



NATIONAL PRODUCTIVITY COUNCIL

(Under Department for Promotion of Industry & Internal Trade (DPIIT), Min. of Commerce & Industry, GoI)
Productivity House, 5-6, Institutional Area, Lodi Road New Delhi

RFP No. NPC/HQ/COE/I4.0/2022-23

Date:04.08.22

Subject: Request for Proposal (RFP) from Industry4.0 solution providers for Industry 4.0 solution implementation in the five (5) Demo manufacturing SME units.

National Productivity Council (NPC) under Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry, GoI invites sealed bids from the Industry4.0 solution providers at National Productivity Council of India.

1. The Instructions to Bidder are provided in the subsequent section of this document. Bidder may take note of the same before applying.
2. NPC reserves the right to update, amend and supplement the information in this document including the technical specifications before the last date and time of receipt of bids.
3. The crucial information on the process of invitation of bids for **Industry 4.0 solution implementation in the five (5) Demo manufacturing SME units** is given below.

Procuring Authority	National Productivity Council
Bidding Document Download	Start Date: 05/08/2022 from 1100 Hrs onwards
Bid submission Start Date	05/08/2022 at 1600 Hrs
Last Date & Time of Submission of Bid/Quotation	26/08/2022 at 1600 Hrs
Correspondence Address:	Deputy Director (HRM & CoE), National Productivity Council 5-6 Institutional Area, Lodi Road New Delhi-110003 Phone: 011-24607370/337 Email: aman.gulati@npcindia.gov.in, us.prasad@npcindia.gov.in
Earnest Money Deposit (EMD)	Rs 2,00,000.00 (Two Lakh only) including GST
Submission of queries/clarification	12/08/2022 by 1100 Hrs
Pre-Bid meeting for queries	18/08/2022 at 1200 Hrs
Venue of Pre-Bid meeting	Manthan Hall, First Floor, NPC, Lodhi Road, New Delhi
Uploading of Corrigendum/ addendum/ clarification (if any)	19/08/2022 by 1700 Hrs
Opening of Technical bid	29/08/2022 at 1100 Hrs
Presentation by the Bidders	01/09/2022 at 1400 Hrs onwards at NPC, New Delhi
Opening of Financial bid	To be informed later
Performance Security	3% of Project Value <ul style="list-style-type: none">• PBG should be valid for 60 days beyond the date of completion of contractual obligations.• PBG to be made in favour of National Productivity Council, New Delhi
Bid/Quotation Validity	90 days from the date of Bid submission

INSTRUCTIONS TO BIDDERS

- A. Tender documents may be downloaded from NPC website: www.npcindia.gov.in (for reference only) and Central Public Procurement Portal (CPPP) (e-procurement) site <https://eprocure.gov.in/eprocure/app>. Bids shall be submitted online only at CPPP (e-procurement) website: <https://eprocure.gov.in/eprocure/app>
- B. RFP document shall not be tampered/modified in any manner. In case the same is found to be tampered or modified in any manner, Quotation will be completely rejected and bidder will be banned for future.
- C. The last date and time for Submission of bid is 26/08/2022 at 1600 Hrs. The Technical Bid would be opened on 1100 hrs on 29/08/2022. The date for opening of Financial Bid will be informed later.
- D. Validity of Bid/Quotations shall be 90 days from date of opening of Quotation.
- E. Bidder shall not be permitted to withdraw his/her offer or modify the terms and conditions thereof.
- F. The NPC reserve the right to reject this tender/ any Quotation including the ones which fail to comply with the conditions stipulated in the RFP document without assigning any reason whatsoever and does not bind itself to any specific quotation condition. The decision of the NPC in this regard will be final and binding.
- G. Work Completion Period: The maximum timeline for completion from point B.1 to B.12 of Annexure-I shall be T0 + 3 months where T0 is the starting date of the contract.
- H. Scope of work for Industry 4.0 solutions implementation is given at Annexure-I.
- I. The Bidders Particulars, Price Quotation, Technical proposed Solution format are given at Annexure-II, Annexure-III, Annexure-IV, Annexure-V & Annexure-VI respectively.
- J. Breach of terms and conditions: In case of breach of any terms and conditions mentioned above, the competent authority will have the right to cancel the work without assigning any reason thereof and nothing will be payable by NPC in that event.
- K. Payment Terms:
 - i. The successful bidder has to sign an agreement on non-judicial stamp paper which shall contain penalty clauses related to liquidated damages on account of delays, errors, cost and time over runs etc.
 - ii. Advance payment of 10% of total project value will be released as mobilization advance post submission of Performance security.
 - iii. Remaining payment of total project value will be released post implementation of work & after fulfillment of contractual obligations with submission of necessary documents, completion report to NPC and receipt of original bills in duplicate.
 - iv. No claim on account of any price variation/escalation shall be entertained.
 - v. No claim for interest in case of delayed payment.
 - vi. In case of non- fulfilment of the service provider's specific obligation as under the contract, which non- fulfilment leads to loss of any nature, the service provider shall indemnify NPC to the extent of any loss suffered because of delay of the project or damage. However, the total liability of the service provider under this clause as well as under any other clause of the

contract shall be limited to total amount payable by NPC to the service provider (under the terms of the contract), provided, however, that this limitation shall not apply to any liability for damages arising from wilful misconduct or negligence.

- vii. No interest will be paid to the successful bidder on the security deposit.
 - viii. The payment to the service provider shall be made in Indian rupees.
- L. Any further information related to RFP will be issued only through the website of NPC.
- M. This RFP is a "Two Bid" document. The Technical Bid should contain all the relevant information, technical detail, commercial terms & conditions, and other desired enclosures in the prescribed format along with Earnest Money Deposit (EMD). The Financial Bid should contain only commercials in the prescribed format. In case, any bidder attaches the financial bid within the technical bid, the same shall be rejected, summarily. The offers submitted by Telegram/Fax/email shall not be considered. No correspondence will be entertained in this matter.
- N. The EMD of INR 2,00,000.00 (Two Lakh only) in the form of demand draft/ECS Transfer/RTGS drawn in favour of "National Productivity Council, New Delhi". There is no exemption from EMD and tenders without these, shall not be accepted. However, any exception as per Govt. of India (GoI) notifications shall be complied.
- O. The successful bidder shall be required to deposit performance security in form of bank guarantee equal to three percent (3%) of contract value of examination within 15 days from the date of the award of the work. Performance Security should remain valid for a period of sixty days beyond the date of completion of all contractual obligations.
- P. The EMD of the unsuccessful bidders shall be returned without interest after award of work to the successful bidder. The EMD of the successful bidder shall be returned only after the signing of the contract along with performance security deposit. The EMD stands forfeited in case the bidder withdraws or amends its bid after submission of tender document.
- Q. Tenders submitted after the closing date shall not be accepted, under any circumstances.
- R. The Technical Bid shall consist of supporting documents including but not limited to the following:
- Bidders Particulars as per **Annexure - II**
 - Earnest Money Deposit of INR 2,00,000.00 (Two Lakh only) in the form of demand draft/ECS Transfer/RTGS drawn in favour of "National Productivity Council, New Delhi".
 - The Financial Information as per **Annexure - III**
 - Details of Proposed Solutions as per **Annexure - V**
 - The details of Technical and Administrative Manpower for Project as per **Annexure - VI**
 - An undertaking **on letter head** stating that bidder would provide hand holding support & warranty of industry 4.0 solutions for atleast one (1) year post implementation and thereafter on AMC basis.
- S. The **Financial bid shall be submitted as per Annexure -IV only.**
- T. The bids are to be submitted online only at CPPP website: <https://eprocure.gov.in/eprocure/app>.
- U. The offers submitted by Telegram/Fax/email shall not be considered. No correspondence will be entertained in this matter.

V. Eligibility Criteria

The determination of eligibility will take into account the technical experience capabilities and past performance of the participating firm along with financial status; it will be based upon an examination of documentary evidence of the participating firm qualifications submitted by them as well as such other information, as NPC deems necessary and appropriate. The participating firm willing to associate with NPC should meet the following Pre-Qualification Criteria:

- i. Bidder should be the solution provider/integrator of the industry 4.0 solutions.
- ii. Bidder should be having prior experience of development & implementation of similar type of turnkey project execution in at least 10 projects. The project completion certificate from the clients shall be attached with quotation.
- iii. The Bidder should have minimum annual turnover Rs.50 lakhs for the any two financial years (2018-19, 2019-20 and 2020-21) and should not have accrued losses. The bidder should submit audited statement and financial assessment copy/Income Tax Return Copy for last three financial years.
- iv. The bidder should not be blacklisted / debarred by any Statutory, Regulatory or Government Authorities or Public Sector Undertakings or Autonomous Bodies during last 3 years. A declaration in this regard to be submitted in the letterhead of the bidder.
- v. Bidder should be nationally / internationally reputed company having its office at New Delhi/NCR.
- vi. The bidder should participate as a single entity, no consortium or group companies will be allowed. Any experience as a consortium partner will also not be considered.
- vii. The bidder shall be single point of contact with NPC and shall be solely responsible for the execution and delivery of the work.

W. Scope of Work

Scope of work for Industry 4.0 solutions implementation is given at Annexure-I.

X. Procedure of Bid Evaluation and for Shortlisting

- i. Evaluation committee constituted by NPC; Delhi will evaluate the technical proposal received by RFP closing date. The scrutiny will be based on profile and track record of bidder, past experience of similar nature & magnitude.
- ii. Scrutiny of quotations: The quotations received will then be assessed on the eligibility criteria. Quotations found not meeting the eligibility criteria shall be considered non-responsive and shall be rejected.
- iii. NPC reserves the right to revert back to individual bidders with further clarifications /queries on the quotations. The bidder has to respond to the queries within the specified time mentioned in the covering letter.
- iv. Detailed technical evaluation shall be carried out by an Evaluation Committee constituted for this purpose by the NPC along with other conditions in the RFP document to determine the substantial credentials, credibility of bidders responsiveness. For this clause, substantially responsive bid is one that conforms to all the eligibility and terms and conditions of the tender without any material deviation. Technical Bid will be assigned technical score (TS) out of a

maximum of 100 points. The technical evaluation will be based on, but not limited to, the criteria given below:

- a. Prior experience of the vendor for implementation of Industry 4.0 projects in the manufacturing units on pan-India basis.
- b. Number of projects undertaken of similar nature.
- c. Capability of the vendor to develop the required hardware & software for delivery of the desired solutions.
- d. Availability of adequately trained personnel of the agency to implement the industry4.0 solutions & handholding of post implementation trainings.
- e. Standing of the agency and its financial position.
- f. Understanding of TOR, methodology & work schedule.
- v. The bidders shall be asked to make a presentation (approx. 30 minutes) about their proposals including architectural virtual model, drawings & proposed specifications of items in their Technical Proposal before a Evaluation Committee constituted by NPC, Delhi.
- vi. Any bidder obtaining marks less than 70% in the above Technical marks, will be deemed as technically ineligible and shall be disqualified. However, NPC reserves the right to relax the benchmark of 70 % with an objective to ensure availability of adequate number of bidders for financial evaluation.
- vii. The Technical Score (TS) for each bidder will be arrived at after totaling each of their respective score on parameters laid down in technical evaluation criteria table and marks allotted by the Evaluation Committee on the presentation made by the bidder.
- viii. NPC shall open financial bids of only those bidders who have been declared technically qualified by the Evaluation Committee for further analysis or evaluation and ranking and selecting the successful bidder for placement of the contract.
- ix. The Financial Proposals shall be opened in the presence of shortlisted bidder representatives who are present/choose to be present.
- x. The selection of the agency will be based on Quality and Cost Based Selection (QCBS) Methodology. There will be 70 % weightage for Technical Evaluation and 30 % for Financial Evaluation.

Y. PREPARATION & SUBMISISON OF BIDS

- i. Bidders are required to enrol on the e-Procurement module of the Central Public Procurement Portal (URL: <https://eprocure.gov.in/eprocure/app>) by clicking on the link "Online bidder Enrollment" on the CPP Portal which is free of charge.
- ii. As part of the enrolment process, the bidders will be required to choose a uRFPue user name and assign a password for their accounts.
- iii. Bidders are advised to register their valid e-mail address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
- iv. Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify/ nCode / eMudhra etc.),with their profile.

- v. Only one valid DSC should be registered by a bidder. Kindly note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.
- vi. Bidder then logs into the site through the secured log-in by entering their user ID/password and the password of the DSC/e-Token.
- vii. The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal. More information useful for submitting online bids on the CPP Portal may be obtained at: <https://eprocure.gov.in/eprocure/app>.
- viii. There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters may include Tender ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other key words etc. to search for a tender published on the CPP Portal.
- ix. Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS/e-mail in case there is any corrigendum issued to the tender document.
- x. The bidders should make a note of the RFP Tender ID assigned to each tender, in case they want to obtain any clarification/help from the Helpdesk.
- xi. Bidders should take well into account, any corrigendum published on the tender document before submitting their bids.
- xii. Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents-including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
- xiii. Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document/schedule and generally, they can be in PDF/XLS/RAR/DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.
- xiv. To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g., PAN card copy, annual reports, auditor certificates, etc.) has been provided to the bidders. Bidders can use "My Space" or "Other Important Documents" are available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

- xv. Bidders should login to the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
- xvi. The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- xvii. Bidder has to select the payment option as "offline" to pay the tender fee/EMD as applicable and enter details of the instrument.
- xviii. Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the concerned official, latest by the last date of the bid submission or as specified in the tender documents. The details of the DD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.
- xix. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and NO OTHER FORMAT is acceptable.
- xx. The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
- xxi. All the documents being submitted by the bidders would be encrypted using PKI encryption techRFPues to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the Secured Socket Layer (SSL) 128-bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid openers public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- xxii. The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- xxiii. Upon the successful and timely submission of bids (i.e. after Clicking "Freeze Bid Submission" in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid No. and the date & time of submission of the bid with all other relevant details.
- xxiv. The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.
- xxv. Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
- xxvi. Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk.

Z. Disclaimer

- i. NPC, its employees and advisors make no representation or warranty and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of the RFP document.
- ii. NPC may, in its absolute discretion, but without being under any obligation to do so, modify, amend or supplement the information in this RFP document.
- iii. The issue of this RFP does not imply that NPC is bound to select and shortlist any or all the participating firm. Even after selection of suitable participating firm, NPC is not bound to proceed ahead with the participating firm and in no case be responsible or liable for any commercial and consequential liabilities in any manner whatsoever.
- iv. The participating firm shall bear all costs associated with the preparation, technical discussion/presentation and submission of quotation. NPC shall in no case be responsible or liable for these costs regardless of the conduct or outcome of the RFP process.
- v. Canvassing in any form by the participating firm or by any other agency on their behalf shall lead to disqualification of their Bid.
- vi. Process to be confidential: Information relating to the examination, clarification, evaluation and comparison of quotations and recommendations shall not be disclosed to participating firm. Any effort by participating firm to influence NPC processing of quotations or selection decisions may result in the rejection of the quotation.
- vii. The regular services will be handled by the successful bidder and will start from the date of award of contract. The work plan outlining the different phases and delivery schedule shall be submitted to NPC for approval. The bidder should ensure timely completion of work as per schedule.
- viii. NPC will be at liberty to levy a penalty 1% per day of the amount of contract after one week of delay. The maximum amount of penalty shall not exceed 10% of contract value including Performance Security that shall also be forfeited except due to any reasons beyond the control of the Agency (Force Majeure).
- ix. The Performance Security should be valid for a period 60 days beyond the contract period. The Performance Security shall be kept valid till completion of the project and Warranty period. The Performance Security shall contain a claim period of three months from the last date of validity. The successful bidder shall be responsible for extending the validity date and claim period of the Performance Security as and when it is due on account of non-completion of the project and Warranty period. In case the successful bidder fails to submit performance security within the time stipulated, NPC at its discretion may cancel the order placed on the successful bidder without giving any notice. NPC shall invoke the performance security in case the successful agency fails to discharge their contractual obligations during the period or NPC incurs any loss due to agency's negligence in carrying out the project implementation as per the agreed terms & conditions.
- x. If the bidder fails or neglects any of the bid obligations under the contract it shall be lawful for NPC to forfeit either whole or any part of performance security furnished by the bidder as penalty for such failure.

- xi. NPC at its sole discretion with prior notice can cancel / terminate the agreement without assigning any reasons thereof. The bidder will deliver to NPC all the work deliverable completed and confirm in writing that all rights and permissions and licenses are also vested now with NPC and that it is free of royalty and is fully paid up. All payments due to bidder and payable till that time will only be paid by NPC.
- xii. If any dispute(s) or difference of any kind whatsoever arise between the parties, the parties Hereto shall negotiate with a view to its amicable resolution & settlement through a Committee appointed by Director General-NPC. In the event no amicable resolution or settlement is reached between the parties within 30 days after receipt of notice by one party, then the disputes or differences as detailed above shall be referred to & settled by the sole Arbitrator to be appointed mutually by the parties. The Arbitration proceedings shall be in accordance with the preventing Arbitration & Conciliation Act, 1996 & Laws of India as amended or enacted from time to time. The venue of Arbitration shall be New Delhi. The Arbitrator will give the speaking & reasoned award.
- xiii. Tender documents may be downloaded from NPC website: www.npcindia.gov.in (for reference only) and Central Public Procurement Portal (CPPP) (e-procurement) site <https://eprocure.gov.in/eprocure/app>. Bids shall be submitted online only at CPPP (e-procurement) website: <https://eprocure.gov.in/eprocure/app>. Tenderer shall not tamper/modify the tender form including downloaded price bid template in any manner. In case if the same is found to be tampered/modified in any manner, tender will be completely rejected and EMD would be forfeited, and tenderer is liable to be banned from doing any business with NPC.
- xiv. In case if any misrepresentation of fact/information, corrupt or fraudulent practices by successful bidder comes to the notice/information of NPC/purchaser even after signing of the contract, in that case, NPC/purchaser shall provide notice of seven (7) days to successful bidder for providing the clarification.
- xv. Where issue is not resolved within 7 days of notice to successful bidder/ or if the satisfactory clarification is not rendered by successful bidder in 7 days, in that case, Purchaser may, without prejudice to any other remedy for breach of contract, by written notice to the successful bidder, terminate the Contract in whole or in part: a) If the successful bidder, in the judgment of NPC/purchaser, has engaged in misrepresentation of facts/information, corrupt or fraudulent practices in competing for the bid or in executing this Contract; b) If the successful bidder submits to NPC/purchaser a false statement/facts. c) NPC/Purchaser may also forfeit the PBG and/or take other necessary legal action.
- xvi. Bidders are neither allowed to join hands, form consortiums to participate in the tender nor allowed to submit multiple bids. Any such act will make the bid liable for rejection. Even though bidders may satisfy the above requirements, they may be disqualified for the following reasons:
 - a) If misleading or false representation of facts are made or deliberately suppressed in the information provided in the forms, statements and enclosures of this document.
 - b) If they have any record of poor performance such as abandoning work, not properly completing the contract, any type of court/criminal proceedings against the Agency/Firm and its CEOs and/or Directors or any financial failures/weaknesses.

- c) If confidential inquiry reveals facts contrary to the information and/or undertaking provided by the bidder.
 - d) If confidential inquiry reveals unsatisfactory performance on any of the selection criteria.
 - e) In the event of any finding on the above enlisted and related matters, in all such cases, NPC has the right to disqualify the bidder(s) and cancel or modify the tender.
- xvii. The Goods/Documents supplied under the Contract shall be fully insured by bidders against any loss by theft, destruction or damage incidental to manufacture or acquisition, transportation, storage, fire, flood, under exposure to weather and delivery at the designated project locations.
- xviii. The NPC or its duly authorized representative shall at all reasonable times have access to the suppliers / Selected Bidder's premises and shall have the power at all reasonable times to inspect and examine the materials and workmanship of the goods/ equipment/ machineries during manufacturing/assembling process or afterwards as may be decided:
- a) The supplier / selected bidder shall furnish complete address of the premises of his factory, office, godown and workshop where inspection can be made together with name and address of the person who is to be contacted for the purpose.
 - b) After successful inspection it will be supplier's / selected bidder's responsibility to dispatch and install the solutions/equipment at respective unit locations without any financial liability to the NPC. However, supplies when received at respective unit locations shall be subject to inspection to ensure whether they conform to the specifications.

Scope of Work

A. Background:

Five (05) demonstration manufacturing SMEs have been identified for the implementation of Industry 4.0 solutions in a focused way. The five demo SMEs are from different sectors:

S. No.	Product Manufacturing Categories	Location
Unit 1	Aluminium castings and stamping	Faridabad
Unit 2	Plastic moulded components	Faridabad
Unit 3	PCB (printed circuit board)	Faridabad
Unit 4	Finger Snack items	Ghaziabad
Unit 5	Readymade Garments	Faridabad

The units have been pre-assessed on the following indicators under 4 categories:

- Production Management
- Smart Machine
- Data Storage and Analysis
- Market and Supply Chain

B. The scope of work is as below:

1. Survey the units and interact with the respective owners & department heads for gathering the required data.
2. Design and validate the architecture framework as per the unit wise scope of work indicated at "C" below.
3. Development of complete IIoT solutions (hardware + software).
4. Deployment of IIoT solutions in the area (identified by the SMEs & NPC) of Demo units.
5. The industry 4.0 enabled solutions should bring together manufacturing, automation and data management leading to intelligent collaboration, monitoring, and process management in real-time.
6. The solutions should be IIoT enabled and compatible for an IIoT system to be connected to the hardware and collect real time data and monitor performance, in the future.
7. The Industry 4.0 solutions should produce proposed complete layout design & drawing along with the equipment/ machines/ tools/ hardware/ accessories specification to be supplied with the quotation.
8. **Unit wise scope of work is indicated under para "C" below.** However, Industry 4.0 / Smart manufacturing should have equipment's with fully automated way of controlling and managing the manufacturing process in a factory and equipped with intelligent maintenance system. The innovative common solutions may be proposed by bidders to cover other following processes involved in manufacturing:
 - a. Manufacturing
 - b. Inspection & Quality Control
 - c. Material handling & Transfer Systems
 - d. Data Management and Radio-frequency identification (RFID) communication system
 - e. Overall Equipment Effectiveness (OEE) & Intelligent maintenance system
 - f. Energy Management
 - g. Manufacturing Execution System
 - h. Management Information System
 - i. Troubleshooting simulation systems

Note: The above-mentioned system are indicative only. OEMs/Resellers may suggest better system with latest specifications and futuristic technology. The bidders should produce proposed complete layout design & drawing along with the equipment/ machines/ tools/ hardware/ accessories specification to be supplied with the technical bid.

9. Integration, configuration, installation and testing of the supplied hardware & software.
10. Project documentation including user manuals and operation and troubleshooting guides.
11. Post implementation training to demo units' team for operation and user level maintenance of the system.
12. Preparation of success stories/case studies.
13. Post installation, provision of hand holding support & warranty of industry 4.0 solutions for atleast one (1) year post implementation and thereafter on AMC basis.
14. The maximum timeline for completion from point B.1 to B.12 shall be T0 + 3 months where T0 is the starting date of the contract.

Note:

- *The bidder is required to visit the demo SMEs to clearly understand the scope before submission of bids. The unit visits on request will be facilitated by NPC.*

- An undertaking from the bidder is required to be furnished with technical bid stating that they would provide hand holding & warranty support for atleast one (1) year post implementation and thereafter on AMC basis.

C. Unit wise Scope of Work

UNIT-1: ALUMINIUM CASTINGS AND STAMPING MANUFACTURER

i. Machines to be covered under the I4.0 implementation

S.no	Machine Type	Make	Model No.	Manufacturing month & year	Tonnage
1	Pressure Die Casting	Zitai, Taiwan	ZDC-100 TPS	08-2011	100 ton
2	Pressure Die Casting	Zitai, Taiwan	ZDC-180 TPS	12-2009	180 ton
3	Pressure Die Casting	Zitai, Taiwan	ZDC-250 TLPS	08-2011	250 ton
4	Pressure Die Casting	Zitai, Taiwan	ZDC-250 TLPS	07-2010	250 ton

ii. Scope of work in the unit:

- Implementation of OEE solutions for capturing cycle times, Load/ Unload times and down times with reasons for production parts.
- Real time monitoring of Critical to quality (CTQ) process parameters.
- Predictive maintenance of machine parts and auxiliary equipment's effecting critical to quality (CTQ's) parameters.
- Real time monitoring of total power consumption in the plant and also power consumption vs required at point of usage in the form of excel reports/ dashboards or maps.
- Real time monitoring of total compressed air generation and usage in the plant and also compressed air generation vs usage at the point of usage in the form of excel sheets/ dashboards or maps.
- Solution for traceability of parts.
- Digital display of documents like SOP's, control plans and drawings etc on machines using machine mounted displays to make the shop-floor paper less and digital.
- Digital data entry of patrol inspection data and daily / weekly maintenance in easy to fill soft forms to make the shop-floor paper less and digital.
- All above-mentioned real-time information to be delivered on Laptops/ Mobiles/Display in the form of reports, dashboards, maps with alerts.

UNIT-2: PLASTIC MOULDED COMPONENTS MANUFACTURER, FARIDABAD

i. Machines to be covered under the I4.0 implementation

Machine Type	MAKE	M/C TONAGE	Controller	Motor KW
Injection moulding machine	Jonwai	120 Ton	Techmation	15KW/20 hp
Injection moulding machine	Jonwai	150 Ton	Techmation	25KW
Injection moulding machine	Electronica	90 Ton	Techmation	15KW
Injection moulding machine	Jonwai	165 Ton	Arico, Divanshi	18.5kw/25hp
Injection moulding machine	Electronica	220 Ton	Techmation	25KW
Injection moulding machine	Ferromatik	150 Ton	B & R	25KW
Injection moulding machine	Jonwai	165 Ton	Arico, Divanshi	18.5kw/25hp
Injection moulding machine	Electronica	175 Ton	Techmation	15KW/20 HP
Injection moulding machine	Electronica	120 Ton	Techmation	15KW
Injection moulding machine	Electronica	90 Ton	Techmation	15KW
Injection moulding machine	Ferromatik	200 Ton	B & R	25KW
Injection moulding machine	Ferromatik	275 Ton	B & R	15KW
Injection moulding machine	Ferromatik	80 Ton	B & R	15KW
Injection moulding machine	Ferromatik	80 Ton	B & R	25 KW
Injection moulding machine	STM-D	200 Ton	Techmation	25 KW
Injection moulding machine	STM-D	130 Ton	Techmation	18 KW
Injection moulding machine	Fanuc	130 Ton	Fanuc CX130I	18 KW
Injection moulding machine	MULTIPLAST	120 TON	Omron	15KW

ii. Scope of work in the unit:

- Implementation of OEE solutions for capturing cycle times, Load/ Unload times and down times with reasons for production parts.
- Real time monitoring of Critical to quality (CTQ) process parameters with real-time alerts for corrective actions.
- Predictive maintenance of machine parts and auxiliary equipment's effecting critical to quality (CTQ's) parameters.
- Real time monitoring of total power consumption in the plant and also power consumption vs required at point of usage in the form of excel reports/ dashboards or maps.
- Solution for managing 4M change, traceability of material & parts.
- Digital display of documents like SOP's, control plans and drawings etc on machines using machine mounted displays to make the shop-floor paper less and digital.
- Digital data entry of patrol inspection data and daily / weekly maintenance in easy to fill soft forms to make the shop-floor paper less and digital
- All above-mentioned real-time information to be delivered on Laptops/ Mobiles/Display in the form of reports, dashboards, maps with alerts.

UNIT-3: PCB (PRINTED CIRCUIT BOARD) MANUFACTURER, FARIDABAD

i. Machines to be covered under the I4.0 implementation

a. Conveyorisred Double Sided Etch/Strip Line with oscillation in Etching:

Design Specifications:

Make	:	Fibre Abrasive Machineres
Conveyor Width	:	670 mm(Maximum);610mm(Effective)
Conveyor Speed	:	0.5 to 4.5 Mtrs / Min
Board Thickness	:	0.3mm to 3.2 mm
Minimum/Maximum Board Size	:	150 x 150 mm; 610mm x Any Length
Maximum Operating Temperature	:	60°C in PP Module
Power Input	:	415 V,3 Phase with Neutral & Earthing,50Hz
Conveyor Pitch	:	50mm
Conveyor Height	:	900mm +/- 10mm

Modules

		Dimensions in MM
• Loading	:	600
• Drag Out	:	150
• Etching 1	:	950
• Etching 2	:	950
• Drag Out	:	150
• Drag Out	:	150
• Cir.Water Rinse	:	200
• Fresh Water Rinse	:	200
• Drag Out	:	150
• Ink Strip	:	600
• Drag Out	:	150
• Drag Out	:	150
• Cir Water Rinse 1	:	350
• Cir.Water Rinse 2	:	350
• Fresh water Rinse	:	350
• Squeeging	:	250
• Hot Air Drying	:	500
• Unloading	:	600
		<u>6800mm</u>

Module I(2800) covers Loading, Drag Out, Etching 1, Etching 2, Drag Out, Drag Out.
 Module II(1450) covers Cir.Water Rinse, Fresh Water Rinse, Drag Out, Ink Strip, Drag Out, Drag Out.
 Module III(2550) covers Cir Water Rinse 1, Cir.Water Rinse 2, Fresh water Rinse, Squeeging, Hot Air Drying, Unloading.

Technical Specification:

Conveyor System :-

- AC Drive 1 HP
- AC Geared motor 2 x 0.5 HP for Conveyor Drive Shaft.
- Digital conveyor speed controller.
- Maximum conveyor speed 4.5 mtrs per minute.

Spray System : Etching Double Chamber 1 & 2 with Manifold Horizontal Oscillation System

- 1 Top1 Bottom PP Manifold with each 8 Spray Bars having 7 / 6 alternate placed Nozzles.
- Imported PP Detachable Flat Spray Nozzles 7 / 6 per Spray Bar.
- Horizontal Manifold Oscillation System by AC Geared Motor 0.25 HP for each set of Top & Bottom Manifolds. Total 2 Oscillation Systems in Double Chamber.
- 5HP X 2 Vertical Glandless Pump with Titanium Shaft and PP Impeller for 1 top and 1 bottom spray manifold. Total 5HP x 4 Vertical Glandless Pump with Titanium Shaft and PP Impeller for two etching chamber
- Total No. of Nozzles per Spray Manifold = 52 Nos. Totally 52 x 4 = 208 Nozzle in the Double Chamber.
- Sump Capacity of Etching 1 & 2 combined chamber– 800 Ltrs (approximately)
- Low Level Float Switches in the Sump for Pump Protection & Heater Protection
- 2 Kw x 6 Titanium Heaters controlled by Digital Temperature Controller
- Oscillation AC Geared Motor 0.25 HP / 40 RPM – Eltek (02 Nos.)

Spray System : Ink Stripping Chamber without Oscillation.

- 3.0 HP x 2 Vertical glandless pump for Stripping Chamber having AC motor with SS main shaft & PP impeller.
- 5 Top 5 Bottom Spray bars with 6 or 7 fan type nozzle arrangement.
- Sump Capacity around 250 Ltrs (Approx.).
- 2 Kw x 3 SS heaters controlled by digital temperature control.

b. UV Curing machine

Technical Specifications:

- Dimensions: L :2800 mm W:975mm H: 1900mm
- Lamp 24": 5 Kw X 03
- (Medium pressure Mercury Lamps 5 Kw)
- Working width 24"
- Working height: 800 mm
- Conveyor: SS Mesh belt with Chain guide
- Exhaust blower 0.25 Hp X 1
- Conveyor Drive 0.25 Hp AC

c. Circuit Printing machine

Technical Specifications:

- Printing area 600MM × 1200MM
- The maximum size of the screen frame 900MM × 1800MM
- Screen ascent 360MM
- Squeegee angle adjustment 0-40 Printing station fine-tuning Around, ± 10MM ± 10MM
- Printing speed 700PCS / H Printing accuracy ± 0.03MM
- Power Specifications 3-phase 380V; 50HZ
- power consumption 3.0KW
- Barometric pressure 4-6KG / CM 2
- Machine size L5100MM × W1200MM × H1800MM

ii. Scope of work in the unit:

- Production monitoring status of machine:
 1. Live status of operating/operation mode
 2. Hourly rate of processing, down time, uptime, etching time per Job.
 3. Storing of data in tabular and graphical form.
- Monitoring of machine parameters for optimum output quality and alarm indication in case of parameters crossing set limit:
 1. Circuit Printing machine
Control Parameter- Air pressure.
 2. UV Machine
Control Parameters- lamp status, lamp current, Lamp life running hours, Conveyor speed.
 3. Etching machine
Control Parameters- Specific Gravity, Temperature, Conveyor speed, Liquid level, Spray pressure,
- Defect Monitoring of processed product:
Online inspection of processed material through AOI (Automated Optical Inspection) for output quality and alarm indication with recording of quality status.
- Predictive machine failure:
 1. Monitoring of parameters: Current drawn, increased Vibration, temperature limit
 2. Failure prediction for assisted maintenance to minimize downtime and enhance productivity.
 3. Prevent failure occurrence and reduce maintenance cost.
- All above-mentioned real-time information to be delivered on Laptops/ Mobiles in the form of reports, dashboards, maps with alerts.

UNIT-4: FINGER SNACK ITEMS MANUFACTURER, GHAZIABAD

i. Machines to be covered under the I4.0 implementation

Machine Type	Make	M/C TONAGE	Motor
Corn Puff Snack extruder	Customised	100 kg/hr	150Kw
Corn Puff Snack extruder	Customised	100 kg/hr	150Kw
Rotatory Roaster with oil sprayer	Customised	58 Kg/hr	12Kw

ii. Scope of work in the unit:

- Real time monitoring of the following:
 1. Moisture level of RM batches before addition of water
 2. Moisture level of input RM in the extrusion machine
 3. Bulk density & moisture of extruded snack after extrusion
 4. Moisture levels of extruded snack before roasting
 5. Oil spray control mechanism with real time consumption data
 6. Batch wise Seasoning consumption data
 7. Extrusion control data monitoring with real-time alerts:
 - a. RPM
 - b. Temperature
 - c. Vibration
 - d. Current drawn
 - e. RM input feeding and output rate
- Real time monitoring of Critical to quality (CTQ) process parameters with real-time alerts for corrective actions.
- Predictive maintenance of machine parts and auxiliary equipment's effecting critical to quality (CTQ's) parameters.
- Real time monitoring of total power consumption in the plant and also power consumption vs required at point of usage in the form of excel reports/ dashboards or maps.
- All above-mentioned real-time information to be delivered on Laptops/ Mobiles/ Display in the form of reports, dashboards, maps with alerts.

UNIT-5: READYMADE GARMENTS MANUFACTURER, FARIDABAD

i. Machines to be covered under the I4.0 implementation

Machine Type	Make	Model	M/C speed	Motor	Total no.s
Fabric Inspection M/c	Ramson	RFI-01	Variable up to 15 mtrs/min	1HP	4
Water steam generators	Watex	Oil and gas boiler	100 kg/Hr	-	4
	Revomax	Oil and gas boiler	200 to 850 kg/hr	-	2

ii. Scope of work in the unit:

- AOI (Automated Optical Inspection) to inspect the raw material with a camera (CCD or CMOS) module, an x-y table, and an image processing module to recognize the defects or measure the dimensions of products or workpieces from the captured images with the following capabilities:
 - a) Flexible for input fabric defect modes selection as per buyer's demand profile.
 - b) Capturing, recognition and processing of the defect images of the input fabric.
 - c) Intelligent defects identification and marking with sound and light alarm.
 - d) Automatic Defect Sticking/Screen sticking enabled process
 - e) Automatic saving of the batch wise defect pictures with report generation.
 - f) RM batch wise defect data integration with existing ERP server.
 - g) AI enabled
 - h) 4 Point inspection tool flexibility to select the inspection mode as per the RM material.
 - i) Real-time Tracking of the batch wise defects.
 - j) Inspection speed Handling mechanism.
- Real time monitoring of power & Steam consumption in the plant (in the form of excel reports/ dashboards or maps) with the following data recording:
 - a) Fuel consumption vs Steam generated & Steam distributed by headers to the distribution pipe
 - b) Steam consumed at different stations
 - c) Steam leakage & energy loss identification with alarms.
 - d) Power consumption vs required at point of usage
- All above-mentioned real-time information to be delivered on Laptops/ Mobiles/ Display in the form of reports, dashboards, maps with alerts.
- Integration of the desired information from above i4.0 solutions with existing ERP System.

(On Company Letter Head)
BIDDER'S PARTICULARS

S.No	Particulars	Details				
1.	Name of the Bidder					
2.	Full Address of the Bidder					
3.	Firm Registration Number (if any)					
4.	PAN (attach photocopy)					
5.	TIN/VAT No.					
6.	GST No.					
7.	Name of the Authorized Signatory					
8.	Name & address of the officer to whom all references shall be made regarding this RFP					
9.	Telephone					
10.	Fax No.					
11.	E-mail					
12.	Mobile					
13	Details of personnel (Project Management Team) with designation, qualification and experience of Industry 4.0 projects	Name	Designation	Qualification	Experience relevant to Industry 4.0 projects	Projects Handled
14	Details of similar work executed					
	Project details	Name of the client		Date of award	Date of Completion	
15	Details of work under execution or awarded					
	Project details	Name of the client		Date of award	Stipulated Date of Completion	

Note:

1. Project completion certificates and workorders received from clients shall be attached.
2. An undertaking shall be furnished stating that bidder would provide hand holding support & warranty for atleast one (1) year post implementation and thereafter on AMC basis.

Signature _____
 Name _____
 Designation _____
 Company Seal

Date _____

FINANCIAL INFORMATION
(on company letter head)

Details to be furnished duly **supported** by figures in Balance Sheet/ Profit & Loss Account for the last three years i.e. 2018-19, 2019-20 and 2020-21 and certified by the Chartered Accountant, as submitted by the Bidder to the Income-Tax Department (copies to be attached).

Table-1: Total Turnover

S. No.	Details	2018-19	2019-20	2020-21
i)	Gross Annual Turnover			
ii)	Profit/Loss			
iii)	Financial Position:			
	a) Cash			
	b) Current Assets			
	c) Current Liabilities			
	d) Working Capital(b-c)			
	e) Current Ratio: Current Assets/Current Liabilities (b/c)			

Table-2: Turnover from Industry 4.0 turnkey projects Only

S. No.	Details	2018-19	2019-20	2020-21
i)	Gross Annual Turnover			
ii)	Profit/Loss			

The bidder shall provide copies of the financial statements including balance sheets, P&L and related income statements for latest 3 *years*. The financial statements shall:

- Reflect the financial situation of the participating firm submitting Bid.
- Be audited by a certified accountant.
- Be complete, including all notes to the financial statements.
- Correspond to accounting periods already completed and audited (no statements for partial periods shall be accepted).

Note: Attach additional sheets, if necessary.

Signature _____

Name _____

Designation _____

Company Seal

Date: _____

Validate

Print

Help

Item Rate Bidding

Tender Inviting Authority: National Productivity Council

Name of Work/Request for Proposal (RFP) from Industry 4.0 solution providers for Industry 4.0 solution Implementation in the five (5) Demo manufacturing SME units.

Contract No: NPCHQ/CE/14.0/2022-23

Bidder Name :

PRICE SCHEDULE
(DOMESTIC TENDERS - RATES ARE TO GIVEN IN RUPEES (INR) ONLY)
(This BOC template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)
This Price Bidding is Indicative, evaluation of L1 will be as per RFP

Sl. No.	Item Description	Rate per Unit (without taxes) In Rs. To be entered by the Bidder	Tax in % on Unit Rate Only Tax %age to be entered by the Bidder	Cost (with taxes) In Rs.	Cost (without taxes) In Rs.	Total Cost (without taxes) In Rs. In words
NUMBER #	TEXT #	NUMBER #	NUMBER	NUMBER #	NUMBER #	TEXT #
1	2	3	4	5	6	7
1	Implementation of Industry 4.0 solutions in Unit 1			0	0.00	NR Zero Only
2	Implementation of Industry 4.0 solutions in Unit 2			0	0.00	NR Zero Only
3	Implementation of Industry 4.0 solutions in Unit 3			0	0.00	NR Zero Only
4	Implementation of Industry 4.0 solutions in Unit 4			0	0.00	NR Zero Only
5	Implementation of Industry 4.0 solutions in Unit 5			0	0.00	NR Zero Only
Total in Figures					0.00	NR Zero Only
Quoted Rate in Words					INR Zero Only	

Proposed Solution

(Please use separate sheet for each proposed I4.0 solution)

S.no.	Component of the proposed solution	Details
1	Description	
2	Methodology	
3	Indicative Architecture*	
4	Proposed Technology	
5	Server(s)/ Client(s)	
6	Network equipment(s)	
7	Software platform/ Application development tools	
8	Any other vital information	
9	Expected Output	

Note: 1. Please enclose configuration diagram.

2. Bill of materials shall be enclosed (proposed solution & unit wise).

Signature _____

Name _____

Designation _____

Company Seal

Date: _____

ANNEXURE – VI

DETAILS OF TECHNICAL & ADMINISTRATIVE PERSONNEL TO BE DEPLOYED FOR THIS WORK

S No	Designation	Category of employee (Technical/ Administrative)	Number available for this work	Minimum Qualification	Professional experience and details of work carried out	In what capacity these would be involved in this work	Remarks
1	2	3	4	5	6	7	8

Signature _____

Name _____

Designation _____

Company Seal

Date: _____