



Creating Infrastructure
A PPP INITIATIVE OF GOVERNMENT OF KERALA

**Notice Inviting Quotations for Supply of On-Grid Inverters at
Different Locations of Kerala.**

Ref No: IL-RED-NIQ-Inverters/24-25/01

**INKEL Limited,
Door No. 14/812 & 813 1st Floor,
Ajiyal Complex,
Kakkanad, Cochin Kerala-682030
Phone: +91 484 2978101
Email: tenders.re@inkel.in**



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16.01.2025

1. ABSTRACT

Title	Notice Inviting Quotations for Supply of On-Grid Inverters at Different Locations of Kerala.
Reference No:	IL-RED-NIQ-Inverters/24-25/01
Mode of Application	Online via email to tenders.re@inkel.in
Date of Publishing of Notice Inviting Quotations (NIQ)	16.01.2025
Last date & Time of submission of Bids	28-01-2025
Contact Details for clarification	Manager (RE) - 0484-2978101(Extn 509) AGM (RE) - 0484-2978101 (Extn 501) Email: tenders.re@inkel.in
Date and Time of opening of NIQ	28-01-2025

Interested Supplier/Manufacturer/Other Dealers shall download the NIQ from INKEL website (www.inkel.in) and submit the application for empanelment online on or before the deadline mentioned above.

**Kakkanad
16-01-2025**

**S/d
Managing Director**



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2. PREAMBLE

2.1. INKEL LIMITED (INKEL) is a public-private partnership (PPP) company promoted by Government of Kerala. INKEL is an innovative PPP initiative which brings together Government Agencies, prominent global investors, NRI Industrialists and businessmen. It is engaged in setting up sustainable infrastructure models to address all the infrastructure requirements of industrialists and entrepreneurs in the state of Kerala.

2.2. INKEL Ltd offers services ranging from Project Concept development to the Completion and Handing over stage covering Sectors like Construction, Road & Bridges, Development of Industrial/Business Park, Engineering Design and Consultancy, PMC, Advisory & Management Consultancy, Education and Skill development, Health & Hospitality, Power, Facilities Management, Hi-Tech Agro and Renewable Energy.

2.3. Renewable Energy is one of the core departments of INKEL Limited and is involved in the implementation of solar PV projects throughout Kerala.

2.4. Inkel is in requirement of Solar Inverters for its projects in Kerala and is looking for a reputed supplier for the same.

3. Eligibility Criteria

The bidder must fulfil the following eligibility criteria.;

3.1. The bidder must be registered under GST.

3.2. The bidder must be Original Equipment Manufacturer (OEM) of Grid-Connected Solar Inverters or Authorized Distributor or Dealer.

3.3. Bidders shall not be black listed or banned by INKEL or any other Govt. agencies/ Govt PSU's.

3.4. Bidders should provide warranty of Minimum 5 years.

The Supplier/Manufacturer/Other Dealers shall submit the Quotations/Price bids addressed to "**Managing Director, INKEL Limited, 1st, Floor, Ajiyal Complex, Kakkanad, Cochin, Pin: 682030**, Phone:0484-2978101, 0484-2978103 through E-mail **tenders.re@inkel.in**.

The last date for receipt of applications is **28-01-2025**



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The bidder is required to submit all required documents as part of the bid. Price bid must be submitted as password-protected files.

The password for the files must be shared separately and confidentially with the procurement authority or the designated contact person as per the instructions.

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

- The quotation shall be valid for 3 months 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. Inkel shall issue the Purchase Order after consolidating the requirements and site locations. Multiple Purchase Orders may be issued based on the consolidated requirements and site locations.
- The timeline for the supply will be before March 2025.

4. Bid Submission Checklist:

The bidder shall submit the following:

1. Technical Bids:

- 1.1. The entire NIQ signed and sealed as a token of acceptance of terms and conditions.
- 1.2. Copy of GST registration certificate.
- 1.3. Copy of Registration Certificate and PAN Card.
- 1.4. Documents to prove the annual Turnover of the bidder.
- 1.5. Copy of Valid BIS certification.
- 1.6. Datasheets and Type Test Certificates.

Sd/-
Managing Director



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Appendix 1 - Scope of Supply and Technical Specification

1. Scope of Supply

- Manufacturing, Testing, and delivery of Grid-Tie Inverters at different locations of Kerala as well as commissioning support of Grid Connected Solar String Inverters.
- The estimated cumulative capacity required is 5000 KW. Purchaser shall state the actual quantity to be supplied by the Bidder in the Purchase Order. Purchaser reserves the right to reduce or increase the quantity of purchase as required without change in agreed rate. The total quantity of 5000 KW is cumulative of different sites.

2. Technical Specifications

Sl No	Item	Specification / Requirement
1	System Configuration	Multiple Inverters
2	Type	String Inverters
3	Technology	Maximum power point Tracking and IGBT based design
4	Max DC Power Capacity	110% rated capacity
5	Efficiency	Greater than 97% (Test report as per IEC 61683 at 75% load shall be considered for verification)
6	Voltage Ripple	Less than 3 %
7	Operating Temperature	5°C to 50°C
8	Relative Humidity	95% non-condensing
9	Enclosure protection	Minimum IP 65 for outdoor as per IEC62208 specifications
10	Cooling	Forced Convection
11	Input DC	
11.1	Maximum Input voltage	1000VDC/1500 VDC
12	Output AC	
12.1	Rated Output Power at 50°C	Equal to DC Capacity at each site
12.2	Frequency	50 Hz ± 10%
12.3	Phases	3 Phase
12.4	Voltage	As per rated inverter output ± 10%
12.5	Harmonics	Within limits as per IEEE-519 2014



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13	Certifications	<p>The Solar inverters supplied shall have valid certifications given below</p> <ol style="list-style-type: none"> 1. IEC 60068 2. IEC 62116 3. IEC 61727 4. IEC 62109 5. IEC 61683 6. IEC 60255
	Protections/Features	<p>The inverters shall be protected against the following conditions.</p> <ol style="list-style-type: none"> 1. Continuous over load 2. Over / Under voltage protection on AC side (+10% / -20%) 3. LVRT and HVRT feature 4. Over / Under frequency (50.5Hz / 47.5Hz) 5. DC reverse polarity 6. Short circuit protection 7. Over voltage protection 8. Over heating 9. Islanding 10. Ground fault and Earth fault 11. Overload capacity 150% for 10 seconds 12. Surges and lightning (with type II MOV surge protection device) 13. DC Switch/DC Isolator on DC Side <p>Night time VAR capability</p>
	Alarms	<p>Alarms shall be provided for</p> <ol style="list-style-type: none"> 1. Hardware failures 2. Internal or external auxiliary supplies <p>potential free contacts shall be provided for alarms.</p>
	Data logging & monitoring	<ul style="list-style-type: none"> ➤ Communication/SCADA interface – RS485 Modbus/Modbus ➤ TCP IP ➤ LCD Display shall be available for local monitoring ➤ Data logging function shall be provided in the inverters. <p>Following parameters are to be logged</p> <ul style="list-style-type: none"> • Inverter per phase voltage, current, frequency, kW, KVA • Grid Voltage and frequency • MPPT current and Voltage • Ambient temperature • Heat sink and panel temperatures • Inverter KWh Import and export • Inverter status • System settings • Hours of operation • Event logs



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Rev. No: 01

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		Vendor shall not limit the data to the data mentioned above. Vendor can provide additional data in case, the data benefits the end user in operation, improving safety and performance. Any additional features such as string current monitoring shall be indicated separately
	.OND File	. OND file for each inverter shall be provided for carrying out PVSyst calculations before supply.

3. Quality Assurance

Quality Plan and Datasheet shall be subject to Purchaser's approval. Inverters shall be subject to pre-dispatch inspection by Purchaser, Client or any third party designated by Purchaser.

Pre-shipment inspection by Purchaser/Client (Factory Acceptance Test) at Bidder's works will include: -

- Dimensional and Visual Check
- Electrical Tests for functionality and protection features
- MPPT tracker test
- AC under / over voltage test
- Under / Over frequency test
- THD measurement
- Efficiency measurement
- Hi Pot Test
- Any other test as required by customer

Successful bidder has to prepare and submit the Quality assurance plan to INKEL for Customer approval.

4. Warranty

- Inverter shall be warranted (ON- Site warranty) for minimum of 7 Years from the date of commissioning against all material or manufacturing defects and workmanship from the date of invoice.
- All costs for repair including transportation shall be paid by the vendor.
- Inverters that do not meet the above criteria shall be replaced/ repaired on site free of cost by Bidder/ Supplier.

5. Packing and Identification

The inverters shall be packed in carton boxes in road worthy packing. Inverters found



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damaged at the time of opening of the cartons in the project site shall be replaced by the vendor, free of cost at site within 07 days intimation by Purchaser in the absence of which provisions of Liquidated damages.

6. General Conditions

- Inverters shall be manufactured at the factory of OEM for which PO is placed.
- Any additional tests/Type tests/Certification required by INKEL/Client shall be compiled.

7. Manufacturing Clearance Approval Procedure

- The successful Bidder shall submit the Guaranteed technical Particular (GTP), Datasheet, Bill of Materials (BOM), General Arrangement Drawing and Quality assurance plan of the solar inverters for approval.
- Bidder shall provide test certificates corresponding to standards mentioned above along with complete test reports for proposed model of solar inverters from MNRE approved Laboratories.
- The Bidder shall submit a detailed manufacturing quality plan for Inverter with list of checks/ tests performed during incoming material inspection, production, pre- dispatch and package.



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**Appendix – 2
GUARANTEED TECHNICAL PARTICULARS**

(To be submitted for each model.)

**Guaranteed Technical Particular Data Sheet
(To be submitted separately for each model offered)**

Sl No	Particular	Required	Offered
1	Manufacturer		
2	Model name/No.		
3	Type of Inverter	String	
4	Nominal AC power (at 50 deg)		
5	Nominal AC voltage		
6	Nominal AC Current		
7	AC grid Frequency range	47.5 Hz to 50.5Hz	
8	AC grid voltage range	-20% to +10%	
9	Power Factor (+ and -)		
10	Total Harmonic Distortion	as per IEEE-519 2014	
11	AC over / under voltage over / under frequency protection		
12	LVRT/HVRT setting option	Yes	
13	Max PV input power		
14	Maximum DC voltage	1000V/1500V	
15	MPPT voltage range		
16	Maximum DC current		
17	No. of DC input ports		
18	Maximum Efficiency	Greater than 97% as per IEC61683	
19	DC voltage ripple		
20	Ambient temperature range		
21	Humidity (non-condensing)	95%, non-condensing	
22	Degree of protection		
23	Dimensions (H x W x D)		
24	Weight		
25	Protective functions AC over/under voltage, AC over/under frequency, over-temperature, AC and DC over-current, DC over-voltage, against Islanding		



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26	Communication Interface	RS485MPI/WiFi /GPRS	
27	User-display standard		
28	Enclosure Environment Rating		
29	Safety and EMC		
30	Anti-Islanding Feature	IEEE1547/UL1741/ IEC62116	
31	Additional Features	String monitoring, String fuses, SPDs, etc. if any	

Note: -

GTP shall be submitted for each model offered by the Bidder.

Signature of Bidder with Stamp



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**Appendix 3 – Price Bid
(To be submitted in Letterhead)**

Sl No	Capacity of the Inverter (KW)	Model Number	Basic Amount	GST (Rs.)	Total Amount (Rs.)

Note: Bidder may submit prices of inverters from 30KW to 400KW as per the above format.

Terms and Conditions:

The Price shall be inclusive of GST, all other taxes and duties, costs for Factory Acceptance tests, Packing charges, Transportation to site, Transit Insurance.

Payment terms:

1. 5% of the purchase order value as advance on acceptance of Purchase order and executing Agreement on Rs.200/- non-Judicial stamp paper and successful factory acceptance test.
2. Balance 95% of the purchase order value shall be released within one week from the date of delivery of materials at site in good condition.
3. Release of tax portion on receipt of original tax invoice, reflection of credit in the GST Portal and warranty certificates along with the serial Numbers.

Bidder Name:

Signature

Official Seal

Date: