



भाकृअनुप - राष्ऱीय कृषि अनुसंधान प्रबंध अकादमी
राजेन्द्रनगर, हैदराबाद-५०००३०, तेलंगाणा, भारत
ICAR-National Academy of Agricultural Research Management
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F. No.5-682(C)/2025-26/Model Farm-Mini Tractor/A.III
05th February 2026

**NOTICE INVITING TENDER FOR
SUPPLY AND INSTALLATION OF AUTONOMOUS ELECTRIC MINI TRACTOR
AT ICAR-NAARM**

The Director, ICAR-NAARM invites Bids from the authorized Dealers/OEM to Tender for Supply of Autonomous Electric Mini Tractor at **ICAR-NAARM**. The bidders are requested to submit the bids Online on GeM Portal. The summary of the requirement is as under:

S.No	Item Description	Quantity
1.	Tender for Supply of Autonomous Electric Mini Tractor at ICAR-NAARM	As per Schedule I

Specifications along with quantity required for the above items are available in Schedule – I of this tender document.

TERMS AND CONDITIONS

1.	Online bids on GeM are invited for and on behalf of the Director, ICAR – NAARM, from eligible dealers / OEM for Supply and Installation of Autonomous Electric Mini Tractor at ICAR-NAARM.
2.	All communications must be addressed to the Director, ICAR-NAARM, Rajendranagar, Hyderabad.
3.	Specifications: The detailed specifications for Supply and Installation of Autonomous Electric Mini Tractor at ICAR-NAARM are provided in Schedule – I of this tender document.
4.	<p><u>Eligibility Criteria:</u></p> <ul style="list-style-type: none"> a. Scanned Copy of PAN and GSTIN b. Scan of Brochure of the equipment Offered c. Filled Annexure – A*. d. Filled Details as per Annexure-B. e. Proof of 2 contracts related to Supply and Installation of Autonomous Electric Mini Tractor in Government/Public/Private Sector Undertakings in last 3 financial years (FY 22-23,23-24 and 24-25) along with duly filled Annexure-C f. Scanned copy of Bid Security Declaration to be submitted on Firm’s letter head. Annexure D g. The detailed specifications offered, and its brand should be provided in the technical document. <p>*It is advisable to mention the page numbers of all documents attached/submitted as per Annexure-A (Checklist), as this facilitates easy verification and minimizes the possibility of any document being overlooked during scrutiny.</p>
5.	Rejection of tenders: Tenders not complying with any one of the above conditions are liable to be rejected. No correspondence in this regard will be entertained.
6.	Rates: The quoted price shall be inclusive of all costs such as supply, delivery, installation, testing, commissioning, training of NAARM personnel on operation and maintenance, provision of licenses and charges, warranty services, transportation and all applicable taxes, duties, and incidental expenses. No additional payment will be made on any account.
7.	Performance Security Deposit: The successful bidder must furnish a Performance Security Deposit @5% on the total amount quoted which will be refunded / returned only after satisfactory completion of warranty (3 years from date of installation) of the material. The Security Deposit should be in the form of Demand Draft, Fixed Deposit Receipt or Bank Guarantee from any commercial bank and on which no interest will be paid.
8.	If after finalization of the tender, the selected firm expresses its inability to supply the material at the quoted rates, thus failing in fulfilling the stipulated terms and conditions for award of the contract, then the Security Deposit amount is liable to be forfeited in total.

9.	Payment: Payment shall be made after successful supply, installation, testing, and commissioning of the Tractor and upon certification by the concerned In-charge that the work has been completed satisfactorily. No advance payment will be made.
10.	Taxes / Duties: GST as applicable.
11.	Acceptance of tender: Director, ICAR-NAARM reserves the right to accept or reject any of the tenders either in part or in full without assigning any reason thereof.
12.	Jurisdiction: All disputes including court proceedings, shall be settled within the Hyderabad jurisdiction only.
13.	The Finalized bidder will have to supply and deliver the Electric Mini Tractor within 15 days of issuance of Purchase/Supply Order.
14.	The bidders may provide the details of doing this supply to any other institutes.
15.	Warranty & Support: The system and all components shall carry a minimum 3-year comprehensive warranty from the date of commissioning. During the warranty period, the supplier shall provide preventive maintenance, on-call service, and replacement of defective components at no extra cost.
16.	The successful bidder has to provide onsite training of personnel at NAARM regarding Use and Maintenance of Electric Mini Tractor.

Generalized Specifications for Autonomous Electric Mini Tractor

1. General Requirements

- **Operational Mode:**
 - Autonomous Electric Tractor –
 - i) Autonomous (GPS Guided) and
 - ii) Remote control and
 - iii) Manual.All the modes shall be provided with the same tractor
- **Application:** Agricultural field operations including spraying, cultivation, mowing, reaping, and hauling.

2. Powertrain and Performance

Parameter	Specification
Rated Power	Minimum 20 HP equivalent electric output
Drive Type	2 Wheel Drive
Maximum Speed	16-18 km/h
Battery Capacity	Minimum 16 kWh
Operation Time	Minimum 4-5 hours per full charge
Charging Time	Maximum 5 hours
Power	Electric Motor
Steering	Manual + Remote + Autonomous

3. Dimensions and Build

Parameter	Specification
Working Width	Minimum 2.5 ft
Overall Dimensions (L×B×H)	Approx. 7 ft × 3.5 ft × 3 ft
Ground Clearance	Minimum 1 foot
Turning Radius	Around 10 feet
Tyres	Rear – R1 Type, Min 6-ply rating, Agricultural grade Front - Agricultural grade, suitable for uneven field terrain

4. Functional Capabilities

- Compatible with standard mini tractor implements – Category 0 or Category 1 Hitching System
- Capable of precision farming operations including GPS-based auto-steering.
- Remote monitoring and task assignments via UI application.

5. Safety and Standards

- Must include Roll Over Protection Structure (ROPS) or equivalent.
- Emergency stop and manual override features are mandatory.

6. Maintenance and Support

Local Service Centre in Hyderabad

- Must provide:
 - Battery health monitoring tools and Software updates for autonomous features.
 - Service support within 48 hours of request.

7. Warranty

Component	Minimum Warranty Period
Battery Pack	Min. 3000 Cycles or 3 Years
Tractor Body, Motors and Controllers	Min. 2 Years
Autonomous System and other Electronics	Min. 1 Year

8. Documentation Required

- Recommended list of spares (MRLS) for 3 years post-warranty.
- Pre-dispatch inspection (PDI) compliance.
- Proof of local facility presence in Hyderabad for repair and maintenance

9. Implements Specifications

These specifications cover the attachments compatible with electric mini tractors:

Implement	Specification Requirements
Rotavator	<ul style="list-style-type: none">- Working Width: 3 ft- Blade Type: L-type or C-type- Blades: Minimum 12- Depth Control: Adjustable
Cultivator	<ul style="list-style-type: none">- Tines: Minimum 5- Frame: Heavy-duty steel- Working Depth: 4-6 inches- Compatibility: 3-point linkage
Orchard Sprayer	<ul style="list-style-type: none">- Tank Capacity: 200–300 liters- Spray Range: About 6 Feet- Fan Type: Axial or centrifugal- Adjustable Pressure and Discharge Valve
Trailer	<ul style="list-style-type: none">- Load Capacity: 0.5-1 ton- Tyres: Agricultural grade- Size (LxBxH): Minimum 4Ft.x3Ft.x2Ft.- Hitch Type: Compatible with tractor drawbar

10. Implement Compatibility

- All implements must be compatible with standard Category-I 3-point linkage.
- Implements should be operable via PTO/ Three point for Cultivator
- Safety features such as guards, emergency shut off, and overload protection must be included.

11. Autonomous Steering and Navigation System Specifications

11.1. System Overview

The tractor must be equipped with an **autonomous steering system** capable of precision navigation across varied terrains and crop layouts. The system should support both **manual override** and **fully autonomous operation**.

11.2. Core Features

Feature	Specification Requirement
Auto-Steering Accuracy	Minimum ± 10 cm Pass-To-Pass Accuracy
Auto-Drive	System must control acceleration and deceleration based on terrain, implement load, and path curvature
Speed Range (Auto Mode)	0.5 km/h to 7 km/h
Remote-Control Functionality	Tractor must be operable via handheld remote or mobile app, including: - Start/Stop - Auto/Remote Drive control - Emergency override
Deviation Tolerance	Under clear skies, deviation from pre-recorded path must not exceed 20 cm.
Navigation Modes	Map Record and Follow, Straight line, curve mode, and U-turn
Map Record & Follow	Must support recording of field paths and performing the operation with high fidelity
Control Panel	Minimum 7" touch screen, IP65 rated
Path Planning	Map record and follow with path optimization and support for curved and sharp turns
Safety Features	Emergency stop, manual override, obstacle detection sensors
Sensors	Auto stopping upon obstacles detection

11.3. Performance Requirements

- **Turn Radius Handling:** Must support Ω -shape and fish-tail turns for tight field layouts
- **Deviation Limit:** Must maintain path tracking accuracy within (10 cm) under ideal conditions

11.4. Field Management Capabilities

- Ability to store and manage multiple field profiles
- Historical task tracking and boundary mapping

12. The firm has to provide training to staff for handling, usage, maintenance of the supplied item.

CHECKLIST (To be uploaded with Technical Bid)

S. No.	Document to be uploaded in technical bid on GeM Portal	Whether Uploaded (Yes/No)	Please mention Page No From - To
1.	Scanned Copy of PAN and GSTIN		
2.	Scan of Brochure of the equipment Offered.		
3.	Filled Details as per Annexure – B		
4.	Proof of 2 contracts related to Supply and Installation of Autonomous Electric Mini Tractor in Government/Public/Private Sector Undertakings in last 3 financial years (FY 22-23,23-24 and 24-25) along with duly filled Annexure-C		
5.	Scanned copy of Bid Security Declaration to be submitted on Firm's letter head. Annexure D		
6.	The detailed specifications offered, and its brand should be provided in the technical document.		

The documents and annexures as asked in the tender should be indexed and page numbers for the same may be provided in Index by bidder.

COMMERCIAL DETAILS

(To be submitted on Firm's Letter head)

1.	Name and Address of Bidder	
2.	Telephone No. / Mobile No. / FAX No.	
3.	Email ID	
4.	Month and Year of Establishment	
5.	PAN and GSTIN Number	
6.	Bid Security Declaration Form	

SIGNATURE OF THE BIDDER & STAMP

Date:

Place:

RELEVANT WORK EXPERIENCE DETAILS

(To be submitted on Firm's Letter head)

S. No.	Financial Year	Name of the Department, Organization where Similar supply was made	Amount	Contact Details of the Departments / Organizations where Similar supply was made
1.	2022-2023			
2.	2023-2024			
3.	2024-2025			

AUTHORISED SIGNATORY OF THE FIRM WITH SEAL

Place:

Dated:

Note: While uploading this annexure bidder should make sure that work experience certificates are also uploaded along with this in one single pdf

UNDERTAKING
(To be submitted on Firm's Letter head)

To
The Director
ICAR-NAARM
Rajendranagar
Hyderabad 500 030

Sir,

We, the undersigned, declare that: We understand that, according to your conditions, bids must be supported by a **Bid-Security Declaration**.

We accept that we will automatically be suspended from being eligible for bidding in any contract with your institute for the period of time of 2 years starting on date of closing of bids if we are in breach of our obligation(s) under the bid conditions, because we:

(a) have withdrawn our Bid during the period of bid validity specified in the Letter of Bid; or

(b) having been notified of the acceptance of our Bid by your institute during the period of bid validity,

(i) fail or refuse to execute the Contract, if required, or

(ii) fail or refuse to furnish the Performance Security as per tender conditions

We understand this Bid-Securing Declaration shall expire if we are not the successful Bidder.

Signature of Authorized signatory with company seal

Sample of BOQ

(To be filled and uploaded in GeM Bid as per the format there)

The screenshot shows an Excel spreadsheet with the following data:

Item Num	Item Title	Item Description	Item Quar	Unit of Me	Consignee	Delivery Period (In number of days)
1	Autonomous Electric Mini Tractor	As per Schedule I of the Tender docum	1 No	numbers	ao.stores	15
2	Any Intsllation Charges	As per Schedule I of the Tender docum	1 No	numbers	ao.stores	15
3	Any delivery Charges	As per Schedule I of the Tender docum	1 No	numbers	ao.stores	15
4	Staff Training Charges	As per Schedule I of the Tender docum	1 No	numbers	ao.stores	15
5	Any other extra charges	As per Schedule I of the Tender docum	1 No	numbers	ao.stores	15