TRA 26-01 - Supply and Delivery of School Buses - Specification - Base Bus Specifications: Body - Type D 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	Full power steering - minimum 18" diameter steering wheel Tilt steering column telescopic	Yes		Yes	
2	Aluminized Interior Steel Walls Head Room - 77" Subfloor - 5/8" plywood Rubber covered light coloured ribbed in aisle Floor materials to be covered to sidewalls	Yes		Yes	
3	Wheel housings to be molded type and fully covered All joints to be silicone sealed - including sidewalls and perimeter	Yes		Yes	
4	Mud flaps Installed on front and on rear wheels rubber fenderettes on all four (4) wheel wells	Yes		Yes	
5	Exterior paint to meet national school bus yellow standard black rub rails light colour interior	Yes		Yes	
6	Exterior Lettering 6" - (Purchaser name) both sides at belt line 4" - Bus # two front corners and opposite license plate rear	Yes		Yes	
7	Exterior Lettering con't 2" - Capacity GVW (Purchaser name) on side panel back of entrance door and side panel below driver	Yes		Yes	
8	Internal signs over windshield - No Smoking - No Standees	Yes		Yes	
9	Body fully undercoated for noise and enhanced rust protection. Please describe what is included and optional levels of protection available including costs	Yes	Asphalt emulsion undercoating included	Yes	
10	Crossing arm deactivation switch	Yes		Yes	
11	Tinted windshield wipers dual electric with intermittent control Windshield washers with wet arm windshield washer tank 2 litres minimum	Yes		Yes	
12	Split sash side windows tinted	Yes		Yes	
13	All emergency exits to be vandal lock equipped	Yes		Yes	
14	Two (2) roof emergency escape hatches	Yes		Yes	
15	Entrance door to be air or electric operated with an emergency release valve mounted outside. Both doors heavy duty split type windows in upper and lower sections to open outward	Yes		Yes	
16	Entrance steps covered white trimmed with assist rails left side (right side optional)	Yes		Yes	
17	Body insulation including walls ceiling and roof bows - to be fibreglass or equivalent Dust intrusion package on underside of bus up to floor joint	Yes		Yes	
18	Power to accessory side of ignition	Yes		No	The bus has the same function as "Power to accessory of ignition" while turning "Key On" , which is equivalent to the accessory function.
19	Circuit breakers	Yes		Yes	
20	Instruments: Dash mounted hr meter Battery Monitor speedometer in kmh c/w odometer in km Range (2) air pressure gauges if air equipped. Please describe Instrumentation and dash cluster provided	Yes	Speedometer Efficiency Gauge Message Display Center State of Charge (SOC) Motor Temperature Battery Temperature Front Air Gauge Rear Air Gauge Left Warning Area Message Display Center Control Panel Center Warning Bank	Yes	
21	Instrument panel shall be illuminated and include text light indicators monitoring both the amber and red light warning activations; Icruise control activation cruise control	Yes	Cruise control not available on Electric Bus	Yes	Yes but no cruise control function
22	12 volt power point in switch panel	Yes		Yes	
23	Back-up alarm	Yes		Yes	
24	Two (2) FULLY ILLUMINATED Stop arms with strobe lights (red) stop signs (red octagon with white lettering) and wind guards. One (1) front mounted (1) rear mounted. *Please state if electric or pneumatic*	Yes	Standard Pneumatic Option Electric	Yes	
25	ILLUMINATED SCHOOL BUS SIGN (front and rear) approved by BC Ministry of Transportation	Yes		Yes	
26	Driver alert system installed on rear engine door	Yes		Yes	Our buses are designed entirely around electric power and have no engine, so there is no engine door. However, our Emergency Doors have an alert system.
27	Front headlights HD all exterior lights to be LED cluster lights: front and rear - six (6) in total LED 8 light system non-sequential with master switch and visors	Yes	LED Headlights	Yes	
28	Two (2) rows of interior lights front and rear half on separate dimmer switches	Yes		Yes	
29	One (1) driver's light on separate switch	Yes		Yes	Yes 2 lights standard
30	Interior rear view mirror and sun shield. Minimum 6" to maximum 10" x 30" with no obstruction of windshield	Yes		Yes	Yes
31	Right and left side primary and convex mirrors; remote adjustable Exterior convex crossovers self-defrosting mounted on right and left sides	Yes		Yes	
32	Two (2) heavy duty auxiliary windshield defroster fans switched separately one for each windshield. To cover full width of windshield and drivers left side window. Heavy duty defroster motors.	Yes		Yes	
33	Defroster approximately 90 000 BTU capable of clearing front windows	Yes		Yes	Defrost heater is greater than request with 17072 BTU max
34	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

35	Diesel fired heaters are mandatory. 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	Diesel fired heater to be installed at dealer Level.	Yes	Diesel heater; Option for preheat by electric is the only optional using energy from the grid and recharge to 100%
36	One (1) heater unit for driver's control area (transit type) - 10 000 BTU min.	Yes		Yes	
37	First Aid kit fire extinguisher flare kit all mounted in overhead compartment.	Yes		Yes	Yes
38	Driver's seat to be deluxe high back air seat fully adjustable - 6-way with lumbar support and fold down arm rests. Air foam rubber filled with heavy duty covering cloth fabric.	Yes		Yes	
39	Passenger seats to be seat belt ready 3x3 seating on both sides. Seats to be wall mounted on one side All seat coverings to be HD fire resistant gray vinyl.	Yes		Yes	Yes
40	Pre-wired power and ground thru noise suppression circuit for 2-way radio	Yes		Yes	
41	AM/FM/PA radio	Yes		Yes	Yes
42	PA system with six (6) interior and one (1) exterior speakers separately controlled	Yes		Yes	
43	Each unit shall be equipped with a Sound Generator that complies with FMVSS and CMVSS 141	Yes		Yes	Yes

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

		Dynamic Specialty Vehicles		Ride Canada Company Ltd.	
		Submission 1		Submission 1	
Line Item	Chassis Specifications	Yes/No	Additional Information	Yes/No	Additional Information
1	Chassis and Body Year	Yes	2027 Blue Bird	Yes	RIDE Dreamer Type D 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 200 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. 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	Reaching and sustaining 15.5 degrees C (+/- 2 degrees) inside the vehicle when the temperature is 0 is not a problem. Further testing is required to provide the achievable in-vehicle temperature when the outside temp is -30C. The battery thermal management system typically uses less than 10% of useable power to maintain operating conditions. This does not account for cabin heat loads. When cabin heat is activated cabin heat will consume 6%-20% of useable power.	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	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	We offer an axle ratio that is optimized for the full range of operation of a typical route bus all climates terrain and 0-100kph. We are certainly open to exploring additional options if the operating condition would benefit from it.	No	Only one gear ratio
4	Air Brakes - Rear drum: 16½" x 8"; Front drum: 16½" x 6" with dust shields. Auto slack adjusters long stroke S cam type brakes. ABS included. Auxiliary Equipment tank right hand remote drain	Yes		Yes	RIDE Type D school buses use disc brakes front and rear . The remote drain valve is optional
5	Regenerative braking to charge batteries must meet all Canadian Motor Vehicle Safety Standards in regards to braking systems	Yes	Blue Birds regenerative braking system to charge batteries meets all Canadian Motor Vehicle Safety Standards in regards to braking system.	Yes	Yes

6	BATTERY - *200 kwh minimum* - 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.*200kWh minimum*Exception currently at 194 kWh but 88% useable (170kWh). 2.Vendors should describe proposed energy storage/battery system including the number of battery packs: Two (2) 3.and battery chemistry: Li-ion NMC 4."Battery efficiency (kilometers per kWh)" a.Time (in minutes) to charge batteries from 20% to 100% state of charge on level 2 charger: 420-840 minutes. b.Time (in minutes) to charge batteries from 20% to 80% state of charge on level 2 charger: 319-612 minutes. 5.Battery Capacity (amps per hour per cell) 6. Battery Storage capacity kWh:194 kWh 7.Total useable battery energy storage capacity (kWh) 170 kWh 8.Total battery pack C-rate. Exception but available upon request from the battery supplier 9.Total battery pack E-rate Exception but Available upon request from the battery supplier. 10.Battery Cycle Life in number of Charge-discharge cycles at a specific depth of discharge (DOD): Exception 8 year or 390 Megawatt/Hour gross discharge warranty maintaining 70% of useable capacity 11.Battery thermal management type (describe battery maintenance and operational requirements when vehicle is in use not in use): Circulating DexCool and distilled water mix with resistance heat and R134A compressor with chiller block. While the battery is in use coolant level should be inspected before each use and coolant should flush and refilled every 5 years. If the vehicle is going to be stored for an extended period it is recommended to be at 50% state of charge (The low voltage battery can be deactivated during storage). Contact your distributor for more than 90 days.	Yes	Total capacity is 255kwh lithium ion (LPF) with Lithium iron phosphate chemistry. 13.5 hours to charge from 0% to 100% 11 hours to charge from 20% to 100%. Total usable battery energy storage capacity is 230 kWh. Battery capacity will be 60% after warranty period 12years or The gross discharging kWh limitation throughout warranty period is 800000 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.
7	Battery Management System. Must be described	Yes	Blue Birds Battery Management System (BMS) facilitates smart charging by monitoring battery State of Charge (SOC) and other parameters associated with State of Health (SOH) and communications to the system controller (SCM). The SCM will then determine how much charge should be provided to the battery based on the current state of the battery and control the on-board chargers appropriately.	Yes	RIDE Battery Thermal Management System (BTMS) uses multiple intelligent temperature control technologies to ensure that the battery maintains efficient safe and stable operation under various operating conditions. Its main features include: The battery uses an intelligent liquid cooling system to effectively control the battery temperature through the circulation of coolant so that the temperature difference of the battery cell is controlled within a very small range thereby improving the battery life and performance. The battery management system (BMS) can monitor the battery temperature in real time and automatically adjust the cooling or heating strategy according to the operating conditions to ensure that the battery is always in the optimal operating temperature range. • In high temperature environments the system will actively start the liquid cooling cycle to prevent the battery from overheating and avoid the risk of thermal runaway. The liquid cooling system can maintain a high power charging rate and shorten the fast charging time. • In low temperature environments the system will use heating functions (such as PTC heating or heat pump systems) to ensure that the battery can still maintain efficient charging and discharging performance in cold weather. The heating system can improve battery activity shorten charging time and reduce winter endurance attenuation.
8	Front axle - 14 000 lb taper leaf set back. Rear axle - 23 000 lb - performance chart must be supplied Rear axle ratio - Please specify options available Specify turning radius.	Yes	Front axle 14600lb Rear axle is 23500lb Turning radius curb to curb 33'2"; wall to wall 37'9"	Yes	Front air suspension 18078 lb weight capacity. Turning radius is 494.71 in. gear ratio is 17.814.
9	Air suspension rear c/w levelling valve(s). Heavy duty shock absorbers.	Yes		Yes	Yes
10	Tires - Two (2) -11R22.5 Michelin XZE 2 on front preferred Four (4) -11R 22.5Michelin XDN2 on rear preferred disc wheels 10 stud hub pilot. Please specify your OEM equivalent if different	Yes	Kumho equivalent supplied. Micheline XZE & XDN2 available as an option.	Yes	Yes; Michelin 305/70R22.5 xincityz Tires
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	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 Exception currently -Open to discussion charging/discharging systems that conform to the most recent SAE J1772 standards and/or other relevant standards for V2B bi-directional power flow.: We are certified ISO 15118-20 The vehicles should also be fitted with DC charge/discharge coupler capable of a sustained maximum 90kW Up to 120 kWh input and 60 kWh output of power transfer at a maximum of 200 AMPs. Meets the coupler should conform to all current SAE standards.: SAE J1772 CCS1 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: Meets or Exceeds.	Yes	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 compatibility with North American charging infrastructure and the most recent SAE standards for bidirectional communication. Environmental Resilience: The charging and discharging systems are engineered for extreme climates capable of operating within a temperature range of -30°C to 40°C. Under these conditions the system maintains high efficiency with less than 10% performance degradation ensuring reliable V2B service even in harsh winter or summer environments.
12	Tow hooks front and rear heavy duty bumper.	Yes		Yes	Yes

13	Battery solenoid switch to be connected to ignition switch for isolation of all of the switch panel circuitry.	Yes		Yes	Yes	
14	Data collection for performance and analytical comparisons must be available on a regular basis for both ASTSBC and the purchaser. Training must be provided. *Sample report with minimum requirements can be found in the Documents section.	Yes		Yes	Yes; Tecium telematics and offline data storage	
15	Engine and body diagnostics software or licensing. Diagnostic Training must be provided to each purchaser	Yes		Yes		
16	Supply Driver Training and Orientation to ASTSBC Trainers to supply training for drivers upon bus delivery.	Yes		Yes	Yes	
17	Service Manual for engine and chassis	Yes		Yes	Yes	
18	Battery location and weight - please describe	Yes	The batteries are enclosed in aluminum alloy structure and steel container and attached to the chassis via frame mounts and rubber isolators and are located under the chassis frame rails between the front and rear axle. Approximate weight is 1120 KG.	Yes	8 packs on each side of the bus. The total battery pack weight is 1600 kg	