# busworld INDIA 2026 CONCLAVE

Driving the Future of Indian Bus & Coach Mobility

Innovation • Sustainability • Excellence

APRIL **28** 2026

AMALTAS HALL,
YASHOBHOOMI – IICEC,
Dwarka, New Delhi

**9 AM** ONWARDS


## SUMMARY REPORT

# Busworld India Conclave, April 28, 2026, New Delhi | Reflections and Gratitude

We are absolutely thrilled to be back in India after eight years. The Busworld India Conclave held on April 2026, at New Delhi gave us the perfect opportunity to welcome the who's-who of the world's second largest bus market.
The response was overwhelmingly positive.

The curated conference and exhibition was graced by the presence of Honourable Union Minister of Road Transport and Highways, Nitin Gadkari, HE Mr Didier Vanderhasselt, the Ambassador of Belgium to India and Mr TG Bharath, Honorable Minister for Industries, Commerce and Food Processing, Government of Andhra Pradesh.

More than 50 bus industry leaders, representing OEMs, body builders, bus operators, suppliers, policy makers and experts, addressed 350 delegates on topics such as:

- Transition to greener energy beyond diesel
- Getting to know the new wave of EV OEMs
- Opportunities and challenges for bus operators
- Building next-gen coaches in India
- Safety and standards
- Optimising the EV supply chain

The discussions, exchanges and connections created during the conclave once again demonstrated the strength and dynamism of the Indian and global bus-based public transport industry.

We had some cutting-edge buses on display, which were extremely well-received.

More than 20 exhibitors set up booths showcasing products and technologies encompassing chassis components, seating solutions, HVAC, charging systems, fire safety, telematics, NVH solutions, control systems, infotainment systems, interior fabrication, among others.

This is just the start. We are very keen to substantively support and champion the Indian bus industry with meaningful events and initiatives.

We will keep you updated!

# Contents

# Opening Session

## Welcome by

**Vincent Dewaele**
CEO
Busworld International

## Advisory Panel

**Nishant Arya**
Chairman
JBM Electric Vehicles (P) Ltd.

**Akash Passey**
President
ZF Group Region India

**Prasanna Patwardhan**
Chairman and MD
Purple Mobility Solutions Pvt Ltd

- Busworld is excited to be back in India after Eight years !!
- Overview of thought-provoking sessions lined up during the day.
- Our esteemed Advisory Panel, who have been with us since Day Zero share deep insights on key issues and trends that will define the future of the Indian bus industry.

# Opening Session

Session Overview The day opened at Yashobhoomi Convention Centre, New Delhi, with a warm and energetic welcome by the MC, Namitaa Sachdeva, a television journalist and presenter, who set a lively tone for the conclave. She noted that Busworld India was returning after an 8-year gap, framing the event as a moment not just of reunion but of renewed purpose for an industry that "keeps India moving."

**Vincent Dewaele**, CEO – Busworld International Dewaele opened by acknowledging the significance of India as a market, recalling how an Indian delegation of nearly 100 people at Busworld Europe had urged him to bring the event back to India. He highlighted Busworld's global reach exhibitions in Europe, Turkey, and Southeast Asia and introduced Busworld Plaza, a new digital platform for year-round industry connectivity. He gave a special acknowledgement to Sridhar Chari, Busworld's India ambassador, and to BOCCI (Bus Operators Confederation of India) as a long-standing partner. His overarching message: India is too important economically and strategically to be absent from the Busworld calendar.

**Nishant Arya**, Chairman – JBM Electric Vehicles Arya framed the current moment as a paradigm shift for the bus industry. Key points:

- India's EV bus market has grown to over 1,00,000 buses, with multiple new players entering
- Global geopolitical volatility and fossil fuel uncertainty make electric the most resilient path forward
- India's ambition of 500 GW renewable energy by 2030 and 1,000 GW by 2047 aligns perfectly with electric mobility
- Drew a parallel with Japanese auto OEMs — intense home competition sharpened them for global markets; India must do the same
- Vision: "From Make in India to Making for the World — India as the EV capital of the world"

**Akash Passey**, President – ZF Group India Passey brought a grounded, multi-decade industry perspective. Highlights:

- Recalled transformative milestones: bus chassis concept (1990s), low-floor buses (2006–07), and China's influence on rethinking public transport through EVs
- Noted India now has 63,000 electric buses ordered but only ~16,000 on road — a critical execution gap he flagged for the day's panel discussions
- Praised the government's shift from competitor to supporter of private operators over the past decade

# Opening Session

- Observed that India's next decade belongs to public transport: "The movement will be defined by buses"
- As a supplier (ZF), confirmed full commitment to gearing up for India's EV future

**Prasanna Patwardhan,** CMD – Purple Mobility Solutions & President, BOCCI Patwardhan offered an operator's lens on the pace of change. Four major shifts he identified:

1. Regulatory pressure - Legal provisions rapidly evolving due to environmental mandates
2. Technology shift - First fuel-type change in over 100 years (diesel → electric)
3. Customer expectations - From passengers begging for a seat to demanding luxury, safety, and comfort
4. Globalisation - COVID and supply chain disruptions proved the world is truly a global village

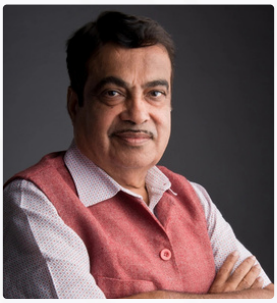
He flagged three critical bottlenecks for electric mobility from an operator's standpoint:

- Space - 92% of India's ~20 lakh buses are privately operated, without depot infrastructure for charging
- Electricity connection costs - One operator quoted ₹1 crore just to pull a power line, more than the charging infrastructure itself
- Financing - Banks reluctant to lend without heavy collateral

He also called on OEMs to display electric buses at dealerships, not just at expos - "Seeing is believing."

# Inauguration and Plenary Session

## Inauguration and Address by Chief Guest



**Shri Nitin Gadkari**
Minister of Road Transport and Highways, Government of India

Address By

**H.E. Mr. Didier Vanderhasselt**
Ambassador of the Kingdom of Belgium to India

**Shri TG Bharath**
Minister of Industries, Commerce and Food Processing, Andhra Pradesh

**Anil Mohan Kamat**
Chairman and MD
MG Group

*VVIP tour of the exhibition and buses on display*

**Chief Guest:** Shri Nitin Gadkari, Union Minister of Road Transport and Highways
**Guest of Honour:** Shri TG Bharath, Minister of Industries, Commerce & Food Processing, Andhra Pradesh
**Patron:** H.E. Mr. Didier Vanderhasselt, Ambassador of Belgium to India
**Address by:** Anil Mohan Kamat, Chairman & MD, MG Group

## Address by Anil Mohan Kamat - MG Group

Kamat opened the inaugural session by acknowledging the significance of Busworld's deepening engagement with India, describing it as a clear global signal that India is an evolving market building scale and capability.

He highlighted three structural shifts transforming the Indian bus industry: a shift **from volume to value**; from **fabrication to engineering** where a bus is now a systems-integrated product; and toward **cleaner energy alternatives**. MG Group, he shared, has evolved from a traditional body builder into a fully integrated concept-to-market manufacturer, with AIS-153 approvals, a 3S (Sales, Service, Spares) ecosystem, and its flagship Tigra super-premium intercity coach on display. He closed with a personal tribute to his late father and founder, who believed a bus is "not just a mode of transport but a promise of a safe journey" a philosophy that continues to guide MG Group.

## Address by H.E. Didier Vanderhasselt - Ambassador of Belgium to India (Patron)

The Ambassador noted Busworld's origins in Belgium in 1971 and its growth into the world's largest dedicated bus and coach exhibition platform. He drew a natural parallel between Belgium one of the world's densest road networks and a nation shaped by transport and connectivity and India's own infrastructure ambitions.

Key points from his address:

- India is one of the most important bus markets in the world, and Busworld's return to India after 8 years is a statement of strategic intent
- The **recently concluded EU-India Free Trade Agreement** creates a strong new framework for technology transfer, trade, and investment in mobility and logistics
- Belgium sees India *"not only as a market but as a partner in innovation"* capable of shaping mobility solutions with global relevance
- He called on all participants to *"challenge assumptions, explore partnerships and think ambitiously about what the next decade of bus mobility can achieve"*

## Address by Shri TG Bharath - Minister of Industries, Commerce & Food Processing, Andhra Pradesh

Bharath made a compelling investment pitch for Andhra Pradesh as India's premier destination for mobility and EV manufacturing:

- The state contributes **over 25% of India's total proposed investments**, backed by six operational ports, 1,000+ km of coastline and direct connectivity to Southeast Asia
- Andhra Pradesh hosts strong industrial anchors Kia India, Isuzu Motors and is expanding into EV policy, battery manufacturing, and smart mobility
- The state's **EV Policy 4.0** offers capital subsidies, SGST reimbursement, power tariff incentives, and 100% stamp duty exemption
- Key differentiator: governance speed *"From proposal to approval to groundbreaking, we measure progress in months, not years"*

His message to the industry: *"If India is the future of mobility, Andhra Pradesh is where that future will be built"*

## Inaugural Address - Shri Nitin Gadkari, Union Minister of Road Transport and Highways

The session's centrepiece was Gadkari's wide-ranging, candid and forceful address one of the most impactful moments of the conclave.

His key themes:

**1. India's Road Infrastructure Transformation** Gadkari cited landmark achievements under his ministry: highway construction accelerated from 12 km/day to consistently over 30 km/day; the national highway network expanded from 91,000 km to 1.46 lakh km. He gave vivid examples of travel time reductions Delhi to Dehradun now 2 hours (from 8–9); Meerut to Delhi now 45 minutes (from 4 hours); Mumbai to Pune reduced from 6–7 hours to 2 hours. He declared: "Within 15 days all flights from Delhi to Dehradun will close" just as Mumbai-Pune flights shut within 15 days of that expressway opening.

**2. The Automobile Industry as a Model** When he took charge in 2014, India's auto industry ranked 7th globally with a size of ₹12 lakh crore. Today it ranks 3rd at ₹22 lakh crore, employing 4.5 crore people and leading in exports. He challenged the bus industry to achieve similar scale current manufacturing capacity of 70,000 buses per year needs to triple; EV bus requirement alone is 1.5 lakh buses in three years.

**3. Clean Fuel - A Non-Negotiable Shift** India spends ₹22 lakh crore annually on fossil fuel imports a simultaneous economic and environmental crisis. **Gadkari** issued a blunt warning: *"There is no future for diesel and petrol vehicles. If you are in the mood to expand only in diesel as a friend, I suggest your future is not good. You must divert."*
He outlined India's clean fuel roadmap:

- **Electric - lithium-ion battery** costs have dropped from $150/kWh to $55/kWh; parity with ICE vehicles expected within 6 months; lithium reserves now identified in Jammu & Kashmir
- **Hydrogen** - already running pilot projects with Tata, Volvo, IOCL, SPCL, NTPC on 10 truck and bus routes; hydrogen is *"the fuel for the future"*
- **Ethanol & Flex Engines** - 20% ethanol blending achieved ahead of target; Scania buses running 100% on bioethanol in Nagpur; flex engine development underway
- **Methanol & CBG** - successful Ashok Leyland trial at 15% methanol blend; 4,000 operational biomass plants producing CNG; Netherlands company producing 28 tonnes of bio-CNG daily from municipal waste in Nagpur
- **Scrapping Policy** - mandatory 15-year vehicle scrap cycle will reduce component costs by 30% through recycled aluminium, copper, steel and plastic; will generate 18% additional domestic demand

**4. Safety - Zero Tolerance** Gadkari expressed deep frustration over the bus fire crisis, calling out **12 major accidents in 6 months resulting in 145 deaths and 200 injuries.** He spoke with rare candour: "There are people making bus bodies I don't want to elaborate but you cannot play with the lives of people." He announced significant policy measures:

- **Revised Bus Body Code (AIS-153) effective September 1, 2025** buses can now only be registered after **type approval certification** from testing agencies; self-certification eliminated
- A **physical and video inspection checklist** to be uploaded on the Vahan portal before registration
- ARAI testing charges **reduced by 50%** (from ₹30–40 lakh to ₹14 lakh) for smaller body builders
- Processing timelines **cut from 4 months to 6 weeks**
- A list of approved critical safety components circulated to all body builders

**5. Accessibility & Inclusion** Gadkari made an impassioned call for **disability-friendly city** buses, warning he would take stern action if progress stalled: *"If it*

*doesn't happen, there will be no buses on the road."* Key mandates: low-floor standard set at 400mm; hydraulic kneeling systems on all city buses; provisions for wheelchair lifts, ramps, handrails and support handles.

**6. Affordability with Quality** He closed with a philosophical balance: India's strength is the size of its market, not the per-capita spending power. If Europe needs 500 buses, India needs 5 lakh. The formula must therefore be: *"Good quality, no pollution, good comfort, safety at reasonable cost. Quality centric, not cost centric."* He used the analogy of the black-and-white TV: *"The poor also buy colour TV. Understand the mentality of the people."*

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## Key Takeaways from the Inaugural Session

- India's road infrastructure revolution is directly enabling long-distance bus travel to compete with aviation **Gadkari's** Delhi-Dehradun declaration was a symbolic and substantive milestone for the bus industry
- The government's position on fossil fuels is unambiguous **diesel has no long-term future;** manufacturers who have not begun their transition are already at risk
- The bus safety crisis is a defining issue the new AIS-153 regime marks a decisive shift from self-certification to accountable, agency-certified type approval; the government is simultaneously offering cost and time relief to ease compliance
- Andhra Pradesh's emergence as an EV and mobility manufacturing hub adds a significant new geography to India's bus industry map
- Belgium's partnership through Busworld backed by the new EU-India FTA signals a deepening of global collaboration around India's mobility transformation

## Session 1:

# Looking beyond diesel, global and local perspectives

Theme: *Transition to more sustainable energy adoption*

**Discussion Points:**

- Incentivizing e-bus adoption/Green Fuels/Preparing for Euro VII.
- Charging and grid infrastructure.
- Financing models: OPEX vs CAPEX, PPP frameworks, fleet leasing.

## Moderator

**Akash Passey**
President
ZF Group Region India

## Panelists

**Nishant Arya**
Chairman
JBM Electric Vehicles (P) Ltd.

**Mahesh Babu**
MD
Olectra Greentech Limited

**Venkat Srinivas**
Executive Director & CEO
SML Mahindra

**Sumit Mittal**
CEO
JSW Greentech

**K Vijay Menon**
Chief Operating Officer
TML Smart City Mobility Solutions Ltd.

**Andamuthu Ponnusamy**
VP, Head of Bus Business
Daimler India Commercial Vehicles

**Sukanta Sahu**
Head - Bus Sales and Marketing
Switch Mobility

**Mahua Acharya**
Founder & CEO
INTENT

**Vaibhav Dange**
Co-Founder
Build India Foundation

**Moderator: Akash Passey**, President, ZF Group India

**Theme:** Transition to sustainable energy in the Indian bus industry across technology, financing, infrastructure, and vision for 2035.

## Opening Framing by Moderator

**Passey** opened by noting the commercial vehicle industry is at a genuine **inflection point** diesel, the backbone of buses for over a century, is now under pressure from regulatory mandates, climate commitments, and technology disruption. He highlighted that this transition is not uniform globally Europe and North America lead, China dominates electric, and India is navigating it at its own pace with unique infrastructure and policy realities.

He posed the defining challenge for OEMs: *"How do you build a future-ready portfolio that adapts across markets, technologies and timelines while maintaining profitability today?"*

## Financing the Transition -

**Mahua Acharya, Founder & CEO, INTENT**

- The shift from government-owned operations to PPP (Public-Private Partnership) was a fundamental **mindset change** it made electric buses financeable as an asset class for the first time
- City buses are now being considered by **pension funds and infrastructure funds** as legitimate long-term infrastructure assets a sea change from just a few years ago
- OEMs that won early GCC tenders are now looking to offload or reduce exposure in their portfolios signalling a maturing secondary market
- Key concern flagged: the **power sector** remains an underappreciated bottleneck financing alone cannot solve what is fundamentally a power availability and quality problem
- Called on the industry to *"move closer to power sector discussions"* it's the next critical frontier

## Why New-Age OEMs Are Outpacing Legacy Players

**K. Vijay Menon, COO – TML Smart City Mobility Solutions (Tata Motors)**

- Electrification eliminated traditional entry barriers (proprietary powertrains, engines, gearboxes)
- New-age players were not complete outsiders many were **former component suppliers or body builders** who understood the ecosystem
- Tata Motors entered EV early (first electric bus in 2017, GCC in 2019), but acknowledged new hungry players accelerated the market's growth

**Nishant Arya, Chairman – JBM Electric Vehicles**

- JBM's success came from having **no legacy ICE product to protect** built on a purely born-EV platform from day one
- Transitioned early from being just a bus maker to being a **full EV ecosystem provider** battery technology, charging, mobility solutions, end-to-end service
- Focus on **Total Cost of Ownership (TCO)** over upfront price was a key differentiator

**Sukanta Sahu, Head Bus Sales & Marketing – Switch Mobility (Ashok Leyland)**

- Ashok Leyland created Switch as a separate entity specifically to **operate with a startup DNA** while leveraging parent's financial strength and engineering heritage
- The move was deliberate: EVs need a **"different mindset, new rule book, digital-first, disruptive approach"**
- Switch is now pursuing **international markets** first batch of 100 vehicles delivered in Mauritius

**Mahesh Babu, MD – Olectra Greentech**

- Challenged the industry with a pointed question: *"India is the second-largest bus market in the world are we behaving like it?"*
- The answer in the past was no but the entry of multiple new players is **filling that gap**
- TCO of electric buses is already **lower than diesel** today economics, not just environment, is the real driver
- Called for a ₹15,000 crore annual investment to sustain 10,000+ buses per year the financing problem is structural and urgent

## The Case for Alternative Fuels Beyond Electric

**Andamuthu Ponnusamy, VP & Head of Business – Daimler India Commercial Vehicles**

- Daimler is not pursuing electric buses for India yet — the company's bet is on **liquid hydrogen** for intercity and high-density routes
- Argued hydrogen offers the best combination of fast charging, energy density, and range for long-distance applications
- Called on the government to establish **trial corridors** with hydrogen fueling stations on high-traffic routes

**Vaibhav Dange, Co-Founder – Build India Foundation**

- India needs a **bouquet of solutions** electric alone cannot address the scale and diversity of requirements

- Highlighted India's ethanol blending success: **20% blending achieved by 2025,** five years ahead of target, saving India ₹1.75 lakh crore (~$17 billion) in import costs
- Backed **CBG (Compressed Biogas)** as a scalable, sustainable option citing Stockholm's entire city fleet running on biogas from city sewage
- Key principle: *"Don't shift pollution from one place to another"* sustainability must be evaluated end-to-end

**K. Vijay Menon / Tata Motors** reiterated a multi-fuel approach CNG, LNG, electric, hydrogen ICE, **hydrogen fuel cell**, biofuels with hydrogen fuel cell as the long-term destination and electric as the near-to-medium term backbone

## Charging Infrastructure - Critical Gaps

**Nishant Arya** (JBM) identified four layers of the charging infrastructure problem:

1. **Upstream power planning** - DISCOMs and power utilities need long-term depot electrification roadmaps
2. **Power quality** - Inconsistent quality affects transformers, charging systems, and vehicles; extra safety layers required in India that aren't needed elsewhere
3. **Asset sweating** - Depot charging infrastructure is largely idle outside peak hours; better round-the-clock utilisation models needed
4. **Financing for charging infra** - Needs dedicated credit lines, separate from bus financing

**Mahesh Babu (Olectra)** flagged a critical customer insight: flash charging technology (8-minute charge, 12% to 87%) already exists in neighbouring countries without grid overload. India needs to innovate toward this rather than work around a 1–2 hour charging assumption.

## PPP Model & Private Operator Participation

**Sumit Mittal**, CEO – JSW Greentech noted a stark reality:
**95% of electric buses in India are procured by government through GCC contracts** - private operators have barely begun to participate. He proposed formalising a concept of "**Right to Charge**" in PPP contracts, drawing from NHAI's model where 90% of right-of-way must be secured before construction begins a similar pre-commitment to charging infrastructure before bus orders are placed.

## 2035 Vision — Rapid-Fire Round

| Speaker | 2035 Vision |
|---|---|
| **Mahua Acharya** | Financing conversation around electric buses should be over majority of buses on road should be electric; battery resale market must be formalised |
| **K. Vijay Menon** | 40–50 Indian cities with fully integrated, multi-modal, sustainable transport systems |
| **Vaibhav Dange** | Government incentives should not be permanent; flex-fuel and hybrid options must be part of the mix; avoid shifting pollution between sectors |
| **Nishant Arya** | India exporting electric buses to 30–40+ countries; 50–60% domestic EV market share; electric as a normal way of life even in Tier 3–4 cities |

## Key Takeaways from Session 1

- The electric bus revolution in India is real and irreversible but **execution gaps** (63,000 ordered vs. 16,000 on road) expose systemic bottlenecks in charging infrastructure, financing, and power sector readiness
- Legacy players are adapting; new-age players are accelerating together they are reshaping the industry faster than anyone expected
- India must pursue a **technology bouquet** electric as the lead, complemented by hydrogen, biofuels, CBG rather than a single-solution approach
- The private operator market (85% of fleet) remains largely untapped for electrification unlocking this is the next frontier
- *"India is the second-largest bus market in the world it's time to behave like it"* perhaps the most resonant line of the session

## Session 2:

# Roundtable: Talking to next-gen OEMs

Theme: *How is the e-bus market opening up to welcome new players*

**Discussion Points:**

- Low entry barriers but established incumbents.
- Open market for techology which is continuously evolving.
- How do we differentiate?
- Philosophy/approach/strategy.

## Moderator

**Jan Deman**
Executive Director
Busworld Foundation

## Panelists

**Dr Aanchal Jain**
CEO
PMI Electro Mobility

**Arathi K Parigi**
MD
Neuton Auto Pvt Ltd

**Venkatesh Challa**
Director
Keto Motors

**Sanyam Gandhi**
Whole-time Director
Chartered Speed Limited

**Ankit Singhvi**
CEO & Co-founder
NaArNi

**Chintan Daftardar**
Program Head
(Electric Buses)
WRI India

**Shyam Sundar**
Global Program Manager,
Buses & CV
Frost and Sullivan

**Moderator: Jan Deman,** Executive Director, Busworld Foundation
**Theme:** How is the e-bus market opening up to welcome new players differentiation, data, ADAS, global ambitions, and China dependency.

## Panelist Introductions & Market Focus

**Neuton Auto (Arathi K. Parigi, MD)** Neuton Auto enters with a legacy in the bus business but with a renewed focus on the **9-metre** city bus segment designed for India's dense, rapidly urbanising cities. The company's compact-vehicle proposition is built not just for India but for other high-density nations facing similar mobility challenges. They see **Mobility-as-a-Service (MaaS)** platforms and Global Capability Centres (GCCs) as key customers.

**NaArNi (Ankit Singhvi, CEO & Founder)** NaArNi focuses exclusively on the **intercity coach market** a segment where a typical operator spends ₹4–5 crore on diesel alone over a bus's lifetime. With 90% of Indian intercity routes under 600 km, there is a compelling electric case. NaArNi operates entirely in the **private market with no government subsidy**, supplying to operators like NueGo, Fresh Bus, and Zing Bus. Their Gen 1 and Gen 2 buses total around 400 vehicles, each covering 18,000–22,000 km per month.

**Chartered Speed Limited (Sanyam Gandhi, Whole-time Director)** As an operator and buyer of buses, Gandhi outlined that procurement decisions hinge on delivery timelines, past product performance, and the depth of OEM relationships not price alone. Operating across **10 states and ~550 cities**, Chartered Speed represents the scale at which data-driven fleet management becomes essential.

## The Electric Bus Market - Evolving Segments

**Shyam Sundar, Program Manager – Frost & Sullivan** provided a market intelligence overview:

- **City bus (transit) segment** will continue to be the primary growth driver, with electrification deepening
- **Intercity routes (400–600 km range)** are the next high-potential segment for private players
- **School buses and corporate transport** show interest but face headwinds higher acquisition cost, unclear state-level subsidies, and limited targeted policy support
- The **90:10 private-to-STU ratio** in India's bus fleet has remained stable for 15–20 years and is expected to hold, meaning private operator electrification is the real unlock

## Grid Readiness for EV Adoption

**Chintan Daftardar, Program Head (Electric Buses) – WRI India** addressed the grid question:

- Government ministries are **upgrading grid capacity** in parallel with EV push, including under recent schemes supporting 100+ cities for both bus deployment and power infrastructure enhancement
- India's **Digital Public Infrastructure model** could be extended to EVs where all vehicles emit data that feeds into an open network for financing, planning, and resource optimisation
- The first step toward a **National ITMS** (Integrated Traffic Management System) platform for government buses is already underway; private OEMs need to be brought into this ecosystem

## Data as a Strategic Asset

This was one of the session's richest discussions, with strong consensus that **data is the new competitive frontier** for the bus industry.

**NaArNi (Ankit Singhvi):**

- Tracks **850 real-time vehicle parameters**; interfaces with charging companies for energy reconciliation
- Offers a **personalised vehicle health card** dynamic, data-driven maintenance checklists replacing static service schedules
- Data is delivered in layers: basic telemetry bundled with vehicle purchase, advanced analytics and billing reconciliation as subscription services
- Core argument: *"Software is the key layer that generates trust and certainty for the customer"*

**Chartered Speed Limited (Sanyam Gandhi):**

- Built a proprietary **fleet intelligence layer** on top of multiple OEM platforms, enabling cross-OEM decision-making at scale
- Categorises vehicle alerts as minor, major, or critical enabling prioritised maintenance and improved fleet longevity

**Frost & Sullivan (Shyam Sundar):**

- Flagged the absence of a **common API standard** across OEMs as a major barrier fleet operators with multiple OEMs must navigate siloed dashboards
- Industry convergence on shared telematics APIs (while protecting proprietary data) would be transformative for fleet owners

**NaArNi (Singhvi)** made a strong case for **open-source data stacks**, particularly around batteries noting that LFP cells from 4–5 global suppliers account for ~70% of bus cost; proprietary data walls only slow ecosystem growth

**WRI India (Daftardar):** echoed the call for open data infrastructure framing it as part of India's broader digital transformation wave that the EV industry must ride collectively

## ADAS - Phased Adoption in Indian Buses

**Frost & Sullivan** characterised ADAS in Indian buses as currently **at a premature stage** basic reversing aids and cameras are common, but advanced features remain rare. Government mandates for emergency braking and blind-spot detection are expected in the next 3–4 years, beginning with city buses before coaches.

**Chartered Speed Limited (Gandhi)** proposed a practical **three-phase ADAS framework** for operators:

- **Phase 1 (Now)**: Driver monitoring and road-facing cameras - reduces accidents, improves driver training
- **Phase 2 (Near-term)**: Depot automation - parking management, charger bay optimisation, departure scheduling
- **Phase 3 (Future)**: Autonomous braking, lane assistance, full advanced safety suite

**NaArNi (Singhvi)** challenged the industry's utilitarian mindset: with women passengers growing from 11% to 40% of intercity travellers in a decade, consumer profiles have transformed - buses must shift from *"meeting regulation"* to *"delivering performance"*. At ₹10 lakh, full advanced safety features can be added to a coach that already saves ₹5 crore in diesel - the economics are compelling.

## India's Path to Global Bus Market Leadership

Moderator **Jan Deman** drew a striking reference point: at *Busworld Europe*, the top three represented countries were Turkey, China, and Germany none of them the host continent's largest markets. India, as the **second-largest and fastest-growing bus market** globally (alongside Latin America), has the scale to become a top-three world player.

**Frost & Sullivan** noted early signs of Indian OEM internationalisation:

- Switch Mobility's Mauritius delivery, Indian players entering African markets
- Tata Motors' acquisition of the IVECO bus group opening Latin American supply chains

Key challenge identified: establishing **reliability and TCO credibility** in export markets citing Turkey's Karsan and TEMSA as a model, having penetrated Europe in just 10 years.

**NaArNi (Singhvi)** argued for vertical specialisation over horizontal breadth *"India is not one big market; it's many markets. Take one segment, build the best product, and scale from there."* Highlighted the **software layer** as India's unique global competitive advantage.

## China Dependency - Risk or Opportunity?

The panel debated India's reliance on Chinese battery cells, motors, and electronic components with nuance:

**Arathi Parigi (Neuton Auto):** Framed it as a recognition-to-opportunity play acknowledging the risk is itself the first step toward building domestic alternatives

**Ankit Singhvi (NaArNi):** Argued for **mutual interdependence** rather than binary risk China manufactures for the world across sectors (pharmaceuticals, ICE ECUs, EVs); India must build its own ecosystem gradually, not panic. "We have the scale and the ambition it's not a zero-sum game"

**Sanyam Gandhi (Chartered Speed):** Called for decoupling battery from bus specialist **battery OEMs** supplying across multiple fleets would reduce systemic risk and improve lifecycle management for large operators

## Key Takeaways from Session 2

- New-age OEMs succeeded not by competing with incumbents but by **finding underserved verticals** (intercity coaches, 9-metre city buses) and owning them with purpose-built products
- **Data and software** are fast becoming as important as vehicle hardware certainty of performance, charging, and maintenance is what builds operator trust at scale
- A **common telematics API standard** across OEMs would unlock significant value for fleet operators and the ecosystem as a whole
- India's path to global bus market leadership runs through **vertical specialisation**, **after-sales reliability, and software-led differentiation** not just manufacturing scale
- China dependency is real but manageable the answer lies in building domestic capability over time, not avoiding collaboration in the short term

## Session 3:

# Bus operators: Movers and Shakers

Theme: *Thought process of next-gen private fleet operators, aggregators and select PTAs*

**Discussion Points:**

- Understanding how the bus-based public transport market has evolved.
- Leveraging data and technology to optimise fleet management.
- Understanding and resolving pain points.
- How can private operators, aggregators and PTAs work together especially for EV bus operations?

## Moderator

**Prasanna Patwardhan**
Chairman and MD
Purple Mobility Solutions Pvt Ltd

## Panelists

**Saurabh Patwardhan**
Director
Purple Mobility Solutions Pvt. Ltd

**Shiva Sankeshwar**
MD
Vijayanand Travels Pvt. Ltd.

**Harsh Kotak**
MD
Modern Tours and Travels

**Surya Khurana**
MD
Flixbus India

**Manoj Aggarwala**
Chief Business Officer
Redbus

**Shatrughan Kumar**
MD
Trans ACNR Solutions Private Limited - JTAC

## Session Sponsor

JTAC
A Flagship Brand of
TRANS ACNR

**Moderator: Prasanna Patwardhan,** CMD – Purple Mobility Solutions & President, BOCCI

**Session Sponsor:** Trans ACNR Solutions

**Theme:** How next-gen private fleet operators, aggregators, and PTAs are shaping the future of bus mobility attracting passengers, surviving competition, and driving industry transformation.

## Setting the Stage - The Scale of Bus Transport in India

Patwardhan opened with a powerful framing: while flights carry 5 lakh passengers daily, railway 2.5 crore, and metro 1.15 crore, **buses carry 40 crore people every day** yet the industry receives a fraction of the promotional investment and policy attention of cars and two-wheelers. RedBus's Allu Arjun campaign was cited as a rare example of mainstream bus promotion

## What Will Attact More Passengers to Public Transport?

**Shiva Sankeshwar, MD – Vijayanand Travels** (third-generation entrepreneur from the VRL family)

- Three essentials: **Safety, Comfort, and Service** with price as a marketing lever at entry, not a long-term positioning tool
- Highlighted the impact of washrooms on buses initially dismissed as unsustainable, now proven to justify ₹100–150 premium per ticket
- Vijayanand invested in airport-standard bus terminal facilities, including the same maintenance company that manages Bengaluru Airport
- Key mindset shift: *"The worst that can happen is it fails the cost of not trying is higher than trying"*

**Harsh Kotak, MD – Modern Tours and Travels**

- Three keywords: **Smart, Safe, Sustainable**
- Most urgent infrastructure gap: India has airports and seaports but no world-class **bus ports** waiting at a roadside without amenities is a fundamental deterrent
- Raised a critical safety alarm: **300+ buses caught fire in the past year**, over 200 of them sleeper buses. Called on manufacturers to shift focus from fire containment to **fire prevention** *"Join hands with us and work towards vehicles not catching fire"*

**Surya Khurana, MD – FlixBus India**

- Framed the core challenge: in India, bus is still seen as a **Plan B or Plan C** - only taken when flights are too expensive or trains are unavailable
- Three levers: **Better infrastructure and ease of doing business; Safety; Tech enablement** making bus travel mobile-first, trackable, and anxiety-free

- Drew contrasts: Europe pushes public transport through congestion charges and limited car ownership incentives; the US has mandated Greyhound terminals; India has not yet made this policy push
- *"A country is not rich where the poor take buses - it's one where the rich choose public transport"*

**Manoj Agarwala, CBO – RedBus**

- RedBus platform sees **30% year-on-year demand growth**, driven by structural macro factors railways not expanding fast enough, aviation pricing volatility, roads as the only viable backbone for 6.5–7% GDP growth
- Key insight from data: **50–60% of RedBus travellers start journeys from non-state capitals** but supply on these underserved routes is thin. Sharing demand data with operators to unlock these routes is a major growth lever
- Flagged consumer segmentation: **34% of intercity bus travellers are women** a segment with specific needs that, if well-served, can grow to 50%
- Proposed a mental shift: treat overnight bus travel like hospitality passengers sleep 8 hours on a bus, similar to a hotel stay, but the industry invests a fraction of the attention

**Saurabh Patwardhan, Director – Purple Mobility Solutions**

- Two additions: **Predictability** (consistent, trackable, reliable experience modelled on Amazon-style e-commerce trust) and **Vibrancy** (the "glamour" of EVs is already attracting a new, aspirational customer 10 EV bus launches generated more friend enquiries than 150 diesel buses added over a year)
- Proposed **multimodal integration** connecting buses with metros and carpooling for last-mile and first-mile to save the 2 hours city commute before the 6-hour intercity journey

**Shatrughan Kumar, MD – Trans ACNR Solutions** (manufacturing lens)

- Tracked a remarkable efficiency milestone: bus AC cost has dropped from **25–30% of bus cost in 2001 to under 6%** today through continuous R&D
- Urged manufacturers to focus on: **air suspension for Indian road conditions; air quality management inside sealed buses** (oxygen levels, air refresh cycles, fresh air intake); **dust-repellent interior materials** (cutting cleaning time from 1 hour to 15 minutes); **weight reduction through better materials;** and **fuel efficiency R&D** cars have reached 20–25 km/l, buses are still stuck at 3.5 km/l

## Shaking Up the Industry - Making Bus Travel Cool Again

**FlixBus (Khurana):** standardisation and consistency of experience is the foundation when every journey delivers exactly what was promised, NPS scores

rise and repeat rates follow. *"Make bus travel cool again"* with tech, brand positioning, and value delivery in combination.

RedBus (Agarwala): the industry must move from being a **transporter of necessity to a preferred mobility partner**. A key structural problem: the lifetime value of a bus traveller is far lower than air or rail because passengers tend to stop taking intercity buses after marriage. Reversing this churn requires raising the quality bar to where people actively choose buses not just default to them.

**Purple Mobility (Saurabh Patwardhan):** fastest route to disruption is **electrifying short-distance** routes this directly threatens shared taxi and cab aggregator services which occupy the same space with higher road footprint and cost.

**Vijayanand (Sankeshwar):** the industry's biggest brand ambassadors are **bus drivers** investing in driver dignity, recognition, and pride has a direct multiplier effect on customer experience and operator brand.

## Survival of Small Operators - A Critical Industry Question

Moderator **Patwardhan** highlighted that **90% of India's bus operators are small, with fewer than 10 buses each** and yet they serve routes and communities that large operators simply cannot reach.

Key perspectives on how small operators survive and thrive:

**RedBus (Agarwala):** The RedBus platform has 7,000 active operators with ~50,000 buses average fleet of 7–8. Small operators must: identify niche routes (not compete head-on with large players on Tier 1 routes); leverage free and low-cost SaaS platforms to reduce overheads; and use online distribution to eliminate expensive physical counters and branches.

**FlixBus (Khurana):** There are sweet spots at **15–20 bus fleet sizes** where micro-entrepreneurs can be highly profitable on specific origin-destination pairs. FlixBus's model enables small operators to access brand, network planning, pricing intelligence, and demand-shock resistance allowing gradual fleet growth without overextending. *"Don't compete on price with larger players choose your niche and own it"*

**Harsh Kotak:** Small operators have a natural advantage in **personalised service** the owner can personally check timing, cleanliness, driver behaviour, and customer interactions. BOCCI's bulk procurement platform already helps smaller operators access economies of scale.

**Saurabh Patwardhan:** Small operators outperform large ones on three parameters when managed personally **punctuality, cleanliness, and customer engagement**. These are the axes on which they should compete, not price.

### Three survival strategies for small operators (Moderator's summary):

1. Find a niche market and serve it with personalised depth
2. Partner with aggregators like RedBus or FlixBus for distribution and technology
3. Form associations and consortiums (like BOCCI's Pravas platform) for collective buying power and knowledge

### Closing One-Word Answers — What Must Change for Public Transport?

| Panelist | Word/Phrase |
|---|---|
| Shiva Sankeshwar | Green mobility |
| Harsh Kotak | Safety and comfort |
| Surya Khurana | Mindset |
| Saurabh Patwardhan | Tech enablement |
| Shatrughan Kumar | Government policies |
| Manoj Agarwala | Sustainability |
| Prasanna Patwardhan (Moderator) | Infrastructure + Integrated transport |

### Key Takeaways from Session 3

- Buses move **40 crore Indians every day** - more than all other modes combined yet the industry remains severely under-promoted, under-invested, and undervalued in public perception
- **Safety** (especially bus fires and road accidents) is the single biggest trust barrier operators and manufacturers must jointly own this problem
- **Tech enablement, predictability, and multimodal integration** are the three levers that will shift bus from Plan B to Plan A
- The **small operator ecosystem** (90% of the industry) is not dying but it must specialise, collaborate, and digitise to survive increasing competition
- The industry's boldest opportunity: **reframe bus travel as hospitality**, not just transportation passengers spend 8 hours on a sleeper bus; treat it accordingly

## Session 4:

# Building India's Next-Gen Coaches

Theme: *Design, Comfort & Localisation*

**Discussion Points:**

- The growing demand for premium intercity and tourist coaches.
- Innovations in lightweight and modular coach body structures.
- Passenger comfort, interior design, digital amenities, and connectivity.
- Enhancing partnerships between OEMs and coach builders for faster delivery and supply chain management.

## Moderator

**Dr Sudhir Mehta**
Founder & Chairman
EKA Mobility & Pinnacle Industries Limited

## Panelists

**Sivakumar V.**
President - Strategy & Sales
MG Group

**K Srinivas Reddy**
MD
Veera Vahan Udyog Pvt. Ltd.

**Kanwal Preet Singh**
MD India & Head-AsiaPacific
Eberspaecher Suetrak India

**AG Giridharan**
Executive Director
CEO-SCS Domain at Uno Minda Limited

**Veeresh Manrai**
General Manager- Business Development
Southco India Private Limited

**Harpinder Singh**
Sr. Manager – Product Development
L&L Products

**Buddhiraj Deshmukh**
CEO
TACO Air International Thermal System

**Moderator: Dr. Sudhir Mehta,** Founder & Chairman, EKA Mobility & Pinnacle Industries Limited

**Theme:** Design, comfort, localisation, standardisation, safety, and the path to scale for India's intercity coach industry.

## Opening Framework - Dr. Sudhir Mehta

**Dr. Mehta** opened with three powerful statistics to reframe the industry's self-perception:

- Buses carry **more than twice** the number of people that Indian railways do every day yet the industry punches far below its weight in policy conversations and investment attention
- Switching the entire bus fleet to electric or alternative fuels would **save India ₹1 lakh crore** annually at current diesel prices roughly half of India's defence budget
- Alternative fuel coaches have a **payback period of just two years** making them the most profitable segment of the entire bus value chain

His core challenge to the industry: *"We need to move from thinking of ourselves as a small part of the auto value chain to the most important part of the auto value chain."* He also notably introduced the word **profit** as an underused but essential concept coaches are what generate it, and profit enables R&D, innovation, and growth.

## From Cost-Centric to Experience-Centric - Sivakumar V., MG Group

**Sivakumar** traced the industry's evolution over his 35-year career. When Volvo launched its first coaches in India, a ₹30 lakh bus sparked intense viability debates. Today, ₹1.8 crore multi-axle coaches are purchased without hesitation. The shift is fundamental: from **CAPEX decisions to TCO and experience decisions.**

Key developments he highlighted:

- Customers are now signing **maintenance contracts** for chassis, bodies, and tyres - signalling a move toward professional lifecycle management
- In the EV coach segment, the metrics that matter are **reliability, safety, comfort, and cost per kilometre** - CAPEX is no longer the dominant concern
- The definition of a coach should match European standards: any bus operating intercity must deliver best-in-class comfort, safety, and reliability not just a step above a city bus

### Safety by Design - Buddhiraj Deshmukh, TACO Air International Thermal Systems

**Deshmukh** approached safety from the **thermal management angle** a component category directly implicated in bus fire incidents:

- The most critical safety function of thermal systems in EVs is **battery cooling** preventing thermal runaway requires cooling systems designed with zero margin for error
- He advocated for **three layers of safety:** safety by design; maintenance-driven safety (ensuring critical components are serviced at required intervals); and **behavioural safety** changing the mindset of operators, drivers, and manufacturers alike

He also supported standardisation as a prerequisite for scaling the coach industry.

### Three Things Keeping Coach Manufacturers Up at Night - K. Srinivas Reddy, Veera Vahan Udyog

**Reddy** offered the most operationally grounded perspective on the session's central challenge:

1. **India-first platform design** - imported EV chassis designed for other markets are failing in Indian conditions. Coaches must be engineered from the ground up for Indian roads, temperatures, and usage patterns
2. **Charging infrastructure** - long-distance EV coaches cannot operate at scale without **reliable rapid-charging points** at route midpoints. This is the single biggest deployment bottleneck today
3. **Trained manpower** - there is a severe shortage of EV-trained technicians for both manufacturing and mid-route servicing. Unlike ICE vehicles where mechanics are ubiquitous, EV coach breakdowns in remote areas currently have no resolution pathway

He also flagged that India's **electric coach manufacturing capacity** is critically low compared to city buses a structural gap that must urgently be addressed.

### The Standardisation Imperative - Dr. Sudhir Mehta

**Dr. Mehta** made the case that standardisation is the foundational prerequisite for everything else the industry wants to achieve scale, quality, export competitiveness, and safety:

- Today no OEM in India produces coaches in the thousands per year. City buses have reached 5,000–10,000+ unit scale; coaches remain a cottage industry

- **Delivery times of 6 months to 1 year** are unacceptable in a generation that expects immediate fulfilment this is a direct consequence of custom-built, non-standardised manufacturing
- Every ad hoc customer modification changing a harness, moving a vestibule, altering a berth layout creates a new safety variable, a new spare parts problem, a new test requirement
- *"We need to learn to say no. Safety also comes from not making custom changes."*
- The industry must urgently define **standards for what can and cannot be customised** this is not government's job to mandate, but the industry's responsibility to self-regulate

His analogy: *"India needs less jugaad and more organised planning. Jugaad undersells us as a nation."*

### Thermal Management - Kanwal Preet Singh, Eberspaecher Suetrak India

On the challenge of cooling buses in India's extreme climate (up to 50°C+):

- Effective thermal management is an **integrated systems problem insulation** quality, duct design, air distribution, and pre-conditioning all work together to reduce thermal load on the AC system
- Pre-conditioning (cooling the bus before passengers board) is especially important for EVs it reduces in-journey energy demand, freeing battery capacity for range
- Export experience across markets (UK, Middle East) shows that regional requirements vary enormously **Indian-specific thermal design** is not optional
- A critical industry-wide issue flagged: removal of the **engine partition door** (per MoRTH guidelines) has significantly increased heat load inside buses, but AC capacity has not been upgraded to compensate "You cannot cheat physics"
- A collective industry representation to MoRTH was proposed suggesting **sliding partition alternatives** rather than complete removal

### Build Quality & Global Benchmarks - Veeresh Manrai, Southco India

**Manrai** drew vivid comparisons between Indian coaches and international standards, focussing on the details that define passenger experience and security:

- **Access panel security** - internationally, battery access doors, luggage bays, and charging ports have tamper-proof locking with feedback systems confirming secure closure. In India, critical panels are often secured with

basic ₹100 padlocks

- **Passenger touch points** - headrests, armrests, tray tables, reading lights the small components passengers interact with most are where quality is visibly compromised in Indian coaches despite large investments in chassis and body
- His principle: *"You build a ₹2 crore house and spend ₹10,000 on a quality lock. Why would you compromise the same logic in a ₹2 crore coach?"*
- Volume and standardisation are the solution: produce 100,000 identical locks a year and the cost drops to where quality becomes affordable

## Delighting the Customer - AG Giridharan, Uno Minda

**Giridharan** proposed a **pre-journey comfort rating system** for buses publicly visible, platform-integrated (e.g., through RedBus), and costed into ticket pricing. The logic: passengers already pay premiums for rated comfort; making safety and quality ratings transparent would drive operators to invest and give passengers confidence before boarding.

He also highlighted:

- 80% of commercial vehicle accidents are caused by **driver fatigue** driver drowsiness alert systems should become standard, and rating visibility would incentivise adoption
- The EV transition will make squeaks, rattles, and interior noise far more perceptible in a quieter cabin - **NVH (Noise, Vibration, Harshness)** standards must be elevated
- Coaches should evolve from point-to-point transport into **working spaces and entertainment environments** for different traveller types a transformational shift in product philosophy

## Audience Q&A - Driver Shortage & Training

A question from the floor on the **scarcity of qualified bus drivers** opened a rich exchange:

- **K. Srinivas Reddy (Veera Vahan)** made a pointed technical observation: bus fires under BS6 are occurring at rates never seen under BS2/BS3/BS4, despite stricter standards. The root cause may lie in changed systems notably the **orange battery cut-off button** on BS6 dashboards, which replaced the familiar rotary switch most drivers knew. He proposed a mandatory **driver SOP for fire emergencies**: open passenger doors first, then press the orange button (which otherwise locks the doors), activate emergency lighting siren, use the safety hammer to break windows. He argued this simple SOP, if trained universally, could save lives immediately.

- **Southco (Manrai)** highlighted that in India, **the owner decides the vehicle, not the driver** a stark contrast to the US and Europe where the equipment operator has a say. Driver roster regulation (like DGCA for pilots) was proposed as a necessary reform.
- **BOCCI representative** noted that intercity bus drivers now earn ₹40,000–50,000/month, dual-driver mandates exist for routes over 500 km, and BOCCI is running 20 driver training sessions across India in 2025. However, the gap in **social respect for the driving profession** remains the biggest recruitment barrier.
- **Dr. Mehta** added that **women drivers** represent a significantly underexplored talent pool and that driver comfort (dedicated cabin AC, better driver seats, legal driver sleeper berths) must be improved as a recruitment incentive.
- **BOCCI app initiative:** BOCCI announced development of a **component and supplier rating app** inviting industry players to list components, receive ratings, and enable smaller operators to access quality-verified parts. An open invitation to the industry to participate.

## Key Takeaways from Session 4

- India's coach industry is at a critical inflection point - it must transition from a **cottage industry with custom delivery times** of **6–12 months** to a **standardised, high-volume manufacturing ecosystem producing 5,000–10,000 coaches** per OEM per year
- **Safety cannot remain reactive** - fire incidents, tampered vehicle specs, inadequate driver training, and poorly secured access panels are all symptoms of an industry that hasn't yet treated coaches as serious automotive products with zero tolerance for modification
- The **thermal management gap** - worsened by removal of engine partition doors without corresponding AC capacity upgrades needs urgent joint industry-government resolution
- **Driver welfare and training** are both a safety imperative and a recruitment strategy treating drivers as professionals with proper rosters, adequate rest, and good working conditions is essential to solving the talent shortage
- The global coach export opportunity is real and imminent but only if India builds to **international standards at competitive cost**, which requires scale, which requires standardisation
- **Dr. Mehta's** closing call: *"The day we dream big the day we decide we are the industry driving the nation all our aspirations will change."*

# Session 5:

## Safety, Standards & Skills

Theme: *Addressing perhaps the most critical issue for the bus industry*

**Discussion Points:**

- New AIS and CMVR standards for buses and coaches.
- Role of telematics in enhancing safety and compliance.
- Driver and technician training programs.

### Keynote Address by

**Tuhin A. Sinha**
National Spokesperson
Bharatiya Janata Party, acclaimed author and road safety evangelist.

*Effective public-private partnership to promote road safety*

### Panel Discussion

**Moderator**

**Bhagwan K Bindiganavile**
EVP, Strategic Planning, Brand & Communications
VE Commercial Vehicles

**Panelists**

**KC Sharma**
Director (Road Safety)
Ministry of Road Transport & Highways

**Suresh Chettiar**
Executive VP, Bus Division
VE Commercial Vehicles

**Dinesh Sharma**
MD
Damodar Group

**Soumik Ukil**
Co-founder & CEO
LightMetrics

**Jalpa Jain**
Director
Aadinath Group

**Amit Chhabra**
Head of Sales - OE & IB
Apollo Tyres

**Jaywant Hardikar**
Head – CMVR
International Centre for Automotive Technology (ICAT)

**C Balasubramanian**
CTO
Chemito Infotech Pvt. Ltd.

**Keynote Speaker: Tuhin Sinha**, National Spokesperson, BJP & Road Safety
**Moderator: Bhagwan Bindiganavile**, EVP – Strategic Planning, Brand & Communications, VECV
**Theme:** Addressing the most critical issue facing the Indian bus industry safety as a mindset, a system, and a shared responsibility across all stakeholders.

## Keynote Address - Tuhin Sinha: PPP for Road Safety

Sinha opened by contextualising India's road safety crisis: **4.7 lakh accidents and 1.7 lakh deaths annually** - figures that have remained largely unchanged from a decade ago, despite significant policy attention under Minister Gadkari. He attributed this to a structural challenge: vehicular traffic is growing at 8–10% annually, making absolute reduction in accident numbers extremely difficult even when safety measures are improving.

**Key proposals for effective public-private partnerships in road safety:**

- **Real-time accident database** - no comprehensive, reason-tagged database of India's 4.7 lakh annual accidents exists. A corporate-led initiative, city by city, to build and maintain this database would be transformational for policy, prevention, and response planning
- **Emotional safety communication** - drawing from a 2017 Mahindra campaign he helped design, Sinha proposed involving **families of drivers** (particularly children and spouses of truck and bus drivers) in road safety messaging. When a 10-year-old child gently reminds their driver-father about safety, the behavioural impact far exceeds any regulatory messaging
- Good Samaritan recognition - an annual institutional award for the 100 best Good Samaritans, championed by corporates through CSR funding, to normalise and incentivise life-saving behaviour. He noted that approximately **50% of Indians do not know basic first aid**, which critically reduces survivability in the critical first hour after an accident
- **Safety education in school curriculum** - road safety (and broader safety literacy) as a subject in Classes 5–6, building a generation of safety-conscious citizens before they become drivers or road users
- **RTO office transformation** - a PPP model to upgrade RTO offices to professional corporate environments, creating a culture shift in how licensing and compliance are administered
- **Digital memorial for road safety victims** - a *"road safety martyrs"* memorial to make the human cost of accidents visible and real, reinforcing the value of accident-free lives

**Audience intervention - three critical systemic failures raised by an operator:**

1. **Panic buttons go nowhere** - currently, bus passenger panic buttons send alerts to the vehicle owner, not the nearest police station or enforcement authority rendering them functionally useless in emergencies
2. **Fire tenders absent at toll plazas** - despite it being a mandated contractual obligation for toll agencies to maintain fire tenders, during 300 bus fires over the past year fire tenders took hours to arrive
3. **Ambulances absent at toll nakas** - similarly mandated but routinely absent, dramatically reducing survivability in the critical golden hour

Sinha committed to formally taking these industry concerns to the relevant ministry, calling them *"genuine issues that must be dealt with on a war footing."*

**Vincent Dewaele (Busworld CEO**) closed the keynote segment with a personal reflection from his time as general manager of a glass factory where mandatory safety training for all staff, including office-based management, initially seemed like a cost centre but proved to be a business enhancer. His message: *"Safety is not something that should be imposed. It's something you do for yourself."*

## Panel Discussion - Safety, Standards & Skills

Moderator **Bhagwan Bindiganavile** opened with a critical reframing: while buses account for only **2–3% of India's 1.78 lakh annual road fatalities**, public reliance on buses (40 crore daily passengers) creates a moral responsibility of a different order. Bus accidents shake societal conscience disproportionately because of their scale 40 lives lost in a single incident. He also introduced the **Four Es framework for road safety**: Engineering, Education, Enforcement, and Emergency Care.

## Why Volvo Buses Are Safe - Suresh Chettiar, VECV Bus Division

**Chettiar's** answer was unequivocal: *"Because Volvo wanted its buses to be safe."* Intent precedes everything else. He reflected on his 25–30 years in the industry, recalling a painful era when industry voices would respond to safety proposals with: *"We can deal with loss of lives but not loss of money."* He contrasted this with Volvo's consistent philosophy building safety features into products **before they became mandatory**, not in response to mandates. Features such as front impact protection, driver leg protection, and under-run guards were standard in Volvo India buses a decade before regulation required them, at additional cost, and remain ahead of current mandatory requirements. His message: safety leadership is a **choice of intent**, not a regulatory output.

## Where Regulation is Heading - Jaywant Hardikar, ICAT

**Hardikar** provided a structured overview of India's bus body regulation evolution:

- **AIS-052** (2016–17): foundational bus body regulation covering all bus types
- **AIS-119**: specific standard for sleeper buses
- **AIS-153** (September 2025): the latest upgrade, adding structural integrity requirements and NVH standards; covering all bus types (city, urban, semi-urban)
- To reduce compliance burden on body builders navigating multiple overlapping standards, ICAT has developed a **consolidated testing package** combining AIS-052 and AIS-153 tests to reduce cost and time for manufacturers seeking combined certification

**Upcoming regulations on the horizon:**

- **Fire and material flammability standards** current regulations address fire detection and suppression systems, but new standards for **interior material flammability and toxicity** are in development, driven directly by the bus fire incidents. Many current materials, while meeting fire resistance standards, emit **toxic fumes** when burned a critical survivability issue
- **AIS-135** (Electric Bus Fire Safety): mandatory from **October 2026** for all electric bus manufacturers covering thermal runaway detection, EV-specific fire suppression, and emergency protocols distinct from ICE vehicles

**Hardikar's** closing note: *"Regulation is collaborative growth it is not a testing agency telling the industry what to do."*

## Leadership Culture and Inclusive Safety - Jalpa Jain, Aadinath Bulk

Jain brought one of the most personal and resonant perspectives of the session:

- Safety is not merely a human failure it is first a **system failure**, and the real transformation happens when technology, standards, and **culture** come together
- A critical question for operators using telematics: are we using this data to **punish drivers** (using it as a digital weapon) or to **coach them** (using it as a development tool)?
- She shared a formative personal moment: an accident in her fleet's first year of operations that left her unable to sleep for two days and permanently changed how she sees her responsibility *"I'm not running buses. I'm caring for the lives of people."*
- On inclusivity while working with women's skill development NGOs, she found that women consistently cited unsafe public transport as the reason their families wouldn't allow them to work.

*"If we are not building safer transport, we are contributing to stopping the financial independence of women."*

### Technology for Driver Safety - Soumik Ukil, LightMetrics

LightMetrics operates at the intersection of AI, edge computing, and video telematics for fleet safety. Key points:

- AI in fleet safety has been deployed for **7–8 years** long before the current generative AI wave. Road-facing and driver-facing cameras, combined with on-device AI, provide real-time alerts for forward collision risk, seatbelt non-compliance, driver fatigue, and distraction
- In a bus, a single incident puts **40–50 lives at risk simultaneously** making the ROI on AI safety technology unambiguous
- Highlighted Fresh Bus's approach calling their drivers **"captains",** providing rest stops, and positioning AI monitoring as *"a virtual coach, not Big Brother"*. This framing drives adoption and changes driver behaviour positively
- **Next frontier**: proactive health monitoring using smartwatches and steering-wheel biometric sensors to detect early signs of driver fatigue or cardiac events with integration to automatic braking systems that can bring a bus safely to the side of the road if a driver becomes incapacitated. Inspired by two real accidents in Tamil Nadu caused by driver heart attacks

### Integrated Transport Management Systems C. Balasubramanian, Chemito Infotech

**Balasubramanian** presented Chemito's innovations in ITMS (Integrated Traffic Management System) for passenger and driver safety:

- Developed a **thermal runaway early warning system** for EV batteries reading real-time data from battery CAN/ECU systems, activating in-bus display alerts, voice announcements, and sirens to warn passengers of fire risk before it becomes critical. Deployed in partnership with Tata and other manufacturers
- Currently researching **driver health monitoring** via smartwatch integration and steering-wheel biometric sensors detecting heart rate anomalies, fatigue patterns, and health emergencies with automatic braking as a failsafe response
- Philosophy: *"Safety should be proactive, not reactive. We imagine the risk before it happens."*

### Tyre Safety - Amit Chhabra, Apollo Tyres

**Chhabra** made the case that tyres the most underappreciated safety component

account for **50–60% of preventable bus safety** incidents when maintained correctly:

- Maintaining correct inflation pressure alone would resolve the majority of tyre-related incidents blowouts (which cause loss of steering control at high speed), increased braking distance in wet conditions, and excessive heat generation
- **TPMS (Tyre Pressure Monitoring System)** is now available and increasingly adopted a straightforward real-time solution that drivers can act on immediately
- Predictive analytics (weather conditions, road surface, driving behaviour, tyre wear patterns) are the next frontier in tyre safety management
- Called for regulatory mandates for TPMS on buses to accelerate adoption beyond early-adopter fleets

## Rapid-Fire Closing Round

| Panelist | One technology India's buses need today | One change they'd make |
|---|---|---|
| **Soumik Ukil (LightMetrics)** | AI-based driver monitoring | Deeper OEM integration for telematics as standard fit |
| **Dinesh Sharma (Damodar Group)** | Discipline over regulation | Enforcement of existing rules |
| **Jalpa Jain (Aadinath Bulk)** | Culture change (everyone owns safety) | Shift from reactive to proactive safety mindset |
| **Suresh Chettiar (VECV/Volvo)** | Safety leadership as intent | Maintain Volvo's safety-first philosophy |
| **Bodybuilder representative** | FR-grade materials and proper wiring routing | Comfort alongside safety in every build |

Moderator **Bhagwan's** closing statement: *"Safety begins with us. It's a mindset more than a technology because once our minds are in the right place, we get it right."*

## Key Takeaways from Session 5

- The **only acceptable target for bus-related fatalities is zero** the industry must hold itself to this standard, not benchmark against current averages
- Safety is a **systemic issue**, not a single-stakeholder failure OEMs, body builders, operators, suppliers, drivers, and regulators all share responsibility and must act in coordination
- Three critical PPP failures demand immediate rectification: **panic buttons must connect to enforcement authorities** (not just owners); **fire tenders and ambulances must be physically present at toll plazas** as mandated; response infrastructure cannot be a contractual fiction
- The incoming **AIS-135 EV fire safety standard (October 2026) and new interior material flammability regulations** signal a significant tightening of the safety framework manufacturers must begin preparation now
- **AI and telematics are no longer optional** - proactive driver monitoring, health detection, and thermal runaway early warning are proven, deployable technologies that can save lives today
- The most underused safety lever: **tyre maintenance** - simple inflation monitoring could prevent more than half of tyre-related incidents immediately
- **Women's safety as an economic equity issue** - Jalpa Jain's insight that unsafe public transport directly prevents women's workforce participation reframes bus safety as a development imperative, not just a compliance matter

## Session 6:

# Localising the EV supply chain

Theme: *How can the Indian bus industry create a secure ecosystem for the sustainable adoption and deployment of electric buses?*

**Discussion Points:**

- Sourcing for e-mobility.
- Using digital public infrastructure to optimize the EV supply chain.
- Catering to Indian OEM export requirements.
- Imperative to fine-tune predicatability of requirements.
- Busworld Plaza as an enabler.

## Moderator

**Chintan Daftardar**
Program Head (Electric Buses)
WRI India

## Panelists

**Vinay Jain**
MD
Masstrans Technologiies Private Limited

**Sachin Nijhawan**
COO
Vertelo

**Ravin Mirchandani**
Chief Deam Merchant
Quench Chargers

**Vishwas R Moktali**
Head - Strategic Business Development - EV
Medha Servo Drives Pvt Ltd.

**Himanshu Vyas**
Sr. General Manager
Manatec Electronics Pvt. Ltd.

**Hosts/Moderators: Chintan Daftardar** (Program Head, Electric Buses, WRI India) & **Rajat Bhatt** (Senior Associate, WRI India)

**Theme:** Building a resilient, interoperable, and digitally connected EV supply chain ecosystem for the sustainable adoption and deployment of electric buses in India.

## Opening Framework - Digital Public Infrastructure (DPI) as the Missing Layer

WRI India's **Rajat Bhatt** opened with a foundational argument: India's EV bus ecosystem has made significant progress on the **physical layer** vehicles, components, charging hardware but has barely begun to build the **digital layer** that will determine whether the ecosystem scales or stagnates.

He introduced the concept of **Digital Public Infrastructure (DPI)** not as a technology, but as a *way of thinking about systems:*

- DPI is an **enabler of multiple solutions**, not a single solution itself analogous to how the internet, GPS, and UPI enabled entirely new ecosystems that their creators never envisioned
- In mobility terms, DPI means: **common protocols, open APIs, shared data standards** that allow any player OEMs, charge point operators, financiers, telematics companies to build interoperable solutions without starting from scratch
- The UPI analogy is instructive no single bank or fintech could have transformed India's payments ecosystem alone; the open protocol is what unleashed it
- The **Lego principle**: if charging protocols, data schemas, and APIs become common building blocks, competition shifts to the innovation layer where India can lead

**Key challenge**: today's EV bus ecosystem is deeply siloed operators must manage charging infrastructure, OEM data streams, energy sourcing, and telematics across disconnected platforms. The cost of coordination and interoperability is enormous and is actively slowing scale-up.

## China Dependency & Supply Chain Resilience - Ravin Mirchandani, Quench

**Mirchandani** (who had to leave early due to a flight) delivered the session's most candid and provocative contribution on physical supply chain resilience:

- **90% of what India uses in the EV and battery transition space comes from China** not because India lacks capability, but because China is genuinely better, faster, and cheaper. BYD, he noted, offers a better driving experience than a Mercedes-Benz today

- The risk is existential: a geopolitical disruption to China-India supply chains (Taiwan conflict, trade tensions) could halt India's entire electrification program. "From today to two years forward, the whole mobility transition would be in jeopardy"
- India's **keiretsu-style approach** (Tata, Adani, Ambani) has concentrated capabilities in a few large conglomerates but trickle-down to the wider ecosystem is too slow. Europe and Germany's strength comes from their **mid-size and SME tier**, not just large companies
- Quench's own journey: designed **India's first fully made-in-India charger** in 2021, got ARAI approval, and now produces power electronics and control software indigenously. Proof that it is possible but it requires deliberate policy incentives that currently do not exist
- **India as a scale-up economy, not an innovation economy** India's competitive advantage lies in taking global innovation and scaling it at lower cost (e.g., green hydrogen brought from $9/kg to $3.50/kg in one Indian Oil tender, beating European projections)
- On interoperability: **82% of India's vehicles are two- and three-wheelers** none of which share a common charging standard. Fixing this is more urgent than building discoverability layers on top of a fragmented base

## Indigenisation of Power Electronics - Vishwas Moktali, Medha Servo Drives

**Moktali** pushed back on any suggestion that India cannot build critical EV components domestically:

- Medha has built a **complete range of propulsion system** components motors, VCUs, power electronics designed, developed, and manufactured in India, for India
- The 2021–23 **global chip shortage** was a stress test: because Medha owned the design, they had four VCU board variants ready and could source whichever chips were available OEMs they served faced zero delivery delays as a result. "This is the advantage you get when you own the technology"
- The real barrier to indigenisation is **mindset and patience** not technical capability. Getting OEMs to trust Indian components enough to certify and order at scale requires years of advocacy and performance proof
- **Data gap** - India has 16,000+ EV buses on road, but operating performance data is not pooled or shared. India has unique conditions (potholes, traffic patterns, auxiliary power loads) that differ materially from Chinese or European baselines. Publicly available common data would unlock a wave of India-specific component innovation

- Key ask: *"A common platform where certain operating parameters are publicly available battery cycles, thermal performance, charging behaviour so we stop guessing and start engineering"*

### TPMS, CTI & Solar Charging Innovation - Himanshu Vyas, Manatec Electronics

Manatec's contribution focused on practical localised solutions for the bus ecosystem:

- **TPMS (Tyre Pressure Monitoring System):** Manatec has developed a cloud-connected, web and mobile accessible TPMS specifically designed for buses real-time alerts to drivers and fleet managers before tyre incidents occur
- **CTI (Central Tyre Inflation System):** auto-inflation on puncture, without stopping originally developed for defence applications in extreme terrain, now available for commercial buses
- **Solar charging trees for highway deployment:** standalone solar-powered EV charging stations that don't require grid connection enabling charging infrastructure on stretches where electricity connection would be prohibitively expensive
- **Confident stance on indigenisation:** *"We are an Indian company, confident we can develop and supply everything OEMs need. We should not depend on other countries."*

### EV Financing - The Data Problem - Sachin Nijhawan, Vertelo

**Nijhawan** offered a financing-first lens on the digital infrastructure gap the most commercially grounded perspective of the session:

- Vertelo (Macquarie and Green Climate Fund backed) is a pure-play EV asset financing and leasing company they don't manufacture or operate. Their model: OEM delivers the bus, operator drives it, Vertelo handles everything in between
- **Only 15% of Vertelo employees come from finance backgrounds -** the rest are industry veterans. This is deliberate: understanding the operational reality of buses is what makes financing viable
- The core problem: **residual value (RV) estimation for an 8-year EV bus lease is essentially guesswork today**. Without reliable performance data (battery degradation curves, route-specific efficiency, charging cycle histories), financiers must price in conservative assumptions which drives up leasing costs and suppresses adoption
- If a **digital data commons existed** (publicly verifiable performance data by OEM, route, and battery chemistry), Vertelo could offer operators significantly more competitive and customised lease structures aligned to their specific contracts, routes, and vehicle mix

- He put the challenge simply: *"I wait for a platform like this, or I wait 8 years for one lease cycle to complete before I know if my assumptions were right. Either way, the cost of uncertainty falls on the operator."*
- Offered a notable commitment: if operators provide **verifiable digital performance artifacts**, Vertelo is willing to offer better lease rates in exchange for taking on residual value risk

**Integrated Transport Management & Localisation - Vinay Jain, Masstrans Technologies**

Masstrans has indigenised all core components that go into a connected bus solution onboard computers, cameras, telematics hardware through internal R&D. Key points:

- PM e-Bus and PM e-Drive tenders have now mandated **MQTT and JSON protocols** - a government-led first step toward common data standards for the national platform being built by the Ministry
- Secure MQTT (encrypted) is already being deployed, ensuring data privacy is built in from the ground up
- The **connected bus** is already technically achievable - the challenge is ensuring that the data generated is made available to the broader ecosystem rather than locked in proprietary silos

**Key Themes & Cross-Cutting Insights**

**On China dependency:** All panelists acknowledged the reality but differed on the response. Mirchandani called for policy incentives to make domestic production economically viable; Moktali argued India has already proved it can build world-class EV components and the barrier is OEM trust and management resolve; the consensus view was that **reducing China dependency is a 3–5 year horizon** requiring both policy support and industry commitment.

**On DPI and open standards:** Panelists unanimously agreed that a government-led (not industry-led) initiative to establish common data protocols is essential. The industry-first approach has repeatedly failed to achieve interoperability. Precedents like **UPI and ONDC** were cited as models. The bus sector's equivalent would be open APIs for charging, performance data, and telematics creating a data layer on which the entire ecosystem can build.

**On financing and the data-confidence loop:** A powerful insight emerged: **data quality directly determines financing cost**. Better performance data → lower risk for financiers → cheaper leasing → more operators can afford EVs → more buses deployed → more data generated. Breaking into this virtuous cycle requires the data commons to be built first, not waited for.

## Closing Vote of Thanks - Jan Deman, Busworld Foundation

**Jan Deman** closed the day with a brief reflection on Busworld's journey from six buses in a Belgian parking lot in 1971 to 45,000 participants at Busworld Europe, and now back to India. He recalled the pivotal 2013 decision to add congresses and seminars to exhibitions, recognising that the knowledge concentrated in the room at Busworld events was not being captured or shared. That conviction brought Busworld back to India in 2026.

His closing message: *"We don't consider ourselves experts we are the glue between experts. You are the experts, and we can bring other experts from around the world. That conversation can only enrich all of us."*

## Key Takeaways from Session 6

- India's EV bus ecosystem has a strong and growing **physical layer** but is held back by an underdeveloped **digital layer** of shared protocols, open APIs, and common data standards
- **China's dominance** in EV components is real, near-term unavoidable, and strategically risky the path to resilience requires policy incentives for indigenisation and support for the mid-tier and SME supply chain, not just large conglomerates
- India is a **scale-up economy** the opportunity is to take proven global innovation, certify it for Indian conditions, and scale it at Indian cost structures. This is a realistic and proven pathway
- **Financing is the demand-side unlock** but only if residual value risk can be priced accurately, which requires verifiable, shared performance data. The current data vacuum forces conservative pricing that suppresses EV adoption
- **Government must lead on standards industry-first** interoperability efforts consistently fail. The UPI precedent shows that a government-mandated open protocol can transform an entire sector. The EV bus sector needs its own equivalent
- MQTT and JSON protocol mandates in PM e-Bus tenders are a promising first step but must be extended to create a truly open, publicly accessible national data platform
- The **data-confidence-financing virtuous cycle** must be deliberately initiated: common data → lower financing risk → cheaper leasing → faster deployment → more data

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