TRA 26-01 - Supply and Delivery of School Buses - Specification - Base Bus Specifications: Body - Type A Electric

Line Item	Body Specifications	Dynamic Specialty Vehicles Submission 1 Yes/No	Dynamic Specialty Vehicles Submission 1 Additional Information	Ride Canada Company Ltd. Submission 1 Yes/No	Ride Canada Company Ltd. Submission 1 Additional Information
1	Driver's Seat - Cloth Covered	Yes		Yes	
2	MIRRORS Right and left side primary and convex mirrors; be remote adjustable Exterior convex crossovers self-defrosting mounted on right and left sides of hood	Yes		Yes	Yes
3	FULLY ILLUMINATED Stop Arm with Stop Sign (red octagon with white lettering) strobe lights (red) and front mounted	Yes	Electric	Yes	
4	ILLUMINATED SCHOOL BUS SIGN (front and rear) approved by BC Ministry of Transportation	Yes		Yes	
5	Wet arm windshield wipers intermittent / delay preferred	Yes		Yes	Yes
6	Eight (8) light warning system roof mounted white flashing strobe light	Yes		Yes	Yes
7	Steering - Full Power and Tilt	Yes		Yes	Yes
8	School buses must be equipped with heating units and be able to sustain 15.5 degrees C (plus or minus 2 degrees) inside the vehicle when the outside temperature is 0 degrees C ambient. Heaters should not decrease vehicle range by more than one percent. Please describe achievable in vehicle temperature when outside temperature is -30C and provide the expected impact of heating the interior cabin temperate on vehicle range especially when outside temperature conditions are very cold	Yes		Yes	With auxiliary diesel heater
9	73" minimum interior headroom at highest point	Yes	76"	Yes	Yes
10	Horns - Dual Electric	Yes		Yes	Yes
11	Sun Visor - Specify Dimensions	Yes	OEM supplied sun visor - - GM - 20.5" x 7.25" Ford - 23" x 7"	Yes	Yes
12	One (1) roof emergency hatch/vent	Yes		Yes	Yes
13	Min. 97dB Back up alarm	Yes		Yes	Yes
14	Lights and Instrumentation - Specify Details	Yes	Lights are LED. Instrumentation - DPI (driver performance indicator) SOC (state of charge) indicator transmission gear indicator various warning lights related to the electric drive train.	Yes	Yes
15	Crossing arm deactivation switch	Yes		Yes	Yes
16	Vendors should describe their proposed heating systems including fuel source and flexibility to accommodate different fuel types as requested by local school district. " The use of electric heaters to pre-heat the vehicle cabin is not preferred; however using electric heat to keep the batteries warm is acceptable. Vendors should also describe their proposed system for pre-heating vehicle cabins.	Yes	Fuel fired heaters currently not available. Additional electric heaters to be added for extreme cold climates.	Yes	Preheat by electric is the only optional using energy from the grid.
17	INSULATION Body insulation including walls ceiling & roof bows - to be fiberglass or equivilant	Yes	1 1/2" fiberglass insulation (roof walls front cab & roof bows)	Yes	Yes
18	FLOOR: 5/8" Plywood subfloor secured with screws only (no nails) water-proofed and sealed at joints with silicone sealer including floor to wall seams; floor covering and entry steps	Yes		Yes	Yes
19	Lettering - Ext. Belt line both sides- Purchasers Name (Six Inch)	Yes		Yes	Yes
20	Bus # two front corners and opposite license plate rear. (Four Inch) Capacity GVW (Purchaser name) on side panel back of entrance door and side panel below driver. (Two Inch)	Yes		Yes	Yes
21	Vandal Locks - Emergency and Entrance Doors	Yes		Yes	Only the rear emergency Door has Vandal Lock
22	Outward opening entrance door w/heavy duty control. Specify Control	Yes	Electric control standard	Yes	Yes
23	Driver's and rear dome lights to be on separate switches	Yes		Yes	yes
24	AM/FM CD radio minimum four (4) speakers flush mounted	Yes	AM/FM/BT/USB w/4 flush mounted speakers	Yes	Standard radio without CD
25	EMERGENCY EQUIPMENT COMPARTMENT Above windshield with emergency equipment	Yes	Extinguisher & reflectors mounted to floor seat belt cutter on doghouse first aid kit on bulkhead	Yes	Yes
26	Body fully undercoated for noise and enhanced rust protection. Please describe what is included and optional levels of protection available including costs	Yes		Yes	Fully electrophoretic anti rust coating
27	Each unit shall be equipped with a Sound Generator that complies with FMVSS and CMVSS 141	Yes		Yes	

TRA 26-01 - Supply and Delivery of School Buses - Specification - Base Bus Specifications: Chassis - Type A Electric

Line Item	Chassis Specifications	Dynamic Specialty Vehicles Submission 1 Yes/No	Additional Information	Ride Canada Company Ltd. Submission 1 Yes/No	Additional Information
1	Chassis make year model.	Yes	2027 Ford E450	Yes	RIDE Achiever Type A 2026
2	Propulsion system - vehicle performance include: A sustained speed of 70 kph on a 2.5% grade; and 20 kph on a 20% grade. An ability to accelerate to 20 kilometers per hour (kph) in four seconds; to 40 kph in 10 seconds; 50 kph in 20 seconds and 70 kph in 35 seconds. Expectations are that the school bus shall be cable of a minimum of 160 kilometer range on a single battery charge on route measured with 50% city miles and 50% highway miles. Vehicles should be capable of operating at minus 30 degrees Celsius (-30C) to 35C with limited loss of range (no more than 10% reduction of documented range) in these variable conditions. This range rating must be tested with all normal accessories running in the conditions described including terrain encountered in BC.	Yes	1. Sustained speeds of 7 kph on a 2.5% grade and 20 kph on a 20% grade. a. Achievable 2. Accelerate to 20 kph in four seconds: to 40 kph in 10 seconds; 50 kph in 20 seconds and 70 kph in 35 seconds. a. Achievable 3. 160 km range is achievable with the 140kWh Micro Bird. We expect up to 240 km of total range. 4. Vehicles should be capable of operating at minus 30 degrees Celsius (-30C) to 35C with limited loss of range. a. Vehicle can operate in these conditions. We cannot guarantee a range loss no less than 10% especially in freezing temperatures of -35C. b. Extreme temperatures hot or cold will push the HVAC to operate at max capacity for extended periods. Range loss will be higher than 10%.	Yes	Performance Under GVWR: A sustained speed of 70 kph on a 2.5% grade: YES A sustained speed of 20 kph on a 20% grade: Yes. An ability to accelerate to 20 kilometers per hour (kph) in four seconds: YES An ability to accelerate to 40 kph in 10 seconds: YES An ability to accelerate to 50 kph in 20 seconds: YES An ability to accelerate to 70 kph in 35 seconds: YES The bus is able to achieve a minimum range of 200 km at GVWR with all accessories on under a driving condition of 50% city miles and 50% highway miles.
3	Describe vehicle performance while fully loaded in terms of maximum operating speed grade-ability and acceleration. Please provide documentation of for verifying submitted vehicle performance claims to meet above performance specifications.	Yes	1. Max Speed: 120 km/h 2. Gradeability: 25% 3. Acceleration: 335 HP 1420-FT-LBS torque	Yes	25.5% at the GVWR (21500lbs) Gradeability: up to 28% with GVWR
4	Wheelbase info - up to 170"	Yes	158"	Yes	Yes
5	Wheels - Disc Hub Piloted	Yes	OEM Ford	Yes	Yes
6	Tires - Six (6) - specify OEM supplied	Yes	LT225/75R/16E Hankook	Yes	Michelin tires
7	The manufacturer shall provide a vehicle equipped with a complete propulsion system capable of operating across mountainous city and highway routes without premature battery depletion. The manufacturer shall state whether this capability is achieved through an electric-motor–based system mechanical gearing or a combination of both.	Yes	1. Vehicle is equipped with direct drive single-speed motor. We do not plan to change the differential ratio as our setup is balanced for both maximum gradeability and 120 kph top speed. Changing the differential ratio will have minimal effect between those two extremes.	Yes	Type A drivetrain has 1 gear ratio
8	BATTERY Vendors should describe their proposed energy storage/battery system including the number of battery packs and battery chemistry. " Battery efficiency (kilometers per kWh) " Time (in minutes) to charge batteries from 20% to 100% state of charge on a level 2 charger. " Time (in minutes) to charge batteries from 20% to 80% state of charge on a level 2 charger. " Battery capacity (amps per hour per cell) " Battery storage capacity (kWh) " Total usable battery energy storage capacity (kWh) " Total battery pack C-rate. " Total battery pack E-rate " Battery Cycle Life in number of charge-discharge cycles at a specific depth of discharge (DOD) " Battery thermal management type (describe battery maintenance and operational requirements when vehicle is in use and not in use	Yes	1. # of battery packs: 4 2. Battery Chemistry: Lithium Iron Phosphate (LFP) 3. Expected Battery Efficiency: 550-800 Wh/km 4. L2 19.2kW charger: a. full charge 0%-100%: approx. 7-8 hours b. 20% to 100%: approx. 5 hours c. 20% to 80%: approx. 4 hours d. Charging times will vary based on ambient and battery pack temperatures. 5. Amps/Hour/Cell: 228 Ah 6. Battery Capacity: 140 kWh 7. Total useable kWh: 140 kWh 8. Battery pack C-rate: a. Peak: 3C b. Continuous discharge/Charge: 1C 9. Pack E-rate: 140kWh 10. Battery Life Cycle: a. Expected: 3000+ cycles b. DOD: 0%-100% c. Usage and applications may affect total life cycle (Driving VS V2G/V2B) 11. Battery thermal management type: a. BTMS Active cooling and heating is installed with glycol loop through the pack with a PTC heater (10 kW capacity) and AC compressor. b. No special maintenance is expected.	Yes	Total capacity is 156kwh lithium ion (LPF) with Lithium iron phosphate chemistry. 8 hours to charge from 0% to 100% 7 hours to charge from 20% to 100%. Total usable battery energy storage capacity is 140 kWh. Battery capacity will be 60% after warranty period 12years or The gross discharging kWh limitation throughout warranty period is 600000 kWh. Please try to full capacity until automatically stops each time to maintain SOC accuracy and battery consistency. If the vehicle must be stored for a long period park it preferably in a cool area protected from freezing. To optimise the longevity of the battery it is recommended to always keep the charge at 50%. A heated mat is used to warm the batteries. No maintenance is required.
9	Additional power supply feeds available to power end user devices	Yes		Yes	
10	Rear tow hooks	Yes		Yes	Yes

11	On-Board Charging Systems Vendors should describe their preferred charging/discharging systems including EVSE noting that the expectation is that vehicles will be fitted with on board AC (19.2 kW) bidirectional charging/discharging systems that conform to the most recent SAE J1772 standards and/or other relevant standards for V2B bi-directional power flow. The vehicles should also be fitted with DC charge/discharge coupler capable of a sustained maximum of 90kW of power transfer at a maximum of 200 AMPs. The coupler should conform to all current SAE standards. All charging system components shall have CSA certification or provide acceptable documentation. Charging systems shall be capable of operating from -30C to 40C with no more than 10% degradation in performance	Yes	1. On board AC (19.2 kW) bidirectional charging/discharging systems-Not Available 2. DC charge/discharge coupler capable of a sustained maximum of 90 kW of power transfer at a maximum of 200 AMPs-Yes 3. Charging systems shall be capable of operating from -30C to 40C with no more than 10% degradation in performance. a. As stated above we cannot guarantee a range loss no less than 10% especially in freezing temperatures of -35C.	Yes	The RIDE system is equipped with a high-performance integrated bidirectional on-board charging system that fully meets the power standard and environmental requirements specified in the tender. Bidirectional Power Flow (V2B/V2G): The vehicle features an advanced bidirectional power electronics architecture. While the documentation specifically highlights V2G (Vehicle-to-Grid) integration via Nuvve charging stations this same hardware platform inherently supports V2B (Vehicle-to-Building) bi-directional power flow. The system is capable of discharging energy to support building loads peak shaving and emergency backup provided the site is equipped with compatible EVSE management software. Power Capacity: The system supports a maximum charging power of level 2 19.2 kW (240V AC) and maximum charging and discharging current of level 3 200A without EVSE power limit. Standards & Interoperability: The vehicle utilizes a standard CCS1 (SAE J1772) connector ensuring full
12	Data collection for performance and analytical comparisons must be available on a regular basis for both ASTSBC and the purchaser. Training must be provided. *Refer to Documents section for sample data report*	Yes	1. Monthly report is already submitted to ASTSBC. Similar report will be provided. 2. Data available through custom Ecotuned Telematics. 3. Training available.	Yes	Tecium telematics and offline data storage
13	Mud Flaps - Front and Rear. Rear with rubber fender skirts	Yes		Yes	Yes
14	OWNER'S MANUAL AND DIAGNOSTIC SOFTWARE Supply those available for end users.	Yes		Yes	
15	Supply line setting ticket	Yes		Yes	Yes
16	Supply Driver Training and Orientation to ASTSBC Trainers to supply training for drivers upon bus delivery.	Yes		Yes	Yes