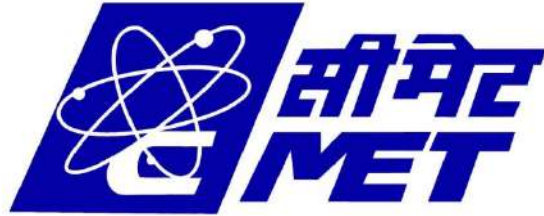


**Centre for Materials for Electronics Technology  
(C-MET)**



*Inviting*

**Expression of Interest (EOI)  
for  
Transfer of Technology**

**in respect of**

**LIB Recycling – Pyro route**

*Under*



**Centre of Excellence  
on  
E -Waste Management**

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

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## I. GENERAL TERMS AND CONDITIONS

### 1. Background

**Centre for Materials for Electronics Technology**, has been set up as a registered Scientific Society, in the year 1990 by Ministry of Electronics and Information Technology (MeitY), Government of India. One of the main objectives of C-MET is to develop technologies, up to the level of Pilot Scale for a range of electronic materials and transfer the same to Industry for commercialization. C-MET is engaged in the development of process/product/technology in the area of Electronic materials, components and devices to cater to India's strategic and industrial applications, exploiting indigenous resources of raw materials and transfer of the technologies developed in such an endeavors.

C-MET indigenously developed many technologies under various research programmes. Some of the Technologies have already been transferred to the Industries and some are under the process of being transferred on as-is-where-is basis. Once these technologies are used by Indian Industries to manufacture end products, it would be a big leap to the Indian Economy.

Centre for Materials for Electronics technology (C-MET), Hyderabad has been awarded a project on management of E-waste by, (MeitY), Government of India together with Government of Telangana, titled "Establishment of a Centre of Excellence on E-waste management", called CoE hereafter. The CoE is also funded by an industry partner. The objectives of the CoE are to drive e-waste recycling and to support Gol missions "Swatch Bharat" and "Make in India".

C-MET, Hyderabad has set up necessary infrastructure facilities to process the PCB recycling in an environment friendly manner, on a pilot scale. CoE has developed LIB recycling technology using hydrometallurgical process which was transferred to multiple industries PAN-INDIA and the technology transfers are still continuing.

In addition, CoE has also developed technology for the recovery of valuable cobalt-nickel alloy from discarded lithium-ion batteries using pyrometallurgical route, hereinafter after called the TECHNOLOGY. The TECHNOLOGY includes the selective extraction lithium content present in discarded batteries in the form of lithium carbonate ( $\text{Li}_2\text{CO}_3$ ) as one of the final products. As part of the technology transfer to the industries, C-MET, ,though this EOI, invites interested parties for absorbing the said TECHNOLOGY .

## **2. Objective**

To transfer the TECHNOLOGY developed by C-MET on non-exclusive basis to industries interested in the recovery of nickel and cobalt in the form of an alloy from assorted types of discarded lithium ion batteries to the interested parties/industries for commercial exploitation of the TECHNOLOGY.

## **3. Purpose of EOI**

The purpose of this EOI is to invite the parties to submit their applications for their interest in absorbing the TECHNOLOGY developed for extraction of cobalt-nickel alloy from discarded lithium-ion batteries using pyrometallurgical route, hereinafter called LIB Recycling Technology-Pyro-route or TECHNOLOGY. Based on the submissions received from the interested parties, details pertaining to the technical know-how, training requirements, handholding and technical support will be provided.

## **4. Definitions**

- (a) "C-MET" means "Centre for Materials for Electronics Technology, Hyderabad"
- (b) "Proposer" means any entity or person or association of persons who submits an application in the prescribed form in response to this EOI expressing interest to absorb the LIB Recycling Technology: Pyro-route.
- (c) "Day" means calendar day.
- (d) "Government" means the Government of India.
- (e) "Application Form" means the prescribed Form to be submitted by the "Proposer(s)".
- (f) "Grantee" means the Proposer to whom the Technology is transferred
- (g) "ToT" means Transfer of Technology
- (h) Know-How is the technical process as detailed in the Technical know-how document stated at section 6.

## **5. Salient features of the Technology Offered for Transfer**

- The technology discloses an effective processing methodology for the recovery of cobalt-nickel alloy from discarded lithium -ion batteries in a single smelting step.
- The technology also includes the selective extraction of lithium content present in the discarded batteries in the form of lithium carbonate ( $\text{Li}_2\text{CO}_3$ ) as one of the final products.
- The technology includes a smelting route in the processing system which is fast, energy efficient and easily scalable.

## **Impact**

The major challenge of using pyrometallurgical route in recycling of LIB is the difficulty in extraction of valuable metal contents as all metal contents smelt to form a mixed metal alloy and very low recovery of the Li due to evaporation and infusion of Li content into slag. C-MET's invention discloses recovery of LI in the pre-treatment process and a methodology for the selective extraction of Co-Ni alloy from residual black mass.

## **Technical Application Area**

- The Co-Ni alloy can find its potential application in jet engines, gas turbines, chemical processing, petroleum refining, marine, electronics and other applications where common stainless steels may not provide adequate performance.
- The Co-Ni alloy can also be used as a master alloy for the preparation of magnets.

## **Important information**

- Recycling plant is to be located in a Red-zone area
- Approximately 20000 sq feet of land is required for a plant of 500 kg batteries per day capacity
- Approximate CAPEX required for 500 kg batteries per day capacity:
  - ❖ Complete plant including Li extraction facility – Rs.220 lakhs
  - ❖ Complete plant excluding Li extraction facility – Rs.135 lakhs
- Approximate Operational cost: Rs.250 to Rs.300 per KG excluding input batteries cost
- The desired electricity installation should be 480 kVA

The above information is approximate and is provided as guidance, rather than the actual requirements. The actuals may differ. The CAPEX and OPEX are computed as per CMET's assessment and is based on the prices as on 1<sup>st</sup> April 2026.

## **6. Price of technology**

The TECHNOLOGY shall be provided to interested industries on non-exclusive basis at a ToT fee of Rs 4.64 lakhs plus applicable taxes for each Grantee.

The selected Proposer(s) would be required to pay Technology Transfer Fee in advance on receiving the slot for the ToT but not later than one week prior to the commencement of the training.

**The price includes;**

- a) The Technical Know-How document
- b) Training for five (5) working days to three (3) people at C-MET site
- c) Hand-holding for six months from date of completion of training
- d) Technical support for period of six months from the date of completion of Training. Technical support will include remote guidance / help in setting-up plant- scale processing facility. The technical support will be provided remotely through audio/video calls. However for any support at proposer's plant site, the financial expenses of Scientist/technical staff's visit including stay, travel shall be borne by the proposer which shall be as per Government norms. The dates to provide such support shall be at the discretion of C-MET based on the availability of the concerned scientists and technical staff.
- e) Technology demonstration at C-MET shall be provided, details of which are given below:
  - Discarded batteries to black mass at scale of 25 kg per batch. The material for demonstration shall be provided from Grantee.
  - Extraction of Lithium at scale of 10 kg LIB black mass in one batch.
  - Demonstration of five (5) batches of smelting operation (@250 g LIB black mass per batch) in continuous mode.
  - Hands-on experience to manpower of ToT absorber for another five (5) batches of smelting operation (@250 g LIB black mass per batch) in continuous mode.
  - Hands-on experience to manpower of ToT absorber on analysis of metal contents using ICP-OES.

However, it is the responsibility of the grantee to independently assess the market potential, existing or potential competition, alternate technologies that are existing or likely to emerge, risk factors etc. before submitting the proposal and C-MET is not under any obligation in this matter.

**7. Terms of Reference**

- Granting of Technical Know How for commercialization is purely on the basis of the grantee's capacity to absorb the TECHNOLOGY to the full satisfaction of C-MET,

the know-how on as-is-where- is-basis.

- On Granting the Technical Know How, the Grantee shall enter into an Agreement on Stamp Paper of worth Rs.500, which shall remain in force for a period of Ten years or such extended period as may be mutually agreed upon from the effective date as specified in the agreement.
- The transfer of Technical KNOW HOW is on a non-exclusive basis, covering the whole of India. C-MET reserves the right to transfer the same KNOW HOW to other parties at its discretion. The Grantee shall have no- say whatsoever with regard to said discretion of C-MET.
- The Grantee shall not, at any time, disclose the said know-how to any third party or person, without prior written consent of the C-MET and shall take all possible precautions against any such disclosure.
- The Grantee shall not assign, transfer, encumber, mortgage, or part with possession of the said KNOW-HOW, wholly or partially, without the prior written consent of C-MET.
- The Grantee shall abide by the provision of “the Patent Act, 1970”, as the “KNOW HOW” is patented.
- The Grantee shall set-up the recycling facility and commence recycling process according to the said KNOW-HOW within a period of 12 months from the date of completion of training. The Grantee shall not at any time deny or dispute the legality, validity or enforceability of the terms of the License or any of its obligations as per the agreement to be signed as stated above.
- The Grantee shall not at any time claim any independent, exclusive or any other right to the said KNOW-HOW.
- The Grantee shall not pass on the said KNOW-HOW as its own technology or KNOW-HOW or invention. Any modifications made to the said KNOW-HOW shall not bestow any right to the Grantee to market the product as its own technology. However C-MET has a right to modify/improve/spin off from the know-how and can patent the same as its own technology.
- The Grantee shall not on its own name or in the name of any third party, file any patent Application for the grant of patent of the KNOW-HOW transferred under the agreement and shall also not oppose at any time any patent application made by C-MET that may also include modification/improvement of the said know-how.
- The Grantee shall permit C-MET, its attorneys and duly authorized agents, at all convenient times to enter the premises of the Grantee where any recycling process is underway and the extracted materials, as aforesaid, may be stored or manufactured or sold under the Agreement for the purpose of inspecting the same

and the manner of manufacture thereof and generally to ascertain that the provisions of the Agreement are being complied with.

- The Grantee shall affix in a conspicuous manner upon every product, box, packet and leaflets pertaining to the said extracted materials under this license, a label or plate bearing the inscription “C-MET KNOW-HOW”: such labels or plates to be supplied by the Grantee and shall not sell or use any articles, boxes or packets containing such materials as manufactured under the Agreement without such labels or plates being affixed thereon and similarly every advertisement in respect of the materials so recovered shall include the same inscription as aforesaid at some conspicuous place. If it is not practicable to put this inscription on the article, the Grantee may put the same on the box in which the items are mounted.

## **8. EOI Advertisement, Submission of the application & Selection process**

Eoi advertisement will be posted on website of C-MET ([www.cmet.gov.in](http://www.cmet.gov.in)), to invite eligible “Proposers” who are capable of absorbing the TECHNOLOGY offered by C-MET, for their participation in the process of Expression of Interest.

The advertisement inviting EOIs is in the nature of rolling one, without any last date for submission of EOI. However, it is advised that the interested parties may submit the EOIs at the earliest to gain the advantage of being the early birds.

After receipt of EOIs, the selection criteria shall be one or more of the following;

- Registration as a recycler with the competent Government agency
- Experience as an aggregator, dismantler, producer responsibility organization (PRO) or recycler in any of the waste recycling
- Possession of land/industrial building in a Red-zone area
- Registration as a start-up for waste management
- Financial strength to set-up the plant
- Willingness to set-up the plant within a period of six months
- Any other criteria as deemed essential by the committee

The training will be scheduled for the party/parties based on the date of full receipt of ToT fee on first-come-first-serve basis.

## **9. Documents to be submitted**

- a. Letter for EOI submission – Annexure I
- b. Profile of the party – Annexure II
- c. Information regarding any conflict of interests as referred to the scope of the assignment – Annexure III

- d. In the case of start-up complete details of the company including their financial soundness/ source of funds and a write up on how they plan to bring the product to market in case they were awarded the technology are to be forwarded. Educational background and relevant work experience to absorb and market the product shall also be informed along with any other relevant document.

#### **10. Submission of EOI**

- a. All the requisite documents shall be placed in a sealed enveloped which shall be superscribed "**Expression of Interest for ToT of LIB Recycling Technology: Pyro-route**"
- b. The sealed envelopes shall be submitted to The Centre Head, C-MET, IDA Phase-III, Cherlapally, Hyderabad – 500 051
- c. This is a rolling advertisement. Interested parties can submit their application at any time and no last date is prescribed.
- d. 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.
- e. The application(s) and material(s) submitted by the Proposer(s) in response to this EOI will become the property of the C-MET.
- f. 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.
- g. 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.

**DRAFT LETTER FOR EOI SUBMISSION TO BE SUBMITTED ON THE LETTER HEAD OF  
THE APPLICANT**

Ref: No.

Date:

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

Dear Sir

Sub: LIB Recycling Technology: Pyro-route –We, the undersigned, submit our interest to absorb the technology package offered in your invitation for EOI dated:\_\_\_\_\_. 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

Authorized Signatory  
NAME & DESIGNATION

**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)	2025-26 (*)	2024-25	2023-25

(\*) Provisional figures may be indicated, in case audited numbers are available.

Note: In the case of start-up, please provide information in separate sheet as mentioned in section 9.

**Certification from the authorized officer**

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

Signature of the authorized signatory

Name

Designation

**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

## In case of Start-up the following details are to be filled

Sl. No.	Particulars	Details
1.	Name of the start up	
2.	Form of the start-up: (Sole Proprietor/Partnership/Company/Any other)	
3.	No. of members (in case the start-up is other than sole proprietor)	
4.	Year of registration as start-up	
5.	Registration No. (pl. enclose a copy of the registration certificate)	
6.	Registered address	
7.	Do the objectives of the start-up include recycling of E-waste in particular	
8.	Objectives of the start-up(in brief) : (Attach a separate sheet, if the space is insufficient)	
9.	Amount of Capital invested as on the date of submission of the EoI (Rs. Lakhs)	
10.	Amount of Borrowings as on the date of submission of EoI	

**ANNEXURE – V**

<b>Sl. No</b>	<b>Particulars</b>	<b>Details</b>
<b>1</b>	How many Plants are being planned to be set up	
<b>2</b>	Location or locations of the plant (Pl. provide the name of the District and State)	
<b>3</b>	Per day capacity of the plant (s) to be set up	
<b>4</b>	What is the period in which the plant(s) will be set up	
<b>5</b>	Do you have qualified/experienced human resources? If yes, details thereof. If no, how do you propose to source the same?	
<b>6</b>	Do you have land/building/other infrastructure available? If yes, details thereof. (like own land/ building/ leased infrastructure, land area, built-up area, permanent/ temporary structure etc). If no, how do you propose to source the same?	
<b>7</b>	Do you have financial resources? If yes details thereof. If no, how do you propose to source the same?	
<b>8</b>	Do you have in-house competency to set up the plant or do you propose to out-source to a turn-key solution provider?	
<b>9</b>	Any other information which adds value to your application. Attach a separate sheet if space is insufficient.	

**Please provide all the relevant and important information, since the committee may add weightage to each of the parameters listed or not listed in the above.**

**Educational qualifications and experience of the key person(s)**

Name of the Key Person	
Designation	
Academic Qualification(s)	
Experience in no. of years	
Field(s) in which experience has been acquired, with particular reference to waste management	

**Pl. provide details of a maximum of 5 key persons**