INVITATION TO TENDER

Preferred Supplier for Design, Manufacture and Testing of Reinforced Concrete Power Poles

Tender No: MR 185/2025

1. INTRODUCTION

Energy Fiji Limited ("EFL") is a limited liability company that was established under the Companies Act (2015), Laws of Fiji. It is supervised by a Board of Directors comprising a Chairman and representatives from its shareholders.

Energy Fiji Limited (EFL) is primarily responsible for generation, transmission and distribution of electricity in Viti Levu, Vanua Levu, Ovalau and Tavueni in Fiji. It owns over twenty (20) power stations and twenty (20) substations and switching stations on the islands of Viti Levu, Vanua Levu, Taveuni and Ovalau. EFL owns, operates and maintains a network of 147km of 132kV transmission lines, 576km of 33kV lines and over 10,900km of 11kV and 415V distribution lines, as at 31st December 2023.

EFL is hereby inviting Proposals to Design, Manufacture and Testing of Reinforced Concrete Power Poles to be used on EFL's distribution and sub-transmission networks.

2. TENDER OVERVIEW

This specification covers the design, manufacture, testing and supply of reinforced, fully or partially pre-stressed concrete poles manufactured by centrifugal spinning or cast methods, which will be used as part of Energy Fiji Limited's Transmission networks.

The preferred Supplier arrangement will be for a period of **3 (three) years** from the date of signing of the contract.

Energy Fiji Limited (hereinafter referred to as "the purchaser"), wishes to receive bids for Supply of concrete poles as specified in these Bidding documents (hereinafter referred to as "Reinforced Concrete Poles").

The successful Tenderer shall provide structural certificate to assure compliance to the above standards. The designer shall be a registered corporate engineer or engineering firm, and recognized by the Insurance Council of Fiji, or equivalent internationally recognized institution if the Tenderer is based overseas, for EFL's insurance purposes.

The items covered by this specification are listed below:

a) 8 m concrete poles
b) 10.2 m concrete poles
c) 11 m concrete poles

2.1. The scope of works may include:

2.1.1. This specification is for reinforced, fully or partially pre-stressed concrete poles manufactured by centrifugal spinning or cast methods shall be suitable to be used in overhead electrical lines by EFL.

2.1.2. The specification covers poles for the following applications:

a) Overhead Lines (HV-11kV)
b) Overhead Lines (LV-415 & 240 V)

c) Stay Poles
d) Line Switchgear and Equipment's

2.1.3. The specification covers pole sizes 8m, 10.2m and 11m without any joints.

2.1.4. The specification also covers sampling, inspection and test of the concrete poles as well as schedule of guaranteed technical particulars to be filled, signed by the manufacturer and submitted for tender evaluation.

The specification stipulates the minimum requirements for concrete poles acceptable for use in the company and it shall be the responsibility of the supplier to ensure adequacy of the design, adherence to the specification and applicable standards and regulations as well as ensuring good workmanship and good engineering practice in the manufacture of the concrete poles for the EFL.

3. REFERENCES

3.1. Standards

All the goods supplied under this Contract must be designed, manufactured and tested in accordance with this technical specification and all relevant Standards and International Standards (as amended from time to time), except where varied by this specification. In the case of any inconsistencies between the Standards, the Australian standards shall prevail. Relevant standards include, but are not limited to, those explicitly mentioned in these specifications, which are listed below.

AS/NZS 1170.1:2002	Structural design actions –General principles
AS/NZS 1170.2:2011	Structural design actions –Wind actions
AS 2159:2009	Piling –Design and Installation
AS 2700S:2011	Colour Standards for general purposes
AS 3600:2018	Concrete Structures
AS 3610:1995	Formwork of concrete
AS/NZS 4065:2010	Concrete utility services poles
AS/NZS 4065:2010	Structural design requirements for utility services poles
AS/NZS 4672.1:2007/Amdt 1:2018	Steel tendons for pre-stressed concrete
AS/NZS 7000:2016	Overhead Line Design –Detailed Procedures
AS/NZS 4672.1:2007	Steel pre stressing materials – General Requirements
AS?NZS 4672.2:2007	Steel pre stressing materials – Testing Requirements
AS/NZS ISO 9001-2016	Quality Management Systems –Requirements
AS/NZS ISO 14001-2016	Environment management system
AS 3972-2010	General Purpose and blended cements.
AS?NZS 4671:2019	Steel for the reinforcement of concrete

Should inconsistencies be identified between standards and/or this specification, the tenderer shall immediately refer such inconsistencies to EFL for resolution.

The bidders shall take note that the successful bidder shall provide EFL with the copies of the relevant standards used in the design, manufacturing and testing of the Reinforced

Concrete Power Poles prior to award of the tender as a mandatory requirement. This cost shall be included in the bid submission.

3.2. Environmental Conditions

The item shall be suitable for using outdoors and shall be designed to withstand the following service conditions.

Description		**Conditions**
Atmosphere Pollution Level	:	Very heavy (IEC 60815)
Ambient Temperature	:	Peak: 40ºC 24 Hour Average: 30ºC Annual Average: 22ºC Minimum: 10ºC
Relative Humidity (Average)	:	85%
Rainfall	:	Annual Average: 2663mm
Isokeraunic (Thunder day) level	:	60 thunder days per year
Seismic	:	To a maximum of 7 on the open-ended Richter Scale

Note: Fiji is situated in a region where cyclones are experienced frequently. All plant and equipment shall be designed and constructed to withstand these extreme conditions. Equipment may be installed in coastal environments and in conditions where special protection measures against corrosion will be required. Bidders are required to provide details of such protective measures for protection against corrosion.

3.3. System Condition

Nominal Voltage	240V/ 415V	11kV
System Highest Voltage	660V	12kV
System Frequency	50Hz	50Hz
Number of Phases	1 or 3	3
System Earthing	Effectively Earthed	Effectively Earthed
Impulse Withstand Voltage (peak)	-	95kV
Power Frequency Withstand Voltage	15kV	28kV

4. DESIGN & MANUFACTURING

4.1. General

The primary standard for the design, manufacture, testing, handling and transportation shall comply with the requirements of AS/NZS 4065:2010. Other relevant standards are listed in clause 3

The successful Tenderer shall provide structural certificate to assure compliance to the above standards. The designer shall be a registered corporate engineer or engineering firm, and recognized by the Insurance Council of Fiji, or equivalent internationally recognized institution if the Tenderer is based overseas, for EFL's insurance purposes.

4.2. Design & Manufacturing features.

The design, manufacture and supply of reinforced, fully or partially pre-stressed concrete poles manufactured by centrifugal spinning or cast methods shall be suitable to be used in overhead electrical lines by EFL.

The following information is provided as a guideline:

Description	Length (m)	Tip Strength - ULS (kN)	Design Mass kg)	Tip Diameter (mm)	Base Diameter (mm)	Embedment Depth (m)
Reinforced Concrete Power Poles	8	≥ 15.0	To be declared by the manufacture	250 (Depends on design proposed by Manufacturer)	410 (Depends on design proposed by Manufacturer)	2
Reinforced Concrete Power Poles	10.2	≥ 15.0	To be declared by the manufacture	250 (Depends on design proposed by Manufacturer)	410 (Depends on design proposed by Manufacturer)	2
Reinforced Concrete Power Poles	11.0	≥ 15.0	To be declared by the manufacture	250 (Depends on design proposed by Manufacturer)	410 (Depends on design proposed by Manufacturer)	2

4.3. Material.

4.3.1. Cement

The cement used shall be Type ‘GP’ or ‘GB’ Cement for normal use, or, Type ‘SR’ Sulphate Resisting Cement, and shall comply with AS 3972.

4.3.2. Aggregate

Aggregates shall comply with AS 2758.1 and AS 1141 - “Concrete Aggregates” (Excluding Lightweight Aggregates). Six weeks in advance of the date when concreting operations are due to commence, the Contractor/manufacturer shall advise the EFL Civil Engineers, the names of the pits, quarries or manufacturing plants from which he proposes to obtain aggregates, and submit evidence showing that the material complies with the requirements of AS 2758.1 and AS 1141.

4.3.3. Reinforcement

Reinforcement shall comply with the following specifications where applicable.AS/NZS 4671 Steel Reinforcing Materials

Other higher strength reinforcement may be used in concrete poles if the manufacturer proves by extensive test evidence the satisfactory ductility and anchorage performance of the reinforcement.

4.3.4. Pre-stressing Steel

Pre-stressing steel shall comply with the following, as applicable.

- AS/NZS 4672.1 Steel Prestressing Materials – General requirements
- AS/NZS 4672.2 Steel Prestressing Materials – Testing requirements

Hard-drawn high-tensile steel wire which has not been stress-relieved shall be permitted only for wire winding, unless its percentage elongation is 2% or greater.

19-wire steel strand shall not be used for pre-tensioned work.

Copies of manufacturers test certificates for the tendons showing breaking and proof strength, together with a stress strain diagram shall be made available by the manufacturer for verification by EFL. Each coil of strand shall carry a label showing the batch identification, serial number or other mark to identify it with the test certificates.

4.3.5. Cast or Pre-stressed Poles

Concrete shall be handled from the mixer to the place of final deposit as rapidly as possible by methods which shall prevent segregation or loss of ingredients. Concrete shall be thoroughly compacted by means of approved high speed mechanical vibrators.
Vibrators shall be manipulated so as to thoroughly work the concrete around the reinforcement and/or embedded fixtures and into the corners and angles of the forms. Vibration shall be supplied at the point of deposit and the area freshly deposited for sufficient duration to thoroughly compact the concrete without causing segregation. Vibration shall not be used on concrete no longer plastic under vibration. Alternatively vibrators attached externally to steel forms may be used. The EFL Civil Engineers may stop the placing of concrete, or he may order that concrete operations shall not commence on account of wet weather or other causes which in his opinion would prevent the satisfactory placing of concrete.

4.3.6. Surface Finish

All concrete surfaces shall be true and free from stone pockets, depressions or projections beyond the surface. All arrises shall be sharp and true. Care shall be exercised in removing forms to ensure this result. All surfaces shall be free from voids, honeycombing, or other large blemishes. Exposed faces shall be uniform in appearance, free from obvious joint lines or with joint lines arranged in an approved regular pattern.

4.3.7. Pole Marking

The following shall be permanent marked on the Reinforced Concrete Power Poles for the purpose of identification. This can be marked using a stainless steel identification plate fitted 2.5m above the nominated foundation depth.

- Manufactures name/ logo
- Pole type
- Pole length
- Pole weight
- Pole breaking load/ strength
- Pole unique production number
- Place of manufacture
- Nominated foundation depth (2m from pole base)

The pole length, strength (breaking load) and unique production number shall also be stamped on the pole butt and top. The markings shall be permanent for the life span of the pole.

5. PERFORMANCE, TESTING AND QUALITY CONTROL

5.1. General

A production drawing shall be provided for each type of pole designed and manufactured, and a quality control technician shall approve each stage of manufacture before proceeding to the next. Concrete cylinder tests shall be performed for concrete poured in the required manner. A final quality control check shall be carried out on each pole after manufacturing is completed. All quality control procedures shall be mandated in a written manual and be available for inspection by EFL.
The Tenderers shall furnish documentary evidence of Quality Assurance processes and forms with the tender submissions

5.2. Testing

All required testing shall be carried out in accordance to the procedures outlined in the referenced documents as per clause 3 Certified copies of all test results shall be submitted by an independent accredited testing authority at an accredited testing facility. The lab accreditation certificate shall be submitted with the bid documents for verification by EFL.

5.3. Acceptance Test

The EFL may carry out acceptance test on product to prove it conforms to the requirements of this Specification and AS/NZS standards. Any product showing evidence of failure to comply with the requirements of this specification and relevant international standards will be liable to rejection.

5.4. Witnessing of test

The bidders shall make allowance for witnessing of routine tests on a batch of Reinforced Concrete Power Poles by two EFL Engineers. The return-air travel, accommodation, meals and other expenses related to routine test witnessing shall be borne by the bidder for overseas bidders. Such costs shall be included in the cost of Reinforced Concrete Power Poles units.

The Supplier shall give EFL not less than four (4) weeks' notice of when each and every type test will be carried out. Such witnessing shall be required once in the contract period, upon purchase of the first unit. A copy of inspection and test plan shall be submitted to EFL with the bid submission, which shall be used in the factory.

For Local successful bidder, EFL engineers will randomly select reinforced concrete poles for testing. Relevant tests will be conducted as requested by EFL engineers and successful bidder has to abide by the request. All the test will be carried out to the satisfaction of EFL engineers who will make sure the product meets the EFL quality and standards.

5.5. Compliance

The Supplier shall state in writing that their offer complies with the relevant Standards and this specification. If the Supplier is offering product manufactured to an equivalent standard, full details of that standard must be given including a copy written in English.

6. RELIABILITY

6.1. Service Life

Bidders are required to comment on the reliability of the product and the performance of the materials offered for a service life of 60 years under the specified system and environmental conditions in clause 3.

6.2. Evidence in Support of Reliability

Where the specified guaranteed service life is less than 60 years Suppliers are required to provide comment and submit evidence in support of the reliability and performance claimed including detailed information on Failure Mode and Effect Analysis.

7. ENVIRONMENTAL/ HSE CONSIDERATIONS

Suppliers are required to comment on the environmental soundness of the design and the materials used in the manufacture of the items offered. In particular, comments should address such issues as recyclability and disposal at end of service life and also disposal of packaging material.
Bidders are required to provide the Material Safety Datasheet (MSDS) of the product.

8. PACKAGING AND MARKING

The packaging of items by the bidder must ensure that they are capable of being delivered undamaged giving due consideration to the quantity, distance of transportation and the preferred method of handling at each location.

Each pole shall be permanent marked with the following information:

I. Manufactures Name
II. Date of manufacture
III. Pole Weight
IV. Any other relevant information that may be required as per applicable standards in clause 3

9. QUALITY REQUIREMENTS

Tenderers are required to submit evidence that the design and manufacture of the Reinforced Concrete Power Poles is in accordance with AS/NZS ISO 9001 and shall include the Capability Statement associated with the Quality System Certification.

If the Tenderer is a non-manufacturing supplier, the documentary evidence shall include the quality system certifications of both the supplier and the manufacturer.

10. STOCK AVAILABILITY

The bidder is required to show the size of his/her stock holding and the ability to meet the required estimate quantity per annum. The movement of the Reinforced Concrete Power Poles will depend on the EFL's project works and for operation and maintenance purposes. An estimate movement of the item are outlined in the table below but it will not be purchase as a lump sum quantity at once. Hence, the successful bidder will be required to carry a consignment / safety stock at times to meet EFL's demand within the three year contract period.

3 Year Usage for Kinoya & Navutu Depot

No.	Stock Code	Item Description	Approximate 3 Year Stock Movement
1	I05461	8M CONCRETE POLES	274
2	I05465	10.2M CONCRETE POLES	2209
3	I05464	11M CONCRETE POLES	800

3 Year Usage for Labasa Depot

No.	Stock Code	Item Description	Approximate 3 Year Stock Movement
1	I05461L	8M CONCRETE POLES	88
2	I05465L	10.2M CONCRETE POLES	1053
3	I05464L	11M CONCRETE POLES	191

11. STOCK AVAILABILITY

The bidders are required to provide the warranty period as part of the proposal. A minimum warranty period of 24 months from time of dispatch from factory will be preferred.

12. INFORMATION TO BE SUPPLIED BY THE BIDDER

12.1. Documentation to be supplied with the tender

To enable the EFL to fully evaluate the Reinforced Concrete Power Poles offered, (in addition to the completed Specification Requirement and Guaranteed Performance schedule) the bidder shall submit the following information with their tender: (Note these are mandatory requirements)

- List showing similar product supplied to or on order for other utilities
- Test certificates as per Clause 5.1 and 5.2
- End of service life disposal methods
- Product drawing (in AutoCAD and PDF)/datasheet and catalogs
- Evidence of Quality Management Systems used in the manufacturing process
- Evidence of Health, Safety and Environmental plans
- Evidence of financial ability to provide the level of service and support
- Origin of materials used in manufacture of the Reinforced Concrete Power Poles
- Compliance Certificates??
- Insurance cover??

Bidders may be asked to provide additional information during tender assessment period or following award of contract.

12.2. Documentation to be Supplied During the Course of the Contract

Within two (2) weeks of entering into an contract with EFL, the successful Tenderer shall supply copies of the following:

a) A certified detailed drawing for the reinforced concrete poles (all lengths);

b) Structural engineering calculations (if not provided in tender bid);

c) Datasheets and test reports of Hard-drawn high-tensile steel wire and cement (if not provided in tender bid);

d) Inspection, test regimes and plans

EFL will comment on the drawings supplied under the contract in relation to how the equipment interfaces with EFL's design, construction, operation, maintenance and other requirements. Comments about drawings by EFL shall not in any way absolve the supplier of responsibility for the safety and reliability aspects of the plant or equipment supplied. The Supplier shall amend the drawings as directed and resubmit them to EFL within a week.

Drawings shall be to scale and in accordance with AS 1100. The contract number shall be shown prominently on all contract drawings. All drawings shall be produced on standard EFL borders, which shall be issued to the Supplier upon award of contract.

12.3. Training

Training material in the form of drawings, instructions and/or audio visuals are required to be provided for the items accepted under the tender. The Tenderers shall allow the cost of production and delivery of training material in the tendered prices.

The training materials should include but not be limited to the following topics:

- Handling
- Storage
- Application
- Installation
- Maintenance
- Environmental performance
- Electrical performance
- Mechanical performance
- Disposal

12.4 Supply of Poles to EFL

Offers of vendors who fail to furnish above particulars shall be rejected.

13. APPENDIX

13.1. Price Schedule

Bidders are required to complete the following price schedule and submit with the offer. EFL requires the biding prices to be in VIP.

Stock for Kinoya & Navutu Depot.

No.	Stock Code	Item Description	Unit Price (VIP)	Currency of bid
1	I05461	8M CONCRETE POLES		
2	I05465	10.2M CONCRETE POLES		
3	I05464	11M CONCRETE POLES		

Stock for Labasa Depot.

No.	Stock Code	Item Description	Unit Price (VIP)	Currency of bid
1	I05461L	8M CONCRETE POLES		
2	I05465L	10.2M CONCRETE POLES		
3	I05464L	11M CONCRETE POLES		

Bidders are to clearly indicate the currency of bid.

13.2. Technical Details – Reinforced Concrete Power Poles

This schedule shall be completed and submitted with the offer. A separate schedule shall be provided for each item offered: **(Note these are mandatory requirements)**

Particulars	Units	Requirements	Tenderers Response
Manufactures Name			

Origin of materials used for manufacturing of Reinforced Concrete Power Poles			
Country of manufacture			
Manufactures type test certificate number			
Testing laboratory Name and accreditation certificate provided		Yes/No	
Pole length	m		
Tip strength (ULS)	kN	≥ 15	
Design Mass	kg	To be declared by manufacturer	
Tip diameter	mm	250	
Base diameter	mm	410	
Type of tests conducted on the Reinforced Concrete Power Poles		Bidders to provide list of tests conducted on the pole	
Testing reports provided		Yes/No	
Testing standards		Bidder to state	
Dimensional drawing provided in both AutoCAD and PDF		Yes/No	
Material safety datasheet provided		Yes/No	

Name of Tenderer: _____

Signature of Tenderer: _____

Date: _____

13.3. Tender Submission – Mandatory Requirement

All tenderers are required to complete and submit a copy of the submission requirements with their bid submissions. **(Note these are mandatory requirements)**

Requirements	**Response from Bidders**
Validity of bid (180 days required) (Yes/No)	
List of test reports/certificates provided. (As per Clause 5)	
Minimum warranty period offered for this product	
Completed price and technical schedules (Clause 13.1 and 13.2) (Yes/No)	
The biding pricing to be in FJD VIP.	
Currency of bid.	
Lead time of delivery after tender award.	
Bidders company profile outlining financial, technical and production capabilities.	
Disposal method after service life.	
Quality management system used in the production of Reinforced Concrete Power Poles, attached certificate.	
Material safety datasheet to be provided for all items	
The bidder to include the following as part of the bid:	
Company profile	
Company registration details	
Company financial capability statement	
Reference list of customers the same product is supplied to and contact details for reference check	
If the bidder is the manufacturer, the ISO certification shall be provided	
If the bidder is only the supplier of the product, then both the manufacturer and supplier ISO certifications shall be provided	

The following information is mandatory to be submitted by the bidder:

a. Manufacturer to provide EFL a complete set of structural design calculations
b. The pole designs to be submitted to EFLs Civil Team for comments before start of production
c. Concrete compression test results for each batch to be sent to EFL on weekly basis
d. Steam curing procedures
e. Centre of gravity for all poles
f. Bending moment graphs for all poles
g. Datasheet for aggregate to be provided including supplier details
h. Cement type and supplier details
i. Reinforcement and stress cable datasheet
j. Confirmation on concrete strength (MPA) used for the poles
k. PVC conduits to be provided in all pole holes to avoid blockage

Name of Tenderer: _____

Signature of Tenderer: _____
Date: _____

13.4. Pole Scarfing details

Reinforced concrete pole scarfing details are attached as annexure 1.

Complete the following schedule as part of the bid: **(Note these are mandatory requirements)**

Stocks for Kinoya & Navutu Depot.

Stock Codes	Items	Country of Manufacture	Manufacturer of product	Brand Offered	Manufactured to standards	ISO Certification of Manufacturer	Lead Time of Delivery
I05461	8M CONCRETE POLES						
I05465	10.2M CONCRETE POLES						
I05464	11M CONCRETE POLES						

Stocks for Labasa Depot.

Stock Codes	Items	Country of Manufacture	Manufacturer of product	Brand Offered	Manufactured to standards	ISO Certification of Manufacturer	Lead Time of Delivery
I05461 L	8M CONCRETE POLES						
I05465 L	10.2M CONCRETE POLES						
I05464 L	11M CONCRETE POLES						

Name of Tenderer: _____

Signature of Tenderer: _____

Date: _____

Tender Checklist

The Bidders must ensure that the details and documentation mention below must be submitted as part of their tender Bid

Tender Number _____

Tender Name _____

1. Full Company / Business Name: _____

(Attach copy of Registration Certificate)

2. Director/Owner(s): _____
3. Postal Address: _____
4. Phone Contact: _____
5. Fax Number: _____
6. Email address: _____
7. Office Location: _____
8. TIN Number: _____

(Attach copy of the VAT/TIN Registration Certificate - Local Bidders Only (Mandatory)

9. FNPF Employer Registration Number: _____ **(For Local Bidders only) (Mandatory)**
10. **Provide a copy of Valid FNPF Compliance Certificate (Mandatory- Local Bidders only)**
11. **Provide a copy of Valid FRCS (Tax) Compliance Certificate (Mandatory Local Bidders only)**
12. **Provide a copy of Valid FNU Compliance Certificate (Mandatory Local Bidders only)**
13. Contact Person: _____

I declare that all the above information is correct.

Name: _____

Position: _____

Sign: _____

Date: _____

Tender submission

Bidders are requested to upload electronic copies via Tender Link by registering their interest at: https://www.tenderlink.com/efl

EFL will not accept any hard copy submission to be dropped in the tender box at EFL Head Office in Suva.

This tender closes at 4.00pm (1600hrs) on Wednesday 11th June, 2025.

For further information or clarification please contact our Supply Chain Office on phone **(+679) 3224360 or (+679) 9992400** or email us on tenders@efl.com.fj

The bidders must ensure that their bid is inclusive of all Taxes payable under Fiji Income Tax Act. Bidders are to clearly state the percentage of VAT that is applicable to the bid prices.

The lowest bid, will not necessarily be accepted as the successful bid.

The Tender Bids particularly the "Price" must be typed and not hand written.

Any request for the extension of the closing date must be addressed to EFL in writing three (3) working days prior to the tender closing date.

Tender Submission via email or fax will not be accepted.