

COMSATS University Islamabad, Lahore Campus Defence Road, Off Raiwind Road, Lahore

> Tender No. CUI-LHR-TN-13-19-1258 Case # 2677

Single Stage Two Envelop Procedure

Title of Tender:Supply of Lab Equipment for Department of Electrical & ComputerEngineering

TERMS AND CONDITIONS

- 1. All pages of bidding documents are mandatory to be signed / stamped, meaning thereby bidder agrees to our terms & conditions mentioned herein, failing which the bid may be rejected.
- 2. Any addition, deletion or modification of any clause of the procurement terms &conditions/BoQs of CUI-Lahore Campus by any vendor will not be acceptable and may lead to rejection of the bid.
- 3. Only registered Suppliers, who are on Active Taxpayers List (ATL) of FBR, are eligible to participate in tender.
- 4. The contract will be executed and handed over in satisfactory conditions up to the entire satisfaction of COMSATS University Islamabad, Lahore Campus.
- Documents along with Pay Order / Demand Draft amounting to <u>Rs. 1000/-</u> as a tender documents fee (Non-Refundable) shall be submitted in favor of COMSATS University Islamabad (CUI), Lahore Campus to the address given below. No bid will be accepted without tender documents' fee.
- 6. Part / Advance payments is not allowed.

7. <u>The exact completion/delivery time from the date of the purchase / work order will be 120 days. The handing over / completion time for this contract is of critical importance.</u>

- 8. Your bid proposal should be inclusive of freight and all other taxes delivered at COMSATS University Islamabad (CUI), Lahore Campus's premises.
- 9. After opening of bids, COMSATS University Islamabad (CUI), Lahore Campus will examine the bids for completeness as per tender document.
- 10. Purchase order (s) will be awarded to the lowest or technically recommended bidder (s) on the basis of item wise / subtotal wise / grand total wise according to the nature of BoQs.
- 11. The bid should be submitted in a sealed envelope up to <u>April 24, 2019</u> on or before <u>1400hrs</u> and will be opened on the same date <u>at 1430hrs</u> in the presence of available bidders.
- 12. COMSATS University Islamabad, Lahore Campus, will follow the PPRA rule of <u>single stage two envelope</u> <u>procedure;</u>
 - i. The bid shall comprise a single package containing <u>two separate envelopes</u>. Each envelope shall contain separately the <u>financial proposal</u> and the <u>technical proposal</u>;

- iii. Initially, only the envelope marked <u>"TECHNICAL PROPOSAL"</u> shall be opened;
- iv. The envelope marked as <u>"FINANCIAL PROPOSAL"</u> shall be retained in the custody of the procuring agency without being opened;
- v. The procuring agency shall evaluate the technical proposal in a manner prescribed in advance, without reference to the price and reject any proposal which does not conform to the specified requirements;
- vi. During the technical evaluation no **amendments** in the technical proposal shall be permitted;
- vii. The financial proposals of bids shall be opened publicly at a time, date and venue announced and communicated to the bidders in advance;
- viii. After the evaluation and approval of the technical proposal the procuring agency, shall at a time within the bid validity period, publicly open the financial proposals of the technically accepted bids only. The financial proposal of bids found technically nonresponsive shall be returned un-opened to the respective bidders;
- ix. and
- x. The bid found to be the lowest evaluated bid shall be accepted.
- 13. The envelope should be marked as under;

Secretary, Purchase Committee COMSATS University Islamabad (CUI), Lahore Campus Defence Road, Off Raiwind Road, Lahore. Tel: 042-111-001-007, Ext: 875

The envelope shall also bear the word "CONFIDENTIAL" and following identification quotation of "Supply of Lab Equipment for Department of Electrical & Computer Engineering".

- 14. The bid form (BoQs) must be duly filled in, stamped and signed by the authorized representative of the bidder.
- 15. If the vendor fails to deliver the goods / services to COMSATS University Islamabad (CUI), Lahore Campus in time then the penalty will be charged as under:
 - a. 1% per day of the invoice price for 5 working days.
 - b. 2% per day of the invoice price for further 5 working days.
 - c. If the vendor fails to deliver the goods / services during the extended period then the purchase / work order may be cancelled, earnest money and payment may be forfeited.
- 16. If the delivered goods / services are not according to the required quality standards / specifications, the same shall be liable to be rejected after inspection. The vendor would be required to supply as per requirements mentioned in our BoQs, otherwise the purchase / work order will be cancelled after due date with confiscation of earnest money.
- 17. Deduction of Income Tax and any other tax will be deducted at source according to Government prevailing rules.

- 18. Payment will be made on submission of Invoice in the name of "COMSATS University Islamabad (CUI), Lahore Campus" with a copy of delivery challan (s) after the complete order has been supplied, inspected and accepted which includes delivery / installation, and COMSATS acceptance / inspection thereof.
- 19. All prices should be quoted on F.O.R (Pak Rupees) inclusive of all applicable taxes.
- 20. All prices should be valid for at least <u>120 days</u>. Withdrawal or any modification of the original offer within the validity period shall entitle CUI, Lahore Campus to forfeit the earnest money in favor of the CUI, Lahore Campus and / or put a ban on such vendor participation in tenders / works.
- 21. It is the sole responsibility of the agent / supplier / manufacturer to comply with the applicable laws, be national or international.
- 22. In case of any dispute or grievance, the matter shall be addressed as per PPRA rules.
- 23. The CUI, Lahore Campus reserves the right to modify the quantities of goods / services at any time before the award of purchase / work order.
- 24. <u>05%</u> of the total value of the <u>Invoice</u> will be retained as security by COMSATS University Islamabad (CUI), Lahore Campus, and will be released after warranty period i.e. <u>(Two Year)</u> which will be counted from the date of delivery / completion of work / supply.
- 25. The bidder is required to furnish in form of <u>Bank deposit/CDR / Pay order equivalent to 2% of the total</u> <u>Bid price as Earnest Money crossed in favor of "COMSATS University Islamabad (CUI), Lahore</u> <u>Campus"</u>.
- 26. COMSATS University Islamabad (CUI), Lahore Campus reserves the rights to reject the bid if;
 - i. Received without earnest money
 - ii. Received later than the date and time fixed for tender submission
 - iii. The tender is unsigned/ unstamped
 - iv. The offer is ambiguous
 - v. The offer is conditional
 - vi. The offer is from a firm, which is black listed by any Govt. Office.
 - vii. The offer is received by telephone/telex/fax/telegram.
 - viii. Any unsigned / ambiguous erasing, cutting / overwriting etc. is made.
- 27. The bidder should furnish a certificate as worded below in token of acceptance of all the terms and conditions of the tender otherwise the tender will not be considered under any circumstances.
- 28. The undersigned affirm that the terms and conditions as contained in this document have been read and accepted and that in the event of selection of my/our rate the agreement in the prescribed form will be entered into:
 - <u>Company / Vendor Name:</u>.....
 - <u>Postal Address:</u>.....

 - <u>NTN# :</u>.....
 - <u>Signature:</u>
 - Please also attach the Certificate supporting being Active Taxpayer as per requirement of FBR.

CUI-LHR-PUR-Tender-001 <u>Technical Portion (Please mention the quoted model/brand in technical</u> <u>portion with no mention of price otherwise the bid will be rejected</u>)

BoQs for Supply of Lab Equipment for Department of Electrical & Computer Engineering

belo colu	change in the Bo w, is allowed. An mns (i.e. model / b) may lead to rejec	Please mention the quoted Model / Brand with meeting				
Sr. #	Item Name	Specifications `	Qty	the all specifications mentioned in BoQs		
01	Lab Equipment (Complete solutions) Including installation & commissioning	 Photovoltaic Solar Energy Unit: Photovoltaic Solar Panels: Specifications: Monocrystalline/Polycrystalline STC Power Rating 200W STC Power per unit of area 11.5W/ft2 (123.8W/m2) Peak Efficiency 12.38% Power Tolerances +-3% Number of Cells 60 Imp 7.12A Vmp 28.16V Isc 7.7A Voc 36.38V Temp. Coefficient of Power - 0.4%/K Temp. Coefficient of Voltage - 0.114V/K Series Fuse Rating 15A Maximum System Voltage 1000V Output Terminal Type Multicontact Connector Type 80% Power Output Warranty Period 25 yrs 90% Power Output Warranty Period 10 yrs Simulated Solar radiation with movable stand with motor control for movement Solar emulator with data acquisition for current-voltage and power-voltage curve tracing of customized parameters (upto 10 KW) Three Phase inverter which may have embedded charged controller or integrated with separate charged controller Measuring equipment Current measurement 600 Amp AC rms 50 Amp DC Voltage measurement 	01 No.			

 		U	UI-LHR-PUR-Tender-001
\circ 600 VAC rms			
• 0 to 825 VDC			
Harmonics measurement			
• All measurements up to 30th harmonic			
• Watt measurement			
• 0 to 1650 kW DC or 1200 kW			
AC			
• VA curve tracer			
\circ 0 to 1650 kVA DC or 1200			
kVA AC			
• Power factor measurement			
• Displacement power factor			
measurement			
• Frequent measurement			
o 15 Hz to 1 kHz			
Solar Irradiance:			
• Display Range $0 - 1500 \text{ W/m}^2$			
o Measurement Range 100 –			
1250 W/m^2			
 Resolution 1 BTU/hr-ft 			
• TEMPERATURE			
• Display Range -30 C to +125 C			
• Measurement Ranges -30 C to			
+125 C			
• Resolution 1			
COMPASS BEARING			
 Display Range 0 to 360 			
• Measurement Ranges 0 to 360			
\circ Resolution 1			
 INCLINOMETER 			
• Display Range 0 to 90			
• Measurement Ranges 0 to 90			
• Sample Rate 1 to 60 minutes			
(user definable)			
Display Custom LCD			
• Power Supply 2AA Alkaline			
Batteries			
• Battery Life >20,000 Readings			
• Four Deep cycle dry cell Batteries with			
100A and 12V			
LOAD			
• AC and DC load (Resistive and inductive			
• AC and DC load (Resistive and inductive load) with Programmable switching	01	No	
Wind Energy Unit:			
• Data acquisition of customized parameters.			
o Control parameters should			
include frequency, torque, speed,			
wind speed, gear ratio and voltage	01	No	
• 400 Watt wind turbine encapsulated in			
tunnel with variable controlled wind speed			
through controller for study of different			
ambiance and conditions			

			C	UI-LHR-PUR-Tender-001
 control the sto electrica consum The axia required power p Hig low Rat Rat Rat VD Stan Sur Ger Blower HO FAI RPI WA PHL AM VO 	al fan generates the air flow d to set the rotor of the wind blant in rotational motion. sh wind power utilization, vibration. ed power: 400W ed voltage: 12V / 24 / 48 C rt-up wind speed: 3.58m/s vival wind speed: 49m/s herator: Permanent magnet RSEPOWER 1 or 1.5 N TYPE Industrial			
Central Controller Central Controller based Acquisition Board to pro computing different anal accompanied with softwa control for re-configuration Microgrid. Data Acquisi specification as under or • Build with flexible DI, RTSI signals for multi-d counters, timer, PLL for with computer interface controller for all acquisit • Used to control Microg	ovide platform for log and digital signals and are package for flexible ion and monitoring of a tion board may have similar. DO, AI and AO, trigger, evices synchronization, clock synchronization, and an independent DMA tion and data logging. grid automatic switch with neration sources according ntrol and monitor all	01	No.	

		U	UI-LHK-PUK-Tender-001
Table: Providing and fixing of Laboratory Table 12'x5'x3'. Structure made up of MS pipe 2 1/2x1 1/4x18 gauges with matt/powder coat finish paint in approved color. Top made of laminated sheet (Laminated Alnoor Lasani or equivalent, approved color) with PVC lapping, side cabinets and drawers made of 3/4" thick lamination board (Alnoor Lasani or equivalent, approved color), PVC end plug inclusive of electrical installation (8 No Multi socket independent circuit 7/0.29 copper connected with industrial socket, and under the table Electricity, complete in all respects.	01	No.	
Computer Computer Core i5 Providing of core computers having processor 2.9 GHz (or equivalent) core i5, Hard drive 500GB, RAM 8 GB, Front side and rear side USB ports with 19" LED, Mouse, Keyboard, Hp/Dell or equivalent	02	Nos	
Electronics Explorer Board (Texas Instrument or equivalent) The Digsilent Electronics Explorer board (EE board) or equivalent includes all of the test and measurement equipment needed to design, build, and test analog and digital circuits of all types. Built around a large solderless breadboard, the EE board includes a 4-channel mixed-signal USB oscilloscope, waveform generator, variable power supply, voltmeter, reference voltage generator, and thirty-two digital signals that can be configured as a logic analyzer, pattern generator, or any one of several static digital I/O devices. All of these instruments can be connected to circuits built on the solderless breadboards using simple jumper wires.	01	No.	

Note:

Purchase Order / Work Order shall be issued on Grand Total / Turnkey Basis.

Financial Portion (Price and Brand/Model to be mention only in Financial Proposal in a separate sealed envelope)

Vendors are required to provide both unit and total price of each item and calculations must be made carefully to avoid mistakes. However, in case, total price does not match with the unit price and quantity due to calculation error or typo error, any of the following can be op

- 1. The bid may be rejected on the reason of ambiguity (OR)
- 2. Unit price will be considered as final and total price of the respective item will be calculated by multiplying it with the quantity required. Sub-totals and grand total will also be corrected accordingly

No change in the BoQs (Specs & Qty.) of CUI-Lahore Campus, as detailed below, is allowed. Any additional information may be mentioned in the blank columns (i.e. model / brand or Price). Any modification in CUI-Lahore Campus BoQ may lead to rejection of bid (fully or partially).

Sr. #	Item Name	Specifications`	Q	Qty	Quoted Model / Brand / Make	Unit Price (Rs.)	Total Price (Rs.)
01	Lab Equipment (Complete solutions) Including installation & commissioning	 Photovoltaic Solar Energy Unit: Photovoltaic Solar Panels: Specifications: Monocrystalline/ Polycrystalline STC Power Rating 200W STC Power per unit of area 11.5W/ft2 (123.8W/m2) Peak Efficiency 12.38% Power Tolerances +- 3% Power Tolerances +- 3% Number of Cells 60 Imp 7.12A Vmp 28.16V Isc 7.7A Voc 36.38V Temp. Coefficient of Power -0.4%/K Temp. Coefficient of Voltage -0.114V/K Series Fuse Rating 15A Maximum System Voltage 1000V Output Terminal Type Multi-contact Connector Type 80% Power Output Warranty Period 25 yrs 	01	No.			

		 CUI-LHK-FU	R-Tender-001
	✓ 90% Power Output		
	Warranty Period 10		
	yrs		
	Simulated Solar radiation		
	with movable stand with motor		
	control for movement		
	• Solar emulator with data		
	acquisition for current-		
	voltage and power-voltage		
	curve tracing of customized		
	parameters (upto 10 KW)		
	• Three Phase inverter which		
	may have embedded charged		
	controller or integrated with		
	separate charged controller		
	Measuring equipment		
	Current measurement		
	o 600 Amp AC		
	rms		
	o 50 Amp DC		
	Voltage measurement		
	o 600 VAC rms		
	• 0 to 825 VDC		
	Harmonics measurement		
	• All measurements up to		
	30th harmonic		
	Watt measurement		
	◦ 0 to 1650 kW		
	DC or 1200 kW		
	AC		
	• VA curve tracer		
	0 to 1650 kVA		
	DC or 1200 kVA		
	AC		
	Power factor		
	measurement		
	• Displacement power		
	factor measurement		
	• Frequent measurement		
	\circ 15 Hz to 1 kHz		
	Solar Irradiance:		
	• Display Range 0		
	-1500 W/m^2		
	• Measurement		
	Range 100 –		
	1250 W/m^2		
	• Resolution 1		
	BTU/hr-ft		
	• TEMPERATURE		
	• Display Range -		
	30 C to +125 C		
·			

T			(CUI-LHR-PU	R-Tender-001
 Measurement Ranges -30 C to +125 C Resolution 1 COMPASS BEARING Display Range 0 to 360 Measurement Ranges 0 to 360 Resolution 1 INCLINOMETER Display Range 0 to 90 Measurement Ranges 0 to 90 Measurement Ranges 0 to 90 Sample Rate 1 to 60 minutes (user definable) Display Custom LCD Power Supply 				<u>CUI-LHR-PU</u>	R-Tender-001
 2AA Alkaline Batteries o Battery Life >20,000 Readings Four Deep cycle dry cell Batteries with 100A and 12V 					
 AC and DC load (Resistive and inductive load) with Programmable switching Maximum Power 10kW 	01	No			
 Wind Energy Unit: Data acquisition of customized parameters. Control parameters should include frequency, torque, speed, wind speed, gear ratio and voltage 400 Watt wind turbine encapsulated in tunnel with variable controlled wind speed through controller for study of different ambiance and conditions The control unit includes the control elements for the axial fan, the storage 	01	No			

 		 CUI-LHR-PUR-T	ender-001
	components for the		
	electrical energy and		
	the electrical		
	consumers.		
0	The axial fan		
	generates the air		
	flow required to set		
	the rotor of the wind		
	power plant in		
	rotational motion.		
	• High wind		
	power		
	utilization, low		
	vibration.		
	o Rated power:		
	400W		
	• Rated voltage:		
	12V / 24 / 48		
	VDC		
	• Start-up wind		
	speed: 3.58m/s		
	o Survival wind		
	speed: 49m/s		
	• Generator:		
	Permanent		
	magnet		
Blower			
• Blower			
	• HORSEPOWE		
	R 1 or 1.5		
	o FAN TYPE		
	Industrial		
	• RPM HIGH550,		
	WATTS1,080		
	DILLOT (' 1		
	or three)		
	• AMPS12,		
	HERTZ (HZ)		
	50, VOLTAGE		
	240 volts		
	• SPEED		
	Variable ,		
	MOTOR ,		
	Steel		

 			UII-LIIK-PU	R-Tender-001
 Central Controller Central Controller based on digital Data Acquisition Board to provide platform for computing different analog and digital signals and accompanied with software package for flexible control for re- configuration and monitoring of a Microgrid. Data Acquisition board may have specification as under or similar. Build with flexible DI, DO, AI and AO, trigger, RTSI signals for multi- devices synchronization, counters, timer, PLL for clock synchronization, with computer interface and an independent DMA controller for all acquisition and data logging. Used to control Micro grid automatic switch with a capability of switch generation sources according to the control algorithm. With a capability to control and monitor all parameters of wind, solar, batteries and load 	01	No.		
Table: Providing and fixing of Laboratory Table 12'x5'x3'. Structure made up of MS pipe 2 1/2x1 1/4x18 gauges with matt/powder coat finish paint in approved color. Top made of laminated sheet (Laminated Alnoor Lasani or equivalent, approved color) with PVC lapping, side cabinets and drawers made of 3/4" thick lamination board (Alnoor Lasani or equivalent, approved color), PVC end plug inclusive of electrical installation (8 No Multi socket independent circuit 7/0.29 copper connected with industrial socket, and under the table Electricity, complete in all respects.	01	No.		

r				CUI-LIIR-PUP	t-Tender-001
	Computer Computer Core i5 Providing of core computers having processor 2.9 GHz (or equivalent) core i5, Hard drive 500GB, RAM 8 GB, Front side and rear side USB ports with 19'' LED, Mouse, Keyboard, Hp/Dell or equivalent	02	Nos		
	Electronics Explorer Board (Texas Instrument or equivalent) The Digsilent Electronics Explorer board (EE board) or equivalent includes all of the test and measurement equipment needed to design, build, and test analog and digital circuits of all types. Built around a large solderless breadboard, the EE board includes a 4-channel mixed-signal USB oscilloscope, waveform generator, variable power supply, voltmeter, reference voltage generator, and thirty-two digital signals that can be configured as a logic analyzer, pattern generator, or any one of several static digital I/O devices. All of these instruments can be connected to circuits built on the solderless breadboards using simple jumper wires.	01	No.		
Total Amount (Rs.) inclusive of all Taxes					

Special Terms and conditions;

- Please submit the technical and financial bid (s) on our prescribed BoQs and clearly mention the quoted model / brands, with complete terms and conditions signed, stamped with both bids, otherwise your bid (s) may be rejected.
- In Addition to filling of the attached BoQs, supporting literature of the quoted model must be attached for verification & technical evaluation of the required specification by the technical committee. In case of any clash is found between the quoted model and the literature model. So the item/bid may be rejected.
- Purchase / work order (s) will be awarded on <u>Grand Total / Turnkey Basis</u> as mentioned in BoQs.
- Kindly attach the Tender fee with Technical Bid and Bid money / CDR with Financial Bid.
- Multiple rates of an item may also lead to the rejection of bid / item.