

|      |                       | <b>RHT Bus Services Ltd- Technical Specifications for<br/>SLF Electric bus -7 to 8 m</b>  |   |
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| S/No | Description           | RHT BS Specification  | Offered specifications together with technical description and documentation. |
| 1    | Type of Bus           | Fully Built, full forward, semi low floor or low floor, Non AC or A/C, right hand drive, power assisted [electrically driven], of at least 22 to 28 seats (excluding Driver's seat)   |   |
| 2    | Electric bus          | Asynchronous AC Motor of rated power 90 kw with a peak power of 150Kw with a maximum torque of 650 NM.  |   |
| 2a   | Engine protection.    | Protection must be provided at the rear of the bus for the engine ,cooling system and other mechanical and electrical /electronic equipment in order to minimise the effects of any rear end collision or under run.<br><b>Also provided with Collision warning device and Emergency automatic brake.</b>   |   |
| 2b.  | Electricals           | Electric fan for motor cooling- and electrical controller.  |   |
| 3    | Transmission          | Automated electric transmission . An electric retarder shall be an integral part of the transmission .  |   |
| 3a   | Transmission          | Acceleration and gear changing [ for both up & down changes] shall be smooth enough to prevent annoyance & discomfort to passengers. Every laden bus must be capable of stopping, being held in park brake and re starting without rolling back on grades of not less than 18% both uphill & downhill . An audible reverse alarm must be fitted integrated on board management system and arranged to sound whenever reverse is selected. |   |
| 4    | (a). Brakes           | Air compressor to be of electric drive.Dual Circuit -full air brake with disc/drum brakes at front and rear fitted with non asbestos anti-squeal type brake lining and air dryer. Brakes also to be controlled electronically and recovers braking energy. <b>Each bus must be fitted with an electronic ABS on all wheels.</b>   |   |
| 4a   | (b). Auxiliary Brakes | The auxiliary brake to slow the vehicle in operation shall be of exhaust type or electromagnetic retarder type or the electric motor acceptable to the RHT BS.  |   |
| 4b   | (c). Parking Brake    | Shall be spring loaded air brake chambers acting on the rear wheels.  |   |
| 4c   | (d). Emergency Brake  | The emergency brake shall be such that will react and cause the vehicle to stop should the air within the brake circuit falls below the recommended.  |   |
| 5    | Battery               | Lithium Ion phosphate energy storage system .   |   |
| 6    | Dashboard             | Full instrumentation panel <b>with retarder switch, speedometer,odometer, electronic meter</b> ,voltage meters and to include buzzer for low air pressure.  |   |
| 7    | Speed Limiter         | Cut off speed in excess of 70 km/h. Speed limiter shall comply with BSAU217 Standard one or equivalent standard. Calibration certificate with company's name, type of speed limiter, Serial number for control box, Assembly valve and speed sensor along with the set speed shall be issued to the RHT BS at the time of delivery. The speed limiter shall not be of cable type.   |   |
| 8    | Suspension            | Semi-elliptic leaf spring type or full air suspension with air bellows at both front and rear axle along with antiroll bar for bus application.   |   |

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| 9  | <b>Linear Convertors-02 nos.</b> | 3 input/output -Supply, Ignition & ground-Input voltage DC 13-40V,Output voltage DC 12V+/- 10%,Output current 5A,Transfer efficiency >95%,Rated power 60W. |  |
| 10 | <b>Charger</b>                   | Preferable three phase supply capable of charging tow buses at one time-Charging time to be less than four hours.  |  |
| 11 | <b>Air Conditioner</b>           | Overhead air conditioner of capacity 30,000 BTHU.  |  |

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| 1    | <b>Bus Body</b>               | To conform to the Road Traffic Construction and Use of Motor buses Regulations 2010.   |   |
| 2    | <b>Bus Overall Dimensions</b> | Overall length of bus <b>shall not exceed</b> 8,000 mm x 2,900 mm and 2,250mm wide.  |   |
| 3    | <b>Bus Body Structure</b>     | The bus body frame shall be constructed with tubular steel of 3 mm thick fitted with diagonal tubular bracing of at least 2 mm thick between the continuous vertical pillars.(i) Structural frame of Bus body made wholly in galvanised steel shall be painted with at least two coats of anti-corrosion material followed by two coats of epoxy black paints. Suitable precautions should be taken to minimise the effects of collision on the driver,steering,braking controls,passengers particularly including side impacts on the low floor section.  |   |
| 3.2  | <b>Safety of construction</b> | The bus body manufacturer shall submit: (a) Details of structural drawing of the body frame with physical dimensions and specifications of the materials to be used. (b) Copy of roll over test of fully built bus with tilt angle attained. (c) Copy of side impact test  |   |
| 4    | <b>Height of Dash Board</b>   | Maximum 1,400 mm from ground level.  |   |
| 5    | <b>Type of Floor</b>          | Semi low floor design – Max of 610 mm from ground level. Fully flat with wheel arches at front rear of max height 150 mm.  |   |
| 6    | <b>Height of Floor</b>        | Height of first step from ground shall not exceed 350 mm   |   |
| 7    | <b>Steps</b>                  | Height of second step shall not exceed 240 mm (step riser).  |   |
| 8    | <b>Flooring</b>               | 15 - 19 mm thick marine fire retardant waterproof plywood covered with 2mm anti-skid type silicon grain materials (vinyl) or an equivalent alternative materials acceptable to the RHT BS. Documentary evidence to be submitted by the manufacturer. The floor structure and flooring materials shall be impervious to moisture to penetration. The floor profile must be designed to eliminate pooling of water .The floor covering must continue up to the sides of the bus as far as underside of the side seal rail. All step and platform must be fitted with contrasting edging mounted in an aluminium step edge strip. |   |
| 9    | <b>Passenger capacity</b>     | At least 22 to 28 seats.   |   |
| 10   | <b>Type of seats +Layout</b>  | Non reclining comfortable ergonomically contoured high back rest with hand grab rails. Seat and back rest shall be well padded with high density foam and washable, durable fabric cloth for comfort of passengers. Model and colour shade to be submitted in offer. Finish should be of synthetic leather type. Seat should also include tray at back rest.   |   |

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| 11  | <b>Seat Layout</b>              | Typical 2 x 2 seat layout .   |  |
| 12  | <b>Exterior Paneling</b>        | Either 1.2 mm aluminium sheets riveted at 100 mm apart or stretched in one piece galvanised metal sheet 50 Micron panels of at least 1mm thick and spot-welded to the structure.  |  |
| 12a | <b>Exterior Paneling</b>        | All exterior hatches and doors must be made from durable & lightweight material and must be provided with gas struts or similar devices to keep the hatches or doors open and <b>positively closed</b> . All such openings shall be fitted with budget locks or quick turn fasteners. All internal components and trim with any fixings exposed must be fixed with tamper proof components which are readily removed without special tools. The bus body shall be so designed to maximise potential advertising space. These areas shall be free from any unnecessary indentations and protrusions. |  |
| 13  | <b>Interior Paneling</b>        | To be lined with aluminium 1.2mm sheet or ABS panels. To include interior panels for advertising with backlight.  |  |
| 14  | <b>Front &amp; Rear Panels.</b> | To be lined with either galvanised 50 micron sheet of 1 mm thick or 1.2 mm aluminium sheet riveted at 50 mm apart.  |  |
| 15  | <b>Entry &amp; Exit Doors.</b>  | Located at the front Overhang of at least 1m wide & in Wheel base of at least 1.2 mm wide electro pneumatically controlled from the dash board and side panel in case of Emergency. Delay mechanism through sensors shall be provided to prevent passenger injury. Doors shall be two leaf inward folding opening with full depth glazing.  |  |
| 16  | <b>Emergency Door</b>           | Emergency door on the driver's side at rear most position – An alarm on the dash board both visual and audible shall indicate when emergency door is not securely closed or opened. Same should trigger an alert on the Vehicle reporting system via the AVL [Automatic Vehicle Location Software].   |  |
| 17  | <b>Roof Ventilators.</b>        | Six mechanical type air extractors leak proof shall be provided on the roof to extract stale air or blow in fresh air. The ventilation system shall provide an even distribution of controlled air throughout the passenger area and provide the driver with sufficient air flow in driver so as to maintain comfort levels.  |  |
| 18  | <b>Side Windows.</b>            | ½ fixed glass at top and ¾ sliding glass at bottom fixed on aluminium extrusion. The toughened glass shall have a visual transmission of light of not less than 25% .Sliding curtains type shall be provided to reduce the heat transfer in the passenger compartment.  |  |
| 19  | <b>Front Windscreen</b>         | Laminated twin piece fixed on rubber extrusions with lock on all sides and centre. Rear windscreen shall be a flat toughened glass.   |  |
| 20  | <b>Driver's cabin</b>           | A variable speed electric fan shall be provided and controlled from the dashboard.  |  |
| 21  | <b>Driver's seat</b>            | Shall be of an ergonomic 500mm wide type with high back rest & Head rest coupled with a three point seat belt. Seat belt light shall be provided on the dashboard. Backward & forward & height adjustment movement of at least 200 mm.  |  |
| 22  | <b>Rear View Mirrors</b>        | Overhanging, non motorized, adjustable convex mirrors . Convex mirrors to view front panel of bus. The front Left hand side shall be of a three piece on a single bracket.  |  |
| 23  | <b>Wipers.</b>                  | Each Windscreen pane to have its wiper of at least 800 mm wide to sweep the view area preferably of Pantograph type. A screen washer to be incorporated to provide soap water for ease of cleaning the windscreens.   |  |

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| 24 | <b>Destination Indicator</b>                  | Alphanumeric, Dual Display Technology, coloured L.E.D based electronic route multi-line display system, with pre-programmed list of Destination Indicators of high intensity illumination with automatic brightness control, shall be installed at the front ,side and rear of the bus. The control unit shall be located within easy reach in the driver's cabin. The display shall be clearly visible in all weathers, at a distance of 50 meters. The front, rear and side destination indicator size shall be at least 1.3 metres wide and 330mm height with character height of at least 130mm. The destination indicators shall comply with Road Traffic (Construction and use of Motor Vehicle) Regulations 2010. |
| 25 | <b>Bumper</b>                                 | Heavy duty bumper lined with at least 1mm thick galvanised steel, streamlined front panel.   |
| 26 | <b>Stanchion and grab Rails</b>               | Hand rails for boarding, alighting and standing passengers to be of at least 30 mm diameter galvanised steel tube coated with yellow plastic. Hand rails can be both vertical and horizontal in the saloon area. Each such vertical handrails shall be provided with the push button call bells. The hangers of the heavy duty type for standees and shall swing along the centre line of the bus ,be of square type and transparent for display of advertisement .  |
| 27 | <b>Conductor locker + Smart Card machine.</b> | To be located at the dashboard area. Provision to be made for a bracket +electrical connection (24 volts) for fixing of smart card equipment at the entrance/driver's cabin area and at the exit door area.  |
| 28 | <b>Bell &amp; Call bell Switches.</b>         | Heavy Duty waterproof wired type provided at each row of seats and on vertical stanchion pipes along gangway.  |
| 29 | <b>Saloon Lights</b>                          | Double row, full length fluorescent LED type covered by diffusers. A separate cabin light must be fitted, illuminating the cabin area. The light must be activated when the front doors open and must be operable at all other times by means of a separate switch. The interior lights shall not cause any reflection on the front windscreen and side windows in the drivers' cabin.   |
| 30 | <b>Fire Extinguisher</b>                      | Telescopic fire extinguishers in engien compartment with temperature alarm.  |
| 31 | <b>Safe</b>                                   | 01 No. to be provided at the dashboard area of size 300 x 225x100mm. An unobtrusive litter bin shall be accommodated inside the bus preferably at the front internal panel.  |
| 32 | <b>Cut Off Switch</b>                         | A relay-controlled battery cut off switch to be provided near the driver seat to disconnect battery positives.   |
| 33 | <b>Towing Fixture</b>                         | Integral in chassis with opening in front bumper.  |
| 34 | <b>Maximum Permissible GVW</b>                | To be specified by manufacturer.   |
| 35 | <b>Water Proofing</b>                         | The roof and windows shall be watertight and all joints sealed with bonding material. A leak test certificate to be provided.  |
| 36 | <b>Mobile phone chargers</b>                  | Phone chargers via universal USB cable shall be provided at each row of seats or on the seat frame itself.   |
| 37 | <b>Smart TV</b>                               | Provision of a smart TV 19 " to be used in conjunction with the LCD and connected to the WIFI. Uploading of data on the screen should be possible.   |
| 38 | <b>Rear view Camera</b>                       | 2-in-1 design rear view monitor & parking sensor system 9.0" LCD monitor .The monitor shall flip up automatically when reversing, and flip down automatically when reversing stops but showing the mid door located in wheel base operation. The rear bumper shall be provided with four sensors with monitor unit on the dash board and beeper.   |

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| 39 | Camera                 | Bus to be fitted with 05 Nos Anti Vandal cameras of 24 -36 volts of roof mounted in the saloon of, 500 GB of about 15 - 45 days footage. The fifth camera should work in conjunction with the reverse camera and show the footage of the exit door at all times except when reverse is engaged. |  |
| 40 | LCD Screen             | 21 inches LCD advertisement screen to be fixed at the back of the driver cabin and midway of the gangway coupled with a <b>DVD player</b> .   |  |
| 41 | Passenger Count System | To incorporate a passenger count system that will generate data on passenger travelled daily in the bus.  |  |

| Other requirement. |                  |   |  |
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| 1                  | NTA Approval     | Offer should meet the NTA approval as regards COstruction & Use regulation of 2010. |  |
| 2                  | Driving Range    | 180 to 200 kms with one charge with AC operating                                    |  |
| 3                  | Tyres            | Prefer tubeless 255/70*22.5 radial type.  |  |
| 4                  | Rear Wheels      | Tyre valve extension for ease of tyre maintenance.                                  |  |
| 5                  | Call bells       | All call bells on side panels & Stanchion bars should be of wired type.             |  |
| 6                  | Charger          | Three phase charger with two outlets.   |  |
| 7                  | On board charger | Availability in the bus.  |  |
| 8                  | Back up service  | Specify back up service In Mauritius.   |  |
| 9                  | Training         | Specify training of local technicians.  |  |
| 10                 | Bus Model        | Semi low floor or Low floor.  |  |
| 11                 | Control circuits | All circuits should be tropicalised due to high humidity in the island.             |  |