

## Invitation for Quotations

**Quotations are invited for the procurement of the following equipment  
under VGST KFIST LI**

Sl. No.	Items permitted to be procured only through E-tender process	Technical Specification of Equipment	Unit Price (Rs.)	Total Unit/ Quantity required	Total Estimated Cost (Rs. in lakhs) (to be approved by VGST)
NRE 1	FMU – Feeder Monitoring Unit	Given below	Rs. 1,86,000.00	2 Nos	3.720
NRE 2	Communication Networking and Data Acquisition Hardware for 2 FMUs		Rs. 56,000.00	2 Nos	1.120
NRE 3	Add on Harmonic Modules with Data Acquisition Software		Rs. 1,50,600.00	1Nos	1.506
NRE 4	Harmonic Data Acquisition Module for 2 FMUs		Rs. 51,000.00	2Nos	1.020
<b>NRE - Total Amount</b>					<b>Rs.7.366</b>

## **TECHNICAL SPECIFICATION OF EQUIPMENT** (For Non-Recurring Expenditure only)

Sl. No.	Name of Equipment & Accessories	Quantity	Details of Technical Specification as indicated/proposed in the e-procurement document
1	<b>FMU – Feeder Monitoring Unit</b>	2	<p>1.1. Monitoring of following parameters</p> <ul style="list-style-type: none"> <li>a. Voltages - R, Y, B – 20 to 350V AC</li> <li>b. Voltages - RY, YB, BR – 20 to 500V A</li> <li>c. Current - R, Y, B - 0.1 to 5 A AC</li> <li>d. Frequency – 40Hz to 60Hz</li> <li>e. Real Power - 1400W</li> <li>f. Reactive Power – 700 VAR</li> <li>g. Apparent Power – 1600VA</li> <li>h. Power Factor - 0 (lead / lag) to Unity</li> </ul> <p>1.2 Compliant to IEC 61036 standards</p> <p>1.3 True RMS measurement</p> <p>1.4 Auto scaling of Kilo, Mega, Giga Decimal point</p> <p>1.5 Programmable PT, CT ratio upto 2000 MVA</p> <p>1.6 Isolated Power Supply with backup interface</p>

			<p>1.7 Communications - RS485 with 9600 Baud Rate up to 600m</p> <p>1.8 Ethernet with 100Mbps</p> <p>1.9 Measurement Accuracy - Class1</p> <p>1.10 Mild Steel Enclosure – Plain Carbon Steel</p>
2	<b>Communication Networking and Data Acquisition Hardware</b>	2	<p>2.1 RS485 to RS232 or MODBUS RTU or MODBUS TCP conversion modules</p> <p>2.2 RS485 with 9600 Baud Rate up to 600m Ethernet with 100Mbps</p> <p>2.3 RS485 with MODBUS RTU Protocol</p> <p>2.4 Ethernet with MODBUS over TCP/IP</p>
3	<b>ADD on Harmonic Modules in Data Acquisition Software</b>	1	<p>3.1 Harmonic Data Capture</p> <p>3.2 Voltage THD – 0 to 100%</p> <p>3.3 Current THD – 0 to 100%</p> <p>3.4 Individual Harmonics – upto 11<sup>th</sup> Harmonics</p>
4	<b>Harmonic Data Acquisition for 2 FMUs</b>	2	<p>4.1 Voltage THD – 0 to 100%</p> <p>4.2 Current THD – 0 to 100%</p> <p>4.3 Individual Harmonics – upto 11<sup>th</sup> Harmonics</p>

**Delivery Period: 90 Days from the date of issue of purchase order. Warranty Period: 36 Months**

## **JUSTIFICATION**

<b>Sl. No.</b>	<b>List of the Equipment/ Item * (relevant to carry out the proposed project)</b>	<b>Justification for the Purchase (in brief)</b>
<b>1</b>	<b>FMU – Feeder Monitoring Unit</b>	<ul style="list-style-type: none"> <li>• Feeder Monitoring Units are specialized units which can be connected to feeding points or load points. These units have inbuilt CT and PT which can be interfaced with the bus bar or conductors and the Power System parameters are monitored through the display of the system.</li> <li>• The system has inbuilt power supply and PLC points. The inbuilt data concentrator can collect all the parameters as per its specification and pass on the data remotely through the communication module through MODBUS protocol.</li> </ul>
<b>2</b>	<b>Communication Networking and Data Acquisition Hardware</b>	<ul style="list-style-type: none"> <li>• The data gathered at different locations through the FMU can be monitored remotely through the MODBUS protocol. The FMUs are remote devices and needs to be connected to a central computer.</li> <li>• The communication network devices convert the RS485 based MODBUS data Ethernet based MODBUS over</li> </ul>

		TCP and sends it to the central location. The repeating stations can also be formed through this network.
3	<b>ADD ON Harmonics modules in Data Acquisition Software</b>	<ul style="list-style-type: none"> <li>• data acquisition of Harmonics data from the FMUs with Harmonic modules.</li> </ul>
4	<b>Harmonic Data Acquisition Module for 2 FMUs</b>	<ul style="list-style-type: none"> <li>• This module will be used with the FMUs to add the functionality of Harmonics data acquisition in THD level.</li> </ul>

### **Terms and Conditions**

1. Hard copies of technical equipments specification documents to be sealed cover superscribed as "Quotation for the supply of FMU – Feeder Monitoring Unit and associated equipments under VGST KFIST L1 " submitted to office of the Principal, The National Institute of Engineering, Manandavadi Road, Mysore 570 008 on or before date: 04-09-2024 , 17:00 hours.
2. Authorized Dealer/ Channel Partner Certificate from the company and technical equipments specification documents should be enclosed Online.
3. Equipment should be delivered at the Department of Electrical and Electronics Engineering, The National Institute of Engineering, Manandavadi Road, Mysore - 570008.
4. 100% payment on installation, demonstration along with instruction manual and successful completion in all respects and final acceptance by the Purchaser.
5. The Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of contract.

Delivery location:

Department of Electrical and Electronics Engineering  
**THE NATIONAL INSTITUTE OF ENGINEERING**  
 Manandavadi Road Mysuru – 570008 Karnataka  
 TEL: (+91) 821 2480475,(+91) 821 4004900