

Ref No. INKEL/RED/2023-24/NIQ-Inverters-100kWp Malappuram/01

Date:05.02.2024

Notice for Inviting Quotations

INKEL Ltd. Invites sealed quotations from financially and technically sound reputed suppliers for the supply of ON-Grid Inverters at Malappuram in Kerala.

Name of Work	Quotations invited for supply of ON-Grid Inverters for the quantity of 2 x 50kWp at Malappuram in Kerala
Date of publishing bid documents	05.02.2024
Last Date & Time of Submission of Quotation document	09.02.2024,03:00PM
Opening of Quotation Cover	09.02.2024,04:00PM
Tender Fee	Rs. 944 including GST
Nature of Contract	Supply

Eligibility Criteria

The bidder must fulfil the following eligibility criteria.

- a) The bidder must be registered under GST.
- b) The bidder must be OEM manufacturer or Authorised Distributor or Dealer. (Authorization letter to be submitted along with quotation)
- c) The PCU Company/OEM should have grid connected solar plants running in the country with inverters at least 10 years from the time of bidding to showcase the service reliability and long-term presence. Also, the PCU/OEM should have local presence in the county for at least last 5 years.

The Scope of Supply & Technical Specifications to be followed is scheduled in Appendix – 1

All the Quotation documents are to be submitted by Password Protected PDF via email -: tenders.re@inkel.in or Speed post or courier in the designated covers on the below address by mentioning name of Supply.

**To,
The Managing Director
INKEL Limited, Door No. 7/473ZA – 5 & 6,
1st Floor, Ajiyal Complex, Kakkanad, Cochin, Pin: 682030**

Note: Please sign and seal all the pages in the Notice Inviting Quotation and return the same.

Bidder can quote price bid with three options of payment terms.

The quotation shall be valid for 1 month reckoned from the date of opening of quotation. No correspondence would be made with the bidders once the quotation is submitted. The decision taken in the INKEL Committee will be final.

INKEL Ltd reserves the right to modify/cancel any or all quotations without assigning any reasons.

Further details can be had from the office of the General Manager – Renewable Energy Division, INKEL Limited, Door No. 7/473ZA – 5 & 6, 1st Floor, Ajiyal Complex, Kakkanad, Cochin, Pin:682030 Phone: 0484-2978101,Ext code:300.

Bidding Process

The bid in response to this NIQ shall be submitted as a softcopy in a two cover format as follows:

Cover-1: Technical Bid

1. Copy of GST registration certificate.
2. The bidder must be OEM manufacturer or Authorised Distributor or Dealer. (Authorization letter to be submitted along with quotation)
3. The entire tender document signed and sealed by the bidder as a token of acceptance of all the terms and conditions of this NIQ.
4. Contact form of Appendix-2 should be filled.
5. Copies of IS/IEC standards specified in Technical specification
6. Copy of accreditations and certifications
7. Catalogue and datasheet

Cover- 2: Price Bid (Password Protected PDF)

1. Price Bid as per Appendix 3.

Cover 1 and Cover 2 shall be enclosed in a single cover. The tender name, number and due date shall be super scribed on all the covers. All pages of the Bidder's submission shall be signed and stamped by the duly authorized of the Bidder.

Sd/-
Managing Director

NIQ Annexures:

1. Appendix 1 - Scope of Supply and Technical Specifications
2. Appendix-2- Contact Form
3. Appendix 3 - Format for Price Bid

Appendix-1
Scope of Supply & Technical Specifications:

1. Scope of Supply

The scope includes the supply of On-Grid (grid Tied) Solar Inverters with BIS certifications and 10 Years warranty as per given standards.

Schedule of Supply:

- The bidder should complete the Supply of On-Grid (Grid Tied) Solar Inverters within 10days from the date of issue of purchase order/payment.
- Price validity should be 30 days from the date of opening of quotation.
- Warranty of On-Grid inverters should be 10 years from the date of commissioning.

2. Delivery Schedule:

Site Name & Address	Delivery Needed	Site Capacity	Inverter Specification	Project Specific Requirement
Kelappaji College of Agricultural Engineering & Technology, Malappuram	Single Location – Malappuram	100kWp	50kWp Three Phase-2nos	The PCU Company should have grid connected solar plants running in the country with inverters at least 10 years from the time of bidding to showcase the service reliability and long-term presence. Also, the PCU should have local presence in the county for at least last 5 years. The PCU manufacturer may need to provide authentic details to customer if asked to prove the same.
Total: 100kWp				

3. Technical Specifications

The Technical Specifications for On-Grid (Grid Tied) Solar Inverter are given below;

Sl.No.	Item Description	Inverter Specification	Quantity (Nos)	Project Specific Requirement	Standard
1	On-Grid Inverter with WiFi Monitoring	50kW Three Phase	2	The PCU Company should have grid connected solar plants running in the country with inverters at least 7 years from the time of bidding to showcase the service reliability and long-term presence. Also, the PCU should have local presence in the county for at least last 5 years. The PCU manufacturer may need to provide authentic details to customer if asked to prove the same. Warranty shall be 10 Years.	As per MNRE standards 1. IEC 62109 2. IEC 62116 3. IEC 61683 4. IEC 60068-2 (1, 2, 14,30)

The inverter output shall be 415 Vac, 50 Hz for 3 phase & 230Vac, 50Hz for single phase.

The Technical Specification of On-Grid (Grid Tied) Solar Inverter are summarized below:

Specifications of Inverters	
Parameters	Detailed specification
Nominal voltage	230V for Single Phase & 415V for Three phase
Voltage Band	Between 80% and 110% of V nominal
Nominal Frequency	50 Hz
Operating Frequency Range	47.5 to 50.5 Hz
Waveform	Sine wave
Harmonics	AC side total harmonic current distortion < 3%
Ripple	DC Voltage ripple content shall be not more than 1%
Efficiency	Efficiency shall be >98%
Casing protection levels	Degree of protection: Minimum IP-65 for outdoor units
Operating ambient Temp range	-10 to + 60 degree Celsius
Operation	Completely automatic including wakeup, synchronization (phase locking) and shut down
MPPT	MPPT range must be suitable to individual array voltages
Protection class	1
Protections	Over voltage: both input and output Over current: both input and output Over / Under grid frequency Over temperature Short circuit Lightning Surge voltage induced at output due to external source Islanding Voltage and frequency protection setting shall be visible for verification and the same shall be set at site as per DISCOM requirements
Ingress Protection	IP 65 for Outdoor
Recommended LED indications	ON Grid ON Under/ Over voltage Overload Over temperature

<p>Recommended LCD Display on front Panel</p>	<p>DC input voltage DC current AC Voltage (all 3 phases) AC current (all 3 phases) Frequency Ambient Temperature Instantaneous power Cumulative output energy Cumulative hours of operation Daily DC energy produced</p>
<p>Communication Interface</p>	<p>RS485/ RS232/Wi-Fi (with or without USB)</p>

The IEC Certifications of On-Grid (Grid Tied) Solar Inverter are summarized below:

Standard	Description
IEC 61683	Photovoltaic systems - Power conditioners - Procedure for measuring efficiency
IEC 61727	Photovoltaic (PV) systems- Characteristics of the utility interface
IEC/EN 62109-1	Safety of power converters for use in photovoltaic power systems - Part 1: General requirements
IEC/EN 62109-2	Safety of power converters for use in photovoltaic power systems - Part 2: Particular requirements for inverters
IEC/EN 61000-3-3/3-11/ 3-5	Electromagnetic compatibility (EMC) - Part 3-11; Limits; Limitation of Voltage Change, Voltage Fluctuations and Flicker in Public Low- Voltage Supply Systems; Rated Current <16A / >16A and <75A / >75A per Phase respectively
IEC/EN 61000-3-2/ -3-12/ -3-4	Electromagnetic compatibility (EMC) - Part 3-12; Limits; Limits for Harmonic Currents produced by equipment connected to the public low voltage systems with Rated Current <16A / >16A and <75A / >75A per Phase respectively
IEC 62116	Utility-interconnected photovoltaic inverters - Test procedure of islanding prevention measures
IEC 60068-2-1	Environmental testing - Part 2-1: Tests - Test A: Cold
IEC 60068-2-2	Environmental testing - Part 2-2: Tests - Test B: Dry heat
IEC 60068-2-14	Environmental testing - Part 2-14: Tests - Test N: Change of temperature
IEC 60068-2-30	Environmental testing - Part 2-30: Tests - Test Db:, Damp heat, cyclic (12 h + 12 h cycle)

Warranty:

- The Warranty Card to be supplied with the system must contain the details of On-Grid (Grid Tied) Solar Inverter supplied including serial number.
- **For inverters, 10 years warranty period from the date of commissioning is required.**



Appendix – 2
CONTACT FORM

Name of the Firm	
Complete Office Address with Phone Number and E-mail ID	
Type of Ownership	
GST No.	
PAN	
Year of Establishment	
Name of Contact Person with Designation	
Mobile Number & E-mail ID of the Contact Person	

Appendix-3
Format for Price Bid
(To be filled by Bidder)

Sl.No.	Site Name	Capacity (kVA)	No of Inverters Req (Nos)	Make& Model of PCU	Capacity of inverter	Price per inverter (Rs)	Total Rate (Basic)(Rs)	GST (Rs)	Total price (All inclusive) (Rs)
1	Kelappaji College of Agricultural Engineering & Technology, Malappuram	50kW	2						
Total Price in figures. (Rs) (All Inclusive)									
Total Price in words. (Rs) (All Inclusive)									

Terms and Conditions:

- 1 The above price is inclusive of loading, Transportation to site, Transit insurance, GST, all taxes and duties.
- 2 Payment terms :
100% Payment will be released on successful delivery of inverters at site. (GST will be released on reflecting GSTR2B)
- 3 Validity of the Quotation is 30 days from the date of opening of quotation.
- 4 Any deviation will have loading factor decided by the management while evaluating the tender.

Bidder Name:

Signature

Official Seal

Date: