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No. GECCS/Mech/2025-26/ 3652

Date- Oct 2025

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To,

GECA Notice Board / GECA Website

Kind Attention :- Head Mech. Engineering Department
Subject :- Quotation for Supply of Components & Materials for E-Vehicle

Dear Sir/madam, You are requested to send your competitive quotations are invited for eligible and interested dealers/distributors/Suppliers for the supply of the following items subject to the following conditions.

Terms & Conditions -

1 Rates quoted should be free delivery at the Institute inclusive of all lead and Lift.
2 Detailed specifications of the articles you intend to supply should be given. If not according to the specification, laid down here under.
3.The material should be supplied within (07) days from the date of order. List of material is given below.
4.The earliest delivery period should be quoted if you cannot supply within the period mentioned above.
5.**Quotation should be in sealed cover and superscripted as "Quotations of Mechanical Engineering Department" Due on : 10/10/-2025, at 5 P.M.**
6.Quotation should be valid for six months.
7.Right to reject any or all quotations are reserved with the under signed.
8.Rates quoted must be inclusive of All applicable Taxes.
9. Delivery of the material will be carried out free of cost at our institute in Mechanical Engineering Department by the supplier.
10. No advance shall be paid and No part payment shall be made.
11.Detail Specification including make of material should be mentioned in Quotation. If the quoted Item/Peripheral is available with you in different brands/makes, the rates should be mentioned separately brand wise/specification wise. **If the Make/Brand/Manufacturer name is not mentioned in the quotation will be rejected without giving any information to the supplier.**
12.Material will be inspected by the concerned department. If the material found correct subject to the required specifications, bill will be passed, otherwise returned as it is at your cost
13.GST Certificate, Authorized Dealers/distributers/Suppliers Certificate, and other related certificate is attached compulsory.
14.Quotation not complying with the above conditions and incomplete once will not be considered.
15. The quantity of the components to be supplied may be varies as per the requirements.
16. **Certification Requirements (Mandatory)**

The supplier/manufacturer shall possess the following valid certifications **will be preferred**
ISO 9001 – Quality Management System
ISO 14001 – Environmental Management System
ISO 45001– Occupational Health & Safety Management System
GMP (Good Manufacturing Practices) Certification
Copies of valid certificates shall be submitted along with the tender

We will priorities the quotations we received which will reach out the supply of all the maximum components together by one supplier with certifications & all our required specifications into minimal cost.

Sr. No.	Specification	Qty.	Rate	Remark
01	**Battery Specifications** • Type: Lithium-ion ($LiFePO_4$ recommended for safety & long cycle life) • Nominal Voltage: **60 V** • Capacity: **100 Ah** (~6.0 kWh energy) • Usable Capacity: ~90–95 Ah (protected by BMS) • Continuous Discharge Current: ≥100 A • Peak Discharge Current: ≥200–250 A • Cycle Life: **2000–3000 cycles** (~8 years) • Warranty: **3 years** • Integrated **BMS** with protections: over-voltage, over-discharge, short-circuit, over-current, thermal monitoring • Max Charge Voltage: ~65.7 V • Discharge Cutoff Voltage: ~50.4 V • Operating Temperature: Charge 0–45 °C / Discharge –20–60 °C • Weight: ~55–65 kg • Enclosure: Metal casing, anti-rust coating, IP65 recommended	01		
02	**Charger Specifications** • Input: **230 V AC, 50 Hz** (single phase) • Output: **60 V DC, 20 A** • Output Power: ~1.2 kW • Charging Method: **CC–CV (Constant Current → Constant Voltage)** • Charging Time: **5–6 hours** full charge • Protections: over-voltage, over-current, short-circuit, reverse polarity, over-temperature • Auto cut-off at full charge • Efficiency: ≥90% • Cooling: Air cooled (with fan) • Enclosure: Rugged aluminium/steel body (IP54 recommended)	01		
03	**Motor Controller & Differential Specifications** • Type: **PMSM (Permanent Magnet Synchronous Motor)** • System Voltage: **60 V DC** • Rated Power: **5 kW peak** (~3–3.5 kW continuous) • Drive: Differential direct drive • Top Speed: **25 km/h** • Continuous Torque: ~30–40 Nm • Peak Torque: ~80–100 Nm (depending on gearing) • Cooling: Air cooled • Ingress Protection: IP54 or better • Controller: 60 V PMSM controller, Continuous ≥150 A, Peak ≥300–350 A, FOC (Field Oriented Control), regenerative braking support • Reverse drive: Supported (Yes) • Efficiency: ≥85–90%	01		

04	**Braking System Specifications**
	• **Brake configuration**: Front disc brakes + rear drum brakes
	• **Brake components**
	  • Discs: vented or alloy, corrosion-resistant
	  • Pads/shoes: semi-metallic or sintered for durability
	• **Hydraulic system**: Master cylinder, brake lines with quality hose, bleedable lines, sealed joints; parking / emergency brake mechanical as backup.
	• **Stopping distance:** ≤ ~4 m from 20-25 km/h full load
	• **Pedal feel**: Firm, progressive, not spongy; low actuator effort.
		01		

05	**Suspension System Specifications** • **Front**: Telescopic shocker with swing arm and spring • **Rear**: Telescopic shocker with swing arm and spring	01		

06	**Electrical Harness**
	• **Voltage Rating:** 60V DC system
	• **Current Rating:**
	  ○ Main power line: ≥ 200A (matches peak discharge of battery)
	  ○ Accessory circuits (lights, indicators): 5–15A
	• **Wire Type:** Copper stranded wire (for flexibility and high current)
	• **Wire Gauge:**
	  ○ Main battery-to-controller line: 25–35 mm²
	  ○ Motor-to-controller: 16–25 mm²
	  ○ Lights and auxiliary circuits: 1.5–2.5 mm²
	• **Insulation:** High-temperature, flame-retardant, UV-resistant (≥105°C)
	• **Connectors:**
	  ○ Waterproof connectors (IP65 rated) for all external connections
	  ○ Anderson Powerpole or similar for main battery lines
		01		

07	**Lighting Specifications** **A. Headlights** • **Type:** 12V Powerful LED lights • **Quantity:** 2 (Front) • **Voltage:** 12V DC (powered via 60V system with step-down DC-DC converter) • **Power:** 20–35W per light • **Lumen Output:** 1500–2500 l m each • **Beam Pattern:** Focused (high beam) + wide flood • **Housing:** IP65 waterproof aluminum casing **B. Tail Lights** • **Type:** 12V LED lights	06		

	• **Quantity:** 2 (Rear) • **Functions:** Brake light, running light, turn signal indicator • **Power:** 5–15W per light • **Visibility:** ≥500m during night • **Housing:** IP65 rated, anti-corrosion coating			
08	**Steering System** • Type: Rack and Pinion • Steering Gear Ratio: 14:1 to 20:1 • Turning Radius: 4.5 m – 6 m • Steering Mechanism: Mechanical • Material: Alloy steel housing with hardened gear teeth • Lubrication: Grease or oil-filled sealed unit • Mounting: Bolted to chassis frame with vibration isolators • Safety: Collapse-resistant design with energy absorption	01		
09	**Steering Column** • Type: Collapsible and tilt. • Material: High-strength steel shaft with universal joints • Length: Vehicle-specific (usually 500 mm – 900 mm) • Energy Absorption: Collapsible under impact for driver safety • Bearings: Needle/ball bearings for smooth rotation • Lock Mechanism: Integrated steering lock with ignition switch • Connection: Coupled between steering wheel and steering gearbox	01		
10	**Steering Wheel** • Diameter: 350 mm – 400 mm • Material: Polyurethane/thermoplastic over steel frame • Grip: Ergonomic, anti-slip textured surface • Additional Features: Airbag housing, horn pad, multifunction switches • Weight: 1.5 – 3 kg	01		
11	**Chassis** • Type: Tubular frame • Material: Mild Steel • Load Capacity: 950 kg • Cross Members: Reinforced with welded/bolted joints for rigidity • Surface Protection: Anti-rust coating	01		
12	**Seats Specifications** • **Seating Capacity** Total-6 Seater • Load Carrying Capacity- Driver + 5 Passengers or up to 600 kg • **Body Material Related to Seating** • Fiber Reinforced Polymer with PU (Polyurethane) Coat for durability, weather resistance, and comfort.	03		

	• Cushioning: Medium-density foam with PU cover recommended for outdoor use. • Seat Frames: Can be steel/aluminum with anti-rust coating to match chassis durability.			
13	**Tyres Specifications** • Tyre Type: Tubeless • Tyre Size: 145/80R-12 • 145 → Tyre width (mm) • 80 → Aspect ratio (sidewall height = 80% of tyre width) • R → Radial construction • 12 → Rim diameter (inches) • Wheel Type: Alloy Wheel Rim	04		
14	DC DC Converter	01		
15	Horn	01		
16	Combination Switch	02		
17	Multi Hub	01		
18	FRP Parts	01		
19	Fastners			

Yours faithfully

Principal
Govt. College of Engineering, Aurangabad
Chhatrapati Sambhajinagar

Principal,
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