MEMPHIS AREA TRANSIT AUTHORITY

Memphis Area Transit Authority
RFP: 23 -13 Forty Zero Emmision Bus Solution
Request for Clarification Responses Due July 26, 2023

Request #:	RFP Section:	Page:	RFP	Questions/Clarification or Approved Equal:	Agency Response:
1	6.18.2 Fire Suppression	99/221	6.18.2 Fire Suppression. The bus shall be equipped with a suitable means of automatically detecting and extinguishing fires and/or over-temperature situations that may cause unreliable or unsafe operation. This system shall employ intrinsically safe detectors capable of reliable operation, alert and shutdown to ensure safe operation. Alert shall occur at approximately 25% lower flammability limit (LFL), and shutdown shall occur at approximately 50% LFL. This system shall include an uninterruptable power supply (UPS) capable of sustaining operation for a period of 72 hours regardless of the primary energy source. The quantity, location and technology for sensors, suppression, agents, etc. shall be best practice. Sensors shall be linear type, capable of measuring temperature and programmable at the controller. Fire suppression piping located in the immediate area(s) being protected shall be fireproof and capable of surviving gross thermal events. The subject piping shall include flow path between the fire suppression bottle and nozzles, with metalized rigid/flexible stainless steel preferred. The system shall include a means to automatically monitor fire suppression storage container pressure and to provide low-pressure alerts to the integrated system controller/display.	requests approval to our standard design where the battery management system is capable of thermally monitoring the internal temperature of the batteries with redundant sensors internal to the battery pack rather than providing a fire suppression system. We can however, provide coverage for the LV batteries as described in Exhibit A.	DENIED
2	6.18.3 Safety	99/221	6.18.3 Safety Equipment.	Request approval for our standard safety	To be determined/approved during Demonstration

	Equipment		On board safety equipment per Federal Motor Carrier Safety Regulations part 393 shall be provided with each bus. The following equipment shall be mounted out of th way but shall be readily accessible. Amerex or approved equal fire extinguisher, with 5-pound capacity, Underwriters' Laboratories rating of A/B/C or more, marked as such with charge indicator and mounted in a bracket. The fire extinguisher is to be mounted vertically in a mutually agreed upon location. Safety triangles shall be provided and installed in a mutually agreed-to location. Three bi- directional emergency reflective triangles conforming to FMVSS 125 stored in a plastic molded case.	equipment location as indicated in Exhibit B.	Program.
3	6.20.4 Step Height	100/221	6.20.4 Step Height. The step height shall not exceed 16.5 inches at either doorway without kneeling and shall not exceed 15.5 inches at the step. A maximum of two steps are allowed to accommodate a raised aisle floor in the rear of the bus, if so designed.	Request approval for step height of 16 In. at the front door and 17 in. at the rear door. One of the major benefits of the Catalyst vehicle is the placement of the battery packs under the floor and between the wheels. Having the batteries located in this location allows for the following benefits: • Lower center of gravity, better handling; • Increased safety; • No HV batteries inside the passenger compartment • Batteries are lower than the side impact height for automobiles However, as a result, the step height and floor height are slightly taller than average vehicles at nominal height. The buses are still capable of full kneel functionality.	DENIED
4	6.20.6.4	101/221	6.20.6.4 The proposed electric bus shall comply with the ramp angles depicted in Table 6-3 below. Table 6-6: Ramp Angle Clearances Angle 40 ft Bus Approach 8.6 deg (min.) Front Breakover 8.0 deg (min.) Departure 8.6 deg (min.)	Request approval for the minimum front breakover angle of 7.8 degrees at normal height for our 40ft bus. It is important to note that our bus is equipped with an over-raise feature that can be activated while driving, effectively increasing the breakover angle to 8.9 degrees.	DENIED
5	6.20.9 Wheel Area Clearance	101/221	6.20.9 Wheel Area Clearance. Wheel area clearance shall be no less than 8 inches for parts fixed to the bus body and 6 inches for parts that move vertically with the axles.	Request approval for the wheel area clearance to be no less than 7.85" for parts fixed to the bus body and 6" for parts that move vertically with the axles.	DENIED
6	6.20.10 Floor Heigh	101/221	6.20.10 Floor Height. The height of the step above the street shall be no more than 16 inches measured at the centerline of the front and rear doorway. All floor measurements shall be with the bus at the design running height and on a level surface and with the standard installed tires. A maximum of two steps are allowed to	Request approval for step height of 16 In. at the front door and 17 in. at the rear door. One of the major benefits of the Catalyst vehicle is the placement of the battery packs under the floor and between the wheels.	DENIED

			accommodate a raised aisle floor in the rear of the bu:	Having the batteries located in this location allows for the following benefits: • Lower center of gravity, better handling; • Increased safety; • No HV batteries inside the passenger compartment • Batteries are lower than the side impact height for automobiles However, as a result, the step height and floor height are slightly taller than average vehicles at nominal height. The buses are still capable of full kneel functionality.	
7	6.24 Acceleration	102/221	Note: The system shall be programmable to allow optimization of acceleration. Performance may be affected when reprogramming. The manufacturer shall supply the new performance data.	approval for our standard offer that provides three performance modes that adjust the power and torque capabilities of the power train; however, the acceleration and deceleration rates are not further programmable.	To be determined/approved during Demonstration Program.
8	6.27.7 Energy Storage System Capacity	108/221	6.27.7 Energy Storage System Capacity 6.27.7.1 The ESS shall have sufficient energy storage to meet the requirements of the intended duty cycle when new and up until the degradation has reached warrantable end of life (WEOL), as defined within the warranty terms of this RFP by percent remaining capacity.	Request approval for degration of the battery to be as stated in the warranty document provided in Exhibit C.	To be determined/approved during Demonstration Program.
9	6.27.7.3	109/221	6.27.7.3 The test protocol shall be to charge the ESS at a rate approximating the actual depot charge rate via the grid. Instrumentation and data logging shall measure the energy consumed in units of kilowatt-hours from 0% to 100% SoC. The ESS shall then be discharged to a steady load or returned to the grid at a rate approximating the average rate of the duty cycle. Instrumentation and data logging shall measure the energy discharged in units of kilowatt-hours from 100 to 0 percent SoC. These tests shall be used to determine overall efficiency and, in comparison to the as-new capacity in kilowatt-hours, the remaining percent capacity.	Request approval for test protocol for battery State of Health (SOH) to be as stated in the provided Exhibit D.	To be determined/approved during Demonstration Program.
10	6.27.11 Battery Thermal Management	111/221	6.27.11 Battery Thermal Management. 6.27.11.1 Thermal management shall be provided to ensure optimal life and performance of the ESS over the environmental operating range.Battery thermal management must be powered from an on- board source at all times.	would like to clarify that the Battery Thermal Management System will only be on when the high voltage (HV) system is active.	DENIED
11	6.27.12 Battery Charging	111/221	6.27.12 Battery Charging. 6.27.12.5 The bus must support published standards (SAE J3105, J3105-1, J3105-2 and J3105-3) for overhead bus charging. The bus shall comply with the standards with provisions for overhead charging.	We would like to clarify that our vehicles support J3105-1. However, our vehicles do not support bus-up pantograph (J3105-2) or pin and socket connection (J3105-3).	DENIED

12	6.28.1.3	112/221	6.28.1.3 Operation of required battery thermal management systems shall be automatically controlled under all normally encountered operating and charging conditions and shall be powered by an onboard source at all times.	would like to clarify that the Battery Thermal Management System will only be on when the high voltage (HV) system is active.	DENIED
13	6.28.1.5	113/221	6.28.1.5 In the event of a failure of the battery thermal management system while charging, the charge system shall be disabled and a visual alert shall be activated on the dashboard, the reset of which shall require the deliberate action of maintenance personnel.	Request approval of our design in which we do not disable charging but will derate based on the reported battery temperature. Additionally, we have a 'Red Level' visual fault for failure of the BTMS but there is no audible alert.	DENIED
14	6.28.1.7	113/221	6.28.1.7 The cooling system is assumed for all temperature control required for the propulsion system, heating and/or cooling, further assuming that heat from thus system shall also be used to provide thermal energy as required for vehicle functions, as HVAC and defroster.	Request approval for our vehicle's design which utilizes two independent cooling loops to cool the high-voltage batteries and the power electronics on the vehicle. The battery coolant loop has two dedicated coolant pumps that circulate coolant through the Battery Thermal Management System (for heating if needed), through the battery packs, an expansion tank, into the HVAC system (for cooling, if needed) and then through a filter to repeat the loop. The power electronics loop also has a dedicated coolant pump that circulates coolant through the power electronic units that require cooling, through a three fan radiator and then through a filter to repeat the loop. Our defroster is electric and indepent from the HVAV. Additionally, we do not harvest heat from bus systems be used to provide thermal energy as required for vehicle functions, as HVAC and defroster.	No spec change. To be determined/approved during Demonstration Program.
15	6.28.2.4	113/221	6.28.2.4 A means of determining satisfactory component coolant level shall be provided. A spring-loaded, push-button type valve or lever shall be provided to safely release pressure or vacuum in the cooling system with both it and the water filler no more than ±60 in. above the ground. Both shall be accessible through the same access door.	Request approval for our system design which does not include a pressure relief button/valve. 's ZX5 vehicles have a "low level" light on the service fill panel and can be displayed on the dash. Additionally, the cooling expansion tank is located on the roof, although the system is fillable and purgeable from ground level service panel on the rear curbside of the vehicle.	DENIED
16	6.28.3	114/221	6.28.3 Radiator Screen. The radiator input shall be protected by an easily cleanable screen designed to collect large debris. The radiator core shall be easily cleaned (to include from the propulsion system side) with standard pressure-washing equipment.	Request approval for our bus design where the radiator is located on the roof and cannot be pressure washed. Additionally, screens are not designed in the system.	DENIED
17	6.28.6 Coolant System Service	114/221	6.28.6 Coolant System Service. The coolant system shall be arranged so that accessibility for all routine maintenance is easily assured. Radiator fillers shall be arranged so as to ensure simple, efficient filling while tethering the cap and ensuring the filler is closed when filling is completed.	Request approval of our standard non-tethered caps on radiators.	DENIED - To be determined/approved during Demonstration Program.
18	6.30.2 Fluid	115/221	6.30.2 Fluid Lines	Request approval to utilize zip ties as an alternative	DENIED

	Lines		6.30.2.4 In general, all lines, plumbing, hoses, harnesses, etc. shall be routed in an organized fashion per design plan to minimize interference, abrasion and fatigue. Routing shall be in parallel when practicable, and the use of split composite pinch blocks shall be used, the use of conventional "P" clamps is discouraged, and the use of tie straps is prohibited.	to P-clamps for securing hoses and pipes where appropriate.	
19	6.30.2.6	115/221	6.30.2.6 Flexible lines shall be compatible with the fluids they are intended to carry, at all expected temperatures and pressures and shall have standard SAE, JIC or ORS brass or steel, swivel, end fittings. Flexible hoses over 1 inch in diameter shall be in conformance with SAE J100R5. Flexible hoses and fluid lines shall not abrade one another, or any part of the bus.	We would like to clarify that J100R5 does not apply to coolant or heater hoses, as it is intended for hydraulic lines operating under high system pressures. Our coolant system is regulated to a maximum of 13 psi. Therefore, we seek approval to utilize EPDM rubber hoses for our coolant lines, which comply with SAE J20R1/R3 D2 standards and are suitable for BEB applications.	DENIED
20	6.31.6 Propulsion Compartment Bulkheads	116/221	6.31.6 Propulsion Compartment Bulkheads. The passenger and motor drive component compartments shall be separated by fire-resistant bulkheads or means that precludes or retards a fire from entering the passenger area. This bulkhead (or equivalent) shall be compliant with FTA Docket 90A, dated October 20, 1993, and FMVSS 302.	Request approval for our bulkhead which is compliant with FMVSS 302 and not Docket 90A.	DENIED
21	6.39.6 Kneeling	122/221	6.39.6 Kneeling 6.39.6.1 A kneeling system shall lower the entrance(s) of the bus a minimum of 3 inches during loading or unloading operations regardless of load up to GVWR, measured at the longitudinal centerline of the entrance door(s), by the driver.	Request approval for our bus design which allows the kneeling system on nominal riding conditions t lower the entrance(s) of the bus a minimum of 2.5 inches during loading or unloading operations regardless of load up to GVWR.	DENIED
22	6.39.6.3	122/221	No spec. change. To be determined/approved during Demonstration Program.	Request approval for our kneeling warning light which provides a minimum of 1.75" diameter lens as opposed to the required 2.5" diameter.	DENIED
23	6.47.3 Air Lines and Fittings	127/221	6.47.3 Air Lines and Fittings 6.47.3.1 Nylon tubing shall be installed in accordance with the following color-coding standards: · Green: Indicates primary brakes and supply · Red: Indicates secondary brakes · Brown: Indicates parking brake · Yellow: Indicates compressor governor signal · Black: Indicates doors, hill hold, and accessories.	Request approval for the following color combination for air lines: • Green: Indicates primary brakes and supply • Red: Indicates secondary brakes • Brown: Indicates parking brake • Yellow: Indicates transmission and height controller feed (We do not have governor air lines) • Black: Indicates accessories & doors • Blue: Indicates curb side air bags • Orange: Indicates street side air bags	DENIED
24	6.48.2 Modular Design	128/221	6.48.2 Modular Design	Request approval of our multicore cable which runs from the drivetrain to the power steering motor at the front of the vehicle. It passes through bulkheads and is part of a drivetrain harness.	DENIED

			6.48.2.2 Power plant wiring shall be an independent wiring module. Replacement of the drive system compartment wiring module(s) shall not require pulling wires through any bulkhead or removing any terminals from the wires.	Maintaining a constant shield is important to protect other systems from Electro-Magnetic Interference. Also, reducing the number of terminations also improves the reliability of the circuit.	
25	6.48.3 Environmental and Mounting Requirements	129/221	6.48.3 Environmental and Mounting Requirements 6.48.3.2 Electrical and electronic equipment shall not be located in an environment that will reduce the performance or shorten the life of the component or electrical system when operating within the route operating profile. No vehicle component shall be able to generate, or be affected by, electromagnetic interference or radio-frequency interference (EMI/RFI) that can disturb the performance of electrical/electronic equipment as defined in SAE J1113 and UNECE Council Directive 95/54 (R10).	Request approval for our ZX5 bus which is designed to comply with vehicle level EMC/EMI tests per CISPR 12.	DENIED
26	6.48.7.4	130/221	6.48.7.4 The batteries shall be securely mounted on a stainless steel or equivalent tray that can accommodate the size and weight of the batteries.	Request approval to our standard design which provides a A1011 steel tray that's E-coated and powder coated. This provides a stronger tray that exceeds 1000 hours of salt spray testing.	DENIED
27	6.48.8 Auxiliary Electronic Power Supply	130/221	Whole section	Request approval for our vehicle design does not require auxiliary battery pack to power additional accessories.	DENIED
28	6.48.13 Low Voltage/Lo Current Wiring and Terminals	131/221	6.48.13 Low Voltage/Lo Current Wiring and Terminals 6.48.13.1 All power and ground wiring shall conform to specification requirements of SAE J1127, J1128 and J1292. All high-voltage power and ground wiring shall conform to specification requirements of SAE J1763, J1654 J2910.	Request approval for the reference to J1763 to be removed as it is related to ITS architecture requirement and provides information and does not specify requirements.	DENIED
29	6.48.14 Electrical Components	133/221	6.48.14 Electrical Components 6.48.14.1 All electrical components, including switches, relays, flashers, and circuit breakers, shall be heavy-duty designs with either a successful history of application to heavy-duty vehicles, or design specifications for an equivalent environment.These components shall be replaceable in less than 5 minutes by a 3M mechanic.	Request approval for electrical system's design which allows for most LV components to be replaced within the require time specified. However, there are high voltage components that will take longer to repair due to the safety requirements to lockout tagout Lock-out/Tag-out (loto) the bus to perform service.	DENIED
30	6.51.4 Normal Bus Operation Instrumentation and Controls	137/221	Whole section	We would like to clarify that the list of Instruments and Controls mentioned in this section may or may not be applicable to our electric bus. Therefore, we kindly request the inclusion of a note specifying that the list is "to be used for reference purposes only." It is important to note that the final details regarding the dash layout and the comprehensive list of switches will be thoroughly discussed and finalized during the preproduction meeting.	To be determined/approved during Demonstration Program.
31	6.51.5.1 Pedal Angle	143/221	6.51.5.1 Pedal Angle.	Request approval for the accelerator and brake pedals angles to be as follows:	DENIED

			The vertical angle of the accelerator and brake pedals shall be determined from a horizontal plane regardless of the slope of the cab floor.The accelerator and brake pedals shall be positioned at an angle of 37 to 50 deg at the point of initiation of contact and extend downward to an angle of 10 to 18 deg at full throttle.	Accelerator (adjustable) Initiation 45° / Full Throttle 25° Brake (adjustable) Initiation 50° / Full Throttle 30	
32	6.56.3.1	147/221	6.56.3.1 The operator's side window shall be the sliding type, requiring only the rear half of sash to latch upon closing and shall open sufficiently to permit the seated operator to easily adjust the street side outside rearview mirror.	Request approval for our driver's window design as shown in Exhibit E. Our design does not allow the driver to physically reach the street-side outside mirror but is instead remote adjustable with the driver's mirror controls.	DENIED
33	6.56.3.2	147/221	6.56.3.2 The view through the glazing at the front of the assembly should begin not more than 560 mm (26 inches) above the operator's floor to ensure visibility of an under-mounted convex mirror.	Request approval of our design in which the view through the glazing at the front of our assembly begins not more than 27.2 in. above the driver's floor.	DENIED
34	6.57.1 Capacity and Performance	148/221	6.57.1.2 The HVAC unit should be an all-electric roof-mounted unit; Thermo King or approved equal.	Request approval of 's Valeo all-electric HVAC system as described in Exhibit H.	To be determined/approved during Demonstration Program.
35	6.57.1.8	149/221	6.57.1.8 The system must be designed such that, through automated means, the HVAC system can be turned on to bring the passenger compartment to route service operating temperature while the bus is still receiving power from the depot charging system. The intent of this design is to avoid utilizing battery Kwh to bring the bus to proper temperature after pull-out thereby conserving available Kwh for longer route service.	Request approval for our ZX5 where the HVAC system will turn on to bring the passenger compartmen to route service operating temperature only if the mastwer switch is manually moved to the ON position. Cabin pre-conditioning based on scheduled departure times is not currently available.	To be determined/approved during Demonstration Program.
36	6.57.3 Controls and Temperature Uniformity	149/221	6.57.3 Controls and Temperature Uniformity 6.57.3.3 Interior temperature distribution shall be uniform to the extent practicable to prevent hot and/or cold spots. After stabilization with doors closed, the temperatures between any two points in the passenger compartment in the same vertical plane, and 6 inches to 72 inches above the floor, shall not vary by more than 5 ºF with doors closed.	Request approval for our HVAC design which afte stabilization with doors closed, the temperatures between any two points in the passenger compartment in the same vertical plane, and 6 to 72 in. above the floor, will not vary by more than +/- 15.	To be determined/approved during Demonstration Program.
37	6.57.4 Auxiliary Heater	150/221	6.57.4 Auxiliary Heater.	Request approval to provide a diesel-fueled auxiliary heating system. Cold weather operation will have a significant impact on the operation of your battery electric buses. Adding another power draw to the high-voltage battery packs will effectively shorten the operating range further. Conversely, using a smaller, highly efficient diesel-fired heater to supplement cabin heat will also allow the buses to achieve a greater operating range in colder environments. That said, we have many operators in cold weather environments that do not utilize an auxiliary heater and do not report any lack of cabin heat for their passengers. Our standard combination of cabin heat from the	DENIED

			The Contractor must include an all-electric. The thermostat must be capable of being easily adjusted by MATA mechanics.	HVAC and defroster provide above average heating capacity for a battery electric bus.	
38	6.58.8 Maintainability	151/221	6.58.8 Maintainability. Manual or automatically controlled shutoff valves in the refrigerant lines shall allow isolation of the compresso and dehydrator filter for service. To the extent practicable, couplings utilizing O-ring seals shall be used to break and seal the refrigerant lines during removal of major components, such as the refrigerant compressor. The refrigerant compressor shall be semi-hermetic and rebuildable.	Request approval for our systems design which provides a hermetically sealed compressor. The system does not provide isolation mechanisms for refrigerant component replacement. Any replacement of component on refrigeration lines requires recovery and re-charge of the refrigerant.	DENIED
39	6.59.12 Service Compartments and Access Doors.	153/221	6.59.12 Service Compartments and Access Doors. Doors with top hinges shall have safety props stored behind the door or on the doorframe or employ gas shocks of sufficient size to support the weight of the door when opened.	Request approval of our design which incorporates gas shocks which hold the doors open without the need for safety props.	DENIED
40	6.59.12 Service Compartments and Access Doors.	153/221	Access doors, when opened, shall not restrict access for servicing other components or systems. If precluded by design, The Contractor shall provide door design information specifying how the requirements are met.	Request approval for our design which does have certain lower side access doors for the motor compartment which, when opened, will restrict access to the upper side access doors. All other access doors, when opened, do not restrict access for servicing other components or systems. Please see Exhibit G for additional detail.	DENIED
41	6.61.6 Bus Exterior Color	155/221	6.61.6 Bus Exterior Color. Proposers should base the proposal on a color scheme of up to four colors. Pricing should reflect one color change.	Please clarify this requirement for up to four colors when section 6.61.7 requires pricing based on a ful bus wrap. Additionally, we request approval for the base white color of the bus body to be gelcoat rather than paint. The gelcoat is inherent to the composite body construction and is resistant to chips and cracks.	To be determined/approved during Demonstration Program.
42	6.63.6 Brake Lights.	157/221	6.63.6 Brake Lights. Brake lights shall be provided in accordance with FMVSS 108 and Part 393, Subpart B of the FMCSA as applicable. A high and center mounted brake light is required.	Request approval for our brake lights as shown in Exhibit H.	DENIED
43	6.65 Floor Covering	160/221	6.65 Floor Covering 6.65.3 The area of the front ramp platform as well as the floor area under and around the ramp in the vestibule area may be LineX sprayed-on polyurethane, or approve equal, non-skid surface. The step edge shall be LineX yellow or approved equal	Request approval for the flooring around the ramp area, including the step edge, to be Altro Transflor consistent with the rest of the floor design.	DENIED
44	6.65 Floor Covering	160/221	6.65.6 The floor under the seats shall be covered with smooth surface flooring material. The floor covering sha closely fit the sidewall cove or extend to the top of the cove.	Request approval for our design which does not allow for the flooring to go up the side wall. This is due to the location of the lower seat rail being just above the floor surface, as well as the wall panels extending to the floor surface in the rear of the bus. Refer to Exhibit H for floor section view.	DENIED

45	6.68 Interior Access Panels and Doors.	162/221	1	requests approval for our standard access panel design which incoporates pan head torx fasteners.	To be determined/approved during Demonstration Program.
46	6.69.5 USB Cell Phone Charging Stations.	162/221	6.69.5 USB Cell Phone Charging Stations. USB charging stations for charging cell phones and other portable devices should be built into the passenger seats. Other designs for these charging stations are acceptable but must be included in the proposals.The charging stations may be powered by the auxiliary electronic power supply addressed in Section 6.49.8 above and not from the bus ESS system.	Request approval for our vehicle design does not require auxiliary battery pack to power additional accessories.	DENIED
47	6.69.10 Passenger Seat Construction and Materials	165/221	6.69.10 Passenger Seat Construction and Materials 6.69.10.1 Selected materials shall minimize damage from vandalism and shall reduce cleaning time.The seats shall be attached to the frame with tamper-resistant fasteners.	Request approval of our seats which are attached to the seat rail with hex bolts and locknuts instead of tamper-resistant fasteners. The seats themselves, however, are built with tamper-resistant fasteners.	DENIED
48	6.69.12.4 Dimensions.	167/221	6.69.12.4 Dimensions. When open, the front doors shall leave an opening no less than 75 inches in height. The front door clear width shall be a minimum of 34 inches with the doors fully open. The rear doors shall leave an opening height of 75.75 inches and the clear width shall be a minimum of 34inches with the doors fully open.	Request approval for our door design which has the following dimesions: Entrance Door 75” height and a clear width of 33.2” Exit Door 75” height and a clear width of 43.3"	DENIED
49	6.69.12.14 Master Door Switch.	169/221	6.69.12.14 Master Door Switch. A control in the operator’s compartment shall shut off the power to the front door mechanism to permit manual operation of the front door with the bus shut down. A master door switch, which is not within reach of the seated operator, when set in the “off” position shall close the rear doors, deactivate the door control system, release the interlocks, and permit only manual operation of the rear door.	requests approval for our design which provides a two-position “door interlock over” switch on the driver’s lower left console control panel for overriding the vehicle interlocks, such as the rear door interlock. This switch can be used in the event the bus must be moved with the rear door open or with other interlock or door fault states active. NOTE: Interlock brakes will be applied when either door is opened. They will release when the brake pedal is pressed after the rear door is closed. When this switch is used, the rear doors will close, if not already closed, and will not respond to driver commands. Additionally, the bus is equipped with a Door Release knob that when it is turned clockwise it releases air pressure to the front passenger door. This allows the door to swing freely so it can be opened or closed manually. NOTE: Turning the knob counterclockwise will restore air pressure to the front passenger door and allow the door to be operated by the door handle on the left console	DENIED

50	6.73.8 Communications Equipment Storage Compartment.	173/221	6.73.8 Communications Equipment Storage Compartment. A storage compartment that houses communication and electronic equipment components shall be provided. This compartment shall be lockable and should contain slide-out trays for which components are mounted. Components within this compartment include AVL device with associated devices normally mounted within close proximity, Wi-Fi router, automatic passenger counter device, and bus manufacturer provided camera system DVR.	requests approval for our standard electronics compartment cabinet which is located on the street-side wheel housing and does not require slideout trays. The proposed compartment is composite construction and does not block the side-window. In addition, the cabinet has only one latch and does not have active cooling for the ITS plate, the design provides enough ventilation to the cabinet and therefore active cooling is not required. Please see Exhibit J for illustrations of our proposed compartment.	DENIED
51	6.73.9 Incident Warning-Recording System	173/221	6.73.9 Incident Warning-Recording System 6.73.10 A system shall be provided that utilizes acceleration/motion sensors, camera(s), and software to trigger a warning to the operator in advance of a collision/accident. This system shall be able to record and store video 15 seconds before and 30 seconds after when a bus has a collision, accelerates aggressively, turns sharply, or stops aggressively. If alternative approaches are proposed, they are subject to the approval of the Engineer.	Can the agency provide the brand of preference?	Engie and (ITS) Intelligence Transportation System
52	6.12.4 Web Based Training	97/98	The Contractor shall maintain, at their expense, a web-based learning management system; web based training for all training for all sessions provided above for theory of operation, vehicle operation and maintenance 6.12.4.2 Quizzes shall be incorporated into all training to provide measurable feedback of attendees' comprehension of training material 6.12.4.3 This on-line training material shall be maintained and updated for 12 years.	Please confirm that we can video tape the training sessions to cover the web based training outlined in 6.12.4.	APPROVED
53	4.3.2 PPI	63	Pricing for Options. Vehicles ordered within the first year of the contract shall be the same as bas order vehicles. After the contract's first year, the Contractor may adjust the contract price per bus in accordance with the increase or decrease, if any based on the most recently published following "Producer Price Index (PPI)," published by the U.S. Department of Labor: Series ID: PCU3361203361203 Not Seasonally Adjusted Industry: Heavy duty truck mfg. Product: Buses, including military and firefighting vehicles (chassis of own manufacture)	The option pricing in Section 4.3.2. should be the index Category 1413, "Trucks and Bus Bodies" not Heavy Duty Truck Manufacturing.	APPROVED "Trucks and Bus Bodies"This will be added in Addendum #4

			Excepting that the maximum annual increase shall not exceed 3.5%. The new rate will be calculated as per the following example: PPI for current period (Current August Index): 128.1 -PPI for previous period (Prior year August Index): 125.5 = Index point change 2.6 Index point change (2.6) ÷ Prior year August Index (125.5) = 0.021 x 100 = 2.1% index change 2.1% index change x current contract bus price = New contract bus price The increase in the Contract Price may occur after the Contractor has given MATA written notice of such change and MATA approves the calculation.		
54	4.3.2 PPI	63	Pricing for Options. Vehicles ordered within the first year of the contract shall be the same as bas order vehicles. After the contract's first year, the Contractor may adjust the contract price per bus in accordance with the increase or decrease, if any based on the most recently published following "Producer Price Index (PPI)," published by the U.S. Department of Labor: Series ID: PCU3361203361203 Not Seasonally Adjusted Industry: Heavy duty truck mfg. Product: Buses, including military and firefighting vehicles (chassis of own manufacture) Excepting that the maximum annual increase shall not exceed 3.5%. The new rate will be calculated as per the following example: PPI for current period (Current August Index): 128.1 -PPI for previous period (Prior year August Index): 125.5 = Index point change 2.6 Index point change (2.6) ÷ Prior year August Index (125.5) = 0.021 x 100 = 2.1% index change 2.1% index change x current contract bus price = New contract bus price The increase in the Contract Price may occur after the Contractor has given MATA written notice of such change and MATA approves the calculation.	We would like to request the following language to be added to section 4.3.2 - At any time prior to the start of production of the Bus, may adjust the Base Unit Price using the US Department of Labor/Bureau of Labor Statistics Producer Price Index (PPI) Category 1413, "Trucks and Bus Bodies".	MATA will partially accept - MATA will have to approve any price increases
55	5.13.6 ndemnification – Demonstration Program	9 and 10	Indemnification – Demonstration Program. The Proposer shall indemnify, save, defend, an hold MATA, the City of Memphis, Tennessee, Mid-South Transportation Management, Inc., Shelby County Government and RATP Dev USA Inc., their officers, agents and employees free from all losses, damages, claims, and expenses arising or resulting from the Demonstration MATA RFP 23-13 PAGE 10	We would like to request the following to be added to the Indemnification section: The Proposer shall not indemnify MATA, the City of Memphis, Tennessee, Mid South Transportation Management Inc, Shelby County Government and RAPT Dev USA, their officers, agents, employees (the "Indemnities") from any losses, damages, claims, or expenses arising out of or resulting from the negligence or willful misconduct of the	DENIED

			regardless of the actions or omissions of the Proposer, its employees, agents or contractors in the course or performance of the Demonstration	Indemnities.	
56	5.14.10 Historic Preservation	78	5.14.10 Historic Preservation. The Contractor agrees as follows: 5.14.10.1 The Contractor agrees that in implementing its Project, it will not use any land from a historic site that is on or eligible for inclusion on the National Register of Historic Places, unless the Federal Government makes the findings required by 49 U.S.C. § 303. MATA RFP 23-13 PAGE 79 5.14.10.2 The Contractor agrees to encourage compliance with the Federal historic and archaeological preservation requirements of section 106 of the National Historic Preservation Act, as amended, 16 U.S.C. § 470f; Executive Order No. 11593, "Protection and Enhancement of the Cultural Environment," 16 U.S.C. § 470 note; and the Archaeological and Historic Preservation Act of 1974, as amended, 16 U.S.C. §§ 469a through 469c as follows: 5.14.10.2.1 In accordance with U.S. Advisory Council on Historic Preservation regulations, "Protection of Historic and Cultural Properties," 36 C.F.R. Part 800, the Contractor agrees to consult with the State Historic Preservation Officer concerning investigations to identify properties and resources included in or eligible for inclusion in the National Register of Historic Places that may be affected by the Project and agrees to notify FTA of affected properties. 5.14.10.2.2 The Contractor agrees to comply with all applicable Federal regulations and directives to avoid or mitigate adverse effects on those historic properties, except to the extent the Federal Government determines otherwise in writing.	Please remove Performance Guarantee letter from 5.14.10. We are a public company – all financials are available publicly.	DENIED
57	3.8 Rights in Data and Copyrights Requirements – (Applicable to Contracts for Research, Development and/or Demonstration Projects Only)	41 and 42	Rights in Data and Copyrights Requirements – (Applicable to Contracts for Planning, Research, Development and/or Demonstration Projects Only)	We request the removal section 3.8 – Research in Data and Copyright requirements	APPROVED VIA ADDENDUM #4
58	3.3.3 Contract Documents	44	.3.3. Contract Documents. The contract shall consist of (1) the RFP; (2) the proposal submitted	6Remove the following sentence from the General Terms Section 3.3.3	APPROVED VIA ADDENDUM #4

			by the Contractor to this RFP; and (3) the contract. In the event of a discrepancy between the contract, the RFP and the submitted proposal, the terms that provide the greater benefit to MATA and/or impose the greater obligation to the Contractor will prevai	a. In the event of a discrepancy between the contract, the RFP and the submitted proposal, the terms that provide the greater benefit to MATA and/or impose the greater obligation to the Contractor will prevail. This should read: in the event of a discrepancy between the contract, RFP and submitted proposal, the terms of the contract will prevail.	
59	3.3.13 Excusable Delays/Force Majeure		Excusable Delays/Force Majeure	Add supply chain disruptions to Force Majeure definition 3.3.The cause of the delay arises after the Notice of Award and neither was nor could have been anticipated by the Contractor by reasonable investigation before such award. Such cause may also include force majeure events such as any event or circumstance beyond the reasonable control of the Contractor, including but not limited to acts of God; earthquake, flood and any other natural disaster; civil disturbance, strikes and labor disputes; supply chain disruptions; fires and explosions; war and other hostilities; embargo; or failure of third parties, including suppliers or subcontractors, to perform their obligations to the Contractor	APPROVED VIA ADDENDUM #4
60	4.6 Liquidated Damaged	65		Cap Liquidated Damages in Section 4.6 to whatever Marcela agreed to in the finance slide – so it should read: The amount of said damages, being difficult if not impossible of definite ascertainment and proof, it is hereby agreed that the amount of such damages due to MATA shall be fixed at $100.00 per calendar day per bus not to exceed $2500 per bus not delivered in substantially good condition as inspected by MATA's resident inspector at the time released for shipment	DENIED - The contractor delay maybe more than 25 days.
61	General	NA	General	Is MATA seeking quotes for Infrastruture, i.e: Design, construction and installation for turn key option?	MATA has not yet determined whether they will procure a turnkey option for charging infrastructure along with the buses. This decision will be made after the demonstration program is complete. If MATA chooses to procure a turnkey solution for charging infrastructure, it will be included in the RFP addendum issued for Phase 2 of the procurement.
62	General	NA	General	Is MATA currently operationg Electric Buses?	Yes
63	General	NA	General	If MATA does not have Electric Buses are they seeking to purhase and buy the chargers from the same vendor?	MATA has not yet determined whether they will purchase chargers from the same vendor. MATA is open to a presentation regarding charging infrastructure during the demonstration program.

64	General	NA	General	Is MATA seeking to award this project to multiple bidder or just one?	Just one bidder
65	Section 2A	12	Instructions to Proposers - 5.14.7 Part 1 - Demonstration Program Response	Can the bidder use an AC Demo Bus for the xxxkWh?	DENIED
66	Section 1	1	Notice of Request For Proposals	Page 1,2,3 and 4 have information and a signature is required on Page 4, is the bidder responsible to submit these pages with signature to the agency with the bid response?	No the proposer does not have to sign page 4. This question is in regards to funding. MATA has funding for this pruoject.
67	Section 9	192	Forms Required	There are no documents in this section, is the agency providing these forms, if so, where can they be located.	These forms may be found on MATA's website at www.matatransit.com/About Us/Doing Business
68	Section 10	0	Appendices	There are no appendixes as indicated in the RFP, appendix A, B, C, D. Is the agency providing providing these forms, if so, where can they be located?	These forms may be found on MATA's website at www.matatransit.com/About Us/Doing Business
69	Section 2A	5	Instructions to Proposers - 5.4.1.5 MATA's replies to requests under Section 2A.4.1.4 above will be post-marked at least 14 calendar days before the date scheduled for Proposal opening and 5.14.7 - Confirmation of the Proposer's intent to participate in the Demonstration Program stage of this procurement, signed by an officer of the Proposer's firm. Proposers will confirm acknowledgement of Sections 2A.13 and 2B in order to participate in the Demonstration Program.	Where are these sectins 2A.4.1.4 and 2A.13 in the RFP?	There was a formatting issue. More clarification will be provided at the pre-proposal meeting
70	Section 6	104	Technical Specifications - 6.26.2.1 Memphis Innovation Corridor.kmz	The Memphis Innovation Corridor.kmz document on the RFP does not open, can the agency provide this document?	Yes, a new kmz file will be provided.
71	General	NA	General	Is MATA interested in purchasing buses through an executed cooperative agreement?	No
72	Table 2A-2	19	Part 1 - Demonstration Program Response Evaluation Criteria	What is the minimum scoring required in Part 1 by MATA in order to proceed to Part 2?	MATA does not divulge scoring doing the procurement process
73	General	NA	General	Since MATA is not operating Battery-Electric Buses is the agency seeking turn-key solution?	MATA is open to hearing presentations that present a turnkey solution
74	Section 3 & Section 4	56	General Conditions & Special Provision	Are redlines on Special Provision, Terms and Condition should be provied prior to submission or with the RFP Responses due date?	Redlines are not allowed
75	Section 3 & Section 4	56	General Conditions & Special Provision	If Redlines are allowed by the agency, how would the agency require us to submit it?	DENIED
76	Section 4-Special Provisions	65	4.6 - Liquidated Damages for Late Delivery Buses	Is the calendar days in this section considered as the calendar days including Saturday and Sunday or Business Days not included Saturday and Sunday?	Calendar Days are Sunday - Saturday

77	Section 9 & Section 2A	Page 2 of RFP & 14	Required Forms and Certification & 5.14.8 Part 2 - Technical and Price Proposal	In the second page of the RFP Section 9 Required Forms and Certificate shows Exhibit X identified as the Disadvantage Business Regulations and on page 14 letter H Exhibit X is identified as the TVM Certification can you clarify if this is correct?	Exhibit X is identified as TVM Certificate of Compliance with Disadvantaged Business Regulations
78	Section 2A	25	5.25.4 Bonding Requirement	Will the Bid Bond be required for Part 1 Demonstration Program?	No
79	Table of Content	NA	Section 10	All the forms in this section are missing. Will MATA provide them as soon as possible as it is required for Part 1 of the RFP?	MATA will provide
80	Section 6 Technical Specification	29	6.11.2 MATA shall have final approval of the content of all manuals. Table 6-4 Types & Quantities of Manuals	Is this requirement with bid submission or after notice of award?	To be discussed at the Demonstration round.
81	Section 6 Technical Specification	69-70	6.12.3 Training Materials-Table 6-5 Types and Quantities of Training Materials	Is this requirement with bid submission or after notice of award?	To be discussed at the Demonstration round.
82	Bus Maximum Overall Height.	103	The maximum overall height shall be 135 inches, including all rigid, roof-mounted items such as A/C, ESS, etc	PROPOSER would like to clarify that with TK roof HVAC, the bus height is 138 inches. requests approval.	DENIED - Due to infrastructure limits.
83	Energy Storage System and Controller	111	Proposers shall include documented results of life-cycle testing. Proposers shall include certification of battery lif cycle testing by an independent testing agency.	PROPOSER requests approval of attached battery life cycle report. PROPOSER`s battery is a culmination of over 25 years of testing and research. As a battery manufacturer, PROPOSER utilized its supreme understanding of battery technology to develop its LFP chemistry specifically for heavy-duty transit operations because it offers an extended life-cycle, overall energy density, and safety attributes.	DENIED
84	6.27.7 Energy Storage System Capacity	112	The ESS shall be measured periodically during the 12-year design life of the buses following protocol below by a bus manufacturer representative at an interval of once per year. 6.27.7.3 The test protocol shall be to charge the ESS at a rate approximating the actual depot charge rate via the grid. Instrumentation and data logging shall measure the energy consumed in units ofkilowatt-hours from 0% to 100% SoC. The ESS shall then be discharged to a steady load orreturned to the grid at a rate approximating the average rate of the duty cycle. Instrumentation and data logging shall measure the energy discharged in units of kilowatt-hours from 100 to 0 percent SoC. These tests shall be used to determine overall efficiency and, in comparison to the as-new capacity in kilowatt-hours, the remaining percent capacity	PROPOSER requests no battery capacity test, The battery warranty is responsible for the attenuation results, not responsible for the attenuation changes in the process, PROPOSER provides a 12-year 70% WEOL warranty	DENIED

85	6.27.10 Battery Management System	114	The BBM must be capable of balancing the cell voltages during regular bus operation and charging without requiring a special charge.	PROPOSER would like to clarify the battery balance function only works when its about to be fully charged.	DENIED
86	Component Thermal Management	117	Radiator piping shall be stainless steel, brass tubing, or powder coated steel.	PROPOSER would like to clarify that we usee aluminum piping for radiator. Aluminum provides corrosion resistance like stainless steel with lighter weight. PROPOSER requests approval.	DENIED
87	6.29 Regenerative Braking	117	6.29.3 The bus shall also include a regenerative braking system over/deactivation switch within reach of the bus operator with “system deactivated” indicator light for use during inclement weather road conditions.	PROPOSER would like to clarify the regen disable switch located in the cabinet above the driver's seat is the standard design of PROPOSER'S bus. PROPOSER request approval.	The driver needs to access the switch while driving. Thi is a design review issue that will be discussed at the Demonstration Program.
88	6.40.2	122	Tires. Tires shall be provided under a lease agreement between MATA and the tire manufacturer. Tires shall be315/80R22.5 load range H. Load on any tire at GVWR shall not exceed the tire supplier’s rating. If the bus design requires a different tire size and load range to meet FMVSS, the Contractor shall provide details within the technical proposal.	PROPOSER requests approval of 305/70R22.5 tire size. 305/70R22.5 tire size is PROPOSER's standard design and 315/80R22.5 will interfere with PROPOSER's chassis frame.	DENIED
89	6.41.1	122	Steering Axle. The front axle should be of an independen suspension design, non-driving with a load rating sufficient for the bus loaded to GVWR and shall be equipped with grease type front wheel bearings and seals. All friction points on the front axle shall be equipped with replaceable bushings or inserts and lubrication fittings easily accessible from a pit or hoist. The steering geometry of the outside (front lock) wheel shall be within 2 degrees of true Ackerman up to 50% lock measured at the inside (back lock) wheel. The steering geometry shall be within 3 degrees of true Ackerman for the remaining 100% percent lock measured at the inside (back lock) wheel.	PROPOSER would like to clarify that we equips the front axle of our bus with ZF RL82A heavy-duty, low-floor, reverse-Elliot, I-beam, deep- drop axle with front shaft fist-shaped ends and grease-type bearings. And this axle has been Altoona tested. PROPOSER requests approval.	DENIED
90	6.45.4	125	Friction Material. The brake linings shall be made of non asbestos material. To aid maintenance personnel in determining the extent of wear, a provision indicating the thickness at which replacement becomes necessary shall be provided on each disc brake lining. The complete brake lining wear indicator shall be clearly visible from the pit or hoist without removing wheels or backing plates.	PROPOSER also offers electronic brake wear indicators, using visible pins and electronic sensors Since electronic indicators can take minute measurements and will remotely alert the driver and/or mechanic on the PROPOSER'S Electronic Dashboard if brake pads need replacement.	DENIED

91	6.48.8 Auxiliary Electronic Power Supply.	133	As a means to provide electrical power to additional accessories and as a means to minimize accessory drain upon the ESS, proposers shall include an auxiliary power supply within the bus design. Auxiliary power supplies should only be accessible from the bus exterior by maintenance personnel. All auxiliary electronic power supplies should be recharged through the ESS depot charging system, not the bus ESS, unless their SOC reach an unacceptable level (level where accessories are not adequately powered).	PROPOSER would like to ask MATA to provide more details of the auxiliary electronic power supply. What is the voltage and how much power should be provided?	An Auxiliary electronic Power Supply of 12V & 24V
92	6.48.10 Low-Voltage Generation and Distribution	133	6.48.10.2 The vehicle shall be equipped with a 300-AMP minimum, 24 VDC DC-DC power converters, suitably rated to handle the electrical load requirements. The high output DC amps shall be achieved at the DC-DC Power converter's designed maximum output.	PROPOSER would like to clarify that the max power rate of 24V DC-DC is 6kW on PROPOSER'S bus, 250A max. it is enough for PROPOSER pure electrical bus and all the electrical system assigned by customer. PROPOSER request approval.	DENIED
93	6.50.1 General	138	6.50.2.2 Programmability (Software). The drivetrain level components shall be programmable by MATA with limitations as specified by the sub-system supplier.	PROPOSER would like to clarify all the software of drivetrain level components can not be programmable by MATA based on safe operation of the vehicle, all the customized function MATA can be discuss in the PPT meeting.	DENIED. WIll be discussed at the Demonstration Program.
94	Adjustable Brake and Accelerator Pedals.	146	Both pedals shall be adjustable forward and rearward a minimum of 3 inches.	PROPOSER requests approval for unadjustable accelerator pedal from Williams and brake pedal from Bendix. Please refer to Knorr Brake Pedal and Williams Accelerator Pedal	This will evaluated doing the Demonstration Program
95	Heating, Ventilating and Air Conditioning (HVAC)	152	The HVAC unit should be an all-electric roof-mounted unit; Thermo King or approved equal	PROPOSER requests approval of their own HVAC system which has been thoroughly researched and developed in-house. PROPOSER's HVAC system is highly integrated into the bus design and has proven to be reliable and efficient in altoona test	Design review issue. To be discussed at the Demonstration Program.
96	6.69.12.4 Dimensions.	170	The front door clear width shall be a minimum of 34 inches with the doors fully open.	PROPOSER would like to clarify that the front door opening width is 37.9in. And the clear front door width is 33.7in. It can meet ADA front door width requirement. PROPOSER requests approval	Denied
97	6.69.12.4 Dimensions.	170	The rear doors shall leave an opening height of 75.75 inches and the clear width shall be a minimum of 34inches with the doors fully open.	PROPOSER would like to clarify that the rear door opening width is 37.9in. And the clear front door width is 33.7in. PROPOSER requests approval	Denied
98	6.71.1 Destination Sign.	174	A Luminator, or approved equal, destination sign shall be furnished on the front (amber 16 row X 160 column), rear (amber 16 row X 48 column without wheelchair symbol), and on the right side near the front door (amber 8 row X 96 column exterior viewable) at the Number 15 window position. The Front Run Sign shall be amber, (12 row x 40 column).	PROPOSER would like to clarify that their standard destination sign is IO Controls Destination Sign. PROPOSER requests approval	Denied