Fiji Electricity Authority

Design Services for 132kV Transmission Line Protection Upgrade

MR46-2017

March 2017

1 Background

The Fiji Electricity Authority (FEA)

The FEA is a wholly Government of Fiji owned statutory body that was established under the Electricity Act of 1966. It is supervised by a Board of eight members comprising a Chairman, Deputy Chairman, the Chief Executive Officer of FEA, the Permanent Secretary of Infrastructure and Transport, the Permanent Secretary of Finance, and representatives of Business and Consumer Groups. All members are appointed by the Minister of Infrastructure and Transport, except for the Chief Executive Officer of FEA, who is appointed by the Board with the approval of the Minister. The Management team of the FEA consists of Chief Executive Officer, Chief Finance Officer, General Manager Human Resources, General Manager Generation, General Manager Network, General Manager Customer Services, Chief Information Officer, General Manager Major Projects & Strategy, General Manager Commercial and General Manager System Planning & Control.

FEA maintains power supply systems on the larger islands Viti Levu, Vanua Levu, Ovalau and Taveuni which account for some 90% of the country's population.

2 FEA System Arrangement

2.1 Viti Levu Interconnected System

The Viti Levu Interconnected System (VLIS) is by far the largest system of the four power systems operated by FEA. The VLIS consists of four hydro power stations and eight thermal power stations, which are linked via 132 kV or 33 kV transmission systems, or 11kV interconnectors. The installed generation capacity on Viti Levu is approximately 290.94MW, comprising 137.1MW hydro-power, 144.12MW of thermal capacity and 9.72MW wind energy. The recorded peak demand on the VLIS is 170MW to date.

The Wailoa, Nadarivatu and Wainikasou hydro power stations are located in the centre of the island. 132 kV steel tower transmission lines connect Wailoa and Nadarivatu power stations to the 132 kV backbone transmission network, which spans from Cunningham to Vuda, with switching stations in Wailoa and Nadarivatu.

The Wainikasou hydro power station is connected to the Wailoa switching station via a 33 kV transmission line and a 132/33 kV step-up transformer at Wailoa. The Nagado Power station is connected to the 33 kV sub-transmission network in the Western region of VLIS.

132/33 kV substations are situated at Vuda in Western Region and at Cunningham in Western Region. These are connected to strategically located 33/11 kV zone substations via 33 kV sub-transmission lines or underground cables.

The 33 kV network is configured as a closed ring system feeding a total of eleven substations around the Central region, and two substations fed off in a radial configuration. The Cunningham Road, Old Kinoya, New Kinoya, Suva, Knolly Street, Vatuwaqa, Sawani, Nausori, Komo Park, Rokobili and Hibiscus Park stations are configured as a closed ring main system while single radial circuits run from Hibiscus Park to Wailekutu and then to Deuba. Majority of these 33kV circuits are of underground cable construction.

The Western Region 33 kV sub-transmission network is configured as radial links to sixteen 33/11 kV zone substations, including the one at Vuda itself. There are 33 kV circuits that run from Vuda to Pineapple Corner and to Rarawai in Ba, and a 33 kV overhead line extending from Rarawai to Tavua 33/11 kV substation. There are four 33kV circuits that extend from Vuda to Waqadra. Three 33 kV

circuits runs direct from Vuda to Waqadra whilst the other is via Sabeto Switching Station, which is connected to Nagado Power Station via a single 33 kV circuit. A single 33 kV circuit emanates from Waqadra to Qeleloa, and is connected in a tee-configuration with circuit emanating from Sabeto. The Maro 33 kV substation is a tee-off to Qeleloa-Sigatoka 33 kV overhead line, and supplies power to Natadola 33/11 kV substation via a single 33 kV underground circuit. The Sigatoka 33 kV Substation feeds Nacocolevu and Korolevu 33 kV substations via a single 33 kV overhead line. A single 33 kV underground cable links Butoni Wind Farm to Nacocolevu Substation. Majority of the 33 kV overhead lines in the Western Region are of wooden-pole type construction.

Power distribution is by means of more than 9,000km of 11kV and 415/240V lines

Independent Power Producers (IPPs) are also connected to the FEA electricity grid. At present, two IPPs are connected directly to the 11kV distribution network.

2.2 Other Systems

The Northern power system consists of four independently operating power systems spread over three islands, Vanua Levu, Taveuni and Ovalau. The Labasa and Savusavu power systems are on the island of Vanua Levu whilst Ovalau power system is on Ovalau. FEA has started operating in Taveuni since December 2016.

3 Objective of the Assignment and Scope of Work

The Fiji Electricity Authority is undertaking investments to upgrade its generation and transmission systems to meet the increasing electricity demand. In addition to this, it is investing in upgrading existing systems to ensure the power system is operated safely, reliably and efficiently.

The project scope includes design for upgrade of line differential protection schemes on Wailoa – Cunningham Road, Wailoa – Nadarivatu and Nadarivatu – Vuda 132kV transmission lines, from SEL311L to SEL411L. The high level scope of work includes:

- Assessment of existing As-built drawings and identifying how the existing relays can be replaced, and new schemes can be integrated with existing CB Fail schemes and inter-tripping schemes
- Preparation of design drawings, including specification of protection relay for procurement, and protection relay settings files
- Preparation of design report and operator notes
- Preparation of I/O list for SCADA interconnection of new protection relays
- Preparation of installation guidelines, for minimum impact to the transmission line availability
- Review of existing distance protection settings for the 132kV transmission lines

4 Deliverables

Within one week of commencement, the Consultant shall submit to FEA a detailed work program outlining time inputs, field visits and the methodology, in MS Project format.

An inception report shall be submitted with the detailed work program.

Delivery of design drawings, protection settings files, design report, SCADA I/O list, operator notes and installation guidelines shall be staged.

Fortnightly progress reports shall be submitted every consecutive Monday from the date of commencement.

5 Program

The anticipated program for the review is shown below.

RFP Close	29/03/2017
Evaluation Completed & Endorsed by EMG & Board	14/04/2017
Engagement of Consultant	21/04/2017
Commencement of Study	28/04/2017
End of Study	31/07/2017
Final Date for Submission of all Designs	4/08/2017

6 Supervision and Reporting

The successful Consultant will report to the Unit Leader System Studies and Protection.

7 Expertise & Qualification

The following is required:

- The Lead Design Engineer must have as minimum a first degree in electrical engineering/science.
- The Lead Design Engineer shall have at least 15 years working experience in power system protection design
- The Lead Design Engineer shall be a Chartered Professional Engineer with a current certificate of practicing
- The Lead Design Engineer or the team will possess good management and co-ordination skills, and experience on technical project implementation.
- The Lead Design Engineer should have worked on identical 132kV (or higher voltage) transmission line protection scheme designs

Knowledge of or familiarity with FEA's network is highly desired.

8 Fee Proposal

A detailed financial proposal is required. FEA prefers a lump sum contract, including disbursements. Unit rates for staff and consumables is to be submitted. The Contract price proposal shall be comprehensive in that, in consideration of the Tenderer meeting all obligations, conditions and liabilities under the Contract.

9 Payment Schedule & Terms

Payment terms shall be as per Appendix 2.

10 Submission of Proposals/Tenders

10.1 Summary of Requirements

Tenderers shall provide the following information as their response to this RFP. Information shall be contained in a single bound document.

The bidder shall provide one electronic copy of the Technical and Financial proposals on FEA's electronic tender hosting website, https://www.tenderlink.com/fea, before closing time. The hard copy is to be sent by courier and air way bill number provided. The Tenderer is to provide one original hard copy and one copy.

The Tenderer shall seal the original copy of the technical proposal, the original copy of the price proposal and each copy of the technical proposal and each copy of the price proposal in separate envelopes clearly marking each one as: "ORIGINAL-TECHNICAL PROPOSAL", "ORIGINAL - PRICE PROPOSAL", "COPY NO. I -TECHNICAL PROPOSAL", "COPY NO. I - PRICE PROPOSAL", etc as appropriate.

The inner and outer envelopes shall

(a) be addressed to:

The Secretary Tender Committee
Fiji Electricity Authority
2 Marlow Street
Suva, Fiji

and

(b) bear the following identification:

Bid for Design Services for 132kV Transmission Line Protection Upgrade
Tender Number: MR46-2017

The inner envelope shall indicate the name and address of the Tenderer to enable the bid to be returned unopened in case it is declared "late". If the outer envelope is not sealed and marked as above, FEA will assume no responsibility for the misplacement or premature opening of the bid.

Facsimile submissions will not be accepted.

10.2 Submission Requirements

The proposal shall include:

1. A covering letter including the complete name and address of the principal firm including the name and title of person principally responsible for the assignment
2. A detailed methodology including a programme for the works/services.
3. Lump sum fee for the entire works/services
4. Unit rates for all staff proposed to be engaged on the project
5. Tenderers are to familiarise themselves with Local Fijian Taxation requirements and clearly identify relevant local taxes that are included in their fees
6. Tenderers are to state clearly the currency(s) that is being used in their submission bids
7. Company background and evidence of similar works undertaken by the firm over the last five years including project name, summary of work carried out, contact name and address of clients
8. Background of proposed sub-consultants if any, and their relevant scope of work
9. CV's of personnel that will be engaged in the work including sub-consultants
10. Copies of insurance certificates including any Professional Indemnity Insurance cover are to be submitted
11. Information requirements from FEA, which is to be provided at the commencement of study

Submissions shall be made in English language only.

10.3 Closing Date

Submissions close at **1600hrs (Fiji) Time on 29th March 2017** at FEA's Suva office. Late submissions will not be accepted.

10.4 Costs

All costs of preparing the submission shall be borne by the tenderer.

10.5 Pre-bid Visit

A pre-bid visit is not envisaged at this stage of the project. However, if tenderers wish to visit the site(s), then this can be arranged, at the Tenderers cost, with 3 days advance notification.

11 Evaluation

Tender submissions will be checked for completeness, Tenderers who fail to submit all information required above may not be considered for award. A 50% weighting shall be given for the company and personnel background and performance and 50% for the lump sum price and any additional chargeable rates.

12 Notification and Award

Following FEA board approval, tenderers will be advised, by letter, whether they have been successful or not. Tenderers will be able to debrief with the evaluation team should they so request, however the scoring information will not be released to any of the tenderers at any time.

Notwithstanding any other provision of this document, FEA reserves the right to:

- Accept or reject any proposal
- Seek clarification of any aspect or information provided in this document and to seek further information from any party
- Amend the closing date for submission of Tender or any other date referred to or implied in this document
- In whole or in part, suspend or cancel this Invitation for Tender
- Re-advertise this invitation for Tender

13 Confidentiality of Information

The Consultant shall retain ownership of any Intellectual Property already owned by the Consultant or arising from the Services performed under this TOR, but the Consultant grants to the Client a perpetual royalty-free license to use any Intellectual Property which the Consultant owns which is incorporated in the Services or any reports or products provided to the Client as part of the Services. "Intellectual property" means all intellectual property rights including copyright, designs, specifications and know-how. The Client acknowledges that the Consultant has no liability for use of this Intellectual Property for purposes or projects other than the Project defined in this Agreement."

"All information given by the Client to the Consultant shall remain the property of the Client and be treated as confidential and not disclosed to any third party without the prior written consent of the Client."

14 Addenda to Tender

Where the Authority finds it necessary to make amendments to or clarify the requirements of the tender documents during the period of tendering, it shall publish these through its tender publishing website.

Each Tenderer in the Appendix to Tender shall state the reference number and description of each of the aforesaid Addenda which has been considered during the preparation of the Tender. Time extension for tender submission, due to such changes, will be advised by FEA.

15 Contract Conditions

The contract will be based on FIDIC General Terms and Conditions of FIDIC Client/Consultant Contract Model Services Agreement (White Book) Fourth Edition 2006.

Modifications/additional clauses are given in Appendices.

16 Insurance

Certificates of insurance including any Professional Indemnity Insurance cover are to be submitted.

17 Inputs/Facilities Provided

FEA will provide copies of as-built drawings for the transmission lines covered in the project.

18 Enquiries

All enquiries shall be directed to:

Tuvitu Delairewa
General Manager Commercial
2 Marlow Street, Suva
Phone: + 679 331 1133
Facsimile:+ 679 331 1882
Email: TDelairewa@fea.com.fj

Appendix 1: 132kV Transmission Line Protection Drawings

Refer to attached pdf drawings.

Appendix 2: Condition of Payments

Payments Terms

All payments shall be due and payable by FEA in accordance with the payment terms detailed below.

The payments shall be made on monthly progress claims submitted by the Designer.

Payments to be made will fall into two categories.

Payments for work carried out off-shore and hence not subject to GST or VAT, but will be subject to 15% non-resident Withholding tax and will be deducted by Employer.

Payments for work carried out within Fiji (i.e. on-shore), and hence shall be subject to Fiji Income tax legislation for resident company and for non-resident company will also be subject to 15% non-resident Withholding tax and will be deducted by Employer

Off - Shore Work

All invoices issued for off-shore work shall be expressed in the foreign currency and will be issued using Tenderer's Commercial Invoice. No GST or VAT shall be included in the invoice. Payment of the foreign currency shall be paid at the prevailing exchange rate as at the date of payment. The Employer shall pay the invoice amount in foreign currency to each overseas bank account nominated by Contractor within 30 days of receipt of the commercial invoice.

On - Shore Work

All invoices issued for on-shore work pursuant to this Contract shall be expressed in Fiji Dollar currency and will be subject to Fiji income tax. The invoice shall be issued using Tenderer's Fijian registered entity letterhead. FEA shall pay the amount agreed to in Fiji dollars including the VAT amount to a local bank account nominated by the Tenderer. FEA shall pay the invoiced amounts within 30 days of receipt of the invoice.

The Tenderer shall advise FEA details of its Fijian registered entity including the Tax Identification Number given by the Fiji Revenue and Customs Authority (FRCA) as soon as possible after the execution of this Agreement.

FEA shall not be responsible to pay invoices issued by the Tenderer or its Fijian registered entity if such invoices are not in conformance with the above stated requirements.

If FEA disputes any portion of the amount claimed in an invoice submitted by the Tenderer or by its Fijian registered entity, FEA shall notify the Tenderer in writing of the reasons for disputing the amount and FEA shall pay that portion of the amount in the invoice that is not in dispute.

The Tenderer hereby agrees that payments made by FEA in accordance with this Agreement to the Tenderer's Fijian registered entity shall be proper consideration deemed to be received by the Tenderer.

All matters relating to taxation such as income tax, withholding tax, provisional tax, PAYE and other tax issues shall be the responsibility of the Tenderer. Similarly any superannuation related issues such as FNPF liabilities (where applicable) shall be the responsibility of the Tenderer.

Appendix 3: Additional Clauses to FIDIC Conditions of Contract (White Book, Fourth Edition, 2006)

Add to Clause 2.1.1 “fourteen [14] days” in place of “reasonable time”

Alteration of clause 2.3.1:

Insert the word “reasonably” in between the words “all” and “in” in the second line.
Delete and replace “56”days to ”28 “days to Clause 4.6.1

Alternation to Clause 4.6.2

Delete and replace “21”days to “14“ days on third line and 35”days to “7” days on fifth line.

Alteration to Clause 5.2.1

Delete and replace “20” days to “30” days on the first line.

Alteration to Clause 5.1.1;

Add the following words as second paragraph:

“*The Initial Mobilization Fee will be advanced within 7days from execution of the Contract by both the parties. The Contractor shall arrange to issue an Advance Payment Guarantee with a preferred bank of the Client, in the proportion of the amount of the Initial Mobilization Fee received by them at the same time before the advanced is made by the Client. The Advance Payment Guarantee shall expire 28days after the Time for Completion*.”

New clause 5.4.2:

“*Notwithstanding the provisions of clause 5.4.1, the prices bid by the Contractor shall include all customs duties, import duties, levies, business taxes, income and other taxes including any applicable withholding tax that may be levied in accordance to the laws and regulations in being as of the date 28 days prior to the closing date for submission of bids in the Country on the Consultant’s remuneration, imported goods, goods imported for the Services and documents. Nothing in the Agreement shall relieve the Consultant from his responsibility to pay any tax that may be levied in the Country on income, expenses and profits made by it in respect of the Agreement*."

Clause 6.5 – (Drafting error) Change the clause reference from “6.4.1” to “6.5.1”.

Add to Clause 7.1.1 and 7.2.1

As an insertion new 7.1.4 and 7.2.4 respectively:

“The Consultant shall buy a Professional Indemnity Insurance Cover, Workmens’ Insurance Cover and Consultant’s All Risk Cover to adequately and fully cover any losses, claims arising under this Agreement.”

Appendix 4: Amendment to the Agreement of FIDIC Conditions of Contract (White Book, Fourth Edition, 2006

Replace the whole of the following:

" *2. The following documents shall be deemed to form and be read and construed as part of the Agreement, namely:*

(a) Any letter of offer by the Consultant
(b) Any letter of acceptance by the Client
(c) This Client/Consultant model services agreement
(d) The Appendices, namely:

Appendix 1: Scope of Services
Appendix 2: Personnel, Equipment, Facilities and Services of Others to be Provided by the Client
Appendix 3: Remuneration and Payment
Appendix 4: Time Schedule for Services "

With the following:

" *2. The following documents shall be deemed to form and be read and construed as part of the Agreement, namely:*

(a) The terms of this Agreement signed between the parties as set out herein
(b) Particular Conditions
(c) Clients Tender Documents/Bid via MR 42/2016; and Scope for Consultancy Services
(d) General Conditions
(e) The Appendices, namely:

Appendix 1: Scope of Services
Appendix 2: Conditional Award Letter to Consultant dated _____
Appendix 3: Time Schedule for Services

(f) Letter of Acceptance by the Consultant dated _____
(g) Payment Schedule
(h) *Proposal by the Consultant* "

Appendix 5: Amendment to the Particular Conditions of FIDIC Conditions of Contract (White Book, Fourth Edition, 2006)

Replace the whole of Particular Conditions with the following:

Clause number	Type/Classification	
1.1	**Definitions**	
1.1.2	The Project is:	As per specifications
1.1.10	Commencement Date	As per specifications
1.1.11	Time for Completion	As per specifications
1.3	**Language for Communication**	English
1.4	Language(s) of the Agreement	English
	Ruling Language	English
	Governing Law	Sovereign laws of Fiji
1.8	**Notices**	
	Client's address	**Fiji Electricity Authority** 2 Marlow Street Suva Fiji
	Consultant's address	
5.2.2	**Agreed Compensation for Overdue Payment (percent per day)**	Not applicable
6.2	Duration of Liability	12 months from post Completion Date
	Reckoned /Starting from	Post Completion Date
6.3.1	**Limit of Compensation**	For the Contract Sum Value only
8.2	Mediation	Fiji
8.2.1	Named Mediator	By mutual agreement between the Client and Consultant; or preferably

		Atunaisa Siwatibau – partner at Siwatibau & Sloan Lawyers, Fiji.
8.2.1	Nominating Centre for Mediation	Fiji Institute of Engineers
8.2.3	Mediation Procedures	CEDR Model Mediation Procedure (or, as stated below) Fiji Mediation governing engineering
8.3.2	Rules of Arbitration	International Chamber of Commerce (or, as stated below) Fiji Mediation Rules applicable.