

PROJECT PREPARATORY TECHNICAL ASSISTANCE

A. Justification

1. Project preparatory technical assistance (PPTA) is necessary to (i) determine the scope for necessary powerhouse repairs, (ii) develop environmental impact mitigation measures associated with powerhouse repair work, (iii) prepare a comprehensive generation rehabilitation and investment plan, (iv) prepare specifications for procurement of new generator unit(s) and for installation of new generator(s) and associated auxiliary equipment. The PPTA will also (v) assess current tariff policy, tariff-setting procedures, and options for provision of subsidy support for low-income households' electricity consumption.

B. Major Outputs and Activities

2. The major outputs and activities are summarized in Table A4.1.

Table A4.1: Summary of Major Outputs and Activities

Major Activities	Expected Completion Date	Major Outputs	Expected Completion Date
Technical/Financial/Economic/ Environmental Due Diligence:			
Inspect and assess powerhouse structure	March 2014	Develop scope for repair work	May 2014
Assess generation investment options and priorities	March 2014	Specifications for new generation unit(s)	May 2014
		Develop comprehensive generation rehabilitation and investment plan	May 2014
Tariff policy and subsidy mechanism options assessment	April 2014	Recommendation for tariff policy and subsidy mechanism adjustments	June 2014
Financial analysis, financial evaluation (financial cost-benefit analysis), and preparation of the financial management assessment	April 2014	Financial analysis report, including financial analysis assessment	June 2014
Project Preparation			
Design procurement tenders for powerhouse repair and new generation unit(s) delivery, including all associated works and commissioning	June 2014	TOR for Implementation Consultants, Draft RFPs/RFQs for new generation unit(s) and powerhouse structural works	June 2014

RFP = Request for Proposal; RFQ = Request for Quote
Source: ADB

C. Cost Estimate and Proposed Financing Arrangement

3. The TA is estimated to cost \$500,000, to be funded through a grant from the ADB's Technical Assistance Special Fund – V (TASF-V). The government will provide counterpart support in the form of counterpart personnel at NUC, and provision of office space at NUC or other appropriate facility owned by the Government of Nauru. The technical assistance will commence on 01 February 2014 and will be completed on 30 June 2014. The detailed cost estimate is presented in Table A4.2.

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

Item	Total Cost
Asian Development Bank^a	
1. Consultants	
a. Remuneration	
i. International consultants (10 person-months)	330.0
ii. National consultants (2 person-months)	12.0
b. International and local travel	60.0
c. Reports and communications	8.0
2. Equipment (computer, printer, etc.) ^b	10.0
3. Miscellaneous administration and support costs	30.0
4. Contingencies	50.0
Total	500.0

Source: ADB

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

^b Equipment (computers, printers, office furniture, telecommunications hardware, etc.) Equipment procured under PPTA will be transferred to NUC upon completion.

D. Consulting Services

4. The PPTA will require five international consultants (ten months) and one national consultant (two months) to be hired through a consulting firm. Consultants will be engaged by ADB in accordance with the *Guidelines on the Use of Consultants* (2013, as amended from time to time). The consulting firm will be engaged through the quality- and cost-based selection method (quality-cost ratio of 90:10)¹ using a simplified technical proposal. The procurement of equipment by consultants under the technical assistance will follow ADB's *Procurement Guidelines* (2013, as amended from time to time). The proceeds of the technical assistance will be disbursed in line with ADB's *Technical Assistance Disbursement Handbook* (2010, as amended from time to time). The equipment procured under the technical assistance will be turned over to NUC upon technical assistance completion.

¹ 90:10 is considered appropriate as the project requires specific technical capacities to specify diesel generation investments and structural engineering and construction works.

Table A4.3: Summary of Consulting Services Requirement

Positions	Person-Months Required
International	
Team Leader/Power Engineer	4
Structural Engineer	2
Environment Specialist	1
Economic Specialist	1
Financial Specialist	1
Social Impact/Subsidy-Design Specialist	1
National	
Environment Specialist	2

Source: ADB

5. The outline terms of reference for the project preparatory TA consultants are described in paras. 6 to 11.

6. **Team Leader/Power Engineer** (international, four person-months). The Power Engineer will have at least ten years of experience in power-plant operations, with experience in developing generation investment plans, including for small diesel systems and the integration of intermittent renewable (e.g. solar, wind) generation sources. The Power Engineer will serve as the team leader, and will manage the work of other specialists assigned to the PPTA. The Power Engineer's activities will include, but not be limited to, the following:

- (i) Prepare a detailed work program for the implementation of the PPTA, in coordination with the ADB project officer;
- (ii) Coordinate among the PPTA team the collection and review of existing data and reports on Nauru's power system, Government policies relevant to NUC and the development of Nauru's energy sector, and existing and planned activities of other donors;
- (iii) Analyze, confirm, and further develop (as necessary) demand and load forecasts for Nauru's power sector;
- (iv) Design and coordinate feasibility studies for the proposed powerhouse structure (roof) repair/rehabilitation, and for the delivery and installation of replacement diesel generation unit(s). Replacement diesel units shall provide for the lowest levelized cost of generation and comply with all applicable environmental and emissions standards;
- (v) Determine the optimal size of replacement diesel generation unit(s);
- (vi) Develop a detailed comprehensive generation rehabilitation and investment plan for existing diesel generators installed at NUC, including identification of units to be replaced and retired, and units to be rehabilitated;
- (vii) Incorporate consideration of Nauru's renewable energy investment targets in generation rehabilitation and investment plan;
- (viii) Identify investment requirements for NUC's thermal generation assets, including auxiliary systems, for integration of anticipated renewable (primarily solar) generation capacities;
- (ix) Draft Terms of Reference for project Implementation Consultants;
- (x) Coordinate the preparation and delivery of all reports, analyses, and other project *deliverables*.

7. **Structural Engineer** (international, two person-months). The Structural Engineer will have at least ten years of professional experience. Duties will include, but not be limited to, the following:

- (i) Inspect the existing NUC powerhouse main structure and other adjacent structures to determine their level of structural soundness and identify required repairs and rehabilitation measures;
- (ii) Identify the presence of hazardous materials, including suspected asbestos cement corrugated sheeting in roofing materials, and (in collaboration with the Environmental Specialist) develop a hazardous-materials management, handling, and disposal plan;
- (iii) For powerhouse rehabilitation, develop two scenarios for repair and rehabilitation. The first option should be for the repair of the roof to its original design specifications for structural integrity and load-bearing capacities. The second option should provide for increased load-bearing capacity and other requirements such that the future installation solar PV panels can be implemented without significant additional structural work on the powerhouse;
- (iv) Identify other structures at NUC's generation site that require urgent repair, or demolition, and develop recommendations for the same.

8. **Environment Specialists** (international, one person-month; national², two person-months). The Environment Specialists will have at least ten years of experience in environmental assessment of infrastructure projects, and some specific experience in the handling and disposal of construction materials containing asbestos fibers. The Environment Specialists responsibilities will include:

- (i) Preparation of environmental assessments for each investment under the proposed project: (1) delivery and installation of replacement diesel generator(s), (2) decommissioning and disposal of generators to be retired, (3) rehabilitation of existing generators, (4) repair and/or demolition of existing structures at NUC's generation site;
- (ii) In conjunction with the structural engineer, develop environmental impact mitigation measures for incorporation into work envisaged under the project;
- (iii) Develop specific scopes for the management, handling, and disposal of any identified hazardous materials (e.g. asbestos-containing materials) in accordance with relevant national legislation and ADB's *Safeguards Policy Statement (2009)*;

9. **Economic Specialist** (international, one person months). The Economic Specialist will have at least ten years of experience in financial and economic analysis of power generation investment projects, with specific experience with ADB financial analysis procedures, as outlined in the *ADB Handbook on Economic Analysis of Projects*. Duties will include, *inter alia*:

- (i) Assist Team Leader/Power Engineer in development of generation rehabilitation and investment plan, including cost estimates and internal rate of return (financial and economic) analyses for each component;
- (ii) Using available existing data, analyze NUC's power-sector operations costs to determine current costs and long-run marginal cost projections with a view to identifying NUC's revenue requirements *for its power-sector operations*;

² Given the scarcity of qualified Nauruan professional personnel, the PPTA consultants may need to second an environmental specialist from the Government of Nauru.

- (iii) Identify and quantify existing embedded cross-subsidies between NUC's core operations;
- (iv) Review existing power tariff structure and levels, and identify (1) adequacy with respect to meeting NUC's current and projected revenue requirements, (2) the existence of cross-subsidies between customer classes (e.g. high-voltage/high-load customers vs. residential consumers);
- (v) In collaboration with Social Impact/Subsidy-Design Specialist, develop options and justifications for revised tariff structure, tariff level(s) commensurate with NUC's revenue requirements, and design of *targeted* subsidy mechanisms for low-income households.

10. **Financial Specialist** (international, one person month). The Financial Specialist will have at least ten years of experience in financial analysis of power generation investment projects, with specific experience with ADB financial analysis procedures, as outlined in the *ADB Handbook on Economic Analysis of Projects*. Additionally, the Financial Specialist must have a recognized professional accountancy qualification. Duties will include, *inter alia*:

- (i) Calculation of the financial internal rate of return of the proposed deliver of new (replacement) diesel generation unit(s);
- (ii) Assessment of NUC's financial reporting practices and agreement with NUC on financial reporting, auditing and disclosure arrangements;
- (iii) Conduct as appropriate, financial analysis and financial evaluations (financial cost-benefit analyses) including sensitivity analyses; and,
- (iv) Prepare a financial management assessment, and design a flow-of-funds/disbursement mechanism for implementation of the ensuing project.

11. **Social Impact/Subsidy-Design Specialist** (international, one person-month). The Social Impact/Subsidy Design-Specialist will have at least ten years of professional experience in the performance of social-impact evaluations of utility investment projects, and specific experience in the design of targeted subsidy schemes for utility services. The Social Impact/Subsidy Design Specialist will:

- (i) Collect available (existing) household budget information;
- (ii) Review data on Nauru households' consumption patterns;
- (iii) Propose practical options for identification/qualification of low-income households for eligibility for electricity-consumption subsidy;
- (iv) Propose level of subsidy to be provided under subsidy scheme (monetary value or energy value);
- (v) Organize stakeholder consultation workshops on proposed tariff modifications and targeted subsidy mechanisms;
- (vi) Prepare Poverty and Social Assessments (PSA) according to ADB guidelines, and prepare a Summary Poverty Reduction and Social Strategy (SPRSS) to be included in the project document.
- (vii) Undertake due diligence on social safeguards following ADB SPS to confirm that the project doesn't involve land acquisition/resettlement and impacts on indigenous peoples. Complete screening and categorization checklists and prepare a brief due diligence report on these aspects.

D. Implementation Arrangements

12. The Executing Agency will be the Ministry of Commerce, Industry and Environment. The Implementing Agency will be the Nauru Utilities Corporation, which will provide counterpart personnel and office space for PPTA consultants.

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

Table A4.4: Technical Assistance Processing and Implementation Schedule

Major Milestones	Expected Completion Date
PPTA Approved	November 2013
Consultants Mobilized	February 2014
Inception Report	February 2014
Draft Final Report	May 2014
Final Report	June 2014
Financial Closure	July 2014

Source: ADB

E. Reporting and Deliverables

- (i) Inception Report. The Inception Report will include a summary of initial activities and findings, background data collected on NUC's generation and powerhouse structure, tariff policy and subsidy policies, and a revised work-plan for the duration of the PPTA.
- (ii) Draft Final Report. The Draft Final Report will contain technical and economic feasibility assessments, technical specifications and draft RFPs/RFQs for the purchase of new diesel generation and for structural repairs of the powerhouse, as well as TORs for implementation consultants. Draft Final Report will also contain tariff and subsidy mechanism recommendations. Draft Final Report will be submitted for review and comment by ADB project officer and Implementing Agency.
- (iii) Final Report. The Final Report will be delivered within two weeks of receipt by consultants of comments from ADB and Implementing Agency.

All reports will be submitted electronically to the ADB and Implementing Agency.