exceed expectations.
3. Efficient project implementation	PMU meets target contract awards and disbursements Works are completed on schedule	Progress/completion reports of DSC; acceptance report of NUC	

Activities with Milestones	Inputs
1. New generation unit(s) 1.1 Establish specifications – April 2015 1.2 Contract tendering, award – September 2015 1.3 Deliver to Nauru – April 2016 1.4 Install/commission – June 2016 **2. Powerhouse structure repairs** 2.1 Inspect powerhouse, confirm repair scope and contract specifications – April 2015 2.2 Tender and award contract – June 2015 2.3 Complete repair work– December 2015 **3. Project management services** 3.1 Establish PMU within NUC – September 2014 3.2 Short list DSC – November 2014 3.3 Award DSC contract – March 2015 3.4 Field DSC – by April 2015	**ADB** **ADF:** $2.000 million **European Union (grant) (fully administered by ADB):** $2.700 million **Technical Assistance Special Fund (TASF-V):** $0.225 million **Government of Nauru:** $0.840 million

ADB = Asian Development Bank, ADF = Asian Development Fund, DSC = design and supervision consultant, kWh = kilowatt-hour, MW = megawatt, NUC = Nauru Utilities Corporation, PMU = project management unit.

[a] System average interruption duration index and system average interruption frequency index will be used to indicate performance.

Source: Asian Development Bank.

LIST OF LINKED DOCUMENTS

http://adb.org/Documents/RRPs/?id=46455-002-2

1. Grant Agreement (Special Operations)
2. Grant Agreement (Externally Financed)
3. Project Agreement
4. Sector Assessment (Summary): Energy
5. Project Administration Manual
6. Contribution to the ADB Results Framework
7. Development Coordination
8. Attached Technical Assistance
9. Financial and Economic Analysis
10. Country Economic Indicators
11. Summary Poverty Reduction and Social Strategy
12. Initial Environmental Examination
13. Risk Assessment and Risk Management Plan

Supplementary Documents

14. Financial and Economic Analysis: Tables