# Expression of Interest (EoI) for

# Selection of Firm/ Industry/ Entrepreneur/ Startup for setting up of Paddy Straw based Briquetting Plant (350 kg/hr) in Punjab, India

EoI Document No.: PSCST/EoI/011

January 2020



PUNJAB STATE COUNCIL FOR SCIENCE & TECHNOLOGY, CHANDIGARH

(A State Govt. Undertaking)

Name of the Firm/	
Industry/ Entrepreneur/	
Startup	
Address	
Contact Person	
Phone no.	
Email-id	
website	

Certified that this document contains 17 pages (Cover page & 1 to 16)

# PUNJAB STATE COUNCIL FOR SCIENCE & TECHNOLOGY

PSCST INVITES EXPRESSION OF INTEREST (EoI) FOR SELECTION OF FIRM/ INDUSTRY/ ENTREPRENEUR/ STARTUP FOR SETTING UP OF PADDY STRAW BASED BRIQUETTING PLANT (350 KG/HR) IN THE STATE OF PUNJAB.

#### 1. INTRODUCTION

- 1.1 Punjab State Council for Science & Technology (PSCST) is a State Government Undertaking and a Scientific & Industrial Research Organization approved by DSIR & Central Government under Clause (ii) of Sub-Section (i) of Section 35 of Income Tax Act, 1961. PSCST endeavors to harness the potential of Science and Technology as an instrument of socio-economic change and acts as a catalytic agent for transferring technologies from the laboratory to the field.
- 1.2 The Department of Science & Technology, Gol has sanctioned project entitled "Development & Field Demonstration of Paddy Straw based briquetting plant for decentralized applications in the State of Punjab", under Clean Energy Research Initiative (CERI), jointly to PSCST, The Energy and Resources Institute (TERI), New Delhi, International Advanced Research Centre for Powder Metallurgy & New Materials (ARCI), Hyderabad & industrial partner i.e. M/s. Hi-Tech Agro Energy Private Limited, New Delhi for setting up of paddy straw based briquetting unit of capacity 350 kg/hr in the State of Punjab.
- 1.3 The objective of the project is to develop & demonstrate a market ready paddy straw briquetting machine with improved life of wearable components. The industrial partner will provide a standard briquetting press (350 kg/hr) with base material components. ARCI would develop specialized wear resistant surface coatings for the wearable components such as hammer, ram & piston. The improved coated components will be tested on briquetting press utilizing paddy straw for its performance parameters such as wear & tear of developed components, frequency of failure, energy consumption (kWh/ton output) and briquette quality parameters like density, compressive strength & thermal properties.
- 1.4 A suitable Firm/ Industry/ Entrepreneur/ Startup will be identified for demonstration of improved briquetting press in actual field conditions. As part of this endeavor, PSCST invites Expression of Interest (EoI) from the interested Firms/ Industries/ Entrepreneurs, willing to set up paddy straw based (Paddy Straw ≥80% and other Biomass/Bio-residue ≤20%) briquetting unit in the State of Punjab.
- 1.5 The basic components of the plant & machinery i.e. Primary Shredder, Hammer Mill Grinder, Holding Bin, Dust Bag Filter system for Grinder & Briquette Press would be

provided free of the cost under the project. However, the cost of remaining components i.e. magnet, vibrating screen, drier (including furnace & associated dust collection system), water tank & other accessories would be borne by the selected Firm/ Industry/ Entrepreneur/ Startup. Additional limited grant-in-aid towards collection & transportation of 700 tonne paddy straw for trials, paddy straw & briquette storage shed, manpower budget for one plant supervisor & two operators, extension of electrical load connection and expenses towards electricity consumption for running the briquetting machine will be made available as per the funding agency norms.

- 1.6 After the completion of the project duration of 2 years, the selected Firm/ Industry/ Entrepreneur/ Startup shall have to pay the 50% of the salvage value (i.e. share of industrial partner) of the machinery cost to the industrial partner for obtaining the ownership of briquetting plant, otherwise the plant & machinery will be taken back by the PSCST.
- 1.7 As part of this endeavor, PSCST invites Expression of Interest (EoI) from the interested Firm/ Industry/ Entrepreneur/ Startup, willing to set up paddy straw based briquetting unit in the State of Punjab. The salient features of the Project are as under:

Nature of Plant to be installed	Paddy Straw Briquetting Plant		
No. of Plants	1 No.		
Plant Capacity	350 kg/hr		
Feedstock	Paddy Straw (≥80%) + Other Biomass/Bio-residue (≤20%)		
Expected Production	700 Tons of briquette per annum		
Selected Firm/	I. To pay 50% of the salvage value of the paddy straw		
Industry/	briquetting plant machinery components (i.e. Feeding Belt		
Entrepreneur/	Conveyor, Twin Shaft Primary Shredder, Discharge Belt		
Startup Share	Conveyor, Hammer Mill Grinder, Pneumatic System		
	(Pipeline, Bends, Cyclone, Airlock and Fan), Support		
	Structures, Holding Bin, Dust Bag Filter, Briquette Press,		
	Control Panel & Cables) funded under the project to the		
	industrial partner at the end of the project		
	II. To bear the cost of other plant machinery components i.e.		
	magnet, vibrating screen, drier (including furnace &		
	associated dust collection system), water tank & other		
	accessories		
	III. Infrastructure		
	• Land – Minimum 1.5 acre (Open space required for		
	storage of raw material at one location or different		
	locations & for briquetting plant)		

Interested Firm/ Industry/ Entrepreneur/ Startup may only apply.

# 2. SUBMISSION OF Eol:

2.1 Submission of proposal in response to this EoI shall be deemed to have been done after careful study and examination of this document with full understanding of its terms, conditions and implications.

Name	Development & Field Demonstration of Paddy Straw	
	based briquetting plant for decentralized applications	
	in the State of Punjab	
Availability of Eol Document	24.01.2020	
on website		
Last date of submission of	Queries are to be submitted through	
written queries for	Email at <u>ranjit.singh16@punjab.gov.in</u> on or before	
clarifications, if any.	03.02.2020 by 1130 hrs	
Briefing/ Clarification meet	04.02.2020 at 1500 hrs in PSCST Office.	
Release of response to	07.02.2020	
clarifications on website		
www.pscst.gov.in		
Last date of submission of	14.02.2020 till 1500 hrs	
Eol		
Mode of Submission of Eol	Hard copy only	
Opening of Eols	14.02.2020 at 1530 hrs in PSCST office	
Name and Address for	Process Engineer-II,	
submission of Eol	Technology Facilitation Division,	
	Punjab State Council for Science and Technology,	
	MGSIPA Complex, Adjacent Sacred Heart School,	
	Sector 26, Chandigarh -160019	
Contact Details	Ph. +91 172 2792325 (F) +91 172 2793143	
	Email : <u>ranjit.singh16@punjab.gov.in</u>	
	Website: www.pscst.gov.in	
Validity of Proposal	60 days from Proposal Due Date or extended on	
	mutual consent	

- 2.2 Bidders can download the EoI document from the website mentioned above and shall submit the complete proposal/EoI document along with <u>all the supporting document</u> <u>duly signed and stamped on each page</u> at the following address by the due date and time in a sealed envelope superscribing EoI No., Industry's name, address and Due Date/time.
- 2.3 The scoring criteria for the selection of firm/ industry/ entrepreneur/ startup for setting up of paddy straw based briquetting plant are provided at Annexure-III.
- 2.4 The PSCST shall not be responsible for any postal delay.

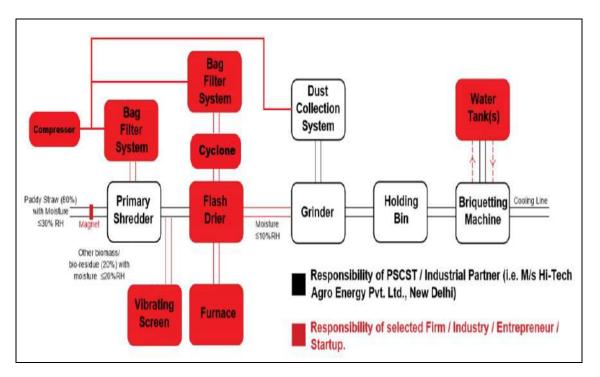
- 2.5 The Proposal/ EoI submitted at any other place is liable to be rejected.
- 2.6 The PSCST reserves the right to accept or reject any or all the applications to be received without assigning any reasons.

# 3. OBJECTIVE OF THE PROJECT

3.1 The project aims at developing a market ready paddy straw briquetting machine of capacity 350 kg/hr with improved material life of ram, piston, hammer mill, shredder and baler blades by the application of specialized coatings and to reduce the down-time of the machine. The developed machine would bring down the briquette production cost and promote gainful utilization of abundantly available paddy straw in the State of Punjab. The successful demonstration of technology is expected to create demand of paddy straw briquette for decentralized applications thereby replacing the use of fossil fuels. The demand of paddy straw would discourage paddy straw stubble burning, leading to reduction in equivalent GHG emission resulting in improvement in ambient air quality.

# 4. **RESPONSIBILITIES**

4.1 The project envisages setting up of complete Paddy Straw briquetting plant of 350 kg/hr capacity with complete set up comprising of Feeding Belt Conveyor, Twin Shaft Primary Shredder, Discharge Belt Conveyor, Hammer Mill Grinder, Pneumatic System (Pipeline, Bends, Cyclone, Airlock and Fan), Support Structures, Holding Bin, Dust Bag Filter, Briquette Press, Control Panel, Cables along with other infrastructure for storage of raw material as well as finishing products. It is expected that the industry would provide the basic infrastructure i.e. land for the plant & storage shed.



The proposed layout of the plant & machinery is as provided in the figure below:

The responsibilities of selected Firm/ Industry/ Entrepreneur/ Startup & PSCST are:

## 4.2 Responsibility of Selected Industry/ Firm/ Entrepreneur/ Startup:

- 4.2.1 To provide a minimum of 1.5 acre land for the following:
  - (a) Installation of Paddy straw based briquetting plant
  - (b) Open space required for storage of raw material (at one location or different locations) for storage of paddy straw & other biomass/ bio-residue near plant.
- 4.2.2 To bear the cost of remaining components not covered under the project i.e. magnet, vibrating screen, water tank, other accessories & drier (including furnace & associated dust collection system) for drying the paddy straw moisture content upto less than 10%.
- 4.2.3 To set up infrastructure at site i.e. foundations for plant erection, water tank, water connections & power connections etc in a time bound manner.
- 4.2.4 To collect, transport & store around 700 tons of paddy straw & 140 tonnes of other biomass/ bio-residues for its combined use with paddy straw from nearby sources.
- 4.2.5 To pay 50% of the Salvage Value of the plant & machinery (Written Down Value depreciation Method considering machine life 5 years & depreciation to be considered as 20% per year) to the industrial partner for obtaining ownership of the briquetting plant at the end of the project.
- 4.2.6 To invest towards marketing/ selling of paddy straw based briquettes.
- 4.2.7 To obtain statutory licenses and regulatory approvals from the competent authorities of the different departments wherever required.
- 4.2.8 To operate the briquetting plant on sustainable basis atleast for a period of 2 years from the date of receiving the ownership of briquetting plant.
- 4.2.9 To submit an irrevocable Bank Guarantee from Nationalized Bank to PSCST equal to half of the cost of briquetting plant (i.e. approx. Rs. 16 lakh) for a period of 2 years or upto the date of receiving the ownership of briquetting plant (whichever is earlier). The Bank Guarantee can be encashed by PSCST in case of breach of the commitments made under the project.
- 4.2.10 Any other responsibility related to the smooth installation & operation of the briquetting plant, which is not under the responsibilities of PSCST.

# 4.3 Responsibility of PSCST/ Industrial Partner/TERI:

4.3.1 To transport, install & commission the Paddy Straw based briquetting plant of 350 kg/hr capacity at site.

- 4.3.2 To provide supervision during setting up of local infrastructure i.e. foundations for plant erection, water connections, storage shed construction, power connections & installation of briquetting plant etc. alongwith industrial partner & TERI.
- 4.3.3 To release the additional limited grant-in-aid towards paddy straw & briquette storage shed, manpower budget for one plant supervisor & two operators, extension of electrical load connection and expenses towards electricity consumption for running the briquetting machine will be the responsibility of TERI.
- 4.3.4 To carry out field performance testing of the improved briquetting machine and associated machinery along with TERI & ARCI.

# 5. ELIGIBILITY CRITERIA FOR SUBMISSION OF EOI:

#### 5.1 Technical Criteria

- 5.1.1 The Firm/ Industry/ Entrepreneur/ Startup should have minimum 1.5 acre of land (*owned or leased till year 2025*) for installation of briquetting plant and storage of paddy straw & other biomass near plant.
- 5.1.2 The Firm/ Industry/ Entrepreneur/ Startup should have existing industrial electricity connection for biomass based briquetting/ palletizing plant.
- 5.1.3 The Firm/ Industry/ Entrepreneur/ Startup should have a minimum 1 year of experience in manufacturing of biomass based briquettes/ pallets.
- 5.1.4 The site for storage of raw material & briquetting plant to be set up should be appropriately located & adequately connected through approach rode for ease of collection & transportation of raw material.

#### 5.2 Financial Criteria

- 5.2.1 The Firm/ Industry/ Entrepreneur/ Startup should have turnover of minimum Rs. 20 lakh in any of the last 2 years (i.e. 2017-18 or 2018-19). The Firm/ Industry/ Entrepreneur/ Startup having turnover less than Rs. 20 lakh are not eligible.
- 5.2.2 The Firm/ Industry/ Entrepreneur/ Startup should have enough financial strength to arrange for the operation & maintenance of the briquetting plant for a period of minimum 2 years from the date of receiving the ownership of briquetting plant.
- 5.2.3 The Firm/ Industry/ Entrepreneur/ Startup shall submit an irrevocable Bank Guarantee from Nationalized Bank to PSCST equal to half of the cost of briquetting plant (i.e. approx. Rs. 16 lakh) for a period of 2 years.

#### 6. GENERAL INSTRUCTIONS:

- 6.1 Applicants must acquaint themselves fully about the project before submitting the EoI.
- 6.2 The hard copy of the EoI shall be submitted at the address given at point 2.1. EoI received through Fax / E-mail shall not be accepted.
- 6.3 PSCST reserves the right to reject any or all EoI received without assigning any reason.
- 6.4 PSCST reserves the right to assess applicant's capabilities and capacity to execute the work using in-house information and by taking into account other aspects such as concurrent commitments and past performance.
- 6.5 The EoI must be complete in all respect leaving no scope for ambiguity. It is in the interest of the applicant to submit complete and comprehensive proposal leaving no scope for PSCST to raise any further questionnaire. PSCST may evaluate the vendor on the basis of documents submitted in the first instance in order to adhere with project schedule requirement.
- 6.6 The applicant shall submit the documents as per checklist provided at point 7 for expressing their interest.
- 6.7 PSCST reserves the right to call for original documents submitted for verification, if required and also to cross check any details as furnished by the applicant from their previous clients/consultants. The applicant shall have no objection whatsoever in this regards and shall facilitate PSCST to obtain the same.
- 6.8 PSCST will not be responsible for any cost or expenses incurred by the applicant in connection with preparation or delivery of EoI or any other expenses during evaluation of EoI.
- 6.9 All revisions, clarifications, corrigenda, addenda, time extensions etc., to the EoI will be hosted on <u>www.pscst.gov.in</u>. The applicant should regularly visit this website to keep themselves updated.
- 6.10 PSCST reserves the right to reject any Proposal/ EoI, if at any time, a material misrepresentation is made or discovered, or the applicant does not provide the responses sought by PSCST within the stipulated period.
- 6.11 PSCST reserves the right to accept or reject any or all the proposal/ Eol to be received without assigning any reason whatsoever.

# 7. CHECKLIST

Covering Letter	Yes 🗔	No 🗔
Authorization Letter	Yes 🗔	No 🗔
Complete Eol document duly signed & stamped	Yes 🗔	No 🗔
Annexure-I Undertaking by the interested party (on Affidavit)	Yes 🗔	No 🗔
Annexure-II Willingness to Participate in the Project	Yes 🗔	No 🗔
Proof of owned/ leased land Min. 1.5 Acre (Copy of ownership and Jamabandi)	Yes 🗔	No 🗔
Proof of industrial Electricity connection (Copy of latest electricity bill)		No 🗔
Proof of manufacturing of biomass based briquettes Min. 1 year experience		No 🗔
Proof of Annual production of biomass based briquettes/ pallets (Quantitative details of opening, closing stock & sale)	Yes 🗔	No 🗔
Proposed briquetting plant site & storage shed location (Mark the location in Google Map)		No 🗔
Proof of registered Firm/ Industry/ Entrepreneur (PAN & GST certificate copies)	Yes 🗔	No 🗔
Audited balance sheet for the year		
FY 2017-18	Yes 🗔	No 🗔
FY 2018-19	Yes 📃	No 🕅
ITR details for the year		
FY 2017-18	Yes 🗌	No 🗔
FY 2018-19	Yes 🔛	No 🗔

#### Undertaking from the Interested Party

(on Affidavit of Rs.100/- Attested by Notary)

- 1. That I have completely understood the objectives of the project for setting up of Paddy Straw based Briquetting Plant (350 kg/hr).
- 2. That if selected, I will provide 1.5 acre of land for storage of paddy straw & other biomass/ bio-residue near plant.
- 3. That, I shall bear the cost of remaining components not covered under the project i.e. magnet, vibrating screen, water tank & drier unit (including furnace & associated dust collection system) for drying the paddy straw moisture content upto less than 10%.
- 4. That, I shall collect, transport & store around 700 tonnes of Paddy Straw & 140 tonnes of other biomass/ bio-residues for its combined use with paddy straw from nearby sources.
- 5. That, I will provide proof of our financial capability to invest in the project to PSCST.
- 6. That, I will submit an irrevocable Bank Guarantee from Nationalized Bank to PSCST equal to the half of the cost of briquetting plant (i.e. approx. Rs. 16 lakh) for a period of 2 years and I fully understand that the Bank Guarantee can be encashed by PSCST in case of breach of the commitments made by me under the project.
- 7. That, I shall pay the 50% of the Salvage Value of the plant & machinery supplied under the project (Written Down Value depreciation Method considering machine life 5 years & depreciation to be considered as 20% per year) to the industrial partner for obtaining complete ownership of the briquetting plant at the end of the project. Otherwise, I shall allow the PSCST to take back the machinery.
- 8. That, I will operate the plant for at least 2 years from the date of receiving the complete briquetting plant ownership.
- 9. That, I shall bear the operation and maintenance cost of plant, including cost towards purchase of raw material and its transportation from the revenue generated on selling of paddy straw briquettes.
- 10. That, I agree to place my unit for baseline & post-implementation resource audit studies to be conducted by PSCST, TERI & ARCI. I will allow the DST, PSCST, TERI & ARCI team or their authorized representatives to visit the facility and observe the performance of the plant during the project duration & after the date of receiving the complete ownership of the briquetting plant.

- 11. That, I will manufacture minimum of 700T paddy straw based briquettes per annum, having greater than or equal to 80% paddy straw by weight composition.
- 12. That, I shall take any other responsibility related to the smooth installation & operation of the briquetting plant, which is not under the responsibilities of PSCST/ Industrial Partner.
- 13. That, I shall set up the project related required infrastructure (under my responsibility) in a time bound manner from the date of award of the project.

DEPONENT

# WILLINGNESS TO PARTICIPATE IN THE PROJECT

1.	Name of Authorized Person/ Owner (in Capital Letters)			
2.	Complete postal Address			
3.	Name of Firm/ Industry/ Entrepreneur			
4.	Contact Details	Mobile		
		Fax		
		Email ID		
5.	Is your unit a registered firm?	□ Yes		
		□ No		
5.1	If Yes, registered under			
		□ Any Other		
		□ Registration No.		
		□ GST/PAN	No.	
6.	Present Business (Name of industrial sector e.g. Biomass Power plant, Briquette Manufacturer, Steel Industry)			
7.	Company Turnover during Financial Year	2018-19		
	(Rs. in Lakh)	2017-18		

8.	Availability of Infrastructure	
8.1	Land	□ >2.0 Acres
		□ 1.5-2.0 Acres
		□ =1.5 Acre
8.2	Area for Shed	□ >4000 Sq.ft.
		□ 3000-4000 Sq.ft.
		□ =3000 Sq.ft.
8.3	Existing Sanctioned Load	□ >70 kW
		□ 50-70 kW
		□ =50 kW
9.	Do you have existing biomass briquetting Plant?	□ Yes
		□ No
	lf Yes, Provide Details	Plant Capacity (in TPH)
		Started in year
		Biomass used for briquetting
		Annual Sale of Briquettes (in Tons)
10.	Experience in the field of	□ >2 Years
	biomass briquetting	□ 1 to 2 Years
		🗆 1 year

11.	combination with paddy straw (Please tick in the relevant	Press Mud	Cotton Stalks
		□ Saw Dust □ Cow Dung	<ul> <li>Peanut Straw</li> <li>Guar Husk</li> </ul>
		□ Mustard Straw	🛙 Heena Straw
12.	Availability of Paddy Straw &	Paddy Straw	Other Biomass/Bio-residue
	other Biomass	□ Less than 10 Kms.	□ Less than 10 Kms.
		□ Less than 20 Kms.	□ Less than 20 Kms.
		□ More Than 20 Kms.	☐ More Than 20 Kms.
13.	Any other relevant information		

Date:

(SIGNATURE) With seal of Industry

# SCORING CRITERIA FOR SELECTION OF FIRM/ INDUSTRY/ ENTREPRENEUR/ STARTUP FOR SETTING UP OF PADDY STRAW BASED BRIQUETTING PLANT (350 KG/HR)

S. No.	Item	Parameter	Max. Score
	Turney of Firm / Industry / Fatronson over / Stortune for	Turreever	
1.	Turnover of Firm/ Industry/ Entrepreneur/ Startup for the previous year	Turnover ( Rs. in lakh)	Score
		20-25	15
		>25-50	20
		>50	25
2.	Infrastructure		
2.1	Availability of Shed	Area (in sq.ft.)	Score
		=3000	3
		>3000-4000	4
		>4000	5
2.2	Existing industrial electricity connection in use	Load (in kW)	Score
	<b>,</b>	minimum 50	3
		>50-70	4
		>70	5
3.	Experience in manufacturing of biomass based	No. of Years	Score
	briquettes/ pallets	minimum 1	10
		>1-2	15
		>2	20
4.	Annual production of Biomass based briquettes/	Tonnes	Score
	pallets of Firm/ Industry/ Entrepreneur/ Startup	=300	10
		>300-500	15
		>500	20
5.	Location of proposed plant from proposed storage shed location	Distance (in Kms.)	Score
		At site	15
		upto 2	10
		>2-5	5
6.	Selection Committee's Interaction with Industry w.r.t.		
	Experience related to use of paddy straw in		
	briquetting/ palletizing		10
	Willingness to undertake R&D activities		
	Any other relevant point		
	Total		100

#### Format for Covering Letter

(on letterhead of interested party, willing to setup Paddy Straw based briquetting plant)

Τo,

#### **Process Engineer-II**,

Technology Facilitation Division, Punjab State Council for Science and Technology, MGSIPA Complex, Adjacent Sacred Heart School, Sector 26, Chandigarh -160019.

#### Subject: Expression of Interest for setting up of paddy straw based briquetting plant.

Sir,

Being duly authorized to represent and act on behalf of M/s. ..... (hereinafter referred to as "the Applicant"), and having reviewed and fully understood the eligibility criteria and information provided, the undersigned hereby apply in response to the EoI document No. PSCST/EoI/011 dated: 24.01.2020, for setting up of paddy straw based briquetting plant of capacity 350 kg/hr at ...... (*location*)

We are enclosing our Expression of Interest with the details as per the requirements of the EoI document, for your evaluation.

Yours faithfully, \_\_\_\_\_

(Signature of Authorized Signatory)

(Name, Title and Address)

Documents attached:

- I. Complete EoI document duly signed & stamped
- II. Authorization Letter
- III. Annexure-I
- IV. Annexure-II
- V. Technical Capability Docs (Pls. mention different documents separately)
- VI. Financial Capability Docs (Pls. mention different documents separately)