Solomon Islands Electricity Authority
trading as SOLOMON POWER

Short Term Consultancy (Company)

Terms of Reference (TOR)

Consultancy Services for Water Treatment Plant Assessment and Refurbishment - Lungga Power Station

1. Background

The Solomon Islands Electricity Authority (SIEA) now trading as Solomon Power (SP) is a vertically integrated state-owned enterprise that owns, maintains, and operates the national electricity grid in the Solomon Islands. SP is solely responsible for the generation, transmission, distribution, selling, and regulating electricity in the Solomon Islands. SP depends heavily on fossil fuel (98%) and very little on renewable energy (2%) – Hydro and Solar.

The largest electricity network in the Solomon Islands (both in terms of geographical coverage and electricity sales) is in Honiara, with a maximum demand of approximately 16 MW. The main generation plant for Honiara is located at Lungga, about 10km from the Honiara CBD. The Lungga Power Station constitutes the largest Generation capacity and is made up of two separate Power Stations namely the Old and New Lungga Power Stations.

- Old Lungga Power Station with a combined Generation Capacity of 20MW
- New Lungga Power Station with a combined Generation Capacity of 10MW

The water supply system to the two Power Stations has been partly treated since 2016 and supplied from a borehole system installed close to the Power Station. The new Lungga Power Station is supplied by a water treatment system through Reverse Osmosis and the Old Lungga Power Station is supplied by a malfunctioned Water Softener system. At present, the Old Lungga Power Station Generators are directly supplied by untreated water.

To address this situation, SP has identified the need for assistance from engineering consulting firms to complete a detailed technical engineering scoping for the complete design of a centralized water treatment facility for the Lungga Power station.

2. Purpose of this Engagement

The purpose of this engagement is to provide a detailed investigation of the current water treatment plants and associated accessories in the New and Old Lungga powerhouses and provide relevant recommendations on a replacement or upgrade for the entire water reticulation and treatment system. The water treatment plant upgrade should be a centralized solution to ensure the efficient operation of the current and proposed Diesel Generation system.

The consultant is expected to:

1. Visit Lungga power station and complete a detailed review of the existing water supply system/treatment. The study to identify replacement strategy and detail costing on the replacement/reinforcement of all relevant equipment.
2. Provide the following:
   a) Provide detailed recommendations to Solomon Power to address this issue
   b) Proposed detail site layout drawings of the upgraded Lungga Water Treatment System
   c) The proposed Water treatment facility is to be a centralized solution for both Power stations.
   b) Proposed detailed equipment layout drawings.
   c) Detail staging of works plan during construction to minimize major outage of power supply to Honiara.
   j) Detail program timeline for the construction of works, the scope of works, and technical specifications to be utilized by the EPC contractor.
   k) Detail cost estimates for the complete upgrade of the entire Lungga Power Station Water treatment facility

3. Input Information

The following information will be made available:

a) Overlay drawing of the entire site
b) Relevant layout drawings
c) Current Water treatment plan information

4. Deliverables and tasks

As an expert, the consultant will be responsible to:

a) Provide a detailed concept design report that will include major deliverables in Section 2.
b) Provide a detailed layout drawings and design for the entire proposed water treatment system
c) Provide detailed cost estimates for the entire upgrade works with a detailed program timeline. This is to be broken down in major components and mitigation plans for any power/water outages during the transfer from existing to new system.
d) Provide detailed staging of works, phase plan/schedule for the recommended replacement and commissioning of works to avoid major outage.
e) Prepare a detailed scope of works for the complete upgrade and replacement works including a detailed schedule for the complete project. Provide technical specification for all new equipment. Prepare tender documents for EPC contract for this works.
f) Provide a detailed cost estimate for the EPC works.

All reports created shall be provided to SP in original editable format. All IP developed as part of this assignment will be owned by SP.

The table below sets out an indicative timeframe for the main deliverables.

Table 1: Major Deliverables

Major Deliverable	Target date
kickoff meeting /site visit	September 2023
Draft detailed concept report	October 2023
Final detailed concept report	December 2023
Technical specification and tender document completed	February 2024
Delivery of all relevant documentation, data, reports, electronic copy of models	February 2024

5. Competence and Qualification

The SP invites an eligible Consultant to indicate its interest in providing the required services. Interested individuals or Consultancy Firms with qualified Consultants should provide information, demonstrating that they have the required qualifications and relevant experience to perform the services.

The consultant's team must be familiar with international best practices in water treatment facilities for preferably Diesel Powered Stations.

The Consultant should possess the following qualification and experience to be suit the objectives of this assignment:

- Design Engineers with minimum 10 years' minimum experience in designing and implementing water treatment plants for Diesel Generator power systems and demonstrated experience in delivering similar projects in the Pacific region

6. Payment Schedule

The bid price should be provided and detailed / WBS as per the major deliverables in Section 2 and 4.

The bid price should be a fixed lump sum in Solomon Dollars for the works not subject to rise and fall.

The consultant's bid is to be inclusive of withholding tax, duties and sales tax (where applicable).

The payment will be made on the key milestones and amount as listed in the table below.

Table 2: Payment Schedule

Description of Milestone	Amount to be paid
Site visit and proposed layout drawing Payment will be made on acceptance of these milestones by SP	15%
Acceptance by SP of the Draft concept detailed report	35%
Acceptance of technical specifications and tender documents	30%
Delivery of all reports documentation, data in electronic copy	20%

7. Additional Information to be provided with the bid

The consultant shall provide details for minimum four (4) reference projects of similar nature, scope and size. The information for the reference projects shall be provided as per the table below.

Table 3: Reference Projects Template

Project No.	
Customer	
Location	
Scope of Works	
Contract Value (USD)	
Date of Completion	
Referee	
Any additional info	

The consultant shall provide names and detailed CVs and the roles of all staff that will form the project team for this study and specify the project manager as the main contact point.

Any subcontractors and software suppliers shall be clearly listed with their roles in the team, CV and contact details to be provided.

Detailed program/schedule to be submitted with the bid with the milestones as detailed in section 2.0 and 4.0 of this TOR.

The consultant shall list and provide any deviations from the scope (TOR) in the offer.

All reports provided shall have the SP logo.