ANNEXURE-D

GOVERNMENT OF INDIA
ORDNANCE FACTORY BADMAL, BALANGIR, ODISHA
NOTICE INVITING EXPRESSION OF INTEREST(Stage-1)

NIEOI No: 3350/EOI/ Fuze A670M & CE Pellet /EO (P & M) Date: 12.09.2025

The Chief General Manager, Ordnance Factory Badmal, Balangir, Odisha invites Expression of Interest (EOI) from reputed Indian Firms for providing the following Machine / Plant at Ordnance Factory Badmal, Balangir, Odisha.

Sl No.	Reference No	Name of Plant/Machine	Capacity (Per Shift/Day)
1	7002/P&M/EOI/Fz. A670M/U-04/2025-26, Dt-08.07.2025 (Annexure-A)	Automatic filling and assembly plant for Fuze A670M (Scope of Work attached as Annexure)	1200 Nos.(150Nos/Hr)
2	7002/P&M/EOI/U-04/ Pellet/2025-26, Dt-07.07.2025 (Annexure-B)	Automatic machine for explosive CE Pellet pressing (Scope of Work attached as Annexure)	800 Nos. (100Nos/Hr)

Contract shall be awarded through Two Stage Process:

- Stage 1: Expression Interest (EOI) Stage
- Stage 2: Tender Enquiry (TE) Stage

Tender documents will be issued in Stage-2 for each Plant separately to the shortlisted companies who participate and qualify in the EOI (Stage-1). Separate contracts will be signed with successful bidders for each plant.

Interested parties are requested to submit their EOI in the prescribed format (**Annexure C**) along with all supporting documents/credentials.

For detailed information, please see Annexure-A , B & C which are displayed in CPPP website , GeM portal and Munitions India Limited web site (*http://munitionsindia.in/downloads/TE_Enquiry*) or send email to "eoofbol@ord.gov.in" of Contact Person mentioned below for obtaining Annexures at least 15 days before the last date of submission of EOI.

Last date of submission of EOI is up to 20 days from the date of publishing of short advertisement EOI.

Sd/-
Sr. Manager
For Chief General Manager

Address for communication:	Contact person (for any queries):
Chief General Manager, Ordnance Factory Badmal Balangir, Odisha	**Name:**Shri Dibyajyoti Sethi **Designation:** Sr. Manager **Telephone No:** 06655-25-2026 ,2088,2031 **E-mail ID:**eoofbol@ord.gov.in

ANNEXURE-A

No: 7002/P & M/EOI/U-04/Fuze A670M/2025-26

Annexure to Notice Inviting Expression of Interest (NIEOI) NIEOI No: 3350/EOI/ Fuze A670M & CE Pellet /EO (P & M), Dt.12.09.2025.

Introduction:

Ordnance Factory, Badmal (OFBL) is under Munitions of India Limited (MIL), Pune which is part of Deptt of Defence Production Public Enterprise, Ministry of Defence, Govt of India. Fuze A670M for 30mm HE/I Ammunition is filled and assembled at OFBL. Currently, the Fuze filling and assembly process is Semi-automatic. The complete process needs to be automated to the extent possible to increase safety, quality and productivity.

Scope of Work in Brief:

1. The scope of work of the plant will include design, fabrication, supply, erection and commission of the plant. The scope will also include civil works for erection, piping and interconnection of different equipment's and services to be provided as part of the plant. The contractor shall have to arrange training for Purchaser's personnel for mutually agreed time period during / before commissioning of the plant at O.F. Badmal.
2. Detailed specifications with description of plant manufacturing process and lists of equipment's required for each plant will be furnished in the tender documents which will be issued in Stage-2. However Brief description of process in given below.

The Fuze A670M filling and assembly process is semiautomatic. Fuze A670M filling and assembly process is an explosive process and the detail comparison of existing v/s desired process for manufacturing process of Fuze A670M is as below.

Sl. No	Existing process	Desired Process/Automation
01	**Spinning of SLA** Sample Spinning of SLA in spinning machine in the range of 30000 to 55000 RPM. RPM recording visual inspection.	Auto spinning and recording of RPM.
02	**Assy-1** **Assembly of Delay Train and Delay train attachment** Positioning of delay train and Delay train attachment manually and pressing and ringing by hand press.	• Automatic pick and place assembly of delay train and delay train attachment into plug. • Pressing and ringing in automatic machine stage wise (i.e pressing in 1st station and Ringing in 2nd station). • AI inbuilt inspection of the assembly.
03	**Assy-2** **Filling of Booster Cup** Scooping and filling of composition (130±6 mg) in Booster cup manually. Pressing in rotary press machine with suitable pre-set dead load (130-150Kg) and dwell time 3 sec.	• Volumetric filling and automatic pressing of booster composition in booster cup. • AI inbuilt inspection of the assembly.
04	**Assy-3** **Filling of Ignitor Cup** Scooping and filling of composition	• Volumetric filling and automatic pressing of ignitor composition in ignitor cup.

	Composition-I-25±4mg and Composition-II-35±4mg in Ignitor cup manually. Pressing in rotary press machine with suitable pre-set dead (130-150Kg) load and dwell time 3Sec.	• AI inbuilt inspection of assembly.
05	**Assy-2 and Assy-3 Insertion into Plug vertical Channel** Insertion of filled Booster cup into booster channel and filled ignitor cup into ignitor channel of plug with steel washer.	• Automatic pick and place assembly of steel washer, Booster cup in booster channel and ignitor cup in ignitor channel. • AI inbuilt inspection of the assembly.
06	**Assy-4 &5** **Filling of Vertical channel (Booster Channel & Ignitor Channel** Filling and pressing of explosive compositions is carried out in semi-automatic method (i.e. Feeding of Plug manually to machine, auto volumetric filling of composition (Ignitor channel (Comp-I-130±5mg and Comp-II-125±10mg) and Booster Channel (Chargemass-110±10mg in three increments) with pressing load of 110-130Kgf.	• Automatic positioning of plug and Volumetric filling and pressing of composition in vertical channel. • Automatic gauging after filling.
07	**Filling of Arc channel (Assy-6)** Filling and pressing of explosive compositions is carried out in semi-automatic method (i.e. Feeding of Plug manually to machine, auto volumetric filling of composition Volumetric filling (Charge mass-470±20mg) and pressing of composition with load 600Kgf in Arc channel.	• Automatic positioning of plug and Volumetric filling and pressing of composition in arc channel. • Automatic gauging after filling.
08	**Assy-7A** **Det. MG-8 Assembly in plug.** Assembly of spring, firing pin and positioning detonator MG-8 and stabbing of little cup on Detonator.	• Pick and place of firing pin (inverted position), spring and locking of spring. • Manual placing of detonator and little cup. • Automatic stabbing of little cup. • AI inbuilt inspection.
09	**Assy-8** **TO-34 filling & pressing in plug.** Assembly of stop in the side channel. Filling of TO-34 (28 to 32mg) scooping method. Pressing in dead load press machine with 300Kgf for dwell time of 6 secs.	• Pick and place assembly of STOP inside plug. • Volumetric weighing of composition TO-34 and auto pressing. • Auto setting in PLC with digital display for pressing load and dwell time. • Auto gauging.
10	**Assy-13** Assembly of Det. A30T in threaded Bush with varnish and Steel washer and synthetic disc. Assemble SLA inside the threaded bush. Place steel Cap and press in machine.	• Automatic varnishing and Automatic Pick and place of Detonator into threaded Bush. • Automatic Pick and place of steel washer. • Automatic Pick and place of SLA. • Automatic Pick and place of cap. • Automatic pressing. • Auto setting of load in PLC with digital display.

		• Automatic AI based checking.
11	**Final Assembly (Conveyor Belt Assy)** a) Insertion of SP unit manually. b) Tightening of filed plug is done manually by foot operated torque tightening machine. c) Assy of PVC washer manually. d) Assy of steel ball (03 Nos). e) Seaming of Ballastic Cap in machine. f) Head assembly by application of Araldite and pressing by press machine with load 350Kgf. g) Tightening of Det. A30T unit (Thread bush). h) Application of APC at base of Fuze. i) Application of Enamel paint in the seaming groove manually. j) Fuze Nose portion dipping in Dye Rodamine	a) Automatic insertion of SP unit. Tightening of plug (filled) into Fuze Body with required Torque. b) AI based checking. c) Pick and place assembly of PVC washer and AI camera based visual checking. d) Pick and place of steel ball assembly in plug and AI camera based visual checking. e) Automatic cap seaming in machine and AI based auto checking. f) Automatic application of Araldite and PLC based automatic pressing of head. AI based checking. g) Automatic torque tightening of Det. A30T into Plug and AI based camera checking with digital display. h) Automatic application of APC and AI based checking. i) Automatic application of enamel paint and AI based checking. j) Automatic Application of Dye Rhoda mine on Fuze and AI based checking.

General Requirements:

A. The interested firm must visit Ordnance Factory Badmal, Balangir, Odisha for better understanding of the composition manufacturing process.
B. The interested firm must come up with a proposal against the said problem statement and present the same at Ordnance Factory Badmal in 1 month after plant visit. The feasibility of the proposal will be checked by the Multifunctional team nominated by competent authority at Ordnance Factory Badmal.
C. The interested firm has to design the plant in current Production building only. Minor Modifications in the Building is allowed without affecting the structural stability of the building.
D. All the electrical, electronics and control equipments and accessories to be kept inside the danger building must be flameproof duly certified by CIMFR, Dhanbad/ equivalent agency like ATEX.
E. All the material handling and storage equipments like Trays, sieves, machines and Boxes must be made from non-sparking and conducting material like Aluminium, Brass etc.
F. The automatic plant is going to handle metallic powder; thus suitable Automatic Fire Extinguishing system must be present in the proposed plant.
G. The production building is Air Conditioned and Compressed Air supply is available in the Building.
H. The plant must be Industry 4.0 Compliant.
I. Safety is the topmost priority in the said project. Thus, no deviation w.r.t safety is allowed while designing the plant.

Desired Capacity of the plant:

The plant should have capacity to achieve minimum output rate of **1200Nos/ day (150Nos/Hr) considering single 8 hour shift with 100% conformance in physical Quality and Safety.**

Bidder's Profile & Qualification Criteria for Stage-1:

1. The interested parties (Bidders) must have the following qualification criteria for selection for Stage-2 (issue of tender documents):

a. Financial Criteria:

Bidder must have average annual turnover of minimum Rupees One Crore in last three years.

b. Technical Criteria:

Bidder should have past experience of design, supply, erection and commissioning of the required plant or similar plants for chemicals/explosives either in India or in any other country or, Bidder should have collaboration agreement for design, supply, erection and Commissioning and after sales service with any other Indian or foreign company who meets the above criteria.

2. The applications (EOI) of firms should be accompanied by following documentary evidence in support of meeting the above criteria / profile:
   i. Photo-copies of audited balance sheet and profit & loss statements for last three years.
   ii. Photo-copies of VAT/CST Registration Certificate, Provident Fund Registration Certificate, income Tax PAN Card and Central Excise & Service Tax Registration Certificates.
   iii. Photo-copies of orders/contracts (showing values of projects & work-share of Bidder) and performance certificates of previous supplies/ projects executed. [In case of projects executed by a foreign firm/partner in a foreign country, if value / other information cannot be given for confidentiality, the Bidder shall submit maximum possible relevant information to satisfy its credentials.]
3. The interested firms should also furnish:
   a) Undertaking to provide pre-delivery inspection with own means or third party mutually agreed with purchaser, in case contract is awarded for any plant.
   b) Undertaking to be responsible for all contractual obligations including guarantee / warranty obligations in case contract is awarded for any plant.
   c) Affidavit that the firm has never been banned by Govt. of India.
   d) General power of attorney in favour of signatory other than owner/head of the firm.

Criteria for Evaluation & Selection Process:

- The interested firms shall be called to O.F. Badmal, Balangir, Odisha to visit the site and to give presentation about their work experience and competence. The interested firm must come up with a proposal against the said problem statement and present the same at Ordnance Factory Badmal in 01 month after plant visit. The feasibility of the proposal will be checked by the Multifunctional team nominated by competent authority at Ordnance Factory Badmal.
- Based on the credentials, fulfilment of qualification criteria and presentations, the firms shall be short-listed.
- Tender documents (Requests for Bids) shall be issued in Stage-2 to only the shortlisted firms.

ANNEXURE-B

No: 7002/P & M/EOI/U-04/CE Pelleting Machine/2025-26

Annexure to Notice Inviting Expression of Interest (NIEOI) NIEOI No: 3350/EOI/ Fuze A670M & CE Pellet /EO (P & M), Dt.12.09.2025.

Introduction:

Ordnance Factory, Badmal (OFBL) is under Munitions of India Limited (MIL), Pune which is a part of Deptt. of Defence Production Public Enterprise, Ministry of Defence, Govt. of India. Various CE Pellets with weight ranging from 4.7gm to 53.16gm are manufactured at OFBL for different Ammunitions by pressing of Blended CE Powder in hydraulic press machines. The CE Pellets are manufactured from blended CE powder which is an explosive composition. Currently, the CE Pellet manufacturing process is semi-automatic process with manual weighing and pouring of composition into various moulds and punches and then pressing by hydraulic press machine with desire load and dwell time. The complete weighing and pressing process needs to be automated to the extent possible to increase safety, quality and productivity.

Scope of Work in Brief:

1. The scope of work of the plant will include design, fabrication, supply, erection and commission of the plant. The scope will also include civil works for erection, piping and interconnection of different equipment's and services to be provided as part of the plant. The contractor shall have to arrange training for Purchaser's personnel for mutually agreed time period during / before commissioning of the plant at O.F. Badmal.

   Detailed specifications with description of plant manufacturing process and lists of equipment's required for each plant will be furnished in the tender documents which will be issued in Stage-2.However Brief description of process in given below.

   The CE Blended powder is prepared by CE Blending with Zinc stearate and graphite powder in Blending machine. Then Blended CE powders are weighted and poured in moulds as required and feed into the press machine for pressing. The brief description of existing production process is given below.

   A. CE Blended Powder is weighed manually in a digital weighing machine and then poured into moulds of different dimensions for various CE pellets.
   B. The following are the various CE Pellets manufactured at OFBL with pressing load and Dwell.
   C. Manual cleaning of Mould Punches after pressing operation.
   D. The Gauging of manufactured CE pellets are done manually with specified gauges.

Sl. No.	Types of pellets	Technical data
i.	53.16gm CE Pellet	• **Pellets are cylindrical in shape.** • **Min Height of the pellet-8mm** • **Max Height of the pellet-47 mm** • **Min. Diameter of the pellet-15mm** • **Max Diameter of the pellet-32mm** • **Min Dwell time-3 sec** • **Max dwell time-10 sec** • **Min Load-5 Ton** • **Max Load-10 Ton**
ii.	8.151gm CE Pellet	
iii.	6.4gm CE Pellet	
iv.	7.6gm CE Pellet	
v.	4.7gm CE Pellet	

vi.	37gm CE Pellet	• **Min. weight of Pellet-4.7gm** • **Max. weight of pellet-53.16gm**

The detail comparison of existing process v/s desired process for manufacturing of CE pellets is as below.

Sl. No	Existing process	Desired Process/Automation
01	Manual weighing and filling of CE powder in moulds.	Automatic weighing and filling of CE powders through machine/system.
02	Manual placing of filled moulds and Pressing with Hydraulic press.	Automatic positioning and pressing of powder in mould and punch.
03	Manual Ejection and collection of finished pellets.	Automatic ejection and collection of pellets and counting and weighing of finished pellets.
03	Manual gauging (Height and diameter of finished Pellet.	Auto gauging.
04	Manual mould and punch cleaning.	Auto cleaning of Mould and punch.

General Requirements:

A. The interested firm must visit Ordnance Factory Badmal, Balangir, Odisha for better understanding of the composition manufacturing process.
B. The interested firm must come up with a proposal against the said problem statement and present the same at Ordnance Factory Badmal in 01 month after plant visit. The feasibility of the proposal will be checked by the Multifunctional team nominated by competent authority at Ordnance Factory Badmal.
C. The interested firm has to design the plant in current Production building only. Minor Modifications in the Building is allowed without affecting the structural stability of the building.
D. All the electrical, electronics and control equipments and accessories to be kept inside the danger building must be flameproof duly certified by CIMFR, Dhanbad / equivalent intl. agency like ATEX.
E. All the material handling and storage equipments like Trays, sieves, machines and Boxes must be made from non-sparking and conducting material like Aluminium, Brass etc.
F. The automatic plant is going to handle metallic powder; thus suitable Automatic Fire Extinguishing system must be present in the proposed plant.
G. The production building is Air Conditioned and Compressed Air supply is available in the Building.
H. The plant must be Industry 4.0 Compliant.
I. Safety is the topmost priority in the said project. Thus, no deviation w.r.t safety is allowed while designing the plant.

Desired Capacity of the plant:

The plant should have capacity to achieve minimum output rate of **800Nos/ day (100nos/Hr) considering single 8 hour shift with 100% conformance in physical Quality and Safety.**

Bidder's Profile & Qualification Criteria for Stage-1:

1. The interested parties (Bidders) must have the following qualification criteria for selection forStage-2 (issue of tender documents)

a. Financial Criteria:

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2. The applications (EOI) of firms should be accompanied by following documentary evidence in support of meeting the above criteria / profile:
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   iii. Photo-copies of orders/contracts (showing values of projects & work-share of Bidder) and performance certificates of previous supplies/ projects executed. [In case of projects executed by a foreign firm/partner in a foreign country, if value / other information cannot be given for confidentiality, the Bidder shall submit maximum possible relevant information to satisfy its credentials.]
3. The interested firms should also furnish:
   a) Undertaking to provide pre-delivery inspection with own means or third party mutually agreed with purchaser, in case contract is awarded for any plant.
   b) Undertaking to be responsible for all contractual obligations including guarantee / warranty obligations in case contract is awarded for any plant.
   c) Affidavit that the firm has never been banned by Govt. of India.
   d) General power of attorney in favour of signatory other than owner/head of the firm.

Criteria for Evaluation & Selection Process:

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- Based on the credentials, fulfilment of qualification criteria and presentations, the firms shall be short-listed.
- Tender documents (Requests for Bids) shall be issued in Stage-2 to only the short listed firms.

ANNEXURE- C

Format of Application

Interested parties should submit EOI application to O F Badmal, Balangir, Odisha in the following format, enclosing supporting documents, required affidavits/undertakings and copies of company presentation. The envelope containing the EOI should be marked with the NIEOI No. and Date for identification and sorting. It may be sent by mail- " eoofbol@ord.gov.in" / post/courier/hand delivery. Any application received after the last date & time for submission will not be considered.

Note: Separate sheets may be used wherever necessary.

1. Name & Address of the Bidder:
2. Name & Designation of the person to whom all references shall be made:
3. Fax Nos:
4. Telephone & Mobile Nos:
5. E-mail ID:
6. Chief of the Organization: E-mail ID: Telephone / Mobile No:
7. Type of Organization (Public Sector/Limited/Private Limited/Partnership/Proprietary /Society/ Any other):
8. No. of offices & factories/workshops (details in separate sheets):
9. No. of qualified Technical & Supervisory Personnel etc in following format:

Sl	Class of Manpower	No. of Personnel Available with contractor	No. of Personnel to be employed

10. Particulars of past experience of similar works executed:
11. Concurrent Commitments (Details of works under execution, %age completion, expected date of completion):
12. Copy of collaboration agreement between parties (if the Bidder has partnered with any other firm to submit bid jointly):
13. Annual Turnover Statement for last 3 years (certified by a statutory auditor):

Financial Year	Annual Turnover (Rs)	Net Worth (Rs)
Year-1		
Year-2		
Year-3		

Net worth shall be worked out on the following basis:
Net worth = Capital + Reserves – Accumulated loss

14. Plant or plants for which interested to bid for:
15. Any other information that the bidder may like to give in order to highlight his bid:
16. List of documents attached:

Place :
Date :

Signature:
Name in Full:
Designation / Status: