



Fiji Electricity Authority

Tender Document

**Supply of 3Ø Primary and Secondary Injection Test Set
for High Voltage Substation**

Tender #: MR 82/2018)

Tender Closing date: 1600hrs, Wednesday 4th April, 2018

Invitation to Bid MR 82/2018

SUPPLY TEST EQUIPMENT – 3Ø PRIMARY AND SECONDARY INJECTION TEST SET FOR HIGH VOLTAGE SUBSTATIONS

Fiji Electricity Authority (“FEA”) invites Bids from eligible, qualified and reputable companies for the Supply of 2 units of Primary and 2 units of Secondary Injection Test Set.

Interested bidders, please address your queries or questions in writing at the address given below

Mr. Abdul Nasim,
Unit Leader Strategic Procurement, Inventories and Properties
Supply Chain Office,
2 Marlow Street, Private Mail Bag,
Suva
or email: Abduln@fea.com.fj

SECTION I - INSTRUCTIONS TO BIDDERS

***Notes to Bidders:** This section provides detailed information necessary for Bidders to prepare their Bids, in accordance with the requirements specified by the FEA. It also provides information on Bid submission, opening, and evaluation, and on the award of contract*

1. Scope

1.1 The entity of the FEA specified above invites Bids for the Supply of Primary and Secondary Injection Test Set as described in the Bidding Document.

2. Eligibility Of Bidders

2.1 This bidding is open to all eligible companies

2.2 FEA in its sole unfettered discretion, disqualify or otherwise determine ineligible any potential Bidder that the FEA believes is, has been or will be, whether directly or indirectly, engaged in criminal or any other unethical behavior, financially unsound, or otherwise unfit in the FEA's opinion to participate in the bidding exercise.

2.3 In its Bid, the Bidder shall indicate the origin of Good proposed.

2.3 A Bidder shall not be eligible to participate in this bidding or in the performance of the contract under consideration if such Bidder:

- Is bankrupt or being wound up, is having its affair administered by the courts, has entered into an arrangement with creditors, has suspended business activities, is the subject of proceedings concerning those matters or is in any analogous situation arising from a similar procedure provided in national legislation or regulations.

- Has been subject of a judgment which has the force of judicator for fraud, corruption, involvement in a criminal organization or any other illegal activity detrimental to the financial interests of FEA.
- Is guilty of misrepresentation in supplying the information required as a condition of participation in this bidding exercise or fail to supply this information.
- Is subject to a conflict of interest.

3. Bid Prices

- 3.1 The Bidder shall indicate on the appropriate Price Schedule the unit prices (where applicable) and total Bid Price of the offered goods.
- 3.2 The Bidder's separation of price components will be solely for the purpose of facilitating the comparison of Bids by FEA and will not in any way limit the FEA's right to contract on any of the terms offered.
- 3.3 All non-exempt duties, taxes and other levies payable by the Contractor under the Contract/Purchase Order, or for any other cause shall be included in the rates, prices and total Bid price submitted by the Bidder.

4. Bid Currency

- 4.1 Unless otherwise specified in Section II, the unit rates and Prices shall be quoted by the Bidders Country of Origin.

5. Period Of Validity Of Goods

- 5.1 Unless otherwise specified in Section II, bids shall remain valid for a period of 90 days after the deadline for the receipt of Bids. A Bid valid for a shorter period shall be rejected by FEA as non-responsive.
- 5.2 In exceptional circumstances, FEA shall may solicit the Bidders' consent to an extension of the period of validity. The request and the responses thereto shall be made in writing.

SECTION II – TENDER SPECIFICATIONS

1. General Description

The supplier is to provide the Fiji Electricity Authority with primary and secondary injection test set as per the specifications given below.

1.1 Primary Injection Test Set

Following table shows the list of test that should be performed by the test set on CTs, VTs, PTs and ground:

TEST	Test Description
CT	Ratio, Voltage mode
CT	Ratio, polarity and burden with high AC current
CT	Burden, secondary side: ALF/ISF
CT	Excitation curve
CT	Winding or burden resistance
CT	Voltage withstand
CT	Remote polarity check
CT	Low power transformers
CT	Tan Delta measurements
VT	Ratio; polarity
VT	Burden, secondary side
VT	Voltage withstand
VT	Remote polarity check
VT	Tan Delta measurements
PT	Ratio per TAP
PT	Vector group
PT	Static and dynamic resistance of Tap Changer contacts
PT	No – Load current
PT	Short – circuit impedance
PT	Tan Delta measurements
CB	High DC current micro-Ohmmeter test
CB	Tan Delta measurements
R	Ground resistance and resistivity
R	Step and touch voltages
Capacitor Banks	Measurements of the capacitance

Primary Injection Tester					
Generator Output					Tendered
High AC current output					
Current Output A AC	Max Power VA	Max Test Duration s	Frequency Hz		
800	4800	25	15 to 500		
600	3780	200	15 to 500		
400	2560	500	15 to 500		
300	1940	15 min	15 to 500		
200	1300	>2 hours	15 to 500		
High DC current output					
Current output A DC	Max Power W		Max Test Duration s		
400	2600		140		
300	1950		3 min		
200	1300		> 2 Hours		
100	630		>>2 hours		
High AC Voltage Output					
Max Voltage Output V	Current Output A	Output Power VA	Max Test Duration s	Frequency Hz	
2000	1.25	2500	60	15 to 500	
2000	1	2000	130	15 to 500	
2000	0.5	1000	>2 hours	15 to 500	
1000	2.5	2500	60	15 to 500	
1000	2	2000	130	15 to 150	
1000	1	1000	> 2 hours	15 to 500	
500	5	2500	60	15 to 500	
500	4	2000	130	15 to 500	
500	2	1000	>2 hours	15 to 500	
Max Voltage Output V	Current Output A	Output Power VA	Frequency Hz		
Low AC current					
≤140	≤6	360	≤500		

Low DC current output				
≤65	≤6	360	-	
Low AC Voltage output				
≤140	-	420	≤500	
Resolution and Accuracy				
Input	Range		Accuracy (reading & range)	
AC current	1A; 10A		<0.05% <0.05%	
DC current	1A; 10A		<0.03% <0.08%	
AC voltage	300mV: 3V		<0.15% <0.05%	
	30V; 300V		<0.05% <0.05%	
DC voltage	10mV		<0.05% <0.15%	
	100mV		<0.05% <0.10%	
	1V: 10V		<0.03% <0.08%	
Binary Input timer	Built in, current/voltage to be ramped or stepped, timer to stop by contact of the protection relay under test, by cessation of current flow or the operator			
Phase angle	0 to 360°			
Color Display				
Pixels	640 x 480 , colored			
LCD type	TFT			
View Area	132 x 99 with back light			
Control				
Test Set	Via display and key pad			
Storage	Pen drive or internal storage (up to 500 test files)			
PC	Via PC software to be supplied with product			
Language	English			
Communication Interface				
Type of interfaces	USB (key), Ethernet (for PC)			
Power Supply				
Mains Power Supply	240V AC			
Frequency	50Hz			
Current	16A			
Standard Accessories				

Transport case	IP 65 rated, 1 m shock proof with handle and wheels	
Cables	All required cables to allow for the test listed	
Manuals	Instructional manual, maintenance manual	
Weight	≤30kG (excluding the transport case)	
Additional accessories		
Bidder to provide list with cost of all additional accessors		

1.2 Secondary Injection Test Set

Following table shows the technical specifications for the secondary injection test set required by the authority.

Note: The secondary injection test set should be 3 phase.

Secondary Injection Tester		
Current Generators	Required	Tendered
Current outputs	6 X 0...32A AC	
	3 X 0...64A AC	
	1 X 0... 128A AC	
Output Power	6 X 430VA at 25A	
	3 X 860VA at 50A	
Voltage Generators		
Voltage Outputs	6 X 0...300V	
	1 X 0...600V	
	Output Frequency	
Current and Voltages output frequency	0 to 3000Hz	
Transient	0 to 5000Hz	
Maximum Frequency Error	0.5ppM	
Resolution	< 5 μHz	
Phase Angle		
Range	-360° to +360°	
Resolution	0.001°	
Low Level outputs		
Number of out puts	6	
Full range voltage output	10Vpk	
Max output current	1mA	

Binary Inputs		
Number of inputs	12 inputs	
Galvanic Isolation	Six groups of two inputs each	
Input Characteristics	Potential-free or with voltage , from 1 to 300 V DC (24 to 230V AC)	
Timer range	Infinite	
Timer resolution	0.01ms	
Timer accuracy	0.001% of the measure \pm 0.1 ms	
Sample rate	Up to 10kHz	
Counter Inputs		
Number of inputs	2	
Frequency range	0 to 100kHz	
Binary Output relays		
Number of outputs	4	
Type	Potential free times relays	
Break capacity AC	300V; 8A; 2400VA	
Break capacity DC	300V; 8A; 50W	
Analog DC Measuring Inputs		
<ul style="list-style-type: none"> • DC Current measuring input 		
Measuring ranges	\pm 20mA and \pm 5 mA	
DC accuracy , 20mA	\pm 0.02% of value \pm 0.001% of range	
DC accuracy, 5mA	\pm 0.05% of value \pm 0.002% of range	
<ul style="list-style-type: none"> • DC Voltage measuring input 		
Measuring ranges	\pm 10V	
DC accuracy	\pm 0.02% of value \pm 0.001% of range	
Interface Connections		
Type of interfaces	USB, Ethernet	
Internal memory	Up to 200Mb	
Pen Drive Interface	Shall allow for savings and recalling local test setting and results	
Display	LED, \geq 5 inch	

Operation	Laptop PC and on test set	
Power Supply		
Mains Power Supply	240V AC	
Frequency	50Hz	
Connection	Standard 16A AC socket	
Weight, transport case accessories		
Weight	≥ 22kG	
Transport case	Protective, IP65 rated hard carrying case with padding (1 m fall), roller and handle.	
Set of test leads (≥12 (6 x black, 6 x red), power supply cable, ground connection cable, USB cable, Ethernet cable	All to be supplied as standard accessories	
6cm flexible jumpers	6	
Test lead connection (current, voltage)	4mm banana Sockets	
Instruction and maintenance manual		
Additional items required		
Equipment must be rugged, self-contained with two wheels and handle		
The set shall have 100% duty cycle		
Leads must have low inductance. The test leads and the timer leads to be 3m long		
Built in timer. Timer to stopped by following ways: contact of the protection relay under test, by cessation of current flow or the operator		
Display to read in English language		
Circuit protection to be provided by circuit breakers, fuses and a thermal overload for overheating		
The output must not be re-energised after a power failure or thermal cut off until the set is reset.		
Spare fuses must accompany the equipment		
Automated testing software and license to be provided with Equipment		
Lit of additional accessories with price		

1.3 Standards

Bidders to provide detailed list of standard that both test sets abide buy.

1.4 Training

Bidders to separately quote for training for both items. Detailed training plan and duration to be provided. Mode of training to be face to face at Fiji Electricity Authorities Kinoya Depot.

2. Pricing Schedule

2.1 Incoterms

All pricing shall be done on Cost, Insurance and Freight (CIF) basis, delivered to Nadi Airport , Fiji.

2.2 Currency

All pricing shall be in the currency of the bidders country.

2.3 Taxation

The pricing shall be EXCLUSIVE of any type of taxation that needs to be paid in Fiji.

2.4 Pricing breakdown

The prices quoted will be fixed and NOT variable.

2.5 Validity

The pricing shall be valid for 90 days.

2.6 Total Bid

Equipment	Quantity	Unit Price CIF (VEP)	Total Price (CIF) to Nadi Airport
Primary Injection tester	1		
Secondary Injection tester	1		
Total			

3. Evaluation Criteria

Category of Evaluation Criteria	% Weighting
Supplier should also provide:	
1. Calibration Certificate of instrument along with the traceability	10%
2. Instruction Manual, software's	10%
3. Standard International Two (2) Guarantee /Warranty certificate	5%
4. Service center (recalibration, back up service) information	5%
5. Quoted price should be validity of 3 months	5%
6. Supplier to provide following information along with technical data in their technical bid <ul style="list-style-type: none">• Physical dimensions of the instrument.• Weight of the instrument.• List of the customers to whom they have supplied the quoted model.	5%

7. Instrument should be housed in a rugged, transportable carrying case. IP rating of case should prevent moisture and dust ingress complete with hard carrying case with locking arrangement.	10%
8. Adherence to specification	15%
9. Delivery lead time 6 weeks	5%
10. Financial	30%

4. General Information

1	Name and Address of the Bidder:	
2	Contacts:	
3	Telephones:	
4	Fax:	
5	E-Mail:	
6	Mobile No:	
7	Name of Chief Executive Office and Telephone No:	
8	Sales Tax/Commercial Tax/CST nos.	
9	Service Tax No.	
10	Income Tax No.	

Name of Authorised Person	
Signature of the Bidder	
Company Stamp	
Date	

Tender Submission - Instruction to bidders

It is mandatory for Bidders to upload a copy of their bid in the TENDER LINK Electronic Tender Box no later than **1600hrs, Wednesday, 4th April, 2018**

To register your interest and tender a response, view 'Current Tenders' at:

<https://www.tenderlink.com/fea>

For further information contact The Secretary Tender Committee, by e-mail

TDelairewa@fea.com.fj

In additional, hard copies of the tender, one original and one copy must be deposited in the tender box located at the FEA Head Office, 2 Marlow Street, Suva, Fiji no later than 1600hrs, Wednesday 4th April 2018 - Addressed as

Tender – MR 82/2018 – Supply of 3Ø Primary and Secondary Injection Test Set

**The Secretary Tender Committee
Fiji Electricity Authority
Head Office
Suva
Fiji**

Hard copies of the Tender bid will be accepted after the closing date and time provided a soft copy is uploaded in the e-Tender Box and it is dispatched before the closing date and time.

Tenders received after **closing time 1600hrs, Wednesday, 4th April, 2018**

- will not be considered.
- Lowest bid will not necessarily be accepted as successful bid.
- **It is the responsibility of the bidder to pay courier chargers and all other cost associated with the delivery of the hard copy of the Tender submission.**