



EASTERN UNIVERSITY, SRI LANKA

PROCUREMENT DOCUMENT

FOR THE

Supplying, Transporting, Installation, Commissioning and Maintenance of 500KW Net-Accounting Solar System with all necessary mounting Structures and Power Cables from each Building to CEB Transformer room at Technology Premises, Eastern University, Sri Lanka (stage I).

NATIONAL COMPETITIVE BIDDING

EUSL/CWI/23/4/I

Name of the Supplier:.....

Address:.....

Issued By:.....



EASTERN UNIVERSITY, SRI LANKA
INVITATION FOR BIDS (IFB)
National Competitive Bidding (NCB)
Contract No: EUSL/CWI/23/4/I

**Supplying, Transporting, Installation, Commissioning and Maintenance of 500KW
Net-Accounting Solar System with all necessary mounting Structures and Power
Cables from each Building to CEB Transformer room, at Technology Premises,
Eastern University, Sri Lanka, (stage I).**

The Chairman, Department Procurement Committee on behalf of the Eastern University, Sri Lanka invites sealed bids from eligible and qualified bidders for the above work at the Eastern University, Sri Lanka.

A complete set of PROCUREMENT DOCUMENTs in the English language may be purchased by interested bidders from the Deputy Registrar (Capital Works & Planning), Eastern University, Sri Lanka, Vantharumoolai, Chenkalady on the submission of a written application addressed to the Chairman, Department Procurement Committee, Eastern University, Sri Lanka, Vantharumoolai, Chenkalady along with the receipt for the payment of Rs. 8,000.00 per document (Rupees Eight Thousand only) made as non-refundable fee credited to any branch of the People's Bank to the A/C No. 227100140000024, People's Bank, Chenkalady in favour of the "Bursar, Eastern University, Sri Lanka" from 24/06/2025 to 07/07/2025 during office hours from 09.00 hrs to 15.00 hrs.

Eligibility:

- a) The Bidders should be registered with the Sri Lanka Sustainable Energy Authority for installing Roof Top Solar PV systems in Sri Lanka.
- b) The proposed Inverter, and Solar Module should have at least 04 years of experience in Sri Lankan market.
- c) The Bidder should have 04 years of experience in installing and commissioning of similar system.
- d) Bidder should have past experience supplying, installing and maintenance of at least 03 similar projects worth at least 500KW within last 03 years
- e) Average annual turnover for the last 05 years should be 80 million.

Interested bidders may obtain further information from the Deputy Registrar (Capital works & Planning) on 065 2240589) or Works Engineer on 065 2240582 or Consultant Electrical Engineer on 0777158693 of the Eastern University, Sri Lanka at Vantharumoolai, Chenkalady and inspect the Procurement Documents free of charge at the above-mentioned address during any working days from 09.00 hrs to

15.00 hrs.

Bid marked as **“Supplying, Transporting, Installation, Commissioning and Maintenance of 500KW Solar System at Technology Premises, Eastern University, Sri Lanka (stage I)”** on the top left corner of the envelope should be sent by registered post to the address given below or deposited in the Bid Box kept at the Office of the Registrar, EUSL, to be received before 2.30 p.m. on or before 08/07/2025. Late bids will not be accepted.

Bids will be opened at the address given below soon after the closing time and date of the bids in the presence of the bidders or their representatives who choose to attend.

Bids shall be valid up to 91 calendar days from the date of closing of bids. All bids shall be accompanied by a Bid Security of Rs 400,000.00 (obtained from any commercial bank operating in Sri Lanka approved by the Central Bank of Sri Lanka). Bid Security shall be valid up to 21/10/2025.

Pre-bid meeting will be held on 30/06/2025 at 10.00 am at the Board Room, Eastern University, Sri Lanka, Vantharumoolai, Chenkalady.

The Chairman,
Department Procurement Committee,
Eastern University, Sri Lanka
24/06/2025

1. Scope

Scope of the work shall be as follows:

- I. Supply and install of net-Accounting solar system at Palachcholai premises 630KvA transformer complete with all necessary mounting structures and associated civil works on the allocated space of the roof. **The system will include the installation of 500 kW capacity inverters and 500 kW solar panels During Stage I.**
- II. Supply and installation all other standard components to complete the system including solar inverter, power box, AC and DC cables, surge protection and protection devices.
- III. Supply and install of lightning protection systems and confirm as per the regulation.
- IV. Provide necessary earthing system and confirm as per the regulation.
- V. Interconnection with existing CEB installation and commissioning of the system and setup online monitoring.
- VI. Certification of the system that complied with CEB regulations to obtain Net-Accounting facility with fulfillment of terms and conditions. All related expenses would be accompanied within the contractual amount.
- VII. The contractor is required to provide after-sales services to ensure the sustainable operation of the system for a minimum of 20 years, including fault rectification, supply of spare parts, and handling of warranty claims.

All the equipment offered shall be brand new, quality products, latest in model/version & technology and currently in production. It shall be completed with standard components and accessories to perform the desired functions and confirm to the given specification.

1. Operating Conditions

Average Ambient Temperature	32 °C
Max. Ambient Temperature	40 °C
Max. Relative Humidity	97 %
Environmental Condition	Humid Tropical Climate
Withstand wind gusts	60 km/hr

The PV array and support structure must be able to withstand wind gusts speed up to 100 km/hr without damage.

All wiring, enclosures, and fixtures that are mounted outdoors must be resist to high humidity, corrosion, insect and dust intrusion. Use of corrosion resistance terminals is required. Protection of the electronic circuit boards from corrosion by potting or applying a conformal coating is recommended.

Section II. Bidding Data Sheet (BDS)

The following specific data for the goods to be procured shall complement, supplement, the provisions in the Instructions to Bidders (ITB). Whenever there's conflict, the provision shall prevail over those in ITB.

ITB Clause Reference	A. General
ITB1.1	The Purchaser is: Eastern University, Sri Lanka.
ITB1.1	The name and identification number of the Contract are: EUSL/CWI/23/4/1
ITB2.1	The source of funding is: GOSL
	Contents of Procurement Documents
ITB7.1	For Clarification of bid purposes only, the Purchaser's address is: Attention: Deputy Registrar/Capital Works & Planning Address: Eastern University, Sri Lanka Telephone: Deputy Registrar - 065 2240589 Works Engineer - 065 2240582 Consultant Electrical Engineer 0777158693
	C. Preparation of Bids
ITB11.1(e)	<p>The Bidder shall submit the following additional documents:</p> <p><i>Should be a registered company with CEB. Proof should be submitted. The company should supply copies of audited financial reports at least for the past 05 years.</i></p> <ul style="list-style-type: none"> - Copy of a Business Registration. - Certificate of Registration with the Sri Lanka Sustainable Energy Authority for installing Roof Top Solar PV systems in Sri Lanka. - The proposed Inverter, and Solar Module should have at least 04 years of experience in Sri Lankan market. - Audited financial reports for the last 05 years. - Catalogues with technical literature of the offered units - Complete dimensional drawings for panel layout - Previous supply records of the bidder within Sri Lanka - Certificate from internationally recognized testing

	<p>laboratory or organization to confirm the quality of the equipment</p> <ul style="list-style-type: none"> - Efficiency curve of PV panels for its life time - Efficiency curve of inverter for its life time - A remote monitoring system through internet should be included along with proposed Solar Net-metering System for monitoring and checking the performance. - Payback period of the proposed system with cost calculation sheet. - Experience in installing similar systems at least 500 KW as a main Contractor in the last 03 years. - Manufacturer Authorization. - The bidders should also have at least 04 years of experience in the relevant work. List of similar work performed should be submitted.
ITB 15.1	The bidder shall quote the local expenditure in Sri Lankan Rupees.
ITB 17.3	Period of time the Goods are expected to be functioning (for the purpose of spare parts): 20 years after the Contract Awarding.
ITB18.1(b)	<p><i>First twelve months shall be trial period for ensuring guaranteed power output. Failing this efficiency, the supplier must install additional panels and devices free of charge to achieve the guaranteed power output or to return the payments paid and remove the entire system at the end of three-month trial period, and payment for consumption of power for this three month will be paid at CEB standard rate.</i></p> <p>After sales service is: Required (annexed all relevant documents)</p>
ITB19.1	The bid validity period: 91 days from the date of bid opening.
ITB20.1	<i>Bid shall include a Bid Security (unconditional irrevocable Bank Guarantee issued by a commercial bank) using the format included in Section IV Bidding Forms.</i>
ITB20.2	The amount of the Bid Security shall be: Rs. 400,000.00 and should be valid up to 21/10/2025.
	D. Submission and Opening of Bids
ITB22.2(c)	The inner and outer envelopes shall have the following identification marks: "Supplying, Transporting, Installation, Commissioning and Maintenance of 500KW Solar System at Technology Premises, Eastern University, Sri Lanka, (stage I)"

ITB23.1	<p>For bid submission purposes, the Purchaser's address is:</p> <p>Attention: <i>The Chairman, Department Procurement Committee,</i></p> <p>Address: <i>Eastern University, Sri Lanka, Vantharumoolai, Chenkalady.</i></p> <p>The deadline for the submission of bids is: 02.30 p.m. on 08/07/2025</p>
	E. Evaluation and Comparison of Bids
ITB 34.1	Domestic preference <i>shall not</i> be a bid evaluation factor.
ITB 35.4	The following factors and methodology will be used for evaluation: <i>Cost, eligibility and Quality at detailed under Section III. Evaluation criteria</i>
ITB 35.5	The whole system is considered as a single lot. The Bidders are requested to quote their rates for the whole system.
ITB 35.6 (add)	The Employer reserves the right to accept or reject any Bid or accept any option provided by the bidder, and to cancel the bidding process and reject all Bids, at any time prior to the award of Contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for the Employer's action.

Section III: Evaluation and Qualification Criteria

- (i) Registered Business Entity
- (ii) Bidder shall not have been blacklisted
- (iii) Registerd with the Sri Lanka Sustainable Energy Authority for installing Roof Top Solar PV systems in Sri Lanka.
- (iv) The Bidder should be authorized by the Manufacturer or Authorized Dealer / Agent for the quoted Brands.
- (v) The proposed Inverter, and Solar Module should have at least 04 years of experience in Sri Lankan market.
- (vi) The Bidder should have 04 years of experience in installing and commissioning of similar system.
- (vii) Bidder should have past experience supplying, installing and maintenance of at least 03 similar projects of at least 500KW within last 03 years as a main contractor.
- (viii) Average annual turn over for the last 05 years should be 80 million.
- (ix) Fully compliance with all technical and non-technical requirement of the Bid.

Bids will be rejected as non- responsive if documentary evidence in proof of above has not been provided.

Schedule of Maintenance Cost

Name of the Supplier:

Pls. mention the annual maintenance cost.

Table 2

Item	Description	Price per Year (LKR)
1	Maintenance cost of the installed Solar PV System	
	1st Year	Free of Charge
	2 nd Year	Free of Charge
	3 rd Year	Free of Charge
	4 th Year	
	5 th Year	
	6 th Year	
	7 th Year	
	8 th Year	
	9 th Year	
	10 th Year	
	Total Maintenance Cost	

Name:.....

In the Capacity of

Signed.....

Duly authorized to sign the Bid for and on behalf of.....

Date:.....

3. Technical Specification

Table 4

Description	Required Specifications	Bidders Response (Yes/No)	Remarks
Works Scope	Design, Supply, Delivery, installation. Testing, Commissioning, and Handing Over of 500kW Net Accounting solar PV systems for the roof top of following buildings Agriculture Building Bio System Technology – Eastern University, Sri Lanka		
	The proposed solar PV systems to be installed at the locations specified in Annex 01		
	The Solar PV string inverter system shall be connected to the CEB network through the existing Transformer.		
	All equipment offered with the system shall be brand new and the installed system should be complied with the CEB regulations.		
	The work scope is summarized as follows, Supply and installation of 500kW solar PV systems with all standard components to complete the system, including the solar panels, mounting structure, 500kW string type grid-tied inverter units, earthing system, combiner box, distribution board, AC and DC cables, standard protection devices and surge protection devices.		
	Supply and installation of suitable earthing systems with bonding to satisfy the IEE & BS for the solar PV systems.		
	Install the system following the CEB regulations and manage the initial documentation, agreements, PV system testing, and commissioning steps with CEB until the grid connection.		
	The supplier must employ skilled technical personnel, including qualified electrical		

	engineers and certified solar PV installation technicians.		
Technical specifications for the solar PV module	Make (To be Specify)		
	Model (To be Specify)		
	Country of Origin (To be Specify)		
	Country of Manufacture (To be Specify)		
	Power rating greater than (P_{max} in STC) - 600 W [or higher]		
	Maximum Dimensions: L:2600 mm W:1250 mm H: 50 mm		
	Maximum Weight: 33 kg		
	No. of Panels required for 500 KW (Pls. specify)		
	Cell type: Mono-crystalline (N-type preferred)		
	Operating temperature: 0 °c - 80 °c		
	Panel frame material: Anodized Aluminium Alloy or mention		
	Front protection glass: Anti-reflective tempered glass		
	Module efficiency (in STC): 22.5 % or higher		
	Power tolerance: ()~ +3% or better		
	Temperature coefficient of maximum power: - 0.30 % per +1 °C or better		
	Annual degradation of power output: Maximum 0.4% or better		
	Degree of protection (Junction box): IP 68 or higher		
	Must comply with the following standards: IEC 61215, IEC 61730, ISO 9001, ISO 14001		
	The solar panels should be provided with a minimum 12-year product warranty with a minimum 30-year linear power warranty.		
Technical specifications for the inverter unit	Make (To be Specify)		
	Model: (To be Specify)		
	Country of Origin: (To be Specify)		
	Country of Manufacture: (To be Specify)		
	Inverter type: Should be string inverter with transformer less topology		
	Rated Power 100 kW (5 nos of 100kW inverters or suitable)		
	Maximum output AC power: 55 kW or higher		
	Dimensions: (To be Specify)		
	Weight: Maximum 45 kg		
	Operating Temperature Range: mention		
	Cooling Method: (To be Specify)		
	Protection Rating: Should be IP 66 or higher		
	Grid Connection Method: Should be 3 phase		
	Rated Grid Frequency: Should be 50 Hz		

	THDi: Should be < 3%		
	Maximum efficiency: Should be a minimum 98.5 %		
	Must include protection mechanisms for anti-islanding, short circuit, DC-reverse polarity, and output over current conditions		
	Surge Protection: mention		
	Maximum input DC power: mention		
	Self-consumption: < IW preferred (or mention)		
	Must comply with VDE 0126, IEC 61727 standards		
	Monitoring system with user interface: Must be able to monitor the grid and the strings.		
	Must support Wi-Fi, GPRS, and RS485 communication protocols or mention		
	The inverter should be provided with a minimum 10-year product warranty		
Technical specifications for the rooftop mounting structure	Mounting rails Material: Aluminium		
	Clamps (T, Angle, Connector, etc.) Material: Aluminium or mention		
	Cable ties: Stainless steel / nylon / polypropylene or mention		
	All components of the mounting structure should be corrosion resistive		
	All components should be UV resistant and should be designed to withstand the high temperatures.		
	Proper sealing materials should be for roof penetrations.		
Technical specifications for the AC surge protection device	Make (To be Specify)		
	Model (To be Specify)		
	Country of Origin (To be Specify)		
	Country of Manufacture (To be Specify)		
	Max. discharge current (To be Specify)		
	Response Time (To be Specify)		
	Enclosure material (To be Specify) Should be provided with a minimum 1-year product warranty.		
Technical specifications for the DC surge protection device	Make (To be Specify)		
	Model (To be Specify)		
	Country of Origin (To be Specify)		
	Country of Manufacture (To be Specify)		
	Max. discharge current (To be Specify)		

	Response Time (To be Specify)		
	Enclosure material (To be Specify)		
	Should be provided with a minimum 1 - year product warranty.		
Technical Specifications for the Earthing System	All the non-current carrying metal system components should be grounded properly. Ex: mounting structures, enclosures, etc. And the earth resistance shall be less than 5 Ohms		
Stock Availability	Minimum 10 years or higher. Should include a maintenance plan within and after the warranty period.		
Warranty	<p>The supplier should provide the rooftop mounting structure with a minimum 20-year warranty.</p> <p>The inverter units should be provided with a minimum 10-year product warranty.</p> <p>The solar panels should be provided with a minimum 12-year product warranty with a minimum 30-year linear power warranty.</p> <p>All the other system components, including cables, DC disconnectors, DC MCB, MCCB, etc, must be provided with a minimum 10-year product warranty.</p>		
Delivery	Free delivery and installation within 60 days after the letter of acceptance is issued.		
Product Demonstrations & Installation	<p>Should provide a complete demonstration/training on the operation and maintenance of the system to the university technical staff focusing on the following areas</p> <ul style="list-style-type: none"> • System monitoring, recording data reporting • Emergency operations and stay • Maintenance management <p>General maintenance and repair and inverter configurations.</p>		
Handing over document requirements	The English versions of necessary operation manuals and service manuals should be provided. Warranty contracts and associated documents		
Attending to Repairs during the 10 year	Contractor shall attend and rectify any defects during the warranty period, 10 years including 1-year free maintenance period,		

Warranty Period	within 03 days after notification of the failure.		
Insurance Coverage during the Construction Period	Contractor shall provide insurance coverage for damages/accidents including human, property, materials during the entire construction period up to the acceptance of the 500 kW solar power system by the Eastern University of Sri Lanka		

.....
Name and Address of the Supplier

.....
Signature with Stamp

.....
Date

Remote Monitoring

Table 5

No	Features	Bidder's Response		Remarks
		Yes	No	
1	Real time data			
2	Past data			
3	Peak power			
4	Cumulating power			
5	CO ₂ emission			
6	Power & Energy graphs			
7	Cloud conditions			
8	Fault & Safety event			
9	Module performance			
10	Ambient Temperature			
11	Wind Speed			
12	Humidity			
13	Sun Rise			
14	Sun Set			
15	Site Status			

.....
Name and Address of the Supplier

.....
Signature with Stamp

.....
Date

Technical Specifications & Requirements

1. Solar Array

- Solar array should consist of minimum number of solar modules to generate AC power as per the given table at average solar radiance of 1,000 W/m² in no shading conditions. (State the annual average power production of the proposed system)
- Cell technology should be Mono or Poly crystalline with a minimum module efficiency of 16.5 %. Module rating should be more than 400 Watts per panel or higher. Rated output of modules should be within 0 to + 5 % of the declared value.
- Solar modules should be IEC 61215, IEC 61730 & ISO 9001:2008 certified. (Certificate copies should be provided)
- Module manufacturer should have at least 5 GW of production history.
- The front glass should be at least 3.2 mm tempered glass, module frame should be anodized aluminum, series fuse rating should be 15 A and the junction box should be IP65.
- The solar module should be glass / glass type, not glass / plastic type.
- The bidder should be an Authorized Representative to market and service this product in Sri Lanka (Attach a copy of the Authorization letters from the manufacturers)
- A 25-year insurance cover should be provided against the insolvency or bankruptcy of the manufacturer in case of a claim within the said warranty period.
- Solar system should be able to upgrade as per the future increased demand.
- Individual panel monitoring system is required.

2. Grid Inverter

- The inverter operation shall be based on Module Level Maximum Power Point Tracking (MPPT) principle. The product should confirm Module Level Power Electronics technology or equivalent technology for solar PV systems. Manufacturer should have a good track record in case of manufacturing and monitoring solutions more than 5 years with the indication of country of origin.
- The grid interconnection protection scheme required (shall be as per the standards and in to inverter or separately provided (Most of the modern inverters are equipped with this protection scheme as a built capability). The bidders are expected to study and understand the protection scheme required at the grid interface prior to choosing the inverter.
- The power quality of the inverter output shall be as specified by the Ceylon Electricity Board (as per the standard and specifications of Net Metering Scheme stipulated by Ceylon Electricity Board).
- The nominal inverter power output shall be delivered to the existing low voltage network at three (03) phases, 400 V, 50 Hz.
- The operating range of the inverter shall be $\pm 10\%$ nominal voltage and $\pm 5\%$ of power frequency. These settings should be adjustable to set the inverter operating range.
- The inverter efficiency shall be 97 % or more. Applicable IP class shall be IP 65 or higher. The inverter shall be built with capability to log data, remote monitoring and data transferring to remote computer.
- Fire safety needs to comply with the IEC 60947 and module level shutdown should be available, complying with Article 690 in NEC 2014.
- Inverter shall be warranted for a minimum of ten (10) years.

3. Roof Mounting Structure and Civil Work

- The solar PV panel mounting should be done firmly secured on the roof structure without affecting the structural integrity and also the panel mounting angle should be as much as closed to the optimum value. Proper

Section VII. Contract Data

The following Contract Data shall supplement and / or amend the Conditions of Contract (CC). Whenever there is a conflict, the provisions herein shall prevail over those in the CC.

CC 1.1(i)	The Purchaser is <i>Eastern University, Sri Lanka</i>
CC 1.1(m)	Technology Premises, Eastern University, Sri Lanka in Vantharumoolai, Chenkalady
CC 8.1	For notices , the Purchaser's address shall be: Attention: Deputy Registrar/Capital works & Planning. Address: Eastern University, Sri Lanka Telephone: 0652240589
CC 12.1	Details of Shipping and other Documents to be furnished by the Supplier are; -Not Applicable
CC 15.1	The method and conditions of payment to be made to the Supplier under this Contract shall be as follows: Advance payment maximum of thirty percent (30%) of the contract value shall be paid on submission of an advance payment guarantee issued by a commercial bank, approved by the Central Bank of Sri Lanka, using the format given in Section VIII – Contract Forms. Payment shall be made after 45 days of presentation of claim supported by a certificate by the Works Engineer / Eastern University, Sri Lanka that the Goods have been delivered, Installed and Properly Commissioned with the appraisal report of end user.
CC 17.1	A Performance Security shall be required 10% of the contract price)
CC 25.1	The Inspections and tests shall be <i>required</i>
CC 25.2	The Inspections and tests shall be conducted <i>by Chartered Electrical Engineer.</i>
CC 26.1	The liquidated damage shall be: 0.05 % per day per Contract Sum
CC 26.1	The maximum amount of liquidated damages shall be: 10 % of the Contract Sum.

