MEPNN Supplier Scouting Opportunity Synopsis

Section 1: General Information

Scouting Number	2026-158
Item to be Scouted	BABA: Commercial Electric Vehicle Charger
Days to be scouted	14
Response Due By	05/13/2026
Description	An electric vehicle (EV) charger is a device—also called Electric Vehicle Supply Equipment (EVSE)—that delivers electricity from the grid to an EV's battery, using built-in control electronics to manage power flow and ensure safe

Section 2: Technical Information

Type of supplier being sought	Manufacturer
Reason	BABA
Describe the manufacturing processes (elaborate to provide as much detail as possible)	1-Design & Engineering Define charger specifications, safety requirements, and electrical architecture. -Determine power rating (Level 1, Level 2, or DC fast charger) -Select connector standard (J1772, CCS, NACS, CHAdeMO) -Design PCB layout for control, metering, and communication modules -Plan thermal management (heat sinks, airflow, or liquid cooling) 2-Procure Electronic Components Source all semiconductor, control, and power components. -Microcontrollers, relays, contactors, and power MOSFETs/IGBTs -AC/DC converters, rectifiers, and EMI filters -Communication chips (Wi-Fi, Bluetooth, OCPP modules) -Safety components: fuses, surge protectors, ground-fault sensors 3-Fabricate Printed Circuit Boards (PCBs) Manufacture and populate the control and power boards. -PCB etching and copper layering -SMT (Surface-Mount Technology) component placement -Wave soldering for through-hole components -Automated Optical Inspection (AOI) for defects 4-Assemble Power Module Build the high-power section that handles energy transfer. -Install AC input terminals and power relays/contactors -Integrate AC/DC conversion stage (for DC fast chargers) -Add heat sinks, thermal pads, and cooling fans or liquid loops -Mount current sensors and voltage monitoring circuits 5-Build the Enclosure Prepare the mechanical housing for durability and safety. -Injection-mold or cast the outer casing (plastic or aluminum) -Add weatherproofing (IP55–IP67 seals) -Install cable glands, mounting brackets, and ventilation paths -Apply insulation and fire-retardant materials 6-Integrate Cable & Connector Attach the charging cable and vehicle-side connector. -Crimp and solder high-current wires -Add strain relief and protective sheathing -Test continuity and insulation resistance -Attach connector (J1772, CCS, NACS, etc.) 7-Software Installation & Calibration Load firmware and configure communication protocols.

	-Install control firmware and safety logic -Configure OCPP or cloud connectivity -Calibrate current sensors and metering accuracy -Verify handshake protocols with EVs 8-Safety & Compliance Testing Ensure the charger meets electrical and regulatory standards. -Ground-fault detection tests -Overcurrent, overvoltage, and thermal protection checks -EMI/EMC compliance testing -UL, CE, or IEC certification procedures 9-Final Assembly & Quality Control Complete the unit and verify full functionality. -Assemble enclosure, seals, and fasteners -Perform full-load charging simulation -Inspect cosmetic and structural quality -Log serial numbers and firmware versions 10-Packaging & Distribution Prepare the charger for shipment to customers or installers. -Add manuals, mounting hardware, and warranty documents -Package with shock-absorbing materials -Ship to distributors, installers, or OEM partners
Provide dimensions / size / tolerances / performance specifications for the item	Typical Size, See Attached Specifications.
List required materials needed to make the product, including materials of product components	1. Power Electronics Components These handle AC–DC conversion, power regulation, and protection. -Power semiconductors — MOSFETs, IGBTs, SiC/GaN transistors (DC fast chargers rely heavily on SiC) -Rectifiers & diodes — bridge rectifiers, fast-recovery diodes -Transformers — high-frequency ferrite-core transformers -Inductors & chokes — EMI suppression, filtering -Capacitors — electrolytic, film, ceramic (high-voltage rated) -Relays & contactors — high-current switching -Current sensors — Hall-effect sensors, shunt resistors -Voltage sensors — precision dividers, isolation amplifiers -Surge protection — MOVs, TVS diodes, gas discharge tubes -Ground-fault detection modules — GFCI / RCD components 2. Control & Communication Electronics These manage charging logic, safety, and communication with the vehicle. -Microcontroller or embedded processor -Communication modules — Wi-Fi, Bluetooth, Ethernet, CAN, PLC (for ISO 15118) -Memory chips — Flash, EEPROM -PCB materials — FR-4 boards, copper traces, solder mask -LED indicators / display modules — status lights, LCD/OLED screens -RTC (real-time clock) — for logging and scheduling -Isolation components — optocouplers, digital isolators 3. Charging Cable & Connector Materials These must withstand high current, outdoor exposure, and mechanical stress. -Copper conductors — multi-strand, high-flex -Insulation — XLPE, TPE, silicone rubber -Outer jacket — UV-resistant TPU or TPE -Connector housing — polycarbonate, nylon, or glass-filled polymer -Connector pins — silver-plated or nickel-plated copper alloy -Strain relief components — molded rubber or polymer Connector types may include: -J1772 (North America AC standard) -NACS (Tesla-originated, now widely adopted) -CCS / CHAdeMO (DC fast charging)

	4. Enclosure & Mechanical Components These protect the electronics and ensure durability. Enclosure materials -ABS or polycarbonate (indoor) -Aluminum die-cast housing (outdoor or high-power units) -Stainless steel (DC fast chargers) Gaskets & seals — silicone, EPDM for IP65/IP67 protection Mounting brackets — steel or aluminum Cooling components -Heat sinks (extruded aluminum) -Fans (DC chargers) -Liquid-cooling components (high-power DC chargers) Fasteners — stainless steel screws, bolts, washers 5. Safety & Compliance Components Required to meet UL, IEC, and NEC standards. -Thermistors & temperature sensors -Overcurrent protection — fuses, circuit breakers -Grounding hardware — copper grounding straps -EMI/RFI shielding — copper foil, conductive coatings -Fire-retardant materials — UL94-V0 plastics 6. Software & Firmware (Non-material but essential) Even though not physical materials, these are required for manufacturing completion: -Charging control firmware -OCPP communication stack -Safety monitoring algorithms -User interface software
Are there applicable certification requirements?	No
Are there applicable regulations?	No
Are there any other stndards, requirements, etc.?	No
Additional Technical Comments	This is for a three story 48 Unit Multifamily apartment over a one-story parking garage.

Section 4: Business Information

Estimated potential business volume	11 Units
Estimated target price / unit cost information (if unavailable explain)	$10,000
When is it needed by?	July 2027
Describe packaging requirements	EV charger packaging must protect sensitive electronics, meet electrical safety regulations, survive global shipping, and comply with environmental standards. AC chargers need lightweight protective packaging, while DC fast chargers require industrial-grade crating and shock protection.
Where will this item be shipped?	Blaine Minnesota

Additional Comments

Is there other information you would like to include?	