Province Government
Ministry of Physical Infrastructure Development
Transport Infrastructure Directorate
Bagmati Province, Hetauda, Makwanpur

Notice for Providing Price List of Fully Electrical Battery Operated Bus

Published Date: 2077/05/10 (26 August, 2020)

1. Province Government, Ministry of Physical Infrastructure Development, Transport Infrastructure Directorate, Bagmati Province is in the process of pursuing operation of Fully Electrical Battery Operated Bus for public transport in capital city Kathmandu and major cities across Bagmati Province.

2. Manufacturer or Supplier is kindly requested to provide Price Lists of Fully Electrical Battery Operated Bus (10-10.5 m long City Bus, 8.5-9 m long City Bus & 8.5-9 m long coach Bus) as per specification with CIP Kathmandu within 15 days through Email: tidpr3@gmail.com.

3. The detailed Specification of above mentioned bus can be downloaded from the official web site of Transport Infrastructure Directorate, Hetauda tid.p3.gov.np

Director
Contact No: 057-522478, 522178
E-mail: tidpr3@gmail.com
Bagamati Provincial Government
Technical Specifications of Fully Electrical Battery Operated Bus

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<th>CRITERIA</th>
<th>REQUIREMENT</th>
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<tr>
<td>1</td>
<td>General</td>
<td>Right Hand Drive (RHD); Fully built Battery-operated Electric Bus for use as public transportation in city areas. Suitable to operate even in the rough, hilly road with steep slope/ sharp bends road condition of Nepal at ambient temperature varying between -5 to 50 degree centigrade and altitude range up to 3000 m.</td>
<td>Make: Model: Country of Origin:</td>
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<tr>
<td>2</td>
<td>Drive System/ Motor</td>
<td>Heavy Duty, Single Drive Permanent Magnet Synchronous Motor (PWSM) having high power and torque density equipped with integrated controller system to comply with latest IEC/NEMA or equivalent international standard for optimization of Bus operation. (Constant torque and constant power mode of operation at various speed) Max. power: Not less than 195 kW Max. Torque not less than: 2500 N.m Efficiency: ≥ 90% Motor Protection level: At least IP67</td>
<td>Make: Model: Test certification:</td>
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<td>3</td>
<td>Battery / Energy Source</td>
<td>Energy storage on board the bus shall be adequate for intended application using latest technology available, to be equipped with Battery Management System (BMS) for optimization of Battery performance: status detection/ analyzing, energy control and constant monitor the Battery condition and ensure high level of safety protection. Battery type: Lithium Iron Phosphate (LFP) Battery Capacity: Not less than 250 KWh Driving range (in single full charge): Not less than 200 KM 12 or 24 V, 2*100 AH (At least battery capacity) Battery for electric appliances.</td>
<td>Make: Type: Model: Test certification:</td>
</tr>
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<td>4</td>
<td>Power train</td>
<td>Electric motor drive with efficient traction control system, enabling the reverse drive active only when vehicle at stationary.</td>
<td>Make: Model: Test certification:</td>
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<tr>
<td>5</td>
<td>Cooling system</td>
<td>Liquid cooling system. The Battery compartment and other electrical/mechanical component to be equipped with proven design of cooling and control system sufficient to maintain temperature within safe limit during the most severe operations possible.</td>
<td>Make: Model: Test certification:</td>
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<tr>
<td>6</td>
<td>Chassis/ Frame structure</td>
<td>Chassis and frame structure to be of manufacture’s “proven design standard”, suitably designed for maximum durability, high strength and corrosion resistance and fabricated, tested for same/ similar load, read and operating condition of Nepal and certified by authorized agency of country of origin. High impact resistant front and rear bumpers Heavy Duty Towing hooks at front and rear.</td>
<td>Make: Type/ Model: Test certification:</td>
</tr>
</tbody>
</table>
| 7 | Body | Body of the Bus must be of proven design and tested (at GVW) for all types of loads that includes: static/dynamic loads, bump loads, braking/acceleration, frequent starts/stops. Aerodynamic design for energy efficiency, comfort with ease of boarding and exit and meeting all safety requirements and comfort to all passengers (seating + standee).

To be equipped with all necessary fitting and fixture items for efficient, comfort and safe operation of Bus service that includes but not limited to the followings:

- Two Service passenger Doors Single in front and Double in middle with suitable step well guards (at left-side of the Bus) pneumatically operated inner swing door.
- Front single piece laminated safety glass Windshield with wipers and washers and rear tempered glass.
- Toughen glass side Windows with inner guardrails built-in air tight sliding window
- Safety hammers with alarm function (At least 6 Nos.)
- Overweight alarm function
- City bus passenger seats made of high density plastic
- Gangways minimum 600 mm
- Handrails and Handholds (Hanging ring equipped 50pcs)
- Antiskid floor
- Insulated roof with adequate Internal ceiling height
- Rear view mirror (Exterior/interior)
- Sun visors
- Vertical stanchions
- Adequate ventilation system without opening windows.
- Ticketing system (Electronic)& Coin Machine
- One 24" LED TV
- Station display (LED type) above middle door with voice messaging
- Exterior Route Display (LED type) in Front and Rear.
- Display Board in interior right and left ceiling side (At least 6 Nos.)
- Digital Time & Temperature Display Unit
- Stop Button in Vertical stanchions
- Ride Height
  - Front End and Middle: 200-220 mm
  - Rear End: Minimum 450 mm
- Detachable Dust Bins
- Infotainment System with Radio, AM, FM, USB and Bluetooth connectivity |

| 8 | Air Conditioning | The bidder is required to offer Air conditioning:

1. Bus equipped with Air conditioning system to be of adequate capacity sufficient to maintain comfort to the passenger even at adverse climatic/temperature condition and frequent door opening and closing. The minimum capacity not less than 24000 Kcal/h cooling-heating (variable-frequency) |

| 9 | Overall and other dimensions | Dimensions:
Length: (10000 to 10500) mm
Width: (2500 to 2600) mm
Height: (3000 to 3500) mm
Wheelbase: (5500 to 6200) mm
Min. Ground Clearance (In Full Load Condition): 165 mm (High Ground Clearance is Preferred)
Turning Radius: ≤12 m |
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<tr>
<th></th>
<th>Description</th>
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<td>Axles</td>
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<td>11</td>
<td>Steering</td>
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<td>12</td>
<td>Brakes</td>
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<td>13</td>
<td>Wheels &amp; Tires</td>
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<td>14</td>
<td>Suspension system</td>
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<td>15</td>
<td>Seating</td>
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<td>16</td>
<td>Control Unit</td>
</tr>
<tr>
<td>17</td>
<td>Vehicle Performance</td>
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</tbody>
</table>
| 18 | Instrumentation / Display unit                                             | All necessary gauges, display unit to be equipped for monitoring performance, efficient operation and maintenance of vehicle that includes:  
  - Vehicle health status  
  - Battery health status  
  - Motor performance  
  - Fault warning  
  - Safety feature  
  - Display (live cameras)  
  - Voice communication  
  - Diagnostic and fault detection. |
| 19 | Essential / Safety Accessories | All standard accessories/safety items to be equipped or supplied with each Bus offered that includes but not limited to followings:  
- Head and tail lights  
- Heater/defroster  
- Fog lights  
- Turn Signals  
- Cabin light  
- Reverse monitor screen  
- Emergency siren  
- Audio visual system  
- CCTV camera with recorder (At Least 7 Units including, 2 Hidden Camera)  
- GPS tracking system  
- Built in Wi-Fi  
- Fire extinguisher 2*4Kg dry powder type  
  - First-aid kit  
  - Hydraulic jack 20 ton.  
  - Emergency Door Valves in both Doors |
| 20 | Instructions | All signs and instructions in the Bus shall be in English. |
| 21 | Manuals | The supplier shall provide the following documents to the end user when the Bus delivered at the site:  
One copy of following manuals in English shall be supplied with each bus  
  a) Operator's and Owner's Instructions and Maintenance manual  
Two copies of following manuals in English shall be supplied  
  a) Comprehensive workshop manual  
  b) Spare parts catalogue |
| 22 | Tools | A set of tools as required for general maintenance shall be supplied in a lockable tool box with each unit of Bus. A list of standard tools to be attached. |
| 23 | Color/Logo | The color of the Buses and the design and size of the logo shall be provided to the bidders |
| 24 | Proven Performance | The bus offered shall be a current model under standard production by the manufacturer and under commercial operation as public transport Bus for at least 3 (three) years.  
Documentary evidence of running model from the user should also be provided.  
All applicable performance test certificates to be provided such as: Electric shock test, Rainwater test, Performance test and others applicable tests. |
| 25 | Warranty | Manufacturer shall provide warranty  
Minimum of 6-year or 300000 km warranty on High Voltage Battery, Driving motor, controller, Electric Pump, ECU Assembly and Electric Appliances. |
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<tr>
<th>Related Service</th>
<th>Training and Inspection Requirements</th>
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<tr>
<td></td>
<td>As part of supplying the new buses, the bidder is required to provide a comprehensive and appropriate program of training. The training modules shall include an overview of the bus system(s); how to install and configure spare components; and the procedures for preventative maintenance, inspection, fault diagnosis, component replacement, and warranty administration on each system component. The training should cover:</td>
</tr>
<tr>
<td></td>
<td>a. At Purchaser's Premises (Delivery Site): Two weeks training and familiarization of components and operation of the bus for (60) sixty persons (operator's and mechanics). The training content should cover all the necessary topics in operation, repair, maintenance both in theoretical and practical aspects essential to optimum use and proper repair and maintenance of the supplied buses that must include but not limited to following topics</td>
</tr>
<tr>
<td></td>
<td>- General introduction and machine features</td>
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<td></td>
<td>- Operating system and safety features</td>
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<td></td>
<td>- Trouble shooting and diagnosis</td>
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<td></td>
<td>- Brake system, Cooling, Electric and Electronic system</td>
</tr>
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<td></td>
<td>- Various Applications</td>
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</tbody>
</table>

| Initial/After sales services | Bidder is required to provide all necessary spare parts for regular and preventive maintenance to provide regular servicing, and all repair and maintenance services that include daily inspection, schedule inspection, preventive maintenance, condition monitoring and breakdown maintenance as necessary for smooth operation of Bus fleet for three years on bidders own cost. After sales service shall be provided by local agent/workshop/dealer appointed by manufacturer in Kathmandu Nepal. |

| Delivery | Kathmandu |
## Charging Station

<table>
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<td>1</td>
<td>Charging System</td>
<td>Complete set of Standard Compatible Charger for proposed vehicle with 2 (two) charging Guns (with source panel board and all the associated accessories), as per manufacturer recommendation. Make, model and detailed specification of the charger to be provided. The Vehicle Charging Unit must be a Long Range Quick Charge Unit with a commercially available plug-in charger that uses the international standard charging protocol (GB/T or CCS2). The Contractor shall supply a battery charger unit for the City Transit Facility capable of recharging the electric bus propulsion batteries to a state (full charge) necessary for the bus to complete a 200 km circuit per charge. The plug-in charging station shall be capable of fully charging the bus within 1-2 hours.</td>
<td>Make: Model: Test certification:</td>
</tr>
</tbody>
</table>

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<td>General</td>
<td>Right Hand Drive (RHD) Fully built Battery-operated Electric Bus for use as public transportation in city areas. Suitable to operate even in the rough, hilly road with steep slope/ sharp bends road condition of Nepal at ambient temperature varying between -5 to 50 degree centigrade and altitude range up to 3000m.</td>
<td>Make: Model: Country of Origin:</td>
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<td>2</td>
<td>Drive System/ Motor</td>
<td>Heavy duty, Single Drive Permanent Magnet Synchronous Motor (PMSM) having high power and torque density equipped with integrated controller system (to comply with latest IEC/NEMA or equivalent international standard) for optimization of Bus operation (constant torque and constant power mode of operation at various speed) Maximum power: Not less than 150 kW Maximum Torque not less than: 1700 N.m Efficiency: ≥ 80% Motor Protection level: At least IP67</td>
<td>Make: Mode: Test certification:</td>
</tr>
<tr>
<td>3</td>
<td>Battery / Energy Source</td>
<td>Energy storage on board the bus shall be adequate for intended application on using latest technology available. be equipped with Battery Management System (BMS) for optimization of Battery performance, status detection/ analyzing, energy control and constant monitor the Battery condition and ensure high level of safety protection. Battery type: Lithium Iron Phosphate (LFP) Battery Capacity: Not less than 165 KWh Driving range (in single full charge): Not less than 200 KM 12 or 24 V, 2*100 AH (At least battery capacity) Battery for electric appliances.</td>
<td>Make: Type/ Model: Test certification:</td>
</tr>
<tr>
<td>4</td>
<td>Power train</td>
<td>Electric motor drive with efficient traction control system, enabling the reverse drive active only when vehicle at stationary.</td>
<td>Make: Model:</td>
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<tr>
<td>5</td>
<td>Cooling system</td>
<td>Liquid or Air-cooling system.</td>
<td>Make: Model: Test certification:</td>
</tr>
<tr>
<td>6</td>
<td>Chassis/ Frame structure</td>
<td>Chassis and frame structure to be of manufacturer's &quot;proven design standard&quot;, suitably designed for maximum durability, high strength and corrosion resistance and fabricated, tested for same/ similar load, road and operating condition of Nepal and certified by authorized agency of country of origin. High impact resistant front and rear bumpers Heavy duty Towing hooks at front and rear.</td>
<td>Make: Type/ Model: Test certification:</td>
</tr>
<tr>
<td>7</td>
<td>Body</td>
<td><strong>Body of the Bus must be of proven design and tested (at GVW) for all types of loads that includes: static/dynamic loads, bump loads, braking/acceleration, frequent starts/stops. Aerodynamic design for energy efficiency, comfort with ease of boarding and exit and meeting all safety requirements and comfort to all passengers (seating + standee).</strong> To be equipped with all necessary fitting and fixture items for efficient, comfort and safe operation of bus service that includes but not limited to the followings:</td>
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<td>Make:</td>
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<tr>
<td>Type/Model:</td>
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<tr>
<td>Test certification:</td>
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<tr>
<td>Single Service passenger door in front (at left side of the bus) pneumatically operated inner swing with suitable step well guards and one emergency exit door at right side rear end of the bus with suitable step well guard pneumatically operated outer swing door.</td>
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<tr>
<td>Front single piece laminated safety glass windshield with wipers and washers and rear tempered glass.</td>
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<td>Toughen glass side windows with guard rails built-in air tight sliding window</td>
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<td>Safety hammers with alarm function (At least 6 Nos.)</td>
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<td>Overweight alarm function</td>
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<td>Gangways minimum 500 mm</td>
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<td>Anti-skid floor</td>
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<td>Insulated roof with adequate internal ceiling height</td>
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<td>Rear view mirror (Exterior/interior)</td>
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<td>Sun visors</td>
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<td>Vertical stanchions</td>
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<tr>
<td>Adequate ventilation system without opening windows.</td>
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<td>Ticketing system (Electronic)</td>
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<tr>
<td>One 32” LED TV</td>
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<tr>
<td>Station display (LED type) above middle door with voice messaging</td>
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<tr>
<td>Exterior route display (LED type) in front and rear</td>
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<tr>
<td>Display board in interior right and left ceiling side (At least 6 Nos.)</td>
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<td>Digital time &amp; temperature display unit</td>
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<td>Stop button in vertical stanchions</td>
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<td>Ride height</td>
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<td>Front end and middle: 200-220 mm</td>
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<td>Rear end: Minimum 450 mm</td>
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<td>Detachable dust bins</td>
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<tr>
<td>Infotainment system with radio, AM, FM, USB and Bluetooth connectivity</td>
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<td>8</td>
<td>Air Conditioning</td>
<td><strong>The bidder required to offer Air conditioning:</strong></td>
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<tr>
<td>1. Bus equipped with air conditioning system to be of adequate capacity sufficient to maintain comfort to the passenger even at adverse climatic/temperature condition and frequent door opening and closing. The minimum capacity not less than 21000 Kcal/h cooling/Heating (variable-frequency)</td>
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<td>9</td>
<td>Overall and other dimensions</td>
<td><strong>Dimensions:</strong></td>
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<tr>
<td>Length: (8500 to 9200) mm</td>
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<td>Width: (2300 to 2600) mm</td>
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<td>Height: (3000 to 3500) mm</td>
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<td>Wheelbase: (4200 to 5000) mm</td>
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<tr>
<td>Min. Ground Clearance (In Full Load Condition): 160 mm (High Ground Clearance is Preferred)</td>
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<td>Turning Radius: ≤ 12 m</td>
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<td></td>
<td>Axles</td>
<td>Sturdy, reliable and proven designed front and rear axles with adequate capacity to carry maximum GVW load and crash loading.</td>
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<tr>
<td>11</td>
<td>Steering</td>
<td>Power steering</td>
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<tr>
<td>12</td>
<td>Brakes</td>
<td>Service brake: Dual circuit pneumatic system, front disc and rear drum type brake. Parking brake: Spring actuated. Braking system to be equipped with Anti-Lock Braking System (ABS) with Regenerative Braking System.</td>
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<tr>
<td>13</td>
<td>Wheels &amp; Tires</td>
<td>Standard Size-Single front, Dual rear and spare one with disc</td>
<td></td>
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<td>14</td>
<td>Suspension system</td>
<td>Suitably designed Electronically Control Air Suspension (ECAS) with shock absorbers for trouble and jerk free comfort ride.</td>
<td></td>
</tr>
</tbody>
</table>
| 15| Seating       | **Driver's seat:** Comfortable, vertical & horizontal adjustable cushioned seat with seatbelt. 
**Passengers seat:** Comfortable, adjustable folding cushioned seats suitable for long ride.  
Capacity: Minimum 26+ Driver  
Details of seating layout: 2X2 |
| 16| Luggage Space | Enough Space for all passengers at suitable place                                                              |
| 17| Control Unit  | Integrated master control unit for optimization of vehicle performance by coordinating all system/function with the operating condition of bus that includes cooling, battery management, motor drive system with facility of Real time data logging and monitoring, diagnostic. |
| 18| Vehicle Performance | Gross Vehicle Weight: Not less than 9500 kg  
Maximum grade ability: Not less than 15%  
Minimum Payload: 4000kg  
MaximumSpeed : Not less than 80 Km/hr  
Time to attain Bus speed of 0-30 km/h ≤ 10 sec |
| 19| Instrumentation / Display unit | All necessary gauges, display unit to be equipped for monitoring performance, efficient operation and maintenance of vehicle that includes:  
- Vehicle health status  
- Battery health status  
- Motor performance  
- Fault warning  
- Safety feature  
- Display (live cameras)  
- Voice communication  
- Diagnostic and fault detection |
| 20 | Essential / Safety Accessories | All standard accessories / safety items to be equipped or supplied with each Bus offered that includes but not limited to followings:
- Head and tail lights
- Heater/defroster
- Fog lights
- Turn Signals
- Cabin light
- Reverse monitor screen
- Emergency siren
- Audio visual system
- CCTV camera with recorder (At Least 7 Units including 2 Hidden Camera)
- GPS tracking system
- Built in Wi-Fi
- Fire extinguisher 2*4Kg dry powder type
  - First-aid kit
  - Hydraulic jack 20 ton.
  - Emergency Door Valves in both Doors |
| 21 | Instructions | All signs and instructions in the Bus shall be in English. |
| 22 | Manuals | The supplier shall provide the following documents to the end user when the Bus delivered at the site:
One copy of following manuals in English shall be supplied with each bus:
  a) Operator’s and Owner’s Instructions and Maintenance manual
Two copies of following manuals in English shall be supplied:
  a) Comprehensive workshop manual
  b) Spare parts catalogue |
| 23 | Tools | A set of tools as required for general maintenance shall be supplied in a lockable tool box with each unit of Bus. A list of standard tools to be attached. |
| 24 | Color/Logo | The color of the Buses and The design and size of the logo shall be provided to the bidders. |
| 25 | Proven Performance | The bus offered shall be a current model under standard production by the manufacturer and under commercial operation as public transport Bus for at least three years. Documentary evidence of running model from the user should also be provided.
All applicable performance test certificates to be provided such as: Electric shock test, Rainwater test, Performance test and others applicable tests. |
| 26 | Warranty | Manufacturer shall provide warranty
Minimum of 6-year or 300000 km warranty on High Voltage Battery, Driving motor, controller, Electric Pump, ECU Assembly and Electric Appliances. |
| 27 | Related Service | Training and Inspection Requirements
As part of supplying the new buses the bidder is required to provide a comprehensive and appropriate program of training.
The training modules shall include an overview of the bus system(s): how to install and configure spare components; and the procedures for preventative maintenance, inspection, fault diagnosis, component replacement, and warranty administration on each system component.
The training should cover:
  a. At Purchaser's Premises (Delivery Site): Two weeks Training and familiarization of components and operation of the bus for thirty persons (operators and mechanics). The training content should cover all the necessary topics in operation, repair, maintenance both in theoretical and practical aspects essential to optimum use and proper repair and maintenance of the supplied buses that must include but not limited to following topics
     - General introduction and machine features
     - Operating system and safety features
     - Trouble shooting and diagnosis
     - Brake system, Cooling, Electric and Electronic system
     - Various Applications

| 28 | Initial/After sales services | Bidder is required to provide all necessary spare parts for regular and preventive maintenance to provide regular servicing, and all repair and maintenance services that include daily inspection, schedule inspection, preventive maintenance, condition monitoring and breakdown maintenance as necessary for smooth operation of Bus fleet for three years on bidders own cost.
After sales service shall be provided by local agent/workshop/dealer appointed by manufacturer in Kathmandu, Nepal.

<p>| 29 | Delivery | Kathmandu, Nepal |</p>
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Model:  
Country of Origin: |
| 2    | Drive System/ Motor | Heavy duty, Single Drive Permanent Magnet Synchronous Motor (PMSM) having high power and torque density equipped with integrated controller system (to comply with latest IEC/NEMA or equivalent international standard) for optimization of Bus operation (constant torque and constant power mode of operation at various speed)  
Maximum power: Not less than 150 kW  
Maximum Torque not less than: 1700 N.m  
Efficiency: ≥ 80%  
Motor Protection level: At least IP67 | Make:  
Model:  
Test certification: |
| 3    | Battery/Energy Source | Energy storage on board the bus shall be adequate for intended application using latest technology available, to be equipped with Battery Management System (BMS) for optimization of Battery performance, status detection/ analyzing, energy control and constant monitor the Battery condition and ensure high level of safety protection.  
Battery type: Lithium Iron Phosphate (LFP)  
Battery Capacity: Not less than 165 KWh  
Driving range (in single full charge): Not less than 200 KM  
12 or 24 V, 2 x 100 AH (At least battery capacity) Battery for electric appliances. | Make:  
Type/Model:  
Test certification: |
| 4    | Power train | Electric motor drive with efficient traction control system, enabling the reverse drive active only when vehicle is stationary. |  |
| 5    | Cooling system | Liquid cooling system. The Battery compartment and other electrical/mechanical component to be equipped with proven design of cooling and control system sufficient to maintain temperature within safe limit during the most severe operations possible. | Make:  
Model:  
Test certification: |
| 6    | Chassis/Frame structure | Chassis and frame structure to be of manufacturer’s “proven design standard”, suitably designed for maximum durability, high strength and corrosion resistance and fabricated, tested for same/ similar load, road and operating condition of Nepal and certified by authorized agency of country of origin.  
High impact resistant front and rear bumpers  
Heavy duty Towing hooks at front and rear | Make:  
Type/Model:  
Test certification: |
| 7 | Body | Body of the Bus must be of proven design and tested (at GVW) for all types of loads that includes; static/dynamic loads, bump loads, braking/acceleration, frequent starts/stops. Aerodynamic design for energy efficiency, comfort with ease of boarding and exit and meeting all safety requirements and comfort to all passengers (seating + standee). To be equipped with all necessary fitting and fixture items for efficient, comfort and safe operation of Bus service that includes but not limited to the followings:  
- Two Service passenger Doors Single in front and Double in middle with suitable step well guages (at left-side of the Bus) pneumatically operated inner swing door.  
- Front single piece laminated safety glass Windshield with wipers and washers and rear tempered glass.  
- Toughen glass side Windows with guardrails built-in air tight sliding window  
- Safety hammers with alarm function (At least 6 Nos.)  
- Overweight alarm function  
- City bus passenger seats made of high density plastic  
- Gangways minimum 600 mm  
- Handrails and Handholds (Hanging ring equipped 40 pes)  
- Antiskid floor  
- Insulated roof with adequate Internal ceiling height  
- Rear view mirror (Exterior/Interior)  
- Sun visors  
- Vertical stanchions  
- Adequate ventilation system without opening windows.  
- Ticketing system (Electronic) & Coin Machine  
- One 24” LED TV  
- Station display (LED type) above middle door with voice messaging  
- Exterior Route Display (LED type) in Front and Rear.  
- Display Board in interior right and left ceiling side (At least 6 Nos.)  
- Digital Time & Temperature Display Unit  
- Stop Button in Vertical stanchions  
- Ride Height  
- Front End and Middle : 200-220 mm  
- Rear End : Minimum 450 mm  
- Detachable Dust Bins  
- Infotainment System with Radio, AM, FM, USB and Bluetooth connectivity. |
| 8 | Air Conditioning | The bidder required to offer Air conditioning:  
1. Bus equipped with Air conditioning system to be of adequate capacity sufficient to maintain comfort to the passenger even at adverse climatic/temperature condition and frequent door opening and closing. The minimum capacity not less than 24000 Kcal/h cooling-heating (variable-frequency). |
| 9 | Overall and other dimensions | Dimensions:  
- Length: (8500 to 9200) mm  
- Width: (2300 to 2600) mm  
- Height: (3,000 to 3,500) mm  
- Wheelbase: (4200 to 5000) mm  
- Min. Ground Clearance (In Full Load Condition): 160 mm (High Ground Clearance is Preferred)  
- Turning Radius: ≤ 12 m |
<p>| 10 | Axles | Sturdy, reliable and proven designed front and rear axles with... |</p>
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<tr>
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<tbody>
<tr>
<td>11</td>
<td>Steering</td>
<td>Power steering</td>
</tr>
<tr>
<td>12</td>
<td>Brakes</td>
<td>Service brake: Dual circuit pneumatic system, front disc and rear drum type brake. Parking brake: Spring actuated Braking system to be equipped with Anti-Lock Braking System (ABS).</td>
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<tr>
<td>13</td>
<td>Wheels &amp; Tires</td>
<td>Standard Size-Single front, Dual rear and spare one with disc</td>
</tr>
<tr>
<td>14</td>
<td>Suspension system</td>
<td>Suitably designed Multi Leaf Spring Type with shock absorbers for trouble and jerk free comfort ride</td>
</tr>
<tr>
<td>15</td>
<td>Seating</td>
<td>Driver’s seat: Comfortable, height adjustable cushioned seat with seatbelt. Passengers seat: Comfortable high density plastic seats suitable for city ride. Capacity: Minimum (30 + Driver) or 30 seats for passengers providing enough space for standee. Total seating capacity: &gt; 70 including Standee Details of seating layout: Best fit arrangement</td>
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<tr>
<td>16</td>
<td>Control Unit</td>
<td>Integrated master control unit for optimization of vehicle performance by coordinating all system/function with the operating condition of bus that includes cooling, battery management, motor drive system with facility of Real time data logging and monitoring diagnostic</td>
</tr>
<tr>
<td>17</td>
<td>Vehicle Performance</td>
<td>Gross Vehicle Weight: Not less than 11000 kg Maximum grade ability : Not less than 15 % Minimum Payload:4000kg Maximum Speed : Not less than 69 Km/hr Time to attain Bus speed of 0-30 km/h ≤ 10 sec</td>
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<tr>
<td>18</td>
<td>Instrumentation / Display unit</td>
<td>All necessary gauges, display unit to be equipped for monitoring performance, efficient operation and maintenance of vehicle that includes: Vehicle health status Battery health status Motor performance Fault warning Safety feature Display (live cameras) Voice communication Diagnostic and fault detection</td>
</tr>
</tbody>
</table>
| 19 | Essential / Safety Accessories | All standard accessories/safety items to be equipped or supplied with each Bus offered that includes but not limited to followings:
- Head and tail lights
- Heater/defroster
- Fog lights
- Turn Signals
- Cabin light
- Reverse monitor screen
- Emergency siren
- Audio visual system
- CCTV camera with recorder (At Least 7 Units including 2 Hidden Camera)
- GPS tracking system
- Built in Wi-Fi
- Fire extinguisher 2*4Kg dry powder type
- First-aid kit
- Hydraulic jack 20 ton.
- Emergency Door Valves in both Doors |
| 20 | Instructions | All signs and instructions in the Bus shall be in English. |
| 21 | Manuals | The supplier shall provide the following documents to the end user when the Bus delivered at the site:
One copy of following manuals in English shall be supplied with each bus
a) Operator's and Owner's Instructions and Maintenance manual
Two copies of following manuals in English shall be supplied
a) Comprehensive workshop manual
b) Spare parts catalogue |
| 22 | Tools | A set of tools as required for general maintenance shall be supplied in a lockable tool box with each unit of Bus. A list of standard tools to be attached. |
| 23 | Color/logo | The color of the Buses and the design and size of the logo shall be provided to the bidders |
| 24 | Proven performance | The bus offered shall be a current model under standard production by the manufacturer and under commercial operation as public transport Bus for at least three years. Documentary evidence of running model from the user should also be provided.
All applicable performance test certificates to be provided such as:
Electric shock test, Rainwater test, Performance test and others applicable tests. |
| 25 | Warranty | Manufacturer shall provide warranty
Minimum of 6-year or 300000 km warranty on High Voltage Battery, Driving motor, controller, Electric Pump, ECU Assembly and Electric Appliances. |
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<tr>
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<th>Related Service</th>
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<tbody>
<tr>
<td>26</td>
<td>Training and Inspection Requirements</td>
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<td>As part of supplying the new buses the bidder is required to provide a comprehensive and appropriate program of training. The training modules shall include an overview of the bus system(s), how to install and configure spare components, and the procedures for preventative maintenance, inspection, fault diagnosis, component replacement, and warranty administration on each system component. The training should cover:</td>
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<td>a. At Purchaser's Premises (Delivery Site): Two weeks Training and familiarization of components and operation of the bus for thirty persons (operators and mechanics). The training content should cover all the necessary topics in operation, repair, maintenance both in theoretical and practical aspects essential to optimum use and proper repair and maintenance of the supplied buses that must include but not limited to following topics</td>
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<td>- General introduction and machine features</td>
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<td>- Operating system and safety features</td>
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<td>- Trouble shooting and diagnosis</td>
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<td>- Brake system, Cooling, Electric and Electronic system</td>
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<td></td>
<td>- Various Applications</td>
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<tr>
<td>27</td>
<td>Initial/After sales services</td>
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<td>Bidder is required to provide all necessary spare parts for regular and preventive maintenance to provide regular servicing, and all repair and maintenance services that include daily inspection, schedule inspection, preventive maintenance, condition monitoring and breakdown maintenance as necessary for smooth operation of Bus fleet for 3 (three) years on bidder's own cost. After sales service shall be provided by local agent/workshop/dealer appointed by manufacturer in Kathmandu Nepal.</td>
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<tr>
<td>28</td>
<td>Delivery</td>
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<td>Kathmandu</td>
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