



**CENTRE FOR MATERIALS FOR ELECTRONICS TECHNOLOGY (C-MET)**

(Scientific Society, Ministry of Electronics and Information Technology (MeitY), Govt. of India)

IDA PHASE – III, CHERLAPALLY, HCL (PO), HYDERABAD – 500 051

Phone: +91-40-27265587, 27267006 Fax: +91-40-27261658 Web:

[www.cmet.gov.in](http://www.cmet.gov.in)

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Advt. No. : C-MET/HD/SP-41/EOI/15(2)/2020-2021

**Invitation of Expression of Interest (EoI)**

C-MET invites Expression of interest from eligible parties for the understated work for MeitY sponsored project titled "*Establishment of Centre of Excellence on E-waste Management*".

Sl. No.	Name of the work
1	Design, fabrication, supply and demonstration of automated depopulation system for Printed Circuit Boards (PCBs)

For details and downloading of the EoI application format & other requisite documents, please visit our website [www.cmet.gov.in](http://www.cmet.gov.in)

**Last date for receipt of EoIs: 11<sup>th</sup> July 2020**

Sd/-  
DIRECTOR

**INVITATION**  
**FOR**  
**EXPRESSION OF INTEREST**  
**FOR**

Design, fabrication, supply and demonstration of automated depopulation system for Printed Circuit Boards (PCBs)

**RESPONSE FORM**

LAST DATE FOR SUBMISSION: **11<sup>th</sup> July 2020**

## **1. INTRODUCTION:**

Centre for Materials for Electronics technology (C-MET) has been awarded a project on management of E-waste by Ministry of Electronics and Information Technology, (MeitY), Government of India. It involves “Establishment of a Centre of Excellence on E-waste management”, called CoE hereinafter. One of the objectives of the CoE is to drive e-waste recycling and refurbishing to support GoI missions “Swachh Bharat” and “Make in India”. C-MET, Hyderabad has been chosen as the centre for pursuing the objectives of the project. C-MET, Hyderabad has developed a process know-how for the recovery of metals from spent printed circuit boards. C-MET, Hyderabad has also set up necessary infrastructure facilities to process the E-waste in an environment friendly manner, on a pilot scale. Another objective of the project is to encourage establishment of start-ups to collaborate/partner C-MET by getting trained in different aspects of the process involved in E-waste management and to commence their own industries in the relevant areas. The CoE is interested in identifying competent and experienced parties for designing, fabrication, supply and demonstration of automated depopulation system for Printed Circuit Boards (PCBs)

## **2. OBJECTIVE OF THE EOI:**

This EOI is meant for inviting the interested parties to submit their applications for undertaking the assignment. Based on the submissions received from the interested parties, most suitable party, which in the opinion of CoE, is capable of handling the assignment, will be chosen.

## **3. Depopulation system:**

A depopulation system is required for splitting components from populated printed circuit boards to further recover precious metals. This machine shall separate solder and, components giving out bare boards. It should

minimize emission of toxic substances into atmosphere during the process. The whole process should be automated to reduce the manual intervention. The process should be carried out in a continuous manner, maintaining controlled heat, vibrating system and mechanical shaving complying with all safety standards. It should be suitable for all kinds of printed circuit boards.

#### **4. Scope of the work:**

Selected party has to Design, fabricate, supply and demonstrate an automated depopulation system for different types of spent Printed Circuit Boards (PCBs). Detailed scope and detailed description of the system shall be shared with interested parties after submitting their EoI and satisfying the selection criteria.

#### **Operations:**

Populated printed circuit boards are fed to one side of the system which shall move along the longitude of the furnace through a conveyor and shall undergo controlled heat and followed by vibration. The molten solder is passed through the perforations of the conveyor as droplets and collected at the bottom of the heating system through vibratory screen. The de-soldered components are loosened by vibration movement and the fallen components are collected at the bottom of the heating system. The components are segregated on the basis of size through vibratory screens. Rest of the components is removed from the board using a mechanical shaving unit. The depopulated PCBs are collected at the outlet of the system.

#### **Capacity:**

**The system should be capable depopulating >100kg/hour spent PCBs.**

#### **Control system:**

The entire automated function are operated and controlled by programmable logic controller with a standalone panel which houses main switch, push buttons, relays, controllers and PLC panel with screen

display and scada interface. Switching on and off of heaters, vibratory motors, and shaving unit should be able to operate with control panel. It should also facilitate programmable heating, soaking and cooling cycles, vibration levels as well as the speed of conveyor. However, in addition to the switches in control panel, emergency switches should be provided for the manual intervention in case of emergency.

#### **5. SELECTION CRITERIA:**

The parties are expected have the following

- a) Personnel having experience / knowledge base in designing similar automated mechanical/electrical systems
- b) Experience in designing, fabrication and commissioning of hot conveyor systems with accurate temperature control and controlled conveyor speed.
- c) Experience in handling equipments for fabrication/population of printed circuit boards or depopulation of printed circuit boards

#### **6. SHORTLISTING OF APPLICANTS:**

- a. The documents submitted by the applicants in response to the invitation for EOI shall be examined a by an expert committee to be constituted by CMET/CoE. The committee shall shortlist the applicants based on the eligibility criteria
- b. The shortlisted parties shall be briefed with detailed requirement of the systems and the interested parties can submit their concept papers.
- c. The qualified parties are required to submit their price bids

#### **7. DOCUMENTS TO BE SUBMITTED:**

- a. Letter for EOI submission – Annexure I
- b. Profile of the party – Annexure II

- c. Profile of the personnel of the party, who will handle the assignment – Annexure III
- d. Information regarding any conflict of interests as referred to the scope of the assignment – Annexure IV
- e. Details of similar works carried out in the past – Annexure V

**8. SUBMISSION OF EOI:**

All the requisite documents shall be placed in a sealed enveloped which shall be superscribed “Design, fabrication, supply and demonstration of automated depopulation system for Printed Circuit Boards (PCBs)

- a. The sealed enveloped shall be submitted to Director, C-MET, IDA Phase-III, Chelapally, Hyderabad – 500 051
  - b. The last date for submission is **11thJuly 2020**
9. The party shall bear all costs associated with the preparation of their proposals and C-MET shall not pay or reimburse any expenses in this regard. C-MET is not bound to accept any proposal and reserves the right to cancel the selection process at any time without any liability accruing to it..
10. C-MET reserves the right to accept or reject any or all proposals without assigning any reasons whatsoever and its decision shall be final and binding on all the applicants.

**11. PRICE BIDS ARE NOT TO BE SUBMITTED AT THIS STAGE. ONLY THE PARTIES SHORTLISTED BY THE EXPERT COMMITTEE SHALL BE REQUIRED TO SUBMIT THE PRICE BIDS. IF PRICE BIDS ARE SUBMITTED ALONG WITH THE EOI, SUCH APPLICATIONS ARE LIABLE TO BE REJECTED.**

**DIRECTOR  
C-MET, HYDERABAD**

**ANNEXURE – I**

**DRAFT LETTER FOR EOI SUBMISSION TO BE SUBMITTED ON THE  
LETTER HEAD OF THE CB/FI**

Ref: No.

Date:

The Director  
C-MET  
IDA Cherlapally, Phase - III  
Hyderabad – 500 051

Dear Sir

We, the undersigned, offer to provide the services as required in your invitation for EOI dated: 19.6.2020 We are hereby submitting our proposal with all the requisite information and documents.

We hereby certify that all the information and statements made in this proposal are true and accept that any misstatement or misrepresentation in the enclosed documents may lead to our disqualification.

We understand that you are not bound to accept/reject any proposal without assigning any reason.

Yours faithfully

Authorised Signatory  
NAME & DESIGNATION

**ANNEXURE - II**

**Profile of the Party**

Name of the party			
Year of Registration			
Registered Office address			
Legal status			
Number of employees			
No. of branches, if any			
Turnover (Rs. lakhs)	2019-20	2018-19	2017-18
@			

@ If the accounts for the financial year 2019-20 are not yet finalized, Provisional figures of turnover may be indicated.



**ANNEXURE - III**

**Details of the skilled personnel of the party who will handle the assignment (one form for each)**

<b><u>Sl.No.</u></b>	<b><u>Particulars</u></b>	
1	Name of the	
2	Date of Birth	
3	Educational Qualification	
4	Trainings undergone	
5	Work experience of the past 10 years	
6	Special qualifications and assignments Please emphasize those assignments that best illustrate the person's capability to handle the current assignment	
10	Special achievements, if any	
11	Contact details	

**Certification from the officer**

I the undersigned certify that to the best of my knowledge and belief the above mentioned particulars correct.

Signature of the authorized signatory

**ANNEXURE IV**

**INFORMATION REGARDING ANY CONFLICTING ACTIVITIES AND  
DECLARATION THEREOF**

Is the party engaged in any activities which conflict with the proposed activities of CoE as mentioned in this document?

If yes:

Please furnish information of activities the institution is engaged in, which in your opinion, is of a nature that conflicts with the assignment desired to be awarded by CoE.

If no:

We hereby declare that our organisation is not either directly or indirectly engaged in any activities which can be termed as conflicting activities as mentioned in the EOI document. It is understood that any misrepresentation or misstatement in this regard shall render our organisation to be disqualified from the entire process.

Signature of the authorized signatory

Name

Designation

