



## **Expression of Interest (EOI)**

**CSIR - CENTRAL ROAD RESEARCH INSTITUTE**

**&**

**CSIR - NATIONAL PHYSICAL LABORATORY**

### **EOI on R&D Collaboration with Industry for Recycling of Plastic and Its Application in Road Construction**

**Dated: March, 2021**

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Subject: EOI on R&D Collaboration with Industry for Recycling of Plastic and Its Application in Road Construction

CSIR-CRRI & CSIR-NPL

TIMELINE FOR ACTIVITIES

Sr. No.	ACTIVITY	DATE	NO OF DAYS BETWEEN ACTIVITY
1	Publication of EOI	1 <sup>st</sup> March 2021	0
2	Address to queries and if required project team will deliver PPT explaining the objective and requirement of EOI and role of industry	5 <sup>th</sup> March 2021 And 6 <sup>th</sup> March 2021	03
3	Submission of EOI by industry/organizations	17 <sup>th</sup> March 2021	10
4	Announcement of Name of Short Listed Industry/Organization on CRRI Website	23 <sup>rd</sup> March 2021	05
5	Submission of financial offer by short listed Industry/Organization	30 <sup>th</sup> March 2021	05

**Title:**

Expression of Interest for R&D collaboration with Industrial Partner for Recycling of Plastic and its Applications in Road Construction

**Brief About CSIR-CRRI & NPL****CSIR-CRRI**

CSIR - Central Road Research Institute (*CRRI*), a premier national laboratory established in 1952, a constituent of Council of Scientific and Industrial Research (*CSIR*) is engaged in carrying out research and development projects on design, construction and maintenance of roads and runways, traffic and transportation planning of mega and medium cities, management of roads in different terrains, improvement of marginal materials, utilization of industrial waste in road construction, landslide control, ground improvement, environmental pollution, road traffic safety and analysis & design for wind, fatigue, corrosion studies, performance monitoring / evaluation, service life assessment and rehabilitation of highway & railway bridges. The institute provides technical and consultancy services to various user organizations in India and abroad. For capacity building of human resources in the area of highway engineering to undertake and execute roads and runway projects, Institute has the competence to organize National & International Training Programs continuing education courses since 1962 to disseminate the R & D findings to the masses.

**CSIR-NPL**

CSIR is one of the leading scientific and industrial research organizations in India constituted by the Government of India in 1942 as an autonomous body. It has emerged as the largest research and development organization constituted by thirty-seven laboratories and thirty-nine field stations or extension centers throughout the nation, with a collective 3500 scientists and technical staff of over 12,000 workers. CSIR undertakes directed and multidisciplinary research, technological innovation as well as industrial and scientific development to improve the quality of life of the country's people. Science and technology services and solutions are provided in support of various stakeholders and opportunities are identified where new technologies can be further developed and exploited in the private and public sectors for commercial and social benefit. Under the umbrella of CSIR, National Physical Laboratory is the largest research establishment for physics and material science in India. It serves as a launching pad for various programmers for: (i) Development of India's measurement standards that are internationally accepted and disseminating the measurement capabilities to industry, government, strategic and academia that underpin the India's prosperity and quality of life; (ii) Conduct of multidisciplinary R & D with a mission to establish the futuristic quantum standards and upcoming technologies so that India remains on par with international measurement laboratories (iii) Developing sophisticated analytical equipment i.e. import substitutes under "Make in India" program to cater the ever increasing demands of emerging India; and (iv) Training of young scientists and industry personnel in the areas of measurements under "Skill India" programmer. One of the team activities already accomplished by CSIR - NPL is directly related to utilization of waste plastics in designing tiles for societal applications.

## **Objective of EOI**

The objective of this EOI is to carry out R & D activities by identifying an industry partner, having vast knowledge in the field of plastics, for development of recycled plastic panels / slab for application in road construction and related items. Industry / Organization having own production facilities and possessing in-house testing facility would be preferred.

## **R&D Area of Interest**

CSIR - CRRI and CSIR - NPL are working on the concept of design and development of recycled plastic panel/slab for application in construction of roads and related items under the Focused Basic Research (FBR) scheme of Council of Scientific and Industrial Research (CSIR) of India. In this context, it is to note that CSIR - NPL has already developed tiles out of waste plastic and technology has been successfully commercialized. Considering the above available technical knowhow, CSIR - CRRI in coordination with CSIR - NPL intend to take this for the construction of roads using plastic panel for motorized traffic movement. In this regard, it is important to define suitable plastic and its form, production technique and optimal design for road etc. Under R&D starting from defining plastic properties, design and development of panel/slab will involve so industry already having experience of using recycled plastic/plastic in production of load related articles like industrial pallets can be suitable

## **Eligibility Criteria for identifying Industrial Partner:-**

The eligibility criterion is as follows:

- The industry/organization must be a registered under the Company's Registration Act (1956) and having environmental clearance from Central Pollution Control Board/State Pollution Control Board. Information should be submitted as per Format 2.
- The industry/organization must have requisite infrastructure, manpower and in-house capability of manufacturing plastic based products using injection/compression molding machine or equivalent and must have proper in-house testing facility as per Format 3.
- Annual turnover figure for last three years (minimum turnover of Rs. 20 crores for each year) should be submitted as per format 4 and shall be certified by the Chartered Accountant (CA).

## **Selection Criteria**

CSIR-CRRI and CSIR-NPL shall evaluate the firms for short-listing. Based on the evaluation, CSIR - CRRI will issue the list of short-listed industry/organization. The short-listed industries/organizations shall have to submit financial bid (in a separate sealed envelope) in terms of royalty [percentage (up to two decimal places) of sales of goods from this technology] as per Annexure 1. All, the short listed industries/organizations shall furnish an security deposit for an amount of Rs 5,00,000 in the form of demand draft for Director, CRRI, New Delhi. However, MSMEs are exempted from the payment of the above security deposit subject to submission of supporting document such as MSME certificate. Industry/organization who submits the highest offer will be selected for this R&D project.

The security deposit (in the form of DD) in respect of unsuccessful industries/organizations shall be returned by CSIR-CRRI.

Further, the Final selected industry/organization after completion of R&D project shall have to furnish a License fee( to be decided at the time of license agreement) as premia (one time) to CSIR-CRRI before commercialization of technology developed through this collaborative R&D project as per terms and conditions mentioned in Annexure 1. Further, the security deposit (without any interest) of the selected industry/organization shall be, returned only after completion of the R&D project.

### **Submission Requirement**

The firms are requested to send the application containing the details given below to pme.crrri@nic.in in the prescribed format on or before 17<sup>th</sup> March 2021. Additionally a hard copy of the application should be sent to “Director, CSIR-Central Road Research Institute, Mathura Road, New Delhi, 110025” by superscripting the envelop with ‘Expression of Interest for R&D collaboration with Industry for Recycling of Plastic’. The hard copy of the application should reach CSIR-CRRI not later than 5 days of last date of sending the same through email.

- 1: Organizational Contact Details as per Format-2
- 2: Information regarding Machine Set up as per Format-3
- 3: Financial strength of the company as per Format-4

## Formats for Applying

Below are the formats for applying to the above-described EOI.

### Form 1

#### Applicant's consent Form

To,  
Director  
CSIR-CRRI  
Delhi-Mathura Road  
New Delhi-110025

Subject: Submission of Expression of Interest for "R&D Collaboration with Industry for Recycling of Plastic and Its Application in Road Construction"

Dear Sir,

In response to the Invitation for Expressions of Interest (EOI) published on for "R&D Collaboration with Industry for Recycling of Plastic and Its Application in Road Construction". We would like to Express Interest to collaborate and we attach following documents in sealed envelopes:

1. Industry/Organization Information and Contact Details (Format-2)
2. Information regarding Machine Set up (Format-3)
3. Financial strength of the organization (Format-4)

Sincerely Yours,

Signature of the applicant

[Full name of applicant]

Stamp & date

Encl: as above

Note: This is to be furnished on the letter head of the industry/organization.

## FORMAT-2

<b>Industry/Organization Information and Contact Details</b>	
Name of Industry/Organization	
Please provide Memorandum of Association	
Please provide Article of Association	
Please provide Certificate of Incorporation	
Year of Registration of Industry/Organization	
Environmental clearance details from Central Pollution Control Board/State Pollution Control Board ( As Applicable) – Kindly enclosed supporting document	
Registered Address	
Contact Address	
Telephone:	
Contact Person :	
Mobile No:	
Fax :	
Email :	

Signature of the applicant  
Full name of the applicant  
Stamp & Date

**FORMAT-3**

Provide information regarding machine/set-up on following with supporting document (including photographs of Machine or Test Set Ups)

<b>Machine/Test Setup</b>	<b>Make and Model</b>	<b>No of Machine/Test Setup</b>
Injection Moulding		
Compression Moulding		
Any other		
Tensile Strength Test		
Compressive Strength Test		
Melt Flow Index characteristics test and ultra violet weatherometer testing		

Signature of the applicant  
Full name of the applicant  
Stamp & Date



**Format 4**

**Financial Strength of the Industry/Organization**

Annual Turn Over for Last Three Years

Year	Turn Over

Note: Please attach auditor's certificate (certified copy) in support of your claim

Signature of the applicant  
Full name of the applicant  
Stamp & Date

Signature of CA and Stamp

### Terms and Condition for Royalty/Premia and Commercialization

This annexure will be applicable to the short-listed industries / organizations by CSIR-CRRI & CSIR-NPL. The shortlisted firms have to submit their commercial offer (in a separate sealed envelope) in terms of royalty [percentage (up to two decimal places) of sales of goods from this technology] as per format 5 to Head, PME, CSIR-CRRI, New Delhi. Out of the various offers received, the firm, which submits the highest offer, will be selected. However, during the R&D phase neither CRRI / NPL nor selected industry/organization will pay any kind of fee to each other. In case this R&D project fails or does not lead to commercialization of any product for field application then in that case no party shall seek any compensation and damages in any case.

For selected industry/organization, the submitted security deposit along with financial bid shall be returned, without any interest, after completion of the R&D project. Further, the Final selected industry/organization after completion of R&D project shall have to furnish a License fee( to be decided at the time of license agreement) as premia (one time) to CSIR-CRRI as license fee before commercialization of technology developed through this collaborative R&D project as per following terms and conditions:-

#### **Detailed terms and conditions:-**

It is to mention that this AGREEMENT will be made and entered between Council of Scientific & Industrial Research (CSIR), a Society registered under the Societies Registration Act (XXI of 1860), having its registered office at Anusandhan Bhavan, 2 Rafi Marg, New Delhi 110001 acting through CSIR-CRRI and CSIR-NPL, a constituent laboratories of CSIR, located at NEW DELHI, INDIA” (hereinafter “party A” )

And

Selected firm (hereinafter called the “party B” )

**1.** The contents of this MoU is indicative in nature, further a separate license agreement will be executed at the time of technology transfer comprising the detailed terms and conditions, financial arrangements, intellectual properties rights (IPR), responsibilities and obligations [scope of work, work plan, time schedule, and modalities] of eachParty pertaining to the PROJECT within the scope of work.

1.1 For the purpose of this MoU henceforth, CSIR-CRRI and CSIR-NPL shall be called first party (Party A) and successful selected industry/organization shall be termed as second party (Party B)

## **2 FINANCIAL ARRANGEMENTS**

Party A and Party B shall bear the financial inputs for the PROJECT as follows:

2.1 The expenditure shall be borne by both the agencies for their respective activities.

2.2 The liabilities, if any, arising out of or in connection with the PROJECT shall be the responsibility of the respective collaborators (i.e. Party A and Party B).

2.3 Party A and Party B will be responsible for the payment of respective TA/DA of their employee in case of tours to be performed.

2.4 The submitted security deposit along with financial bid will be retained by party A and shall be returned, without any interest, after completion of the R&D project to party B.

2.5 In the event of withdrawal by Party B during the tenure of the contract for any reason what so ever, which leads to termination of the contract in between, Party A shall have the right to forfeit the SECURITY DEPOSIT by the Party B.

### **3. RESPONSIBILITIES OF EACH PARTY**

Party A will serve as the nodal organization for the project and will serve as the sole contact. Accordingly, before start of project / work, scope of work for each party i.e. Party A and Party B will be defined. Party A will share the detailed project proposal with Party B so that activities can be defined. Party B will act as a technology partners to facilitate in execution of the project. However, ownership of the intellectual property that may come out as an output of this R&D work shall be with Party A.

### **4. CONFIDENTIALITY**

During the tenure of the agreement of [ 3 years] both Party A and the Party B undertake on their behalf and on behalf of their subcontractors/ employees/ representatives/ associates to maintain strict confidentiality and prevent disclosure thereof, of all the information and data exchanged/generated pertaining to work under this agreement for any purposes other than in accordance with this agreement. Both parties, however, retain the rights to use the R&D results generated during the PROJECT for its own R&D programs without any obligation to the other.

### **5. UTILISATION OF INTELLECTUAL PROPERTY DEVELOPED**

5.1 The Party B shall have the first option to commercially exploit the intellectual property generated in the PROJECT provided such option is exercised by the Party B communication to Party A by a written within [ 06 months] of completion of the PROJECT.

5.2 The Party B shall have the right for license agreement on [Non- exclusive] basis to commercially exploit the intellectual property generated in the PROJECT for commercial production

5.3 However if any other Party approaches to Party A (CSIR) for license, Party A shall have the right to license the intellectual property generated in the PROJECT to others on terms to be mutually decided between party A and Party B.

## **6 FORCE MAJEURE**

6.1 Neither Party shall be held responsible for non-fulfillment of their respective obligations under this agreement due to the exigency of one or more of the force majeure events such as but not limited to Acts of God, war, flood, earthquakes, strike, lockouts, epidemics, riots, civil commotion, etc. provided on the occurrence and cessation of any such events, the Party affected thereby shall give a notice in writing to the other Party within one month of such occurrence or cessation. If the force-majeure conditions continue beyond six months, the parties shall then mutually decide about the future course of action.

## **7 EFFECTIVE DATE, DURATION, TERMINATION OF THE AGREEMENT**

7.1 The agreement shall be effective from the [ -----date of signing] and shall remain in force for a period of [ 03 years] from the said date.

7.2 The agreement shall terminate on the expiry of the period, as in clause CL.7.1 unless extended by both the parties.

7.3 During the tenure of the agreement, parties hereto can terminate the agreement either for breach of any of the terms and conditions of this agreement or otherwise by giving a [ 03 months] notice in writing to the defaulting Party. Failure of either Party to terminate the agreement on account of breach or default by the other shall not constitute a waiver of that PARTY B's right to terminate this agreement.

## **8 NOTICES**

8.1 All notices and other communications required to be served on the PARTY B under the terms of this agreement, shall be considered to be duly served if the same shall have been delivered to, left with or posted by registered mail to the PARTY B at its last known address of business. Similarly, if any notice to be given to the Party A shall be considered as duly served if the same shall have been delivered to, left with or posted by registered mail to the Party A at its registered address in New Delhi.

## **9 AMENDMENTS TO THE AGREEMENT**

No amendment or modification of this agreement shall be valid unless the same is made in writing by both the parties or their authorized representatives and specifically stating the same to be an amendment of this agreement. The modifications/changes shall be effective from the date on which they are made/executed, unless otherwise agreed to.

## **10 ASSIGNMENT OF THE AGREEMENT**

The rights or/and liabilities arising to any Party to this agreement shall not be assigned except with the written consent of the other Party and subject to such terms and conditions as may be mutually agreed upon,

## **11 ARBITRATION**

In the event of any disputes relating to or arising out of this agreement, such disputes shall be resolved amicably by mutual discussions and negotiations in good faith. Failing the above,

the disputes shall be referred to and finally resolved by arbitration under Arbitration and Conciliation Act, 1996 and the rules framed there under for the time being in force.

- a) The place of Arbitration shall be New Delhi, India.
- b) The language of arbitration proceedings shall be English only.
- c) Each PARTY shall bear and pay its own cost of the arbitration proceedings unless the Arbitrator otherwise decides in the Award.
- d) The provisions of this Clause shall not be frustrated, abrogated or become inoperative not withstanding this Agreement expires or ceases to exist or is terminated or revoked or declared unlawful

### FORMAT-5

Submission of commercial offer in terms of royalty [percentage (up to two decimal places) of sales of goods from this technology]

Item	Royalty offered (in %)- minimum 1 % yearly sale value of goods.
-TO BE FILLED BY Industry/Organization- (Upto 2 Decimal Place)	

Signature of the applicant  
Full name of the applicant  
Stamp of Organization & Date