

REQUEST FOR EXPRESSIONS OF INTEREST

(INDIVIDUAL CONSULTING SERVICES)

FEDERATED STATES OF MICRONESIA

Sustainable Energy Development and Access Project (P165183)

Grant No: IDA-D3970

Assignment Title: Power Generation Electrical Engineer

Reference No. FM-DORD 330075-CS-INDV

The Government of The Federated States of Micronesia (FSM) has received financing from the World Bank toward the cost of the FSM Sustainable Energy Development and Access Project (SEDAP), and intends to apply part of the proceeds towards payment of a full time Electrical Engineer located in Pohnpei Utilities Corporation (PUC), Generation Department.

The consulting services (“the Services”) include Providing electrical engineering services for the PUC, Generation Department. This will entail work closely with PUC Owner’s engineers, generation supervisors, PUC Department Heads, and Project Manager at PIU; Preparation of monthly progress reports to the PUC CEO and the Project Manager in PIU; and Working closely with PUC Engineering Team including the Owners Engineers to ensure that the technical information of the new power plant is precisely implemented and as built is exactly the same as what is in place.

The Department of Resources and Development, now invites eligible individuals (“Consultants”) to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services (attach curriculum vitae with description of experience in similar assignments, similar conditions, etc.). Firms’ staff may express interest through the employing firm for the assignment and, under such situation, only the experience and qualifications of individuals shall be considered in the selection process.

The criteria for selecting the Consultant are:

Mandatory Requirements

1. The Electrical Engineer Power should possess necessary qualifications in electrical engineering with the minimum requirement of Diploma or License from an accredited institution and have had over seven (10) years of practical works experience in power generation utility environment. Or, the Electrical Engineer should possess a Bachelor Degree in electrical engineering with the minimum of five (5) years practical works experience in an electricity supply utility environment.

2. An excellent working knowledge, operational and on-site experience and skills of Switchgears, Controls, SCADA, RE systems.

3. Skillsets in both high and low voltage in power plants and substations, live line work, fault detection and locating, infra-red thermal scanning, meter and equipment calibration testing, load data monitoring collection, advanced metering systems, SCADA setup and operation, integrated controls and monitoring systems, transformer analysis and utilization, VCB, switchgear & relay function testing and maintenance, network design, develop and run training programs in both technical skillsets and safe practices are some of the essentials required.

4. Administration skills including report writing, general computing skills, Arc Gis and Auto CAD utilization and updating, digital template construction for deliverables, maintenance of databases and computer logging/control systems, development of quality control and safety procedures are essential.

Desired requirements

1. Knowledge and hands-on experience of electricity sector issues in the state of Pohnpei.

The attention of interested Consultants (including firms) is drawn to paragraph 3.14, 3.16 and 3.17 of the World Bank's *Procurement Regulations for IPF Borrowers, July 2016, Revised November 2017, August 2018* ("the Regulations"), setting forth the World Bank's policy on conflict of interest.

Further information can be obtained at the address below during office hours. The detailed Terms of Reference (TOR) for the assignment are attached here.

Expressions of interest must be delivered in a written form to the address below (in person, or by mail, or by fax, or by e-mail) by 5:00 pm Pohnpei Time, February 28, 2023.

Secretary, Department of Department of Resources and Development

Attn: Charles Butts (Mr),
Project Manager,
Sustainable Energy Development and Access Project
P.O. Box PS-12
Paliker, Pohnpei FM 96941
Tel: +691 9320-2620/2646/5133
E-mail: sedap@rd.gov.fm

and copy to:

ciu.sedap@gov.fm

TERMS OF REFERENCE

1. INTRODUCTION

The Government of The Federated States of Micronesia (FSM) has received financing from the World Bank toward the cost of the FSM Sustainable Energy Development and Access Project (SEDAP), and intends to apply part of the proceeds towards payment of a full time Electrical Engineer located in Pohnpei Utilities Corporation (PUC), Generation Department.

1. BACKGROUND

The Federated States of Micronesia (FSM) is a Pacific Island Country (PIC) comprising 607 islands, 74 of which are inhabited. This archipelago extending over an area of 702 square kilometers, is a federation of four semi-autonomous states with a total population of 102,843 people. Pohnpei, Kosrae, Yap and Chuuk. Each state of FSM has its own executive and legislative bodies, and considerable autonomy to manage domestic affairs.

The Federated State of Micronesia received grants from World Bank under IDA 18, Sustainable Energy Development and Access Project. (SEDAP). The Pohnpei State share of the Project includes the following components:

1. **Component 1: Improving Reliability of Electricity Supply in Pohnpei (IDA US\$ 11.8 million).** This component will address PUC's challenges with insufficient available generation capacity, which is way below the installed capacity, to cover peak demand in a stable manner and reduce unscheduled shutdowns of power supply and unsecure waste oil storage. The component will finance (i) medium speed diesel gensets of about 7.5 MW total, which will serve base load and provide appropriate redundancy; (ii) consultancy work for feasibility studies and supervision; (iii) associated grid facilities in Pohnpei to improve the operational performance and generation capacity of PUC; (iv) waste oil storage tank and spill containment (v) removal of obsolete generation equipment and (vi) electromechanical and electronic equipment, such as a power system SCADA, measuring, monitoring, and protection devices, and converters to help PUC improve its operational performance.
2. **Component 4: Institutional Strengthening and Capacity Building in the Energy Sector (IDA US\$ 1.9 million).** This component aims at reinforcing the sector's operational and environmental sustainability by improving institutional capacities for governance and exploring access to other efficient energy solutions.

Sub-component 4.1: Sector Governance: This component is designed to improve sector governance and financial performance, achieve self-sustainability and improve PUC's asset maintenance strategy. Specifically, this his sub-component will support:

- **PUC's O&M fund and Performance Contract(PC)** PUC O&M capacity and corporate functions through the establishment of an O&M fund that will ensure sustainability The

O&M fund will cover, at least PUC's generation assets financed by ESDP and SEDAP and will be set up within 18 months of project effectiveness. A consultant will be recruited to propose the rules, guidelines, and procedures regulating the funding and subcomponent will also include the signature, implementation, and monitoring of a PC. Once the O&M fund is established in PUC, a similar scheme in each utility will be expected. Further information about the O&M fund is available on section *III.C. Sustainability* of this document.

1. Scope of Work

1. Ability to carry out onsite inspections, review designs and ensure construction complies with design, scope and specifications based on bid documents for a power plant.
 2. Review current generation protection system and prepare plans to improve the system outages, monitor key performance indicators (SAIFI, SAIDI), technical losses, load dispatching and provide recommendations to the office of the general manager.
 3. Work closely with PUC's Owners Engineer to ensure construction of switchgear, power plant and auxiliaries meets NEC standards. Gensets meets manufacturer specifications and the design of the plant.
 4. Prepare transition plans to relocate the outgoing feeders from existing plant to ensure continuity of the power service during the rehabilitation of NPP 2 and 3.
 5. Confirm plans and inspect the construction of waste oil storage for the new power plant.
 6. Implement a load flow analysis of the PUC electricity network design and implement programs to cost effectively optimize the network performance and minimize technical and non-technical losses.
 7. Assess the capacity and skills of PUC Generation personnel and design and implement training programs to achieve the minimum required certification levels.
 8. Design and take responsibility for the implementation of preventive maintenance programs and ensure the power station, switchgears, stores and external equipment of PUC is maintained in a serviceable conditional at all times.
 9. Monitor and supervise the performance of all outside contractors engaged in studies, training, O&M, procurement and construction of the new power plant.
 10. Review current operational procedures for diesel power station, distribution system operations and renewable plants (PV and Hydro) and recommend options to modernize the operations.
 11. Survey the renewable plants and provide inventory of spare parts, evaluate and upgrade the maintenance program for all RE Plant.
 12. Provide operations training, safety training, switchgear, load dispatching, switching and SCADA training
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1. Verify the load bank test with commissioning test results, prepare reports and submit to PIU.

The Electrical Engineer will report to the PUC CEO and the Project Manager at PIU and is accountable to the PUC Chief Executive Officer and the Management Team.

- Work closely with PUC Owner's engineers, generation supervisors, PUC Department Heads, and Project Manager at PIU;
- Prepare monthly progress reports to the PUC CEO and the Project Manager in PIU; and
- Work closely with PUC Engineering Team including the Owners Engineers to ensure that the technical information of the new power plant is precisely implemented and as built is exactly the same as what is in place.

1. Desired Skills, Qualification and Experience

The criteria for selecting the Consultant are:

Mandatory

1. The Electrical Engineer Power should possess necessary qualifications in electrical engineering with the minimum requirement of Diploma or License from an accredited institution and have had over seven (10) years of practical works experience in power generation utility environment. Or, the Electrical Engineer should possess a Bachelor Degree in electrical engineering with the minimum of five (5) years practical works experience in an electricity supply utility environment.
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4. Administration skills including report writing, general computing skills, Arc Gis and Auto CAD utilization and updating, digital template construction for deliverables, maintenance of databases and computer logging/control systems, development of quality control and safety procedures are essential.

Desired

5. Knowledge and hands-on experience of electricity sector issues in the state of Pohnpei.

1. Reporting and Deliverables

Electrical Engineer will consult with the PUC CEO and the Project Manager at PIU in terms of report contents and scopes and submit the reports and deliverables according to the agreed timetable with the acceptable professional standards, including but not limited to:

- Monthly Progress Reports. The Electrical Engineer shall prepare a technical progress report summarizing the work accomplished. The report should at least outline any technical problems encountered and give recommendations on how these problems may be overcome.
- Technical Reports. The Electrical Engineer will produce as necessary technical reports and position papers dealing with technical matters arising during the project.

1. Duration, Location, and Conditions of Assignment

The Electrical Engineer is to be recruited for an initial period of 12 months on a full time basis, with the possibility of extension for the duration of Project implementation based on satisfactory performance. The position would be subject to a probationary period of three (3) months.

The position is a full-time position to be located in PUC Generation Department and international travel will be required from time to time.

The Project PIU and PUC Engineers will provide the all documents related to the new power plant project.

The Electrical Engineer will be housed in the PUC generation office in Pohnpei FSM.

The total remuneration package, including salary and other benefits will be up to US\$100,000.00 per annum subject to negotiation based on previous documented contracting experience and compensation history.

The Electrical Engineer is subject to all tax for non-resident income tax. The Electrical Engineer is fully responsible for the cost of local transportation (to/from local housing to the PUC project sites and offices. Off island travels shall be authorized and is supported from the budget for operating costs under the project as per applicable FSM policies for airfare, accommodation and per diem. Working hours would be consistent with the MEC hours.

Other benefits include:

- Mobilisation from originating location. (*Government policy to be applied – reimbursable for airfares and payment for shipping*)
- Home leave once in a 12-month period. (*travel follows government policy which includes airfare and per diem on travel stops. Reimbursable arrangement*)
- Leaves are not available for contract employees.
- Housing allowance
- Cost of Living allowance