Cell Propulsion

Electrification of Public Transport: OEM Perspective on e-Mobility
About Us

- Mobility technology company developing powertrain components, integrated electric powertrains, and telematics modules.
- Accelerating the transition of Commercial Vehicles to electric.
- Indigenous High Voltage and Low Voltage Drivetrains
- Turn-key fully managed solutions for commercial vehicle owners.
The Core Team

Nakul Kukar
Co-founder & CEO;
7 years experience with rocket engine and electric aircraft design & development;

Paras Kaushal
Co-founder & COO;
6 years experience with rocket engine ignition systems,
Spacecraft Thermal & energy storage systems

Supratim Naskar
CTO;
7 years experience with Launch Vehicle Structures,
Spacecraft Mechanisms & Space Robotics
Market Positioning

Cell Propulsion - Mobility Technology Company

- Vehicle OEMs
- Vehicle Aggregators/Operators
- Pre-Owned EVs
- Mobility Services to End Users

- Conventional Players
- New Market Segments
**Our Solution**

Cell Propulsion is developing integrated powertrains for commercial electric vehicles

<table>
<thead>
<tr>
<th>e-Bus (12m, 16ton) Powertrain Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Power</td>
</tr>
<tr>
<td>Peak Power</td>
</tr>
<tr>
<td>Operating Voltage</td>
</tr>
</tbody>
</table>
| Battery Capacity and Range                   | 125kW-hr for 150km  
                                             | 200kW-hr for 200km  
                                             | 250kW-hr for 250km  |
| Battery Cycle Life                          | 5000 at 0.8C max Charge and 1C max Discharge |
| Top Speed                                   | 80 km/hr |
Solution USPs

Electric Commercial Vehicles

Cell Propulsion Integrated Mobility Solution

- End of Life Management
- Vehicle Finance & Insurance Services
- Fleet Tracking & Management Services
- Chargers & Charging Infra EPC
- OTA Updates for performance upgrades
- Buy Back Guarantee

24x7 Aftersale Support & AMC

Ops & Maintenance

Driving Data Analytics

Ops & Maintenance

End of Life Management

Vehicle Finance & Insurance Services

Fleet Tracking & Management Services

Chargers & Charging Infra EPC

OTA Updates for performance upgrades

Buy Back Guarantee
Potential & challenges in retrofitting of Buses

- Number of buses on Indian roads to increase from current 1.5 million to 3 million by 2030.
- Over next 3-4 decades, all of these have to be replaced/ upgraded to electric.
- Only a mix of new eBuses supplemented by retrofitted Buses can meet this demand.
- Local production/supply chain of cells, advanced electric motors, and cost are the major challenges for large scale conversion of Buses to electric.
- In long term, major technological improvements are also required to enable electrification of long distance inter-city buses.
Thank You
# Technology Advantage

## 1st to Market

One of the few Indian companies developing:

- EV grade high voltage (600V) electric motor
- EV grade high voltage (600V) motor drive technology
- Modular and general purpose BMS capable of handling LTO, LFP, NMC Chemistries as well as Supercapcititors
- Modular battery packs to achieve voltages as high as 800V.

## Hardware Technologies

In-house developed technologies, with proprietary IP, for:

- Electric Motors
- Li-ion Battery Packs
- Motor Drives
- Inverters
- BMS
- Chargers

**Custom** EV components at required voltages, power ratings, and price.

## Tech Enabled USPs

Lower Cost with high performance:

- BLDC Motor with no permanent magnets.
- No rotor cooling required for the motor.
- Tunable regen braking Performance.
- Passive thermo-structural design of battery packs

Vertical integration leading to very low supply side risk.