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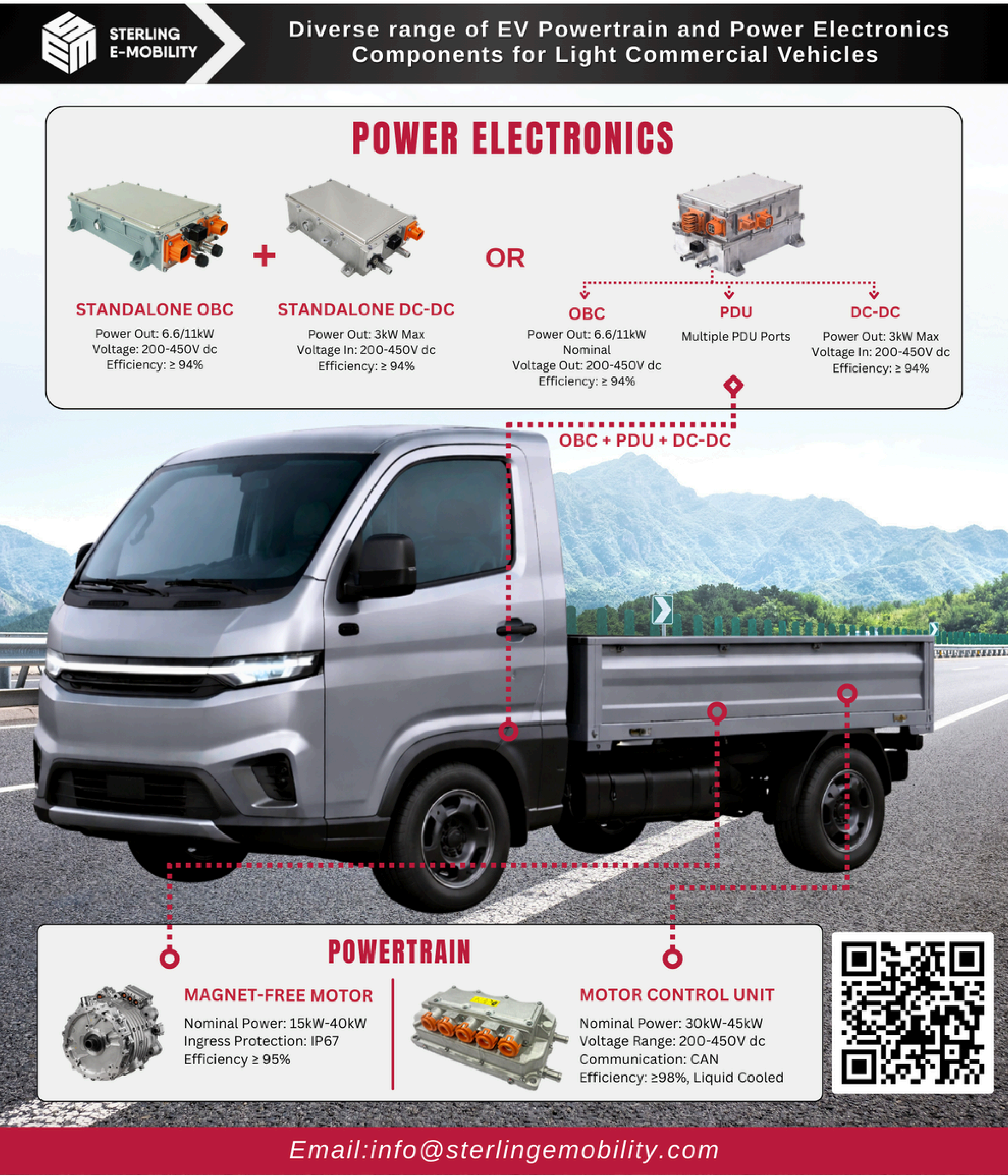


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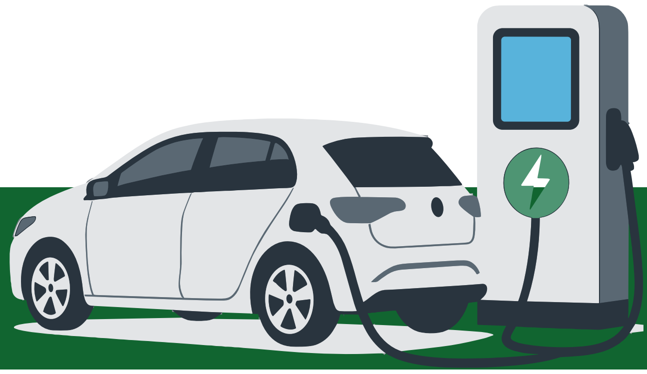

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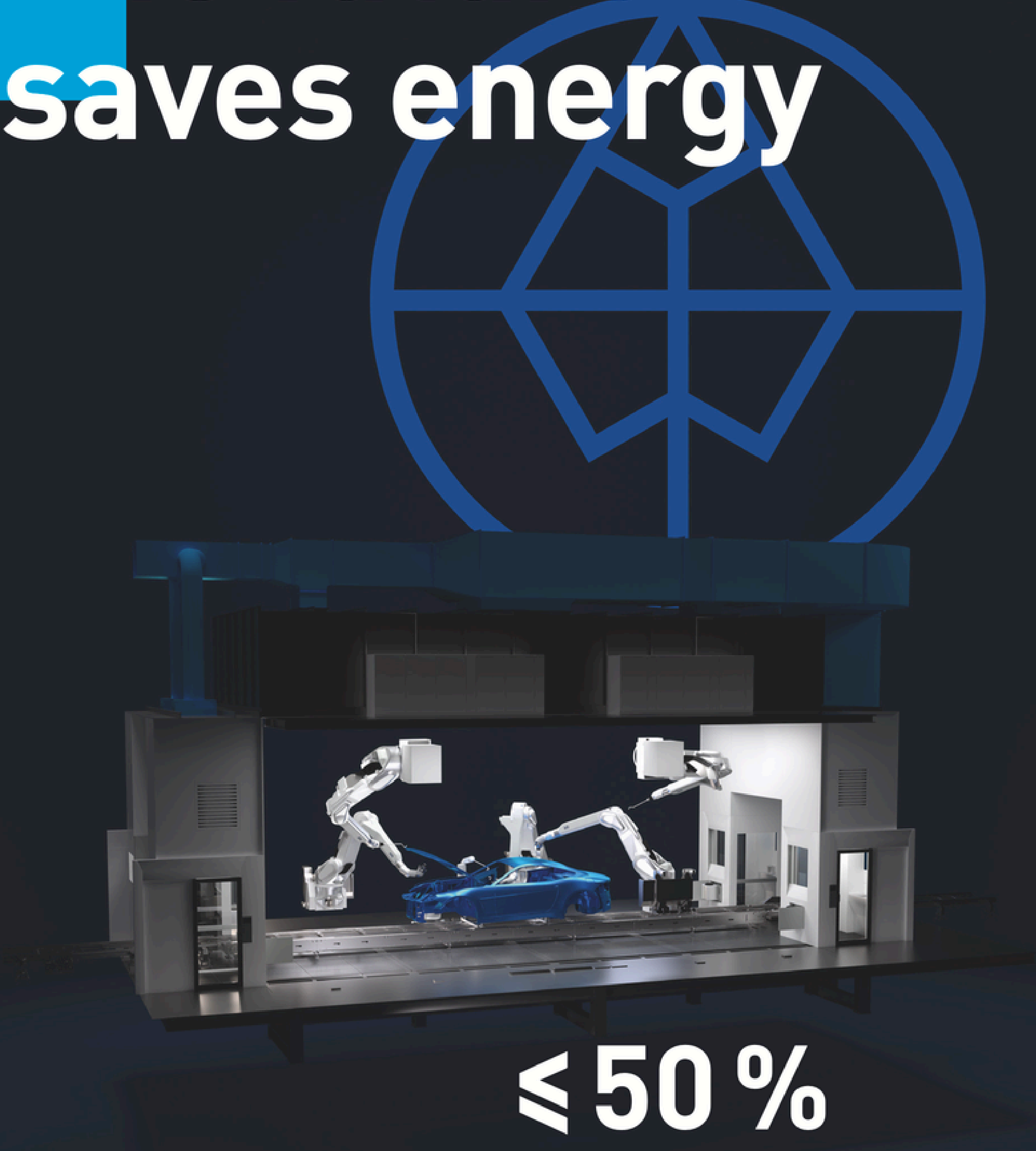

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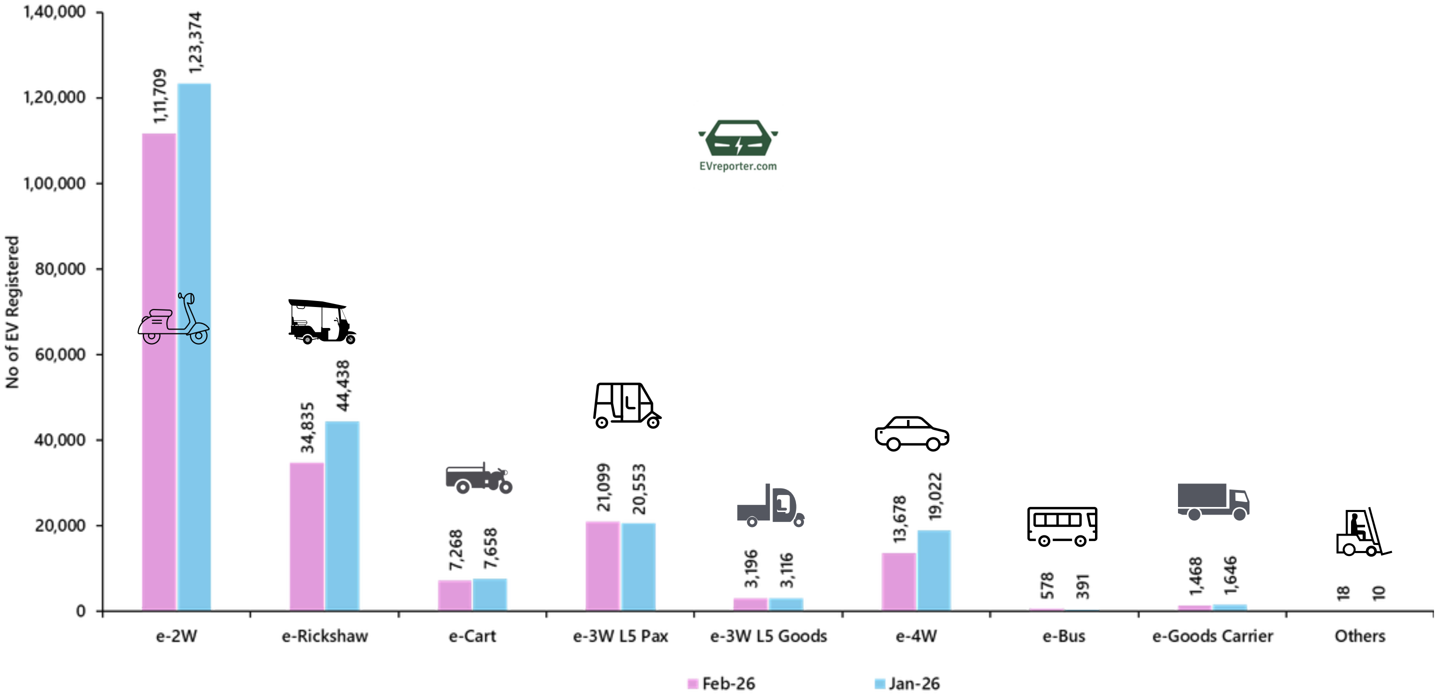
Category-wise Electric Vehicle sales, Feb 2026 | India

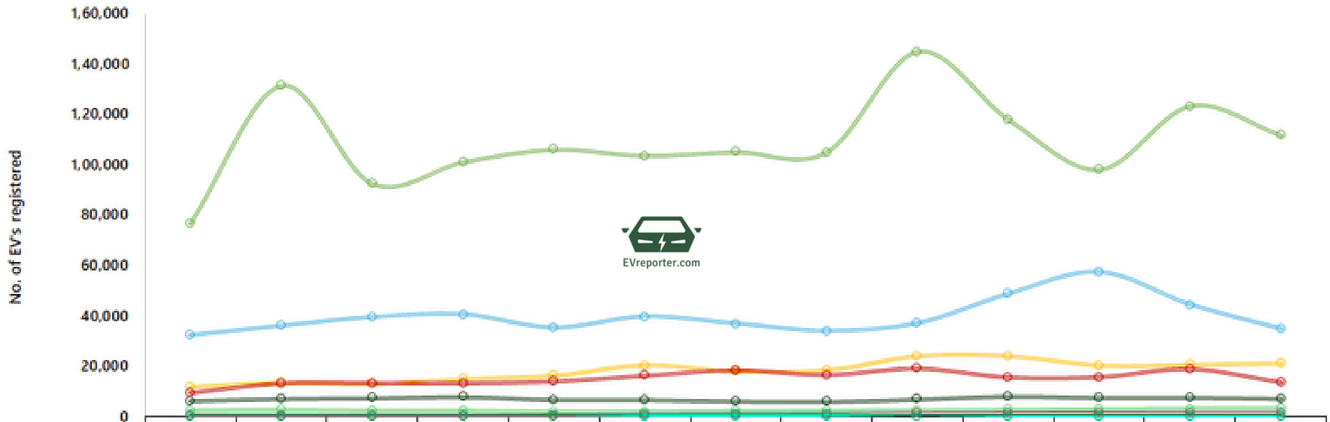
Total Registered Electric Vehicle Sales - **Feb'26 - 1,93,849** I Jan'26 - 2,20,208



'Goods Carrier' refers to N1, N2, N3 vehicles, including LCVs and HGVs, as categorised in Vahan dashboard. 'E-rickshaw' refers to low-speed electric 3Ws (up to 25 kmph) used for passenger transportation. 'E-cart' designates low-speed electric 3Ws (up to 25 kmph) used for goods transportation. 'L5M' stands for passenger 3W L5 vehicles, 'L5N' stands for Cargo 3W L5 vehicles.

Category wise-Sales Trend from Feb 2025 to Feb 2026

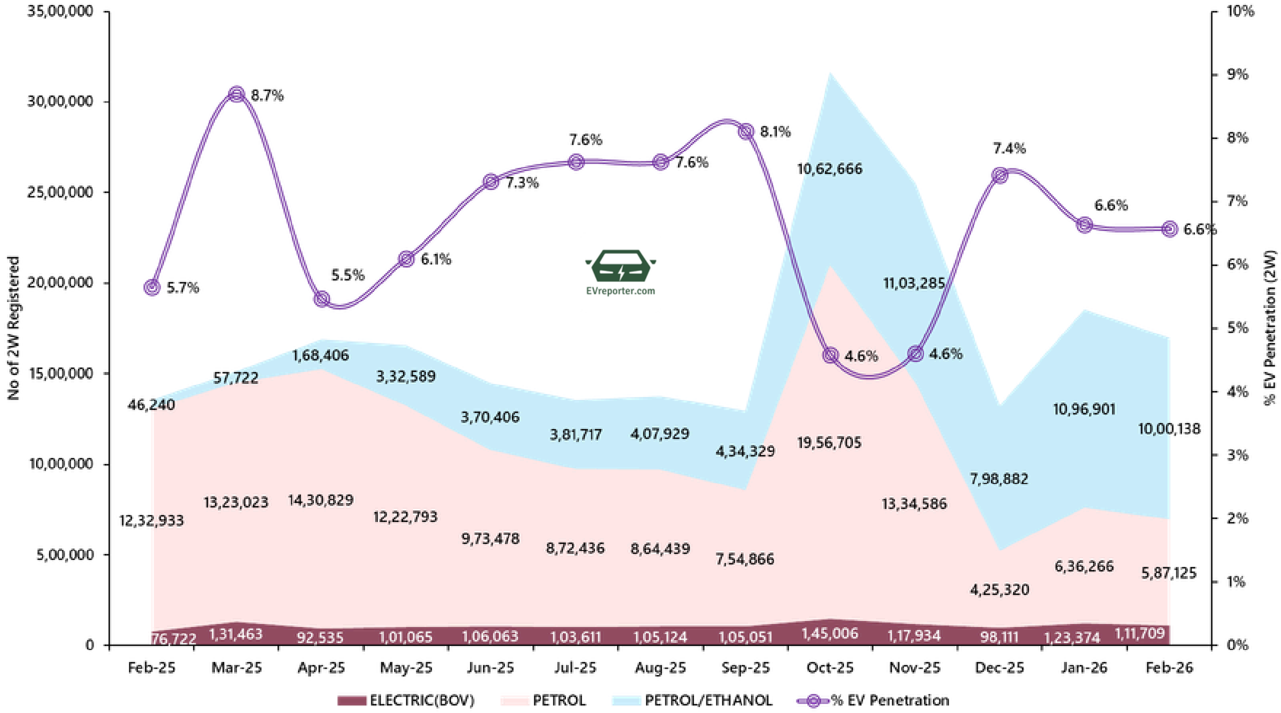
23,75,276 EVs sold in last 12 months from Mar 2025 to Feb 2026



	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26
E-2W	76,722	1,31,463	92,535	1,01,065	1,06,063	1,03,611	1,05,124	1,05,051	1,45,006	1,17,934	98,111	1,23,374	1,11,709
E-rickshaw	32,340	36,058	39,500	40,620	35,327	39,771	36,949	34,070	37,095	48,811	57,431	44,438	34,835
E-3W L5 PAX	11,912	13,543	13,122	14,992	16,327	20,441	18,000	18,491	23,951	23,990	20,339	20,553	21,099
E-cart	6,381	7,195	7,449	7,961	6,839	6,807	6,205	6,032	6,983	8,152	7,609	7,658	7,268
E-3W L5 GOODS	2,449	2,702	2,423	2,424	2,016	2,093	2,299	2,437	2,562	2,708	2,899	3,116	3,196
E-4W	9,493	13,331	13,406	13,316	14,053	16,338	18,579	16,674	19,228	15,686	15,777	19,022	13,678
E-Bus	307	280	284	338	529	363	394	346	290	369	569	391	578
E-Goods Carrier	492	679	618	679	616	882	1,143	1,223	1,486	1,301	1,397	1,646	1,468
Others	69	30	19	38	15	58	40	59	148	29	23	10	18
TOTAL	140165	205281	169356	181433	181785	190364	188733	184383	236749	218980	204155	220208	193849

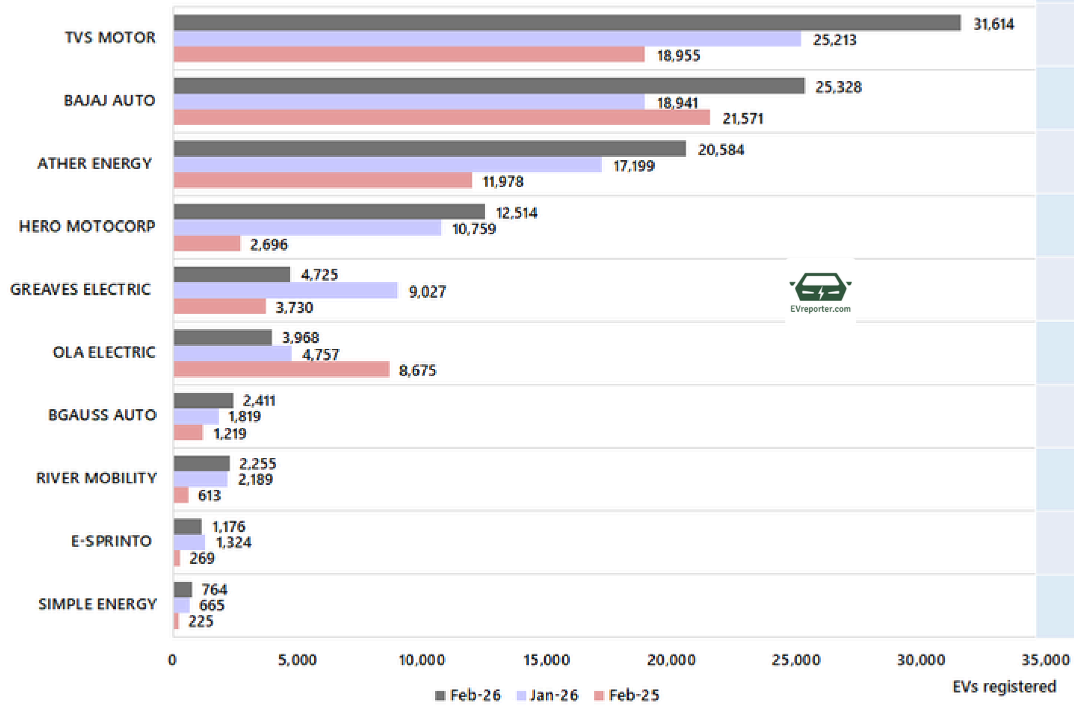
Source: Vahan Dashboard as of Mar 2, 2026. Telangana Data not included. Low speed e-2W sales data not included.

Fuel wise 2-Wheeler Sales Trend, Feb 2025 - Feb 2026



Source: Vahan Dashboard as of Mar 2, 2026. Telangana Data not included. Low speed e-2W sales data not included.

E-2W Sales in Feb 2026 | Leading OEMs

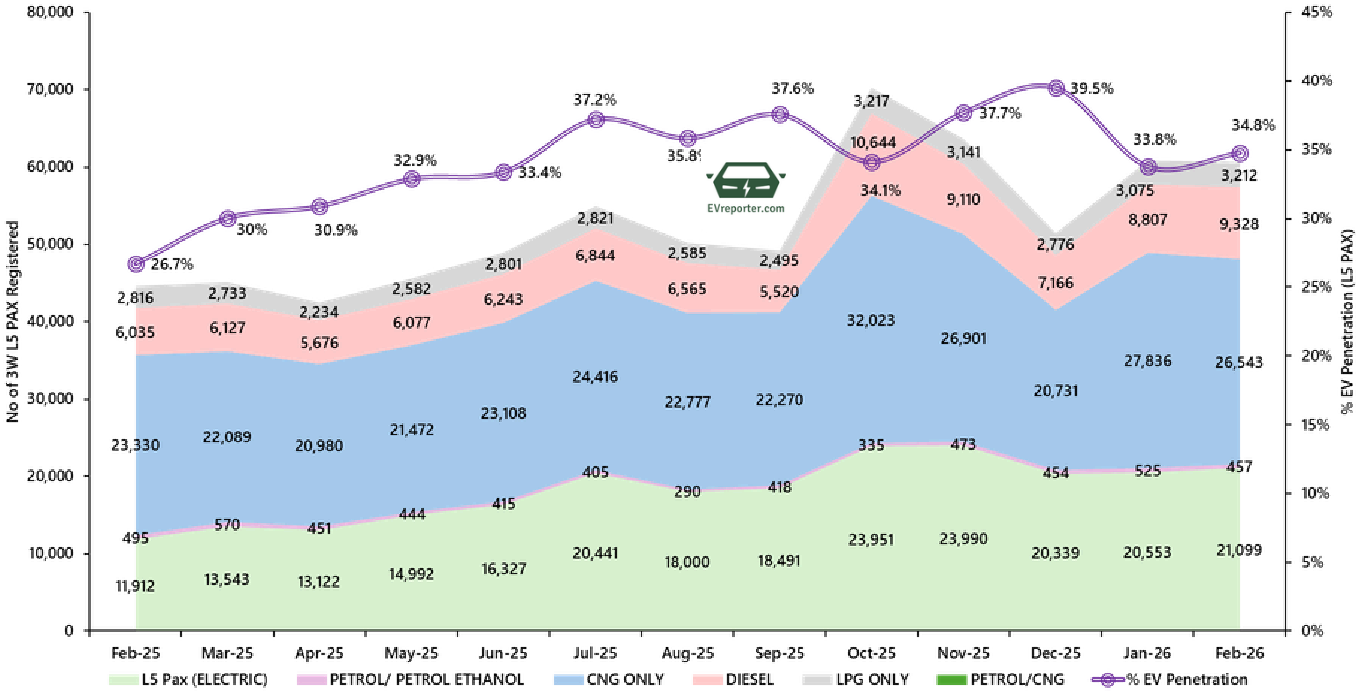


	% Growth (Y-o-Y)	% Growth (M-o-M)
TVS MOTOR	66.8%	25.4%
BAJAJ AUTO	17.4%	33.7%
ATHER ENERGY	71.8%	19.7%
HERO MOTOCORP	-	16.3%
GREAVES ELECTRIC	26.7%	-47.7%
OLA ELECTRIC	-54.3%	-16.6%
BGAUSS AUTO	97.8%	32.5%
RIVER MOBILITY	267.9%	3%
E-SPRINTO	-	-11.2%
SIMPLE ENERGY	239.6%	15%

Source: Vahan Dashboard as of Mar 2, 2026. Telangana Data not included. Low speed e-2W sales data not included.

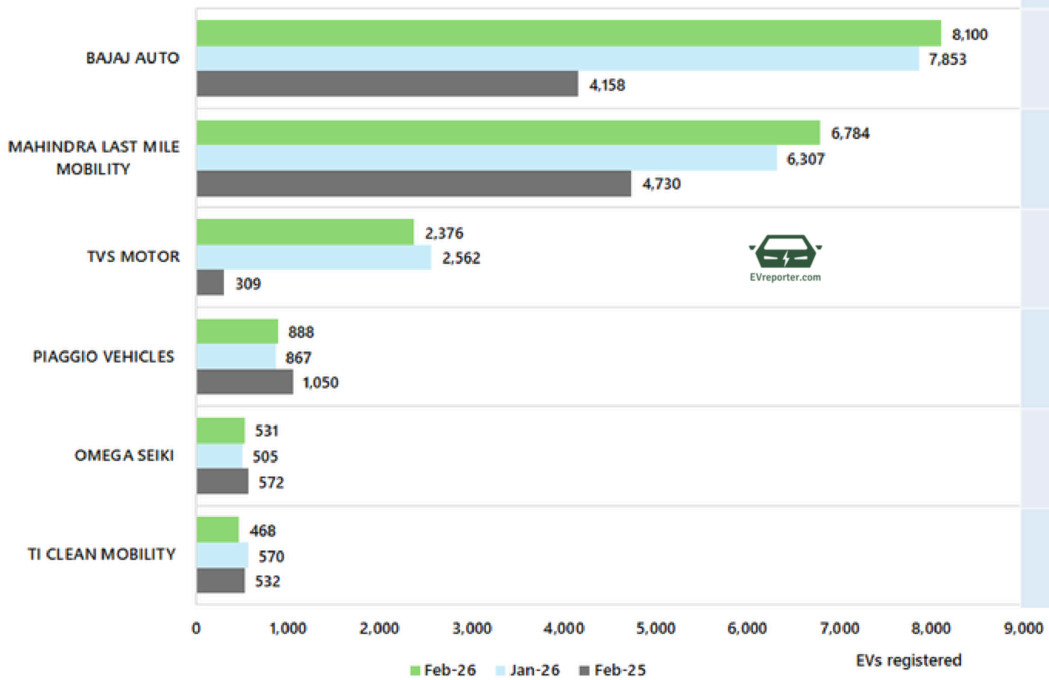
For EV sales, including Telangana data, state-wise, city-wise (70 cities), Top performing RTO data and OEM-wise performance, check out the EVreporter Data Portal here.

Fuel-wise 3W **L5 Passenger** Sales Trend | Feb 2025 - Feb 2026



Source: Vahan Dashboard as of Mar 2, 2026. Telangana Data not included.

E-3W L5 Passenger Sales | Leading OEMs

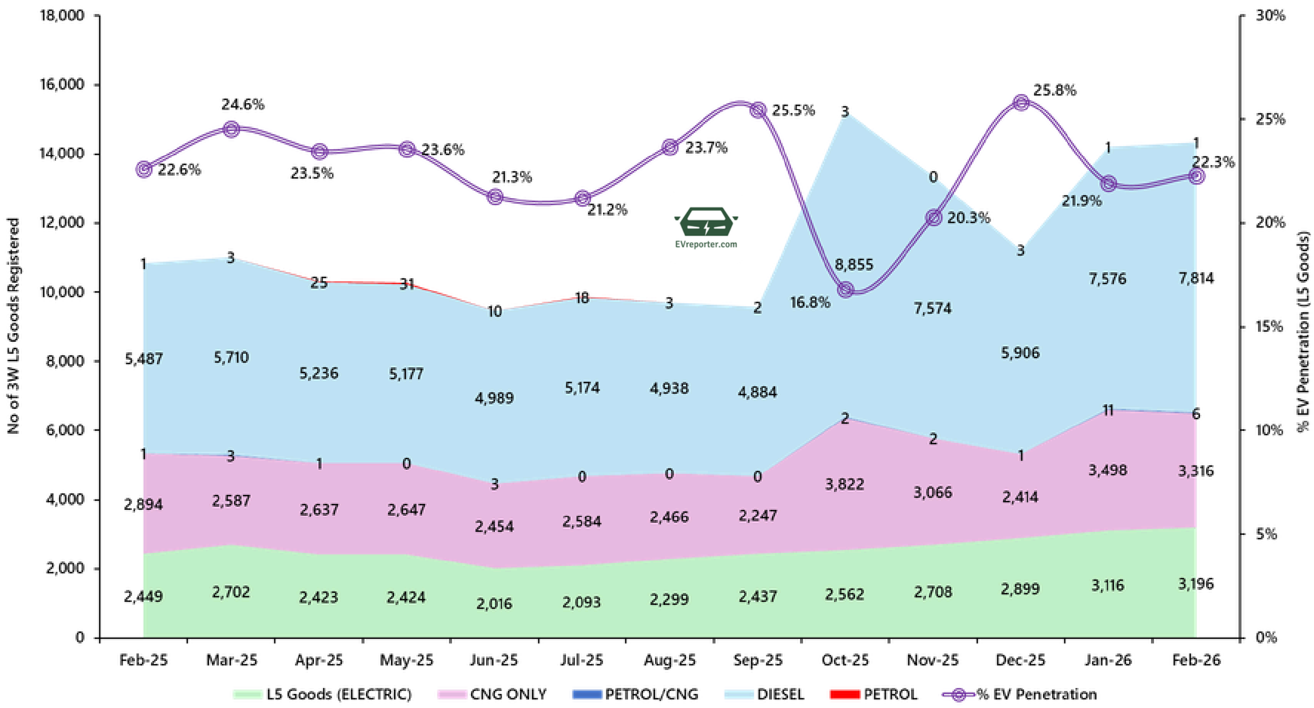


	% Growth (Y-o-Y)	% Growth (M-o-M)
BAJAJ AUTO	94.8%	3.1%
MAHINDRA LAST MILE MOBILITY	43.4%	7.6%
TVS MOTOR	-	-7.3%
PIAGGIO VEHICLES	-15.4%	2.4%
OMEGA SEIKI	-7.2%	5.1%
TI CLEAN MOBILITY	-12%	-17.9%

Source: Vahan Dashboard as of Mar 2, 2026. Telangana Data not included.

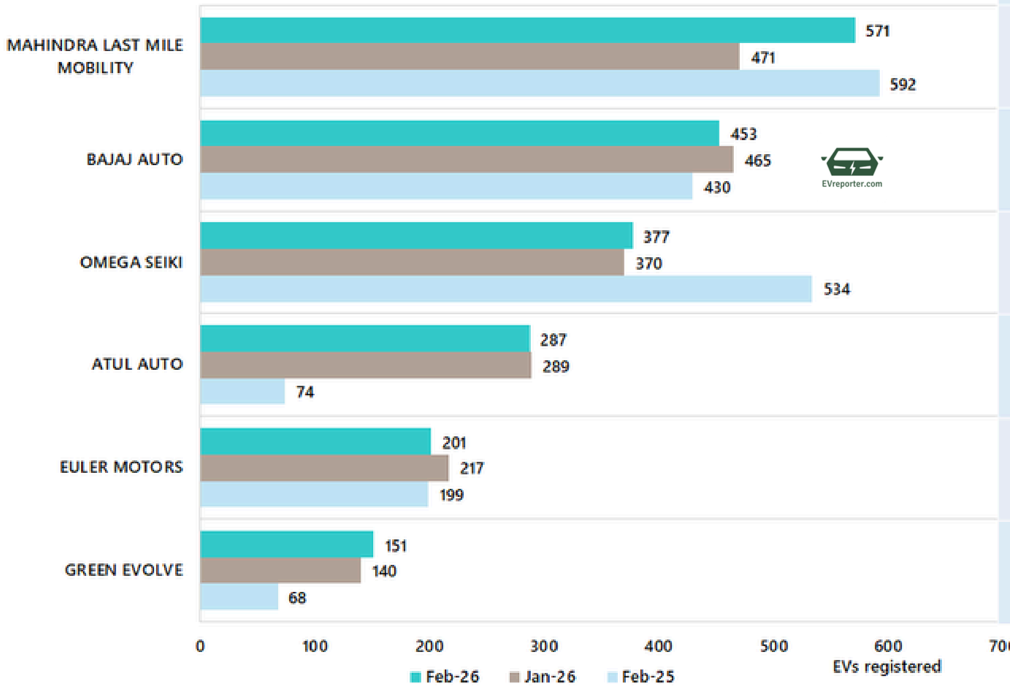
For EV sales, including Telangana data, state-wise, city-wise (70 cities), Top performing RTO data and OEM-wise performance, check out the EVreporter Data Portal here.

Fuel wise 3W **L5 Goods** Sales Trend | Feb 2025 - Feb 2026



Source: Vahan Dashboard as of Mar 2, 2026. Telangana Data not included.

E-3W Goods L5 Sales | Leading OEMs

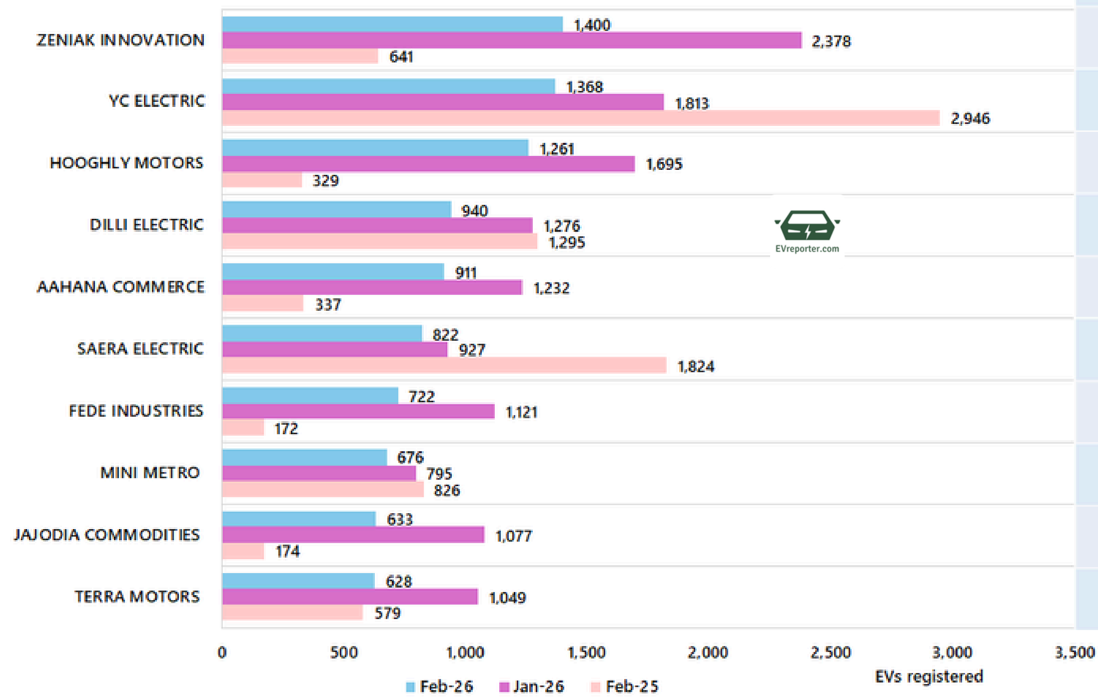


	% Growth (Y-o-Y)	% Growth (M-o-M)
MAHINDRA LAST MILE MOBILITY	-3.5%	21.2%
BAJAJ AUTO	5.3%	-2.6%
OMEGA SEIKI	-29.4%	1.9%
ATUL AUTO	-	-0.7%
EULER MOTORS	1%	-7.4%
GREEN EVOLVE	122.1%	7.9%

Source: Vahan Dashboard as of Mar 2, 2026. Telangana Data not included.

For EV sales, including Telangana data, state-wise, city-wise (70 cities), Top performing RTO data and OEM-wise performance, check out the EVreporter Data Portal here.

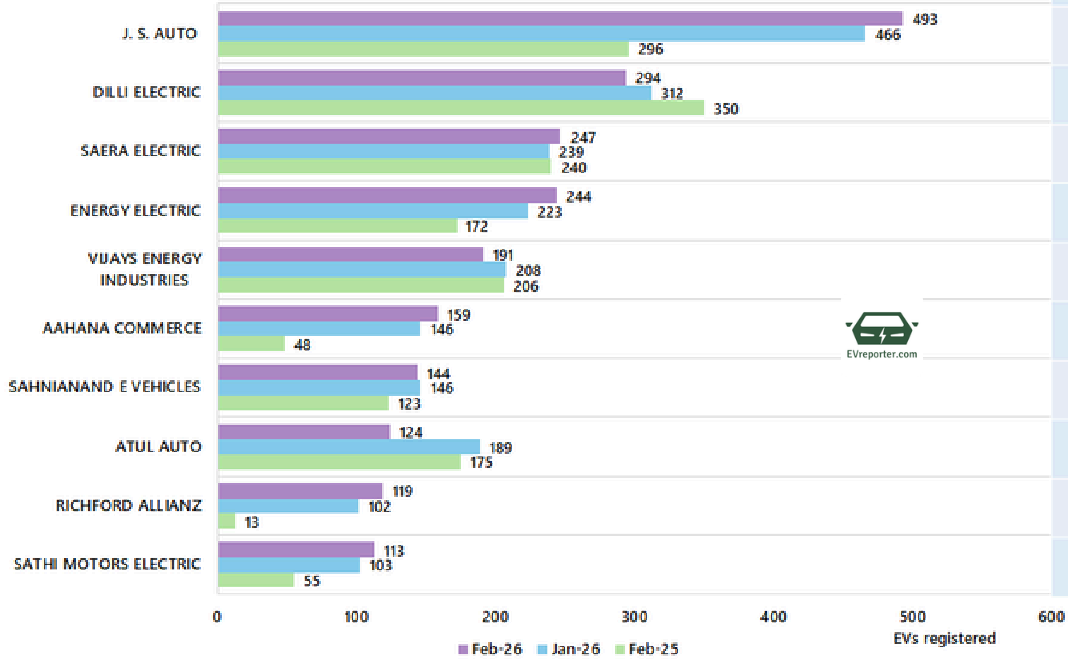
E-rickshaw Sales Trend by OEM | Feb 2026



	% Growth (Y-o-Y)	% Growth (M-o-M)
ZENIAK INNOVATION	118.4%	-41.1%
YC ELECTRIC	-53.6%	-24.5%
HOOGHLY MOTORS	-	-25.6%
DILLI ELECTRIC	-27.4%	-26.3%
AAHANA COMMERCE	170.3%	-26.1%
SAERA ELECTRIC	-54.9%	-11.3%
FEDE INDUSTRIES	-	-35.6%
MINI METRO	-18.2%	-15%
JAJODIA COMMODITIES	-	-41.2%
TERRA MOTORS	8.5%	-40.1%

Source: Vahan Dashboard as of Mar 2, 2026. Telangana Data not included.

E-cart Sales | Leading OEMs | Feb 2026

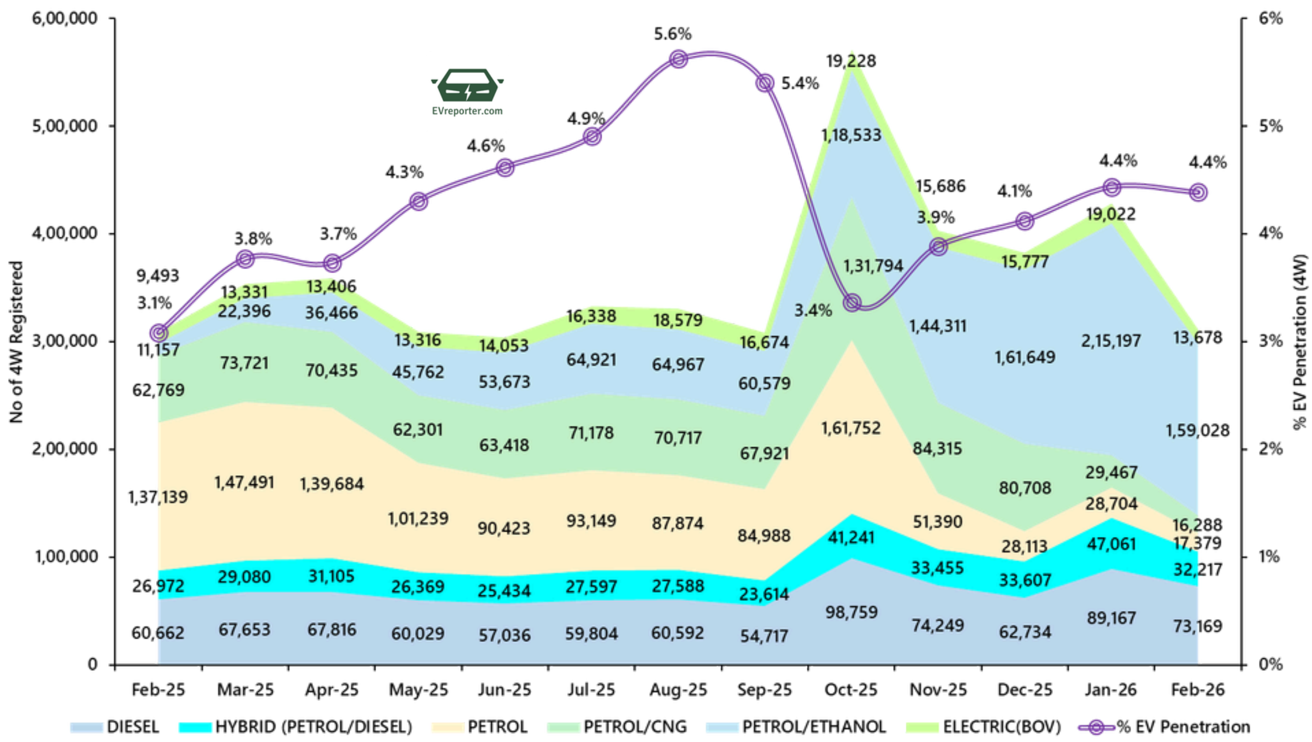


	% Growth (Y-o-Y)	% Growth (M-o-M)
J. S. AUTO	66.6%	5.8%
DILLI ELECTRIC	-16%	-5.8%
SAERA ELECTRIC	2.9%	3.3%
ENERGY ELECTRIC	41.9%	9.4%
VIJAYS ENERGY INDUSTRIES	-7.3%	-8.2%
AAHANA COMMERCE	231.3%	8.9%
SAHNIANAND E VEHICLES	17.1%	-1.4%
ATUL AUTO	-29.1%	-34.4%
RICHFORD ALLIANZ	-	16.7%
SATHI MOTORS ELECTRIC	105.5%	9.7%

Source: Vahan Dashboard as of Mar 2, 2026. Telangana Data not included.

For EV sales, including Telangana data, state-wise, city-wise (70 cities), Top performing RTO data and OEM-wise performance, check out the EVreporter Data Portal here.

Fuel wise Car Sales Trend | Feb 2025 - Feb 2026



Source: Vahan Dashboard as of Mar 2, 2026. Telangana Data not included.

Electric Car Sales Trend by OEM | Feb 2026

S No.	Makers	Feb-26	Jan-26	Difference	% Change	Market Share Feb-26
1	TATA MOTORS	5,566	8,262	-2,696	-32.6%	40.7%
2	JSW MG MOTOR INDIA	3,310	4,858	-1,548	-31.9%	24.2%
3	MAHINDRA & MAHINDRA	2,914	3,817	-903	-23.7%	21.3%
4	VINFAST AUTO INDIA	384	440	-56	-12.7%	2.8%
5	BYD INDIA	306	241	65	27%	2.2%
6	HYUNDAI MOTOR	304	341	-37	-10.9%	2.2%
7	KIA INDIA	295	317	-22	-6.9%	2.2%
8	BMW INDIA	245	335	-90	-26.9%	1.8%
9	MARUTI SUZUKI	214	220	-6	-2.7%	1.6%
10	MERCEDES -BENZ AG	65	70	-5	-7.1%	0.5%
11	TESLA INDIA MOTORS	29	38	-9	-23.7%	0.2%
12	VOLVO AUTO INDIA	25	37	-12	-32.4%	0.2%
13	OTHERS	21	46	-25	-54.3%	0.2%
	TOTAL	13,678	19,022	-5,344	-28.1%	100%

Source: Vahan Dashboard as of Mar 2, 2026. Telangana Data not included.

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OEM wise Electric Bus Sales | Feb 2026

S No.	Makers	Feb-26	Jan-26	Difference	% Change	Market Share Feb-26
1	SWITCH MOBILITY	280	100	180	180%	48.4%
2	JBM ELECTRIC	151	110	41	37.3%	26.1%
3	PMI ELECTRO MOBILITY	83	50	33	66%	14.4%
4	AEROEAGLE AUTOMOBILES	20	29	-9	-31%	3%
5	OLECTRA GREENTECH	20	46	-26	-56.5%	3.5%
6	TATA MOTORS	18	26	-8	-30.8%	3.1%
7	VE COMMERCIAL	4	5	-1	-20%	0.7%
8	PINNACLE MOBILITY	2	25	-23	-92%	0.3%
	TOTAL	578	391	187	48%	100%

Source: Vahan Dashboard as of Mar 2, 2026. Telangana Data not included.

OEM wise E-Goods Carrier Sales | Feb 2026

S No.	Makers	Feb-26	Jan-26	Difference	% Change	Market Share Feb-26
1	TATA MOTORS	619	673	-54	-8%	42.2%
2	EULER MOTORS	293	337	-44	-13.1%	20%
3	MAHINDRA LAST MILE MOBILITY	228	252	-24	-9.5%	15.5%
4	SWITCH MOBILITY	78	92	-14	-15.2%	5.3%
5	TIVOLT ELECTRIC VEHICLES	68	57	11	19.3%	4.6%
6	VE COMMERCIAL VEHICLES	34	55	-21	-38.2%	2.3%
7	BLUE ENERGY	30	3	27	-	2%
8	ENERGY IN MOTION	26	53	-27	-50.9%	1.8%
9	SANY HEAVY INDUSTRY	23	42	-19	-45.2%	1.6%
10	IPL TECH ELECTRIC	18	18	0	-	1.2%
11	OTHERS	51	64	-13	-20.3%	3.5%
	TOTAL	1,468	1,646	-178	-10.8%	100%

'Goods Carrier' refers to N1, N2, N3 cargo vehicles, including LCVs and HGVs, as categorised in Vahan dashboard.

Source: Vahan Dashboard as of Mar 2, 2026. Telangana Data not included.

For EV sales, including e-goods carriers, Telangana data, state-wise, city-wise (70 cities), top-performing RTO data, and OEM-wise performance, check out EVreporter Data Portal here.

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XYRON™ 540Z	0.75	2.5
XYRON™ 443Z	0.75	2.5
XYRON™ G601Z	1.50	2.0

Burn Test for Li-B applications[4]

FR PC/ABS

Burn temp: 850°C
Burn time: 0 min 58 secs
Burn through: Yes
Drip: No

XYRON™ 540Z

Burn temp: 850°C
Burn time: 2 min 19 secs
Burn through: Yes
Drip: No

XYRON™ 443Z

Burn temp: 850°C
Burn time: 2 min 58 secs
Burn through: Yes
Drip: No

Burn test method:
Angle of flame: 20°, Thickness: 3 mm
Flame: Blue tip at the center of the plate
Time start: When the fire is turn on
Time stop: When burn through happen

[5]Advantages of XYRON™

Value proposition		Property	XYRON™	PC	PC/ABS
Energy efficiency due to low weight		Low specific gravity	Excellent	Good	Good
Structural integrity for large and complex designs		Dimension stable	Excellent	Excellent	Excellent
Battery Safety AIS-156	Fire resistance test with thin plate	Thickness[4]	Excellent	Good	Good
	1m drop test	Impact strength[1]	Excellent	Excellent	Good
	Direct/indirect contact of water	Impact strength (after aging) [2]	Excellent	Good	Good
	Thermal shock test	Impact strength (after aging) [3]	Excellent	Good	Good

● Excellent
● Good

Note:
1 – Notched Charpy Impact ISO179
2 – Notched Charpy Impact ISO179 after conditioned using Internal Method: -20°C to 85°C/85%RH for 10 cycles.
3 – Notched Charpy Impact ISO179 after conditioned using AIS-156 – Thermal shock: -40°C to 80°C for 10 cycles.
4 – Asahi Kasei Method
5 – Result shown are estimates comparison conducted by Asahi Kasei

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EV Penetration for Different Vehicle Category Sales in India

Category	Feb-26	Jan-26	Feb-25
2W	6.6%	6.6%	5.7%
3W L5M	34.8%	33.8%	26.7%
3W L5N	22%	21.9%	22.6%
4W	4.4%	4.4%	3.1%
Goods Carrier	1.6%	1.7%	0.7%

Source: Vahan Dashboard as of Mar 2, 2026. Telangana Data not included.

'Goods Carrier' refers to N1,N2,N3 cargo vehicles, including LCVs and HGVs, as categorised in Vahan dashboard. 'L5M' stands for passenger 3W L5 vehicles, 'L5N' stands for Cargo 3W L5 vehicles.

ICE vs EV Sales & Penetration Trend

- India's EV Sales Trend for Feb 2026 shows a slight decline in monthly sales volume from Jan.
- Feb 2026 EV penetration for 2Ws stayed the same at 6.6% as last month, up from 5.7% the year before.
- **The L5 Passenger segment maintained a strong EV penetration at 34.8%.**
- Though small in absolute numbers, the Goods Carrier category is gradually gathering pace, with EV penetration rising to 1.6% from 0.7% the year before.
- **Bajaj Auto** attributed 14% of its Jan 2W sales to EVs, while EV penetration for TVS 2Ws stood at 9.5%. 95.6% of **Mahindra Last Mile Mobility**'s (MLMM) passenger 3W sales were electric. Over 56% of MLMM's cargo 3W sales were electric.
- 72.8**% of JSW MG Motor India's** sales in Feb 2026 were EVs. EV penetration in the passenger car category stood at 9.9% for Tata Motors, and **20.1% for BMW India.**

This section aims to showcase the part of EV sales for top-selling OEMs in the two-wheeler, three-wheeler and passenger vehicle categories.

India's Top 2W OEMs | ICE vs EV Sales for Feb 2026

S No.	Maker	Total Sales Feb-26	ICE	EV	% EV
1	HERO MOTOCORP	4,57,826	4,45,312	12,514	2.7%
2	HONDA MOTORCYCLE	4,31,253	4,31,060	193	0.04%
3	TVS MOTOR	3,33,935	3,02,321	31,614	9.5%
4	BAJAJ AUTO	1,80,846	1,55,518	25,328	14%
5	SUZUKI MOTORCYCLE	94,398	94,067	331	0.4%
6	ROYAL-ENFIELD	91,216	91,216	0	-
7	INDIA YAMAHA MOTOR	60,967	60,967	0	-
8	ATHER ENERGY	20,584	0	20,584	100%
9	GREAVES ELECTRIC	4,725	0	4,725	100%
10	CLASSIC LEGENDS	4,468	4,468	0	-

Source: Vahan Dashboard as of Mar 2, 2026. Telangana Data not included.

India's Top 3W Pax Auto OEMs | ICE vs EV Sales for Feb 2026

S No.	Maker	Total Sales Feb-26	ICE	EV	% EV
1	BAJAJ AUTO	38,205	30,105	8,100	21.2%
2	MAHINDRA LAST MILE MOBILITY	7,097	313	6,784	95.6%
3	PIAGGIO VEHICLES	5,685	4,797	888	15.6%
4	TVS MOTOR	5,078	2,702	2376	46.8%
5	ATUL AUTO	1,135	991	144	12.7%
6	OMEGA SEIKI	531	0	531	100%
7	TI CLEAN MOBILITY	468	0	468	100%
8	BAXY	213	126	87	40.8%

Source: Vahan Dashboard as of Mar 2, 2026. Telangana Data not included.

For EV sales, including e-goods carriers, Telangana data, state-wise, city-wise (70 cities), top-performing RTO data, and OEM-wise performance, check out EVreporter Data Portal here.

India's Top 3W Goods Auto OEMs | ICE vs EV Sales for Feb 2026

S No.	Maker	Total Sales Feb-26	ICE	EV	% EV
1	BAJAJ AUTO	6,176	5,723	453	7.3%
2	PIAGGIO VEHICLES	3,127	3,048	79	2.5%
3	ATUL AUTO	1,796	1,509	287	16%
4	MAHINDRA LAST MILE MOBILITY	1,017	446	571	56.1%
5	OMEGA SEIKI	377	0	377	100%
6	EULER MOTORS	201	0	201	100%
7	GREEN EVOLVE	151	0	151	100%
8	BAXY	123	116	7	5.7%

Source: Vahan Dashboard as of Mar 2, 2026. Telangana Data not included.

India's Top 4W OEMs | ICE vs EV Sales for Feb 2026

S No.	Maker	Total Sales Feb-26	ICE	EV	% EV
1	MARUTI SUZUKI	1,54,012	1,53,798	214	0.1%
2	TATA MOTORS	56,249	50,683	5,566	9.9%
3	MAHINDRA & MAHINDRA	52,903	49,989	2,914	5.5%
4	HYUNDAI MOTOR	45,567	45,263	304	0.7%
5	TOYOTA KIRLOSKAR MOTOR	26,166	26,166	0	-
6	KIA INDIA	25,021	24,726	295	1.2%
7	SKODA AUTO VOLKSWAGEN	7,567	7,567	0	-
8	HONDA CARS INDIA	4,770	4,770	0	-
9	JSW MG MOTOR INDIA	4,546	1,236	3,310	72.8%
10	RENAULT INDIA	3,243	3,243	0	-
11	NISSAN MOTOR INDIA	1,620	1,620	0	-
12	MERCEDES-BENZ INDIA	1,371	1,306	65	4.7%
13	BMW INDIA	1,216	971	245	20.1%

Source: Vahan Dashboard as of Mar 2, 2026. Telangana Data not included.

Unpacking 2W Electrification | Scooters Lead, Motorcycles Lag in EV Penetration

While electric scooters are leading the charge for EV adoption in India, the overall two-wheeler (2W) penetration remains constrained by the motorcycle segment, which continues to account for the majority of sales. To gain a granular understanding of EV adoption trends, **the EVreporter team analysed 2W sales in Telangana from February 2025 to January 2026, examining motorcycles and scooters as distinct categories.** Our analysis of 2W units sold during this period reveals the underlying contrast in how electrification is progressing across the segment.

Scooters vs Motorcycles | Telangana 2W Sales Data - Feb 2025 to Jan 2026

Vehicle Category	EV Sales	IC Sales	Total 2W Sales	% EV Penetration
Motor Cycles	1,009	409,421	410,430	**0.2%**
Scooters	64,993	270,747	335,740	**19.4%**
Total	66,002	680,168	746,170	**8.8%**

Source: EVreporter Intelligence | *Telangana Regional Transport portal.*

746,170 two-wheelers were sold in Telangana during this 12-month period, comprising 680,168 Internal Combustion (IC) vehicles and 66,002 Electric Vehicles (EVs). Motorcycles are the more popular vehicle category with 410,430 total units sold, while scooters accounted for 335,740 units.

The average EV penetration across the entire 2W segment in Telangana was 8.8%. There is a massive gap in EV adoption between the two categories. **While scooters have reached a significant 19.4% EV penetration, motorcycles remain almost entirely ICE-based with only 0.2% penetration.**

- **High EV Adoption in Scooters:** The scooter segment registered 19.4% EV penetration and 64,993 units of e-2Ws sold during these 12 months. Scooters are the primary driver of the electric transition in the state, accounting for nearly 98.5% of all 2W EV sales (64,993 out of 66,002 total EV units).

- **Lagging EV Adoption in Motorcycles**: Despite being the higher-volume category, motorcycles have a very low EV penetration of just 0.2%, with only 1,009 units sold compared to 409,421 ICE motorcycles.

- In the electric motorcycle segment, **Ultraviolette led with 250 units sold** (F77 and X47 combined), **Oben Electric** sold 235 units, while **Ola** and **Revolt** each recorded 230 units over 12 months.

- In the electric scooter segment, **TVS** recorded the highest sales with 17,039 units, followed by **Ather Energy** at 16,963 units during the period. TVS iQube emerged as the highest-selling electric scooter during the period.

Unpacking 4W Electrification | Mass-Market Segment Lags

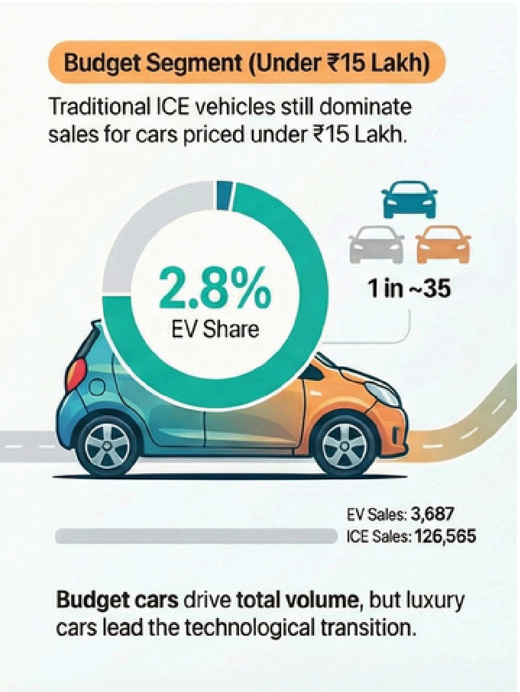
We also examined the four-wheeler (4W) segment in **Telangana** to understand how vehicle pricing factors into EV adoption. Between February 2025 and January 2026, the state's car market, totalling 183,213 units, revealed a stark contrast in penetration rates across different price brackets.

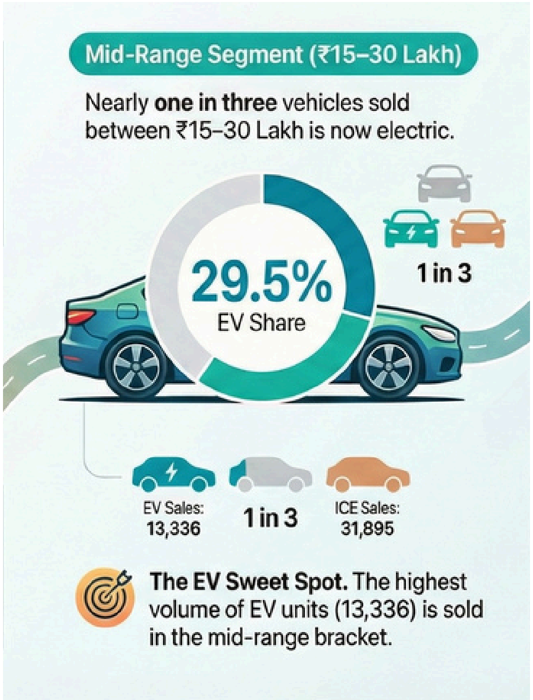
Car Sales by Price Range | Telangana 4W Sales Data - Feb 2025 to Jan 2026

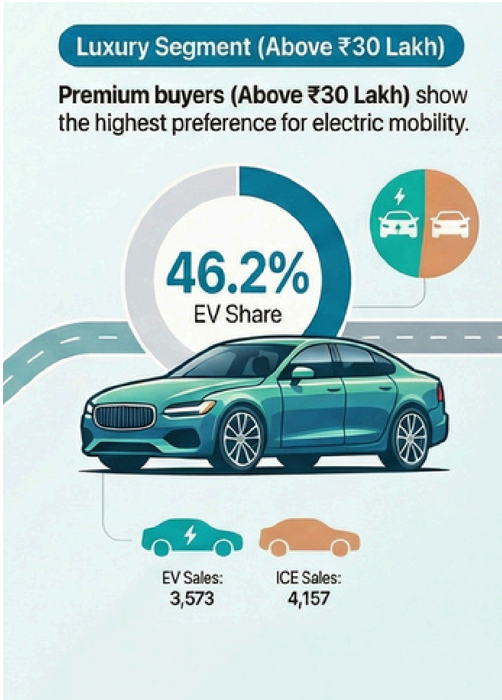
4W Sales	Price Range		
	Upto ₹15 Lakh	₹15 - ₹30 Lakh	₹30 Lakh - Above
EV Sales	3,687	13,336	3,573
ICE Sales	126,565	31,895	4,157
Total 4W Sales	130,252	45,231	7,730
% EV Penetration	**2.8%**	**29.5%**	**46.2%**

Source: EVreporter Intelligence | Telangana Regional Transport portal.

The mass-market segment (up to ₹15 Lakh) remains overwhelmingly dominated by ICE vehicles with only 2.8% EV penetration. The ₹15 - ₹30 Lakh range has emerged as the primary volume driver for EVs in the state, contributing 13,336 electric units during this 12-month period and 29.5% EV penetration. The premium category (above ₹30 Lakh) is achieving a remarkable 46.2% EV penetration.







- The total car market in Telangana for this period reached 183,213 units, comprising 20,596 electric vehicles and 162,617 ICE vehicles. The overall EV penetration is passenger car category in Telangana during the period was 11.2%

- **Mass Market Resistance**: The entry-level and mass-market segment (cars up to ₹15 Lakh) remained heavily dominated by ICE vehicles, which account for 126,565 sales. This segment has the lowest EV penetration at just 2.8%, despite being the largest category by total volume (130,252 units).

- **Volume Leader for EV Sales**: The ₹15 - ₹30 Lakh price range is the primary driver for EV volume in the state, contributing 13,336 electric units and achieving a substantial 29.5% penetration. In the 15–30 lakh passenger car segment, VinFast sold 215 units, while Maruti Suzuki sold 11 units.

- **The segment of cars priced above ₹30 Lakh** has the highest electrification rate at 46.2%, with 3,573 EV units sold out of 7,730 total sales. In the luxury car segment, Mahindra XUV 9e led with 1,535 unit sales, followed by BYD with 641 units, and BMW sold 398 units.

This stark contrast in electrification—peaking at 46.2% in the premium segment but falling to just 2.8% in the mass market—is largely driven by the limited selection of electric vehicle models currently available in the affordable price bracket. The mass-market segment remains the largest volume driver in Telangana, accounting for 130,252 total sales.

These findings highlight a significant, untapped opportunity for manufacturers to introduce more electric models in the sub-₹15 Lakh range to drive broader adoption across the market.

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THE 10C REVOLUTION: WHAT GOES BEHIND ENABLING 1,000 KILOWATT CHARGING

The automotive industry is witnessing a revolution in EV charging technology as **BYD** introduces its **Super e-Platform**, featuring a **1000V** electrical architecture that enables megawatt charging, delivering a **full charge in ~5 minutes.** A critical technical driver of this speed is the new version of the Blade Battery, which can reach **10C** charging speeds.

***Diego Pareschi, Director - EV Charging at BYD Europe**, is driving the deployment of BYD's Flash Charging network. In this interview with EVreporter, he discusses the breakthrough that could end the debate over charging speed for good, as well as BYD's roadmap for bringing this 5-minute charging reality to the European market.*

Can you comment on BYD Super e-Platform and its 1000V architecture, which enables MW charging and full charge in ~5 minutes? What are BYD's plans for introducing this technology and megawatt charging stations in Europe and China?

Globally, the EV charging technology has evolved quickly, moving from 400V to 800V. **BYD is now pushing the bar to 1000V.** This provides more power for the overall powertrain and requires smaller cables with less copper, which helps manage heat—the biggest problem during charging. This advancement is possible because of **BYD's full vertical integration**; almost every component, down to the electronic boards, is manufactured internally rather than sourced from external suppliers.

> **No other company in the world comes close to this level of vertical integration.**

The first vehicle to use this platform, the Denza Z9GT, will be introduced early this year, with more models following in Europe and other markets. While 1000V vehicles can use regular 800V chargers, they will be limited by the charging system and won't reach top performance. We plan an ambitious rollout of Flash charging networks across Europe, Middle East, Africa, Central Asia, China, and Asia Pacific. The plans are an order of magnitude above any other current initiative.

While the 1000V architecture allows for higher voltage and more motor torque, **the real game-changer is the Blade Battery**. The new version can reach 10C, meaning it can charge at ten times its capacity. For example, a 100kWh battery could reach a peak charging speed of 1,000 kilowatts. Because the Blade Battery design cools more efficiently, we can inject more energy without the battery overheating. This changes the paradigm: **instead of spending 30 minutes at a charging station, users would need spend 5 to 7 minutes.**

What connector will be used for flash charging? Is it the same as CCS?

It is a standard CCS connector, liquid-cooled. The higher voltage means we don't need to push excessive current, though we can leverage liquid-cooling technology from systems like MCS (Megawatt Charging System Protocol developed by **Char.IN**) for heavy vehicles that handle up to 1,500 amps.

The connector is a standard CCS plug—making the user experience easy and similar to existing rapid chargers.

Are you also considering dual-gun charging for the same car?

Dual charging was an early bridge technology used for buses with huge battery packs, but it was left behind when we introduced single-gun 1000kW charging in early 2025. Single-gun is more convenient for existing infrastructure and cable handling. We were able to push CCS limits by focusing on cooling the connection pins, which are typically the bottlenecks due to heat generation

The charge pictures represent version 1 of BYD flash charger. An advanced version is under development.

What kind of engagement do you need to have with regulatory bodies to ensure grid support for these charging speeds?

There is no need for grid-side regulatory changes because the system uses a standard 400V AC connection. Every flash charging system includes a BYD battery to store energy as a buffer, so we don't need a powerful grid connection. We can rely on a modest 50kW to 200kW connection.

> **Every BYD flash charging system includes a battery pack to store energy as a buffer, so we don't need a very powerful grid connection.**

What would be impact of the reduction in 'dwell time' to 5–7 minutes on the physical footprint, site requirements, and rollout strategy for future charging infrastructure?

Currently, EV drivers must spend 25 to 30 minutes at a station, which requires large, high-amenity locations to accommodate the wait. However, BYD's technology reduces this dwell time to 5-7 minutes. This rapid turnover allows for the development of significantly smaller charging stations with a reduced physical footprint. The implications for infrastructure include:

- **Fewer Connectors**: While typical high-speed sites, such as Tesla Superchargers, often require 16 plugs and massive parking areas, BYD's flash charging model typically only needs two to four plugs because users do not remain stationary for long.
- **Reduced Parking Requirements:** Because it is less likely to have many simultaneous users, the need for extensive parking space is eliminated.
- **Lower Investment in Amenities**: With sessions lasting only a few minutes, there is less need for expensive facilities; stations can focus on basics like a washroom or a small kiosk.
- **Grid Flexibility:** By using integrated buffer batteries, these smaller stations can be deployed in rural areas with modest 50kW to 200kW connections, removing the need for costly grid or substation upgrades.

Ultimately, this efficiency allows for a fast and aggressive rollout of charging networks that **resemble modern fuel stations—where drivers stop briefly, grab a snack, and continue their journey.** Shorter charging times also make a lot of sense for fleets like Uber or taxi drivers because charging time is time they aren't earning money.

What are some of the challenges to be ironed out in aggressive rollout of BYD flash charging network across Europe?

Unlike China, which operates under a single time zone, one government, and one regulatory system, the main challenge in Europe is the fragmented regulatory landscape across different countries.

While most European countries use the MID metering system, Germany requires Eichrecht, and there are even "different flavors" of these standards for Austria and the German-speaking part of Switzerland. However, BYD is working "full steam" with its 120,000 engineers and has hired industry experts to manage these large-scale rollouts. I'll be able to share more about the scale and priorities of rolling out our flash charging network in due course later this year.


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TACC's ₹2000 Crore Leap into Lithium-ion Battery Anode Manufacturing

*The push for self-reliance in critical materials and the development of a domestic battery supply chain is taking centre stage in India. **Ankur Khaitan,** Managing Director & CEO of **TACC Limited**, details their plans to produce **synthetic graphite-based active anode material** in Dewas, Madhya Pradesh, with operations scheduled to begin in the first quarter of 2027. With an investment of over ₹2,000 crore, the plant will initially produce 20,000 MTPA of anode material, with plans to expand to 100,000 MTPA by 2035. TACC Limited (The Advanced Carbons Company) is a **subsidiary of HEG Limited and part of the LNJ Bhilwara Group.***

Can you help us understand the value chain of manufacturing battery-grade anode powder? What is the end product TACC plans to produce?

Anode active material accounts for **~ 15 percent of the total weight of a lithium-ion cell** and plays a critical role in determining performance, cycle life, and charging capability. Anode materials for lithium-ion batteries can range from natural to synthetic graphite, while emerging chemistries such as sodium-ion batteries use hard carbon.

Catering to evolving market demands, TACC is focused on the synthetic graphite route.

- The value chain **begins with petroleum coke** sourced from global refineries, which serves as the precursor material.
- At TACC, this **precursor is processed** to alter its physical morphology and electrochemical properties to produce battery-grade active anode material.
- This material is supplied to cell manufacturers, whose batteries are then deployed across electric vehicles, energy storage systems, drones, consumer electronics, and other advanced applications.

While TACC's initial capacities are designed to serve lithium-ion cell manufacturers across EV, ESS, and electronics segments, we are innovating for the next phase of battery innovation. To meet future requirements such as faster charging, higher energy density, and longer cycle life, **TACC is working on next-generation materials, including silicon composites, graphene-based solutions, and hard carbon**. At present, TACC's primary industrial focus is the mass production of synthetic graphite-based active anode material for lithium-ion batteries, supporting localisation and strengthening India's battery materials ecosystem.

What is the scale of investment planned for anode powder production by TACC, and what is the target production capacity?

TACC's anode project alone represents an investment of over ₹2000 crore, including recently secured financing of approximately **₹1,250 crore from State Bank of India.**

In the first phase, TACC is establishing a commercial manufacturing facility with a **capacity of 20,000 metric tonnes per annum** of anode active material. This capacity has been aligned with the anticipated growth of lithium-ion cell manufacturing in India and emerging export opportunities, ensuring that capacity ramp-up, customer qualification, and market absorption progress in a balanced and disciplined manner.

Beyond phase one, the project is designed for incremental **expansion up to 100,000 metric tonnes per annum by 2035**. Following the successful commissioning of the initial facility, TACC plans to scale capacity in stages while also investing in adjacent material innovation, including silicon and hard carbon related opportunities. The broader vision is to build not just a manufacturing plant, but a scalable advanced materials platform that can support India's evolving electric mobility and energy storage ecosystem over the coming decade.

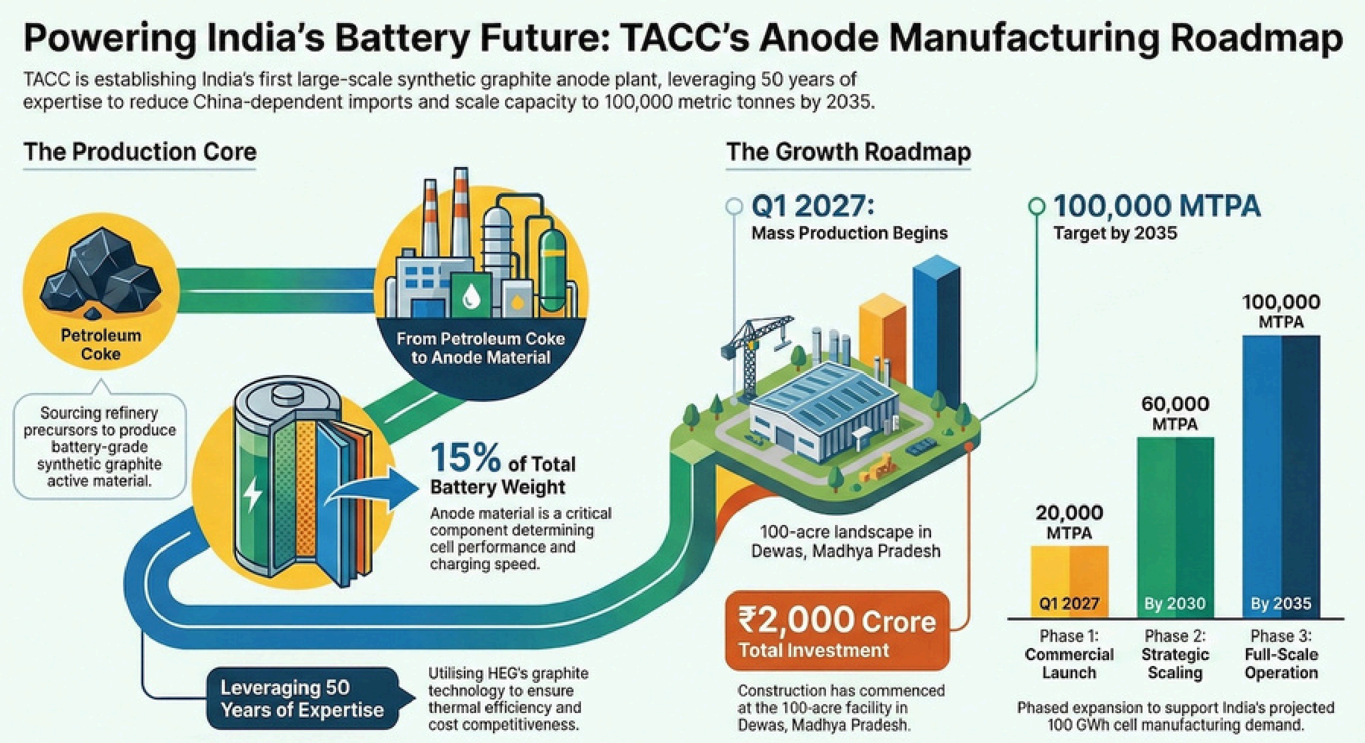
Please provide an overview of the plant's location and the timelines for the start of plant construction and mass production.

The first commercial-scale anode active material manufacturing facility of TACC is being set up at **Dewas, near Indore in the state of Madhya Pradesh, on a plot measuring over 100 acres of industrial land**. This location has been chosen after careful consideration of factors such as infrastructure connectivity and utility availability, which are critical to creating a globally competitive supply chain.

In terms of project implementation, all major environmental and government approvals have been secured, and the construction work has already commenced. **The anode manufacturing facility is scheduled to be operational in the first quarter of 2027.**

Simultaneously with the development of physical infrastructure, TACC has also focused on early customer engagement and product validation. This is being facilitated through the fully operational **demo facility at Mandideep**, which is already facilitating qualification trials with international lithium-ion cell manufacturers.

This structured approach, which takes into account pilot-scale validation, on-going construction work, and commissioning schedules, will ensure that TACC is not only on track to initiate commercial production on schedule but also in sync with customer qualification cycles and international quality standards.



How much of India's anticipated anode demand do you aim by 2030?

India's battery supply chain is expanding rapidly, with over 100 GWh of lithium ion cell manufacturing capacity announced for 2030. At present, most of these projects remain dependent on imported anode materials. TACC's scale up plans are aligned with the ramp up of domestic gigafactories, with the dual objective of supporting India's self-reliance in anode materials while also positioning the country as an export hub for advanced carbon products.

As TACC progresses toward a capacity of around **60,000 MTPA**, this output has the potential to support close to **60 GWh of cell manufacturing capacity.** The objective is not only to build scale, but to establish a stable and locally anchored supply base aligned with localisation requirements under the PLI framework and the broader battery policy regime. By synchronising capacity development with gigafactory commissioning and customer qualification timelines, TACC aims to make a meaningful contribution to India's self-sufficiency in premium battery materials.

Considering the price volatility in Li-ion batteries and anodes, what would be some of the key factors in ensuring healthy margins in this business?

Battery prices impose strict cost discipline on upstream material suppliers. Maintaining healthy margins depends on structural competitiveness rather than short-term pricing cycles. At the same time, global trade actions including anti-dumping duties, countervailing duties, Section 301 tariffs and localisation-driven policies are reshaping supply chains, creating both risks and opportunities for domestic manufacturers.

In the anode business, energy efficiency, process optimisation, and yield improvement directly impact margins. In this context, TACC leverages HEG's over 50 years of graphite technology expertise, including core processes such as graphitization, enabling tighter process control, improved thermal efficiency, and higher yields, all of which enhance cost competitiveness and margin resilience. Technology and product differentiation are equally critical.

Supplying high-performance battery-grade material that meets stringent automotive standards for fast charging, cycle life and safety enables premium positioning over commoditised products. Scale and integration further strengthen margins through operating leverage, better precursor control, and cost stability. Companies that combine energy efficiency, scale, technology leadership, and policy alignment are best positioned to sustain margins in a competitive global market.

Any recommendations for policymakers or the industry?

- **Synthetic graphite should be included under the critical minerals framework**, as over 90% of global anode processing capacity is concentrated in China, creating significant supply chain risk. India's cell manufacturing ambitions are rising, but domestic anode capacity remains limited and import-dependent. Critical mineral status would enable targeted incentives, faster clearances, financing support, and strategic stockpiling. It would also strengthen localisation under PLI schemes and reduce exposure to tariffs and trade disruptions.
- Industry must prioritise the development of the **full anode value chain, especially the petroleum coke-based precursor capacity in India.** While there are oil companies that have initiated steps, stronger policy support and coordinated investment are needed to scale domestic precursor production and improve cost competitiveness.
- **Competitive power tariffs** and robust industrial infrastructure are essential for energy-intensive processes like graphitization.
- Finally, sustained investment in innovation and industry-academia collaboration is key to moving from an assembly-driven ecosystem to a materials-led, globally competitive battery industry.

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- Threshold Guaranteed Units: **4,000** units/month

Minimum Lock-in Period : 5 years

Returns **16,00,000**

120 kW

INVESTMENT 20 Lakhs

- Minimum Guaranteed Monthly Income: **₹20,000**
- Threshold Guaranteed Units: **8,000** units/month

Minimum Lock-in Period : 5 years

Returns **32,00,000**

INVESTMENT 1 Crore

- Minimum Guaranteed Monthly Income: **₹1,00,000**
- Threshold Guaranteed Units: **15,000** units/month

Minimum Lock-in Period : 5 years

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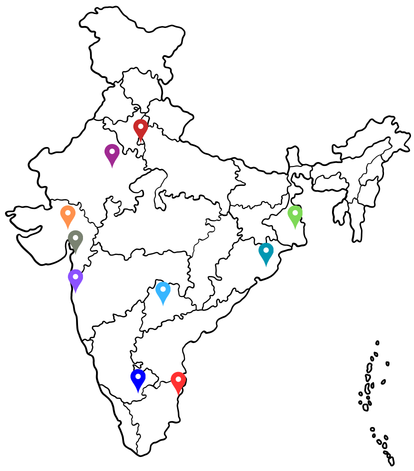
New Entrants in India's Electric Car Market I Sales in FY 2025-26 | Apr 2025 - Jan 2026

VinFast, ***Tesla***, *and* ***Maruti Suzuki*** *are the three latest entrants in India's Electric Car Market. In this regional analysis, we figure out cities where these EVs are selling the most.*

VinFast



Cities	Total Sales
Delhi	141
Jaipur	110
Bengaluru	98
Surat	91
Chennai	68
Mumbai	59
Hyderabad	53
Ahmedabad	51
Kolkata	51
Bhubaneswar	42

- VinFast sells two electric SUVs, the VF 6 and VF 7, in India. Both were launched in **Sep 2025.** Ex-showroom prices start at ₹17,29,000 and ₹21,89,000, respectively. The company has **36 dealer stores** in India.
- VinFast EVs are **locally assembled** at their Thoothukudi plant in Tamil Nadu.
- VinFast's pan-India sales till Jan 2026 total **1,482 units**, of which 10 cities account for 51.6% (764) of the units registered.
- VinFast cars recorded the highest sales in **Delhi** (141 units), followed by Jaipur (110) and Bengaluru (98).
- **V-GREEN**, the charging infrastructure company founded by VinFast's Pham Nhat Vuong, has entered a partnership with oil major **HPCL** to develop charging infrastructure at the latter's retail fuel network.

Source: EVreporter Intelligence, *Vahan Dashboard, Telangana Regional Transport portal.*

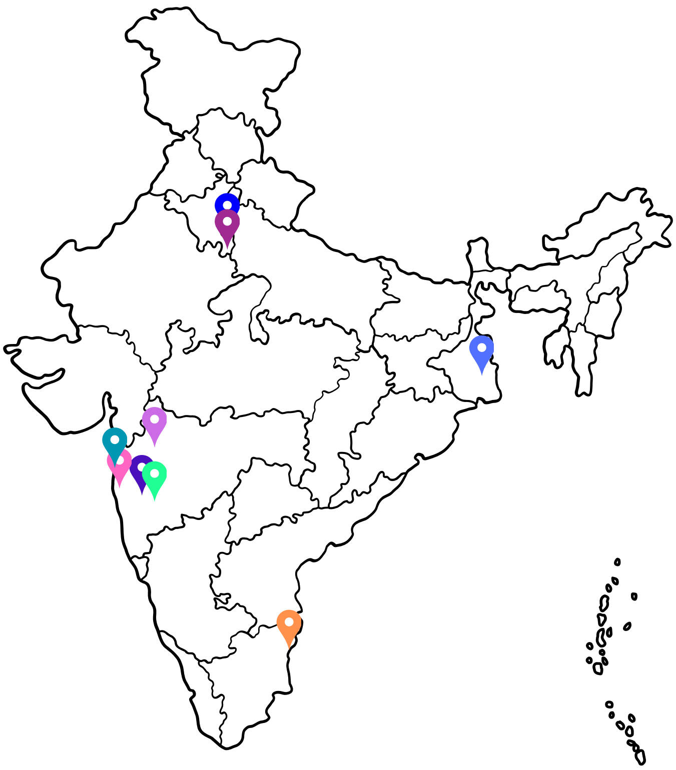
Tesla

- Tesla entered the Indian market in **July 2025** and sells its Model Y (ex-showroom price: ₹59,89,000). The vehicle is available as a **fully imported unit**. The company has **3 stores in India** - Gurugram, New Delhi, and Mumbai, and **4 locations** (2 in Gurugram, 1 each in Delhi and Mumbai) where **Tesla Superchargers** are deployed.

- Tesla's total India sales till Jan 2026 are **263 units**. According to registration data, the 10 cities mentioned below account for 201 units, or 76.4% of Tesla's total sales in India.

- **Mumbai leads** with 101 units, contributing nearly 38% of Tesla's total India sales. It is followed by Delhi with 50 units and Pune with 20 units.

Cities	Total Sales
Mumbai	101
Delhi	50
Pune	20
Gurugram	8
Pimpri Chinchwad	5
Ahmedabad	4
Nashik	4
Chennai	3
Kolkata	3
Thane	3



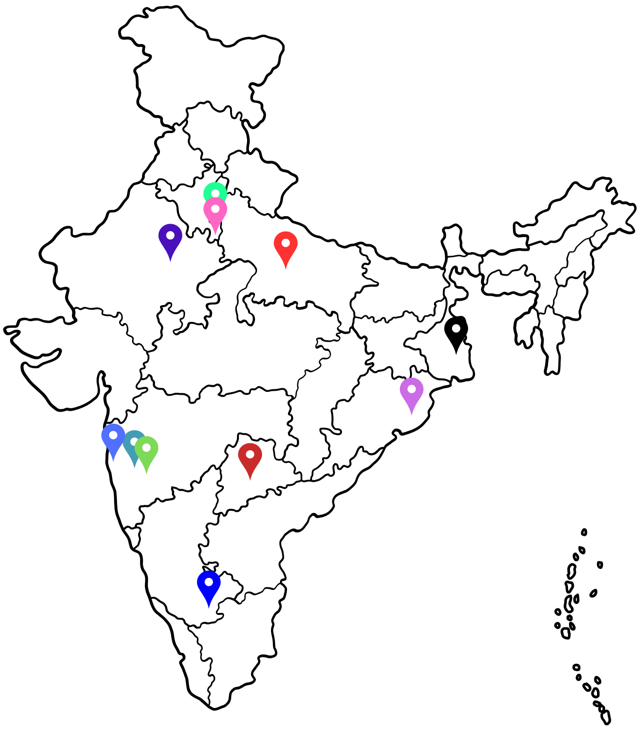
Source: EVreporter Intelligence, *Vahan Dashboard, Telangana Regional Transport portal.*

Maruti Suzuki

- Registrations for Maruti Suzuki's first BEV, the e-VITARA, began in **Nov 2025.** The company has entered into collboration with **13 CPOs and aggregators** to enable EV charging access through a single platform. The starting ex-showroom price is ₹15,99,000, while the introductory BaaS price starts at ₹10.99 lakh + Battery EMI @ ₹3.99/km. Vehicle bookings are underway, and it will be sold through premium **NEXA showrooms** across India**.**

- By the end of Jan 2026, **240 EV units had** been registered. The listed cities — including Kolkata, Jaipur, Lucknow, Bhubaneswar, Hyderabad, Mumbai, Pimpri-Chinchwad, and Pune — together account for 92 units, which is 38.3% of the total India sales.

- **Gurugram** recorded the highest sales at 27 units, followed by Bengaluru (14) and Delhi (13).



Cities	Total Sales
Gurugram	27
Bengaluru	14
Delhi	13
Kolkata	7
Jaipur	6
Lucknow	5
Bhubaneswar	4
Hyderabad	4
Mumbai	4
Pimpri Chinchwad	4
Pune	4

Source: EVreporter Intelligence, *Vahan Dashboard, Telangana Regional Transport portal.*

Hydrogen ICE Vehicles - Readiness and Relevance in Commercial Mobility

Abhilash Savidhan, Head – Hydrogen Systems, New Energy, Mobility Group at Reliance Industries Limited, discusses the technical requirements of converting internal combustion engine (ICE) vehicles to hydrogen, the role of H_2-ICE technology in heavy-duty applications, comparisons with battery electric and fuel cell technologies, developments in refuelling infrastructure, and the current policy framework in India.

What are the key technical modifications required to convert a traditional ICE truck to run on hydrogen?

Converting diesel trucks to hydrogen involves **transitioning from compression-ignition to spark-ignition**—conceptually similar to a diesel-to-CNG conversion but requiring extensive re-engineering due to hydrogen's unique properties. **Core Modifications:**

- **Combustion system:** Lower compression ratios via redesigned pistons and chamber geometry (managing hydrogen's high flame speed and knock sensitivity); complete spark-ignition system (plugs, coils, Engine Management System).

- **Fuel delivery**: Hydrogen-specific injection—port (10-20 bar) or high-pressure direct (up to 350 bar)—designed for hydrogen's low volumetric energy density and high flow requirements.

- **Materials**: All hydrogen-wetted components must resist embrittlement and leakage (specifications differ significantly from CNG).

- **Storage & safety**: Certified high-pressure cylinders (Type III/IV), pressure regulation, refueling interfaces, plus comprehensive safety architecture (leak detection, automatic shut-off, venting, thermal protection).

Bottom line: While philosophically similar to diesel-to-gas conversions, hydrogen requires system-level redesign of combustion, fuel delivery, controls, storage, and safety.

Given India's push toward electric mobility, what specific use cases make H2-ICE technology relevant for the market?

While battery electric mobility gains momentum in India, hydrogen ICE suits hard-to-electrify, high-utilisation segments where batteries face weight, range, payload, and downtime constraints. Key Applications:

- **Heavy-duty trucks**: Though limited in number, they contribute 40%+ of transport emissions. For **long-haul freight and construction logistics,** battery systems impose payload penalties and charging downtimes. H_2-ICE offers familiar architecture, fast refueling, high range, and minimal payload compromise.

- **High-uptime applications: Mining trucks, port equipment, off-highway machinery** operate in confined geographies enabling efficient dedicated refueling infrastructure. Quick refueling and continuous operation provide clear advantages over batteries.

- **Distributed power**: **Diesel gensets** contribute 7-18% of pollution in non-attainment cities. H_2-ICE can replace them in telecom towers, commercial buildings, data centers, and industrial backup power requiring reliability and long operating hours.

- **Marine propulsion:** Energy density constraints challenge electrification. Global players are piloting large-bore hydrogen engines for maritime use.

Indian Context: H_2-ICE complements rather than competes with battery electric mobility, targeting operationally/economically constrained sectors. Leveraging existing engine manufacturing ecosystems, supply chains, and service infrastructure enhances near-to-mid-term relevance.

How would H2-ICE commercial vehicles compare to electric and fuel cell solutions in terms of efficiency and total cost of ownership?

Efficiency Comparison: Hydrogen ICE remains Carnot-limited, achieving diesel-like brake thermal efficiencies (~40-45%). Fuel cells offer higher theoretical efficiency (~80%), with current practical tank-to-wheel efficiencies of 40-50%, improvable through stack optimization. Battery EVs lead today at 80-85% battery-to-wheel efficiency. However, for commercial vehicles, TCO, operational flexibility, and localization potential matter as much as efficiency.

Cost & Localization: H_2-ICE benefits from architectural overlap with conventional ICE and CNG systems. India's CNG transition offers a precedent: early-2000s imported CNG kits were expensive; today, full localization has slashed costs dramatically. A similar trajectory is feasible for H_2-ICE components—the technology requires no rare-earth materials or precious-metal catalysts beyond India's existing automotive/industrial capabilities.

Fuel cells face a longer path to localization due to stack materials, precision manufacturing, and complex balance-of-plant components.

TCO Potential: At scale with viable hydrogen fuel pricing, H_2-ICE can achieve diesel/CNG-comparable TCO, particularly in heavy-duty, high-utilization segments. Advantages over battery EVs include payload retention, faster refueling, and better asset utilization in long-haul applications.

Market Evolution: Rather than winner-takes-all, expect multi-technology equilibrium: battery electric, fuel cell, and H_2-ICE deployed based on duty cycle and economics.

While H2-ICE produces zero CO2 emissions at the tailpipe, do you see any challenges around NOx emissions?

If you run the engines **at the right lambda (air-fuel ratio),** the in-cylinder temperatures do not go very high, which aids NOx formation. Engine and vehicle manufacturers worldwide have achieved Euro 4 (equivalent to BS IV) without after-treatment, and some claim to have cleared Euro 6 (equivalent to BS VI) without after-treatment. Euro 6 won't be super easy, and it may require a NOx reduction system. But it depends on the mechanisms the engine manufacturer is implementing to control combustion temperatures, compression ratio and so on.

Can you share details about ongoing H2-ICE pilot projects or deployments in India?

India's hydrogen ICE development is currently in an **active pilot and pre-commercialisation** phase, led by a mix of large industrial groups and commercial vehicle OEMs.

- **Reliance Industries**, in partnership with **Ashok Leyland,** initiated early hydrogen ICE engine development around 2022 as part of its broader decarbonisation roadmap.

- Since then, most major commercial vehicle OEMs, including **Tata Motors** and **VE Commercial Vehicles (Volvo-Eicher)**, have commenced parallel development programmes.

Several hydrogen-powered trucks and buses were publicly showcased at Auto Expo and subsequent mobility forums, signalling clear industry intent. Most OEMs have established dedicated hydrogen engine development and validation facilities that cover combustion optimisation, durability, safety validation, and vehicle integration. Programmes are at varying stages of maturity, from prototypes to pilot fleet demonstrations in controlled environments.

The industry's aspiration is to achieve diesel-equivalent drivability, range, and reliability while leveraging hydrogen's potential for zero-carbon tailpipe emissions. However, hydrogen's unique combustion behaviour, like high flame speed, low ignition energy, and lower volumetric energy density, requires careful calibration trade-offs. Each OEM is therefore tuning engine performance, efficiency, and durability in line with its own product philosophy and duty-cycle focus, much as seen historically with diesel and CNG platforms.

Given that most deployments remain in pilot or controlled fleet trials, **detailed operational economics are still evolving.** Early feedback across programmes indicates performance characteristics approaching conventional ICE expectations in targeted duty cycles.

TCO sensitivity is seen to be primarily linked to hydrogen fuel cost and supply logistics rather than vehicle hardware. As hydrogen production scales and distribution stabilise, the expectation is that operational economics will progressively align with diesel/CNG benchmarks in high-utilisation commercial segments.

What is the current state of hydrogen refuelling infrastructure in India?

India's hydrogen refuelling infrastructure is currently in an early deployment and pilot phase, closely aligned with the **National Green Hydrogen Mission (NGHM) announced in January 2023.**

- Under this framework, the Ministry of New and Renewable Energy (MNRE) has initiated multiple programmes, including mobility pilots with an allocated outlay of approximately **₹496 crore through FY26 to support hydrogen use in transport applications.**

- Public sector energy companies like **NTPC, Indian Oil, BPCL, and HPCL are leading early efforts to establish hydrogen refuelling stations (HRS)** across select corridors. These installations are largely linked to pilot vehicle deployments and demonstrations rather than open commercial retailing, reflecting the current stage of ecosystem maturity.

- The recently announced **Hydrogen Valley Innovation Clusters in Pune, Jodhpur, Bhubaneswar, and Kerala** are expected to further accelerate infrastructure development by demonstrating integrated hydrogen ecosystems from production and storage to mobility and industrial use.

Hydrogen refuelling stations (HRS) remain capital-intensive—5-6× costlier than CNG stations—due to low volumes, limited component localization, and expensive compression, storage, and dispensing systems. Encouragingly, Indian manufacturers are developing high-value subsystems like **hydrogen compressors and high-pressure storage locally.** As with CNG infrastructure evolution, scale and localization will drive cost reduction. With coordinated vehicle deployment, hydrogen production, and policy support, HRS economics should improve progressively, enabling transition from pilot infrastructure to commercial networks over the next decade.

How supportive is the current policy environment for H2-ICE technology?

India's hydrogen mobility policy, including H_2-ICE, is supportive but still in a near-proof-of-concept phase. The **National Green Hydrogen Mission (NGHM)** has catalysed momentum through transport pilots, R&D programs, and demonstration projects, enabling OEMs to validate hydrogen ICE platforms. **Hydrogen Valley Innovation Clusters (HVICs)** are strengthening the ecosystem by integrating production, storage, dispensing, and mobility.

Regulatory progress is encouraging. Standards like **AIS 195 for hydrogen vehicles are notified**, with broader standards for production, storage, and dispensing published or under development. Regulatory bodies and industry are collaborating to ensure codes evolve with technology.

India's unique position: Unlike previous transitions where India followed European frameworks, it's now among the **early movers** in hydrogen mobility. Standards must balance global best practices with Indian operating conditions, infrastructure realities, and cost sensitivities. Agile, future-ready regulations are critical.

Next steps: Policy must transition from pilot support to commercialisation frameworks, including:

- Fiscal incentives comparable to EVs
- Demand creation through public procurement and fleet mandates
- Integration of H_2-ICE vehicles in future incentive schemes

Elements like hydrogen vehicle identification and HSRP color schemes remain under finalization.

Looking ahead to 2030, what role do you see H2-ICE playing in India's clean mobility transition? What would be the roadmap for scaling this technology?

By 2030, **H_2-ICE will likely serve as a bridge technology for hard-to-electrify segments**—long-haul trucking, mining, off-highway equipment, marine, and distributed power—complementing rather than competing with battery electric and fuel cell solutions. Key challenges:

- **Technical**: Combustion optimization (efficiency, NOx control), durability validation, and full localization of hydrogen-compatible components.

- **Commercial**: Achieving diesel/CNG-comparable TCO through affordable green hydrogen, scale-driven component cost reduction, and demand visibility for OEM investments.

- **Infrastructure**: Developing commercially viable hydrogen production, storage, and refuelling networks with localized high-value equipment (compressors, storage systems).

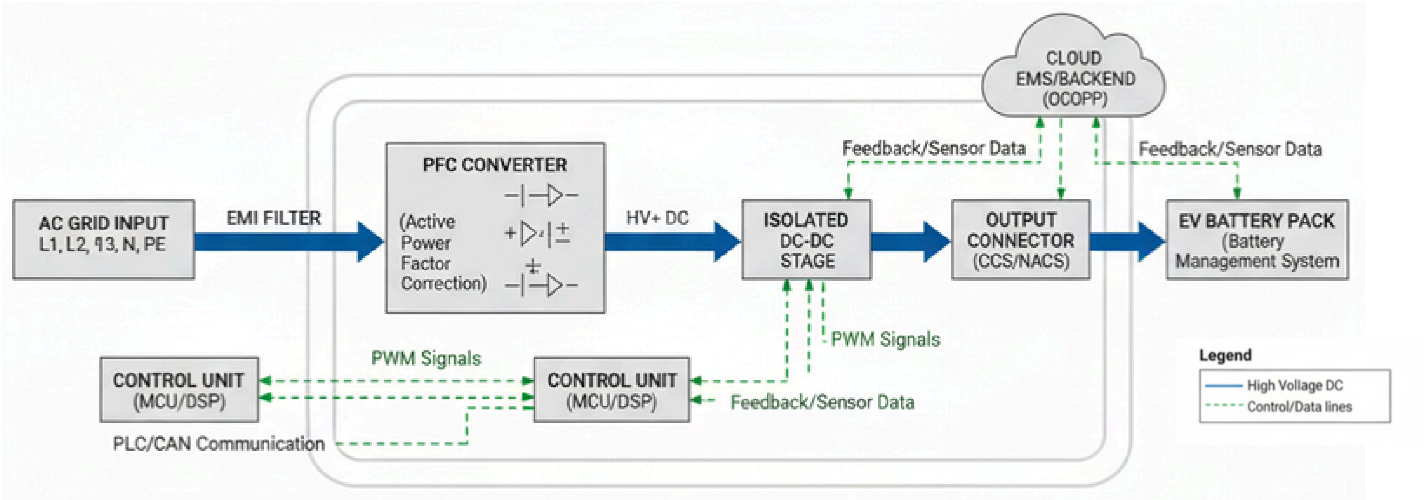
Roadmap to scale

- **2025–27:** Pilot fleets in captive applications; cluster-based H_2 production/refuelling; policy and R&D support.

- **2027–30:** Vehicle and infrastructure localization/cost optimization; early commercial deployments (trucking, mining, industrial fleets); fiscal incentives and public procurement.

- **Post-2030:** Cost parity with diesel/CNG in select segments enables broader adoption. With rationalized fuel costs and parallel infrastructure development, H_2-ICE can become a commercially viable zero-carbon solution for India's heavy-duty mobility by decade's end.

Disclaimer: Opinions expressed are personal.



EV Charger Circuit Architecture

EV Charging Hardware Deep Dive

Types, Power Systems, and Engineering Design

EV CHARGING TECH SERIES - PART 1

Electric vehicle charging is more than plugging into a power source — it's the interface where electrical engineering, battery chemistry, and digital control converge. Part 1 of the series explores how different charger types work, their power conversion, architecture, and the engineering that makes modern charging fast, efficient, and safe. ***Alekhya Vaddiraj*** *writes a deep dive into the engineering that makes modern charging fast, efficient, and safe. The article explores the core architectural components of Electric Vehicle Supply Equipment, ranging from standard residential Level 1 and Level 2 units to high-power DC Fast Chargers and next-generation Extreme Fast Charging systems.*

The Foundation: How EV Charging Works

At its core, charging is the process of transferring electrical energy to the EV's battery pack. The onboard charger (OBC) inside the vehicle dictates how much power it can accept and how it converts AC to DC, since all EV batteries store DC energy.

Core Components of an EVSE (Electric Vehicle Supply Equipment):

- Input Supply Module: Connects to grid power (AC mains, typically single- or three-phase).
- Power Conversion: Converts voltage and current to appropriate DC levels for the battery.
- Communication & Safety Interface: Negotiates current limits, monitors temperature & ground faults
- Output Connector: Ensures compliant plug standards and locking mechanisms.

Charging = Controlled flow of DC into the traction battery.

Inside every EVSE: Input module → filtering → rectification/inversion → output DC bus → control logic.

Formula: Power equals voltage times current; efficiency hinges on switching losses (~ 2–5 %).

Engineering Architecture

EV chargers are essentially precision power-conversion systems — turning alternating current (AC) from the grid into regulated, battery-ready direct current (DC). Their backbone lies in high-efficiency power electronics, designed for compactness, thermal management, and reliability over many thousands of cycles.

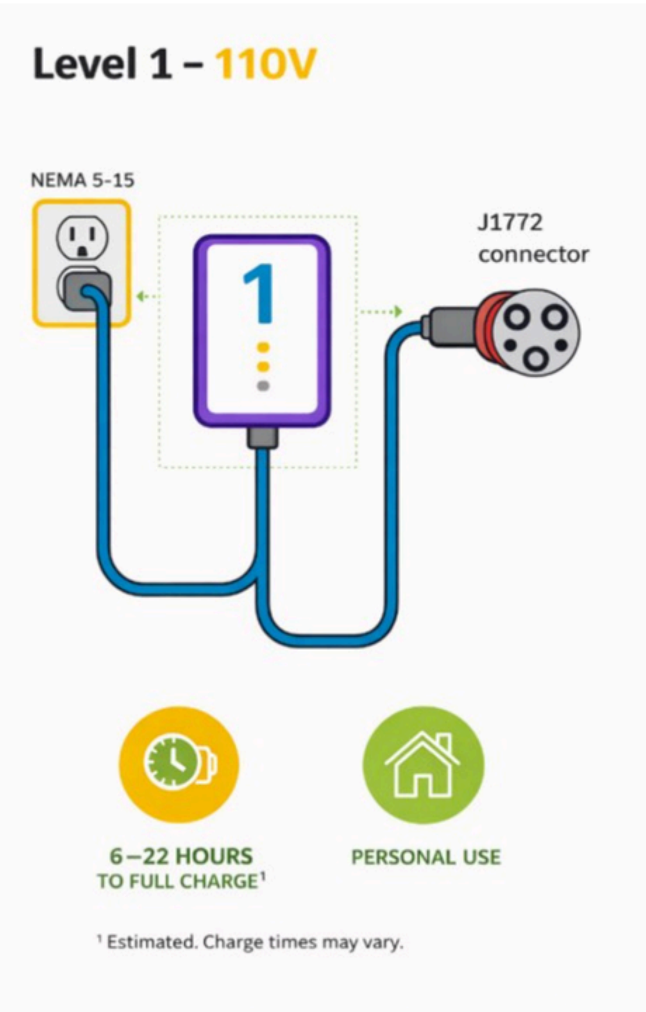
Charger Categories by Power

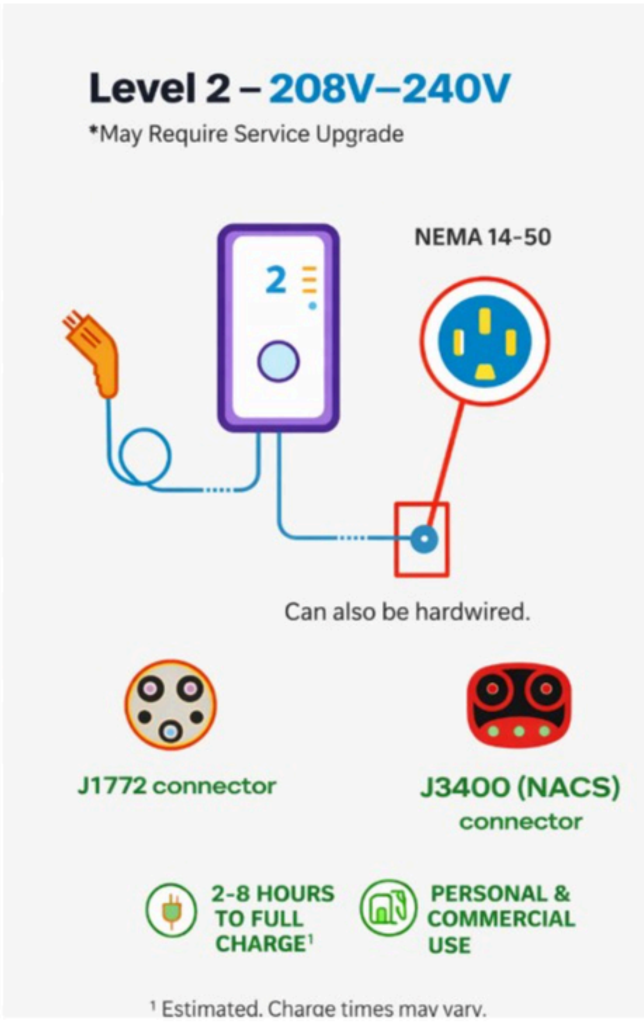
Level 1

- Also known as Type Ⅰ or AC level I
- Charging through a 240V (single phase) household outlet in India or a common residential 120-volt (120V) AC outlet in the US.
- Uses SAE J1772 connector
- Assumes 1.9 - 3 kW charging power range ideal for overnight charging

Level 2

- Also known as Type II or AC level II
- Charging through a higher-rated 240-volt AC outlet (dryer outlet) in the US and a 380-400 V (three-phase) household outlet in India.
- Uses SAE J1772 connector or J3400 (NACS)
- Assumes 7 - 19 kW charging power

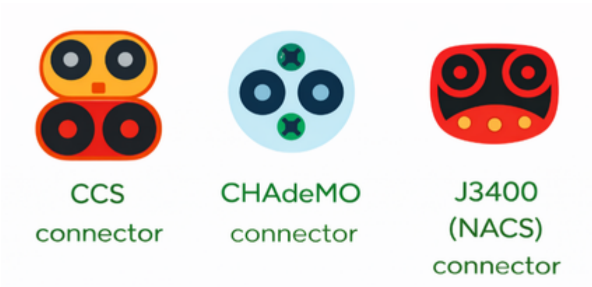




Both Level I and Level II chargers are Onboard chargers. Onboard charger rectifies AC to regulated DC (using active PFC, resonant converters, and DC–DC isolation), efficiency typically 93–95% at 3–19 kW range, leveraging air or liquid-cooled thermal control depending on vehicle design.

Level 3 - Also known as DC Fast Charging

- Uses external or offboard conversion- rectification and voltage control move offboard, allowing higher power and efficiency.
- Uses Silicon Carbide (SiC) or Gallium Nitride (GaN) power devices to reduce switching losses at high frequency (>20 kHz).
- Common bus voltage: 400–800V DC, with some next-gen systems (Lucid Air, Porsche Taycan) using 900–1000V architectures.
- Liquid-cooled cables are standard above 350A of current.



Fast charging relies on two key factors:

1. *Battery voltage (e.g., 400V vs. 800V systems)*
2. *Current flow capability (A)*

Power delivered $P = V \times I$; For example, at 800V and 400A → $P = 320$ kW

Extreme Fast Charging (XFC)

Extreme Fast Charging (XFC) refers to ultra-high-power DC charging that can deliver 200–500+ miles of range in ~10–15 minutes, approaching the refueling time of conventional gasoline vehicles. It typically operates at power levels of 350 kW to 1 MW, far exceeding conventional Level 2 (AC) and standard DC fast charging systems.

Key Features

- High-Power DC Delivery: 800–1000 V architectures reduce current at the same power, minimizing cable losses.
- Advanced Power Electronics: SiC (Silicon Carbide) devices enable higher efficiency and switching frequency.
- Thermal Management: Liquid-cooled cables and battery cooling systems are essential.
- High-C-Rate Batteries: Cells designed for rapid lithium-ion transport to prevent degradation.
- Grid Integration: Often paired with on-site storage and smart energy management to reduce grid stress.

Technical Challenges

- Battery degradation due to lithium plating at high C-rates
- Grid infrastructure upgrades for MW-scale charging
- Cable heating and connector limitations
- Demand charges and utility coordination

Benefits

- Enable long-distance EV travel comparable to ICE refuelling
- Reduces range anxiety
- Critical for heavy-duty EVs (trucks, buses)

While XFC is a key enabler for widespread EV adoption, especially for highway corridors and commercial fleets, it requires coordinated advances in battery chemistry, power electronics, and grid infrastructure.

Charger Level	Input Type	Power Range	Typical Time	Primary Use Case	Conversion Location
Level 1	120V AC	1.4–2 kW	8–20 hrs	Residential charging	Onboard (OBC)
Level 2	208–240V AC (1φ or 3φ)	3–22 kW	3–8 hrs	Home, office, public	Onboard
DC Fast (Level 3)	Rectified DC	50–350 kW	15–45 min	Highway, fleet hubs	Offboard
XFC (Ultra-fast)	High-voltage DC	400–600 kW	<10 min	Highway corridors, premium EVs	Offboard, liquid-cooled

Power Electronics Backbone

Onboard Chargers

- **Architecture:** A two-stage design — a Power Factor Correction (PFC) front end followed by an LLC resonant DC-DC converter.
  - PFC Stage: Uses boost topology to maintain near-unity power factor (PF ≈ 0.99), minimizing reactive current drawn from the grid.
  - LLC DC-DC Stage: Converts rectified DC to a stable output voltage/current range matched to the battery.
- **Switching Devices:** Transition from silicon IGBTs to Silicon Carbide (SiC) MOSFETs increases switching efficiency, reduces conduction losses, and allows higher-frequency operation (up to > 100 kHz).
- **Efficiency**: Current commercial OBCs achieve 93–95 %, with next-gen SiC designs targeting > 96 %.
- **Form factor**: Single-phase units (3–7 kW) for home use; integrated 3-phase OBCs (11–22 kW) in premium EVs.
- **Challenges**:
  - Thermal losses in confined spaces (vehicle underhood).
  - EMC filter design to meet CISPR 25 limits.
  - Maintaining soft-switching across variable loads.

DC Fast Charger (DCFC) Modules

- **Conversion Topology:** Three-phase AC input → PFC rectifier → DC bus (700–1000 V).
  - Multiple interleaved buck or phase-shifted full-bridge modules feed the EV.
  - Parallel power modules scale total output (50 kW → 600 kW).

- **Switching Devices**: All-SiC or GaN transistors drastically reduce heat and magnetic-component size.
- **Efficiency**: Typically > 97 % at rated output; some R&D prototypes > 98 %.
- **Isolation**: High-frequency transformers provide a galvanic barrier using planar magnetics for thinner form factors.
- **Control**: DSP or FPGA controllers run phase-shifting PWM loops at up to 20–50 kHz, synchronizing parallel modules to avoid current imbalance.

Thermal and Cooling Strategy

Managing the heat generated by power semiconductors is critical for efficiency and durability.

Power Range	Typical Cooling Method	Notes
< 50 kW	Forced air	Simple, low cost; fans add noise & dust ingress risk
50–150 kW	Liquid cooling	Closedloop coolant; often glycol or dielectric fluids (~25–40 °C ΔT)
> 500 kW (XFC)	Refrigerant or immersion	Required for >400 A cables; manages > 1 kW/m² heat flux

Control and Sensing

- DSP/MCU executes digital current/voltage loops with PWM ≈ 20 kHz, performing soft-start/stop sequencing.
- Real-time telemetry: Captures IGBT/MOSFET junction temperatures, bus voltage, and fault codes.
- Predictive diagnostics via edge algorithms flag ageing of capacitors or coolant pumps before failure.

Connectors and Standards

Standardization of connectors bridges the world of automakers, consumers, and infrastructure. Each connector standard optimizes different voltages, currents, and communication frameworks.

Global Adoption by Region

Asia-Pacific (China, Japan, Korea) :

- China's public DC fast charging network exceeds 1 million units, with ultra-fast chargers in every major metro.
- Japan is focusing on next-gen CHAdeMO 3.0 with 400 kW and bidirectional capabilities.
- Growing research on battery swapping and smart energy management (NIO, Gogoro, etc.).

Europe:

- Emphasis on interoperability and open data infrastructure across the EU.
- Networks like IONITY and Fastned prioritize multi-standard ultra-fast charging at 150–350 kW.
- Increasing integration of renewable energy microgrids at highway rest areas.

North America

- Tesla's NACS standard is becoming mainstream, with Ford, GM, and Rivian signing on.
- Deployments under NEVI target 50-mile spacing on highways using CCS/NACS hybrid support.
- Growth in fleet and depot charging for logistics electrification.

Emerging Markets

- India**:** 12,000+ public chargers (2024), adding 600–800 new stations monthly.
- Africa and Latin America: Solar microgrids serve remote or off-grid EV users, especially for two- and three-wheelers.

Connector Standard	Type (AC/DC)	Typical Voltage	Current Limit	Max Power	Key Features / Regions
SAE J1772 (Type 1)	AC	120–240 V AC	80 A	7.4 kW	Primary in North America; 1phase; includes control pilot pin
Type 2 (Mennekes)	AC	400 V 3phase	63 A / phase	22–43 kW	Standard in EU/India; supports Mode 3 smart charging
CHAdeMO	DC	500–1000 V DC	≤ 400 A	Up to 250 kW	Japan; early V2G capable; gradually phasing out
GB/T	AC & DC	≤ 1000 V DC	250–600 A	Up to 400 kW (v3.0)	China; separate AC/ DC interfaces; governmentmandated
CCS (Combo 1/2)	DC + AC pins	1000 V DC	500 A (continuous)	350 kW	Global trend; harmonized protocol stack (OCPP + ISO 15118)
NACS (J3400)	DC + AC pins	1000 V DC	> 600 A (peak)	500+ kW	Tesla's North American C harging Standard; compact & highefficiency

Most modern EVs now support either CCS or NACS, both of which are evolving toward universal compatibility.

Next Gen EV Charging Hardware Innovations

The next decade of charger hardware development will merge mechanical innovation, AI control and renewable integration.

Inductive & Dynamic Charging:

- Static pads: 11–50 kW systems embedded in garage floors or bus depots.
- Dynamic lanes: Copper coils buried under the road surface charge vehicles on the move (used in Sweden & Israel).
- Resonant frequency control optimizes coupling efficiency (≈ 90 %) under misalignment.
- Benefits: No physical wear / no exposed conductors / weather-proof.

Modular Rack-Based Chargers:

- Each module (≈ 15 kW) operates autonomously; the system controller balances load across modules.
- Enables scalable installations: 45 → 350 kW simply by stacking modules.
- Mean-time-to-repair < 15 min — hot-swap modules reduce downtime.

AI-Augmented Thermal Algorithms:

- Predictive neural models link ambient temp, load profile & coolant flow to maintain semiconductor junction < 140 °C.
- Self-learning controllers optimize fan/pump speed versus acoustic noise.
- Fleets use cloud analytics to correlate charger health with energy demand patterns.

Integration with Renewables and Storage:

- Incorporating bi-directional inverters so chargers double as grid-forming devices.
- Co-located battery energy storage systems (BESS) provide peak-shaving and backup.
- Hybrid PV+EVSE hubs reduce grid dependency by 20–30 %.

In Summary

EV charging hardware is now a field of advanced power electronics and safety engineering. Future developments point toward smarter, lighter, and faster charging systems that use high-frequency converters, AI-based cooling optimization, and modular components. Each of these subsystems — power modules, connectors, high-voltage loops, and future innovations — together define the trifecta of efficiency, speed, and sustainability that will drive the next decade of e-mobility hardware evolution.

For *the next article in the series, we'll move from hardware to brain—exploring the protocols, intelligence, and communication systems that make chargers smart and connected. Stay tuned.*

About the author

Alekhya Vaddiraj is a clean energy strategist and engineering leader with over a decade of experience driving grid modernization, distributed energy integration, and infrastructure resilience initiatives. She has worked in multidisciplinary teams and multi-stakeholder collaborations across utilities, research institutions, and industry consortia, contributing to DOE- and CEC-funded programs in EV infrastructure, demand response, and energy cybersecurity.

Currently pursuing a PhD in Electrical Engineering, Alekhya combines deep technical expertise in Power Systems with strategic program execution — translating complex engineering challenges into scalable, policy-aligned solutions that accelerate the transition to reliable, low-carbon energy systems.

The Rise of 587Ah Cells and 6.25MWh Battery Energy Storage System

Rahul Bollini, Bollini Energy

Rahul is an R&D expert in Lithium-ion cells with 10 years of experience. He founded Bollini Energy to assist in deep understanding of the characteristics of Lithium-ion cells to EV, BESS, BMS and battery data analytics companies across the globe. Contact | +91-7204957389; bollinienergy@gmail.com.

Rahul had written about the rise of 314Ah Cells and 5MWh BESS in February 2024.

This article discusses **the next trend in the BESS industry -**

587Ah/588Ah cells and 6.25MWh BESS in 20ft container.

For the last two years, the 314Ah LFP prismatic cell has been the trending cell in containerised BESS (Battery Energy Storage System). Cell capacities have been increasing over the years, and with higher capacity, volumetric energy density has improved in a 20ft ISO high cube container. The larger cells reduce components in the container system, lower overall system costs, and reduce project costs, such as lower civil costs and lower land requirements due to higher capacity in a given container.

Comparison of the Latest 587Ah Cell with the Existing 314Ah Cell

Parameters	314Ah Cell	587Ah Cell
Chemistry	LFP / Graphite	LFP / Graphite
Rated Capacity	314Ah	587Ah
Nominal Voltage	3.2V	3.2V
Rated Energy	1004.8Wh	1878.4Wh
Internal Resistance	(0.18±0.05)mΩ	(0.14±0.05)mΩ
Dimensions without tab	71.7*173*204mm	73.5*286*215mm
Typical Weight	5.6Kg	10.2Kg
Gravimetric Energy	179Wh/Kg	184Wh/Kg
Volumetric Energy Density	397Wh/L	416Wh/L
Cycle Life, 25°C (0.5C/0.5C)	8000 cycles, 70% SoH	10,000 cycles, 70% SoH
Calendar Age Life	Up to 20 years	Up to 25 years
Charge-discharge Efficiency	Up to 96%	Up to 96.5%

Advantages of shifting from 314Ah cell to 587Ah cell

- Cell cost per kWh will be cheaper.
- BESS containerised solution will be cheaper.
- Projects will require **less land** to accommodate the same BESS capacity.
- Lower civil costs for BESS.
- Better ROI/TCO on energy storage projects, especially with the ability to work up to 25 years.
- **25% more energy can be stored** in 20 feet container, up from the traditional design of 5016kWh to 6251kWh.
- Higher BESS capacity to allow for lower auxiliary power consumption and hence **improve the overall round-trip efficiency** of the project.

Comparison of 20 Feet Liquid Cooling Container Design for Both Type of Cells

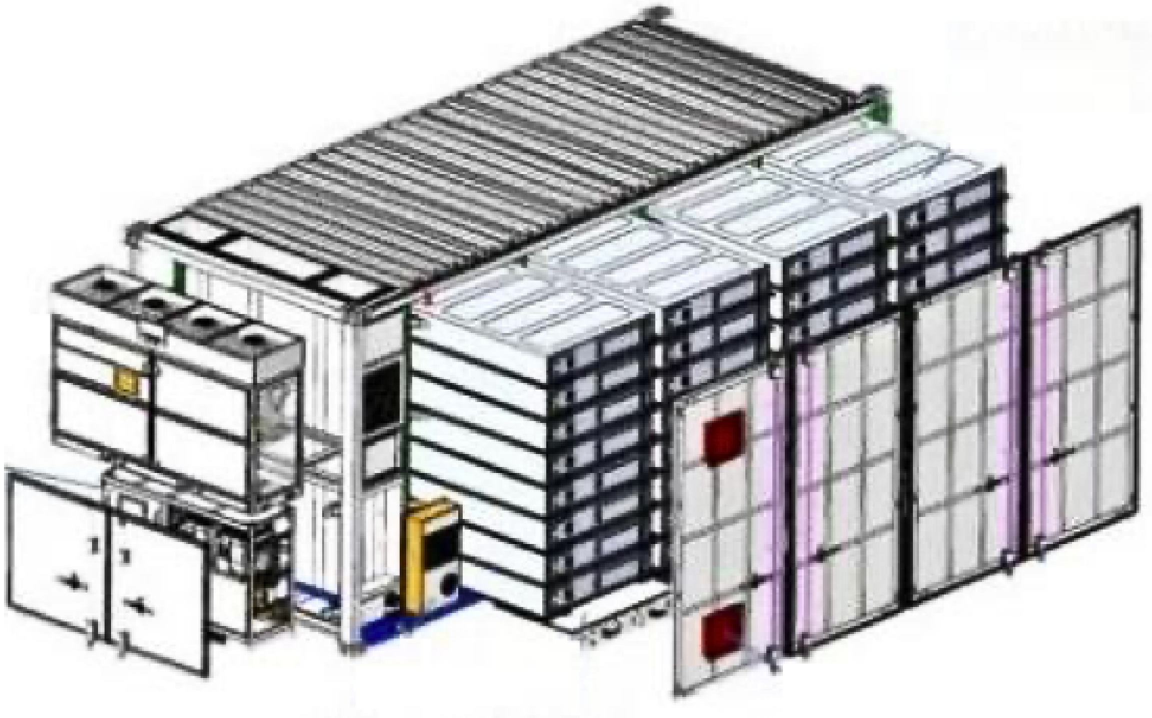
Parameters	314Ah Cell	587Ah Cell
Cell Voltage	3.2V	3.2V
Rated Capacity	314Ah	587Ah
Cell Energy Rating	1004.8Wh	1878.4Wh
Module Configuration	104S1P	104S1P
Module Specification	332.8V, 314Ah	332.8V, 587Ah
Module Energy Rating	104.4992 kWh	195.3536 kWh
Cluster Configuration - Cell	416S1P	416S1P
Cluster Specification	1331.2V, 314Ah	1331.2V, 587Ah
Cluster Energy Rating	417.9968 kWh	781.4144 kWh
20Ft Container Configuration	1S12P Clusters	1S8P Clusters
20Ft Container Specification	1331.2V, 3768Ah	1331.2V, 4696Ah
20Ft Container Energy Rating	5015.9kWh / 5.0MWh	6251.3kWh / 6.25MWh
Liquid Cooling Type	60kW Cooling Capacity	80kW Cooling Capacity

Market Updates

587Ah/588Ah LFP prismatic cells are expected to enter mass production before the end of 2026, with companies conducting trial projects and certifications.

It will be difficult for 587Ah cells to overtake 314Ah cells in residential and C&I (commercial and industrial) batteries. There are many applications where 314Ah cells have a market, and it is difficult to phase out 314Ah cells as 280Ah energy storage cells were phased out of the market.

By the way, 280Ah cells still exist in the market, and they are being produced for power applications and used for higher than 0.5C application uses.



Internal layout design for 6.25MWh BESS

Moreover, 587Ah cells require investment in new cell manufacturing equipment and cannot be produced on the same equipment used to produce 314Ah cells. However, this was not the case when 280Ah cells were replaced with 314Ah cells. The transition was easy due to the same cell dimensions, and the existing cell manufacturing equipment did not require changes.

Some companies have planned 392Ah cells, which can be produced on the existing cell manufacturing equipment used to produce 314Ah cells. 392Ah cells follow the same 12-cluster architecture and can achieve 6.26MWh, which is a similar capacity to the 587Ah-based BESS.

Compared to 600Ah+ series, 587Ah cells have better thermal management properties and are more suitable for 0.5C (2 hours) projects due to their smaller size.

While a 5MWh BESS was coupled with a 2.5MW PCS (Power Conversion System) for a 2-hour project, a 6.25MWh BESS needs to be coupled with a 3.125MW PCS, and PCS companies are planning its launch soon.

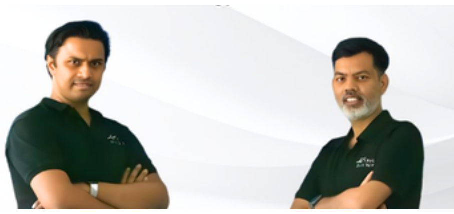
Investment Commitments Announced in Feb 2026

Hero MotoCorp to invest additional ₹275 crore in Euler Motors.

Hero MotoCorp currently holds a 34.1% stake in Euler Motors, and following this additional investment, Hero's stake is expected to increase to ~36%.

EV Charging Network **Statiq announced a fresh capital infusion of USD 18M** in a round led by Tenacity Ventures, with participation from Y Combinator, Shell Ventures, and RCD Holdings. Statiq plans to utilise the funds to strengthen its presence across Tier-1 and Tier-2 cities, deploy more DC fast chargers along highways, and export hardware.

Bengaluru-based **e-TRNL Energy raises a ₹27.4 crore seed round** led by IAN Group through its IAN Alpha Fund. The startup is redesigning battery cell architecture to enhance safety and performance and plans to set up a 250 MWh pilot facility by 2027 to support domestic battery cell manufacturing.



Six Sense Mobility raises ₹44 crore in a funding round led by Ashish Kacholia and Piper Serica. The fresh capital will drive R&D acceleration and manufacturing expansion, including a new electronics plant in Noida. Incubated at IIT Delhi and founded in 2022, the company supplies Telemetry Control Units, Body Control Units and Implement Control Systems to OEMs like Sonalika Tractors International and VE Commercial Vehicles.

Delhi-based **Pluto Mobility has raised $2 million in a seed funding** round led by Version One Ventures, along with participation from gradCapital. The round also saw participation from founders and senior executives from companies such as Delhivery, OfBusiness, Pixxel and Boom Supersonic. Pluto Mobility is developing EVs for last-mile delivery and aims to start pilot deployments later this year.

Investment Commitments Announced in Feb 2026

Battery technology startup **Coulomb LiTech Private Limited has raised ₹20 crore in seed funding** to scale its manufacturing capabilities and expand its presence in India's EV ecosystem. Founded in 2020 by Indian Institute of Technology, Kanpur alumni Ameya Sathe and Darshil Dharod, Coulomb Litech plans to use the newly raised funds to set up a manufacturing facility in Navi Mumbai.

Exponent Energy has entered the fintech space with the launch of **Exponent ONE, securing $2 million in pre-seed funding.** Led by CEO Sandeep Divakaran, the venture will focus on financing and asset management for commercial EVs, providing underwriting, insurance, and assured buyback options for small fleet operators.

CASHurDRIVE Marketing Ltd., a Noida-based transit media company listed on NSE Emerge, has acquired a **50% stake in CharjKaro Greentech Mobility** Private Limited, to expand media monetization across EV charging infrastructure. The company purchased 5,000 equity shares (50% of paid-up capital), including 2,500 shares each from Raghu Khanna and Parveen K. Khanna, resulting in joint ownership.

Fabless semiconductor startup **Vervesemi has raised $10 million in a Series A funding** round led by Ashish Kacholia and Unicorn India Ventures. The round also saw participation from Roots Ventures, Caperize Fina, MaiQ Growth Scheme, and several HNIs. The funds will be used to accelerate product commercialisation, move existing silicon chips into production, expand engineering capabilities, and strengthen its go-to-market presence across India, US, and other Asian markets.

Africa-based electric mobility company **SPIRO has raised $50 million in debt funding** from the African Export-Import Bank (Afreximbank), Nithio, and AfricaGoGreen Fund, managed by Cygnum Capital. The funding follows a $100 million investment in October 2025 and will support the expansion of Spiro's battery-swapping network across African markets.

Electric Vehicle Launches Announced in Feb 2026

TATA Motors launches the **new avatar of Punch EV at an introductory price of ₹9.69 lakh (ex-showroom, Mumbai). BaaS (battery as a service) option,** starting at ₹6.49 lakh, with a Battery EMI of ₹2.6/km, is available.

- Real-world range of ~355 km
- 40 kWh LFP prismatic cell battery pack | 30kWh option also available
- Lifetime HV battery warranty
- 20% to 80% charge in 26 minutes

Maruti Suzuki has introduced the **e-VITARA** in India with an introductory **Battery-as-a-Service price starting at ₹10.99 lakh, along with a battery rental plan priced at ₹3.99 per km.** The electric SUV is available with 61 kWh and 49 kWh battery pack options, offering a claimed driving range of up to 543 km.

The vehicle is backed by an 8-year or 1,60,000 km battery warranty, along with a 3-year vehicle warranty and an optional extended coverage plan. An assured buyback option of up to 60% under a 3-year ownership plan is also part of the introductory package, which is valid until March 31, 2026.

Bajaj Auto launches a new e-3W, **WEGO P9018,** with the biggest battery and highest range in its category in India. The vehicle is priced at INR 4,41,247 (ex-showroom pan-India).

- 17.7 kWh battery | Certified range of 296 km
- Two-speed transmission | 36% gradability
- 5-year warranty

Omega Seiki Mobility showcased its **RAGE+ Tipper, an electric 3W garbage tipper** with hydraulics, at Municipalika 2026 in New Delhi. Priced at ₹4.5 lakh (ex-showroom), it claims a range of 250 km on a single charge and a 15 kWh battery pack. It has a 500 kg load-carrying capacity and comes with a warranty of 5 years or 2 lakh km.

Electric Vehicle Launches Announced in Feb 2026

Mahindra Last Mile Mobility launches UDO - passenger L5 electric 3W at an introductory price of **INR 3,58,999.**

- Real-world range - 200 km | Certified range - 265 km
- Battery size - 11.7 kWh | Top speed - 55 kmph
- Peak Torque - 52 NM, Peak Power - 10 KW
- Gradeability - 25.8% | Ground clearance - 215 mm
- Free service upto 1 lakh km | Warranty - 6 years / 1.5 L km
- To be manufactured at the Zaheerabad facility

Omega Seiki Mobility launches its first fast-speed **e-2W - OSM Vextra, priced at ₹99,000.**

- Top speed of 70 km/h | Range of 110+ km per charge
- 3.45 kWh IP67-rated LMFP battery | 3 kW BLDC hub motor
- Three riding modes – Eco, City, and Sports
- Charging Time: 0–80% in 4 hrs | Full in 5 hrs
- Kerb Weight: 110 kg

Greaves Electric Mobility announced plans to launch the Ampere 6th Gen Electric Scooter in FY27. The model is being developed to compete with petrol scooters in the sub-₹1 lakh segment, serving as an alternative to petrol scooters in the entry-level segment.

GREAVES ELECTRIC MOBILITY

In another update, **Greaves Electric Mobility has entered the Nepal market** in partnership with STC Auto Solutions and launched its electric two-wheeler, Ampere Nexus.

EMO Energy has announced a collaboration with **BNC Motors to introduce EMO Challenger, an electric mobility platform for last-mile and fleet operations in India.**

The platform integrates BNC's vehicle engineering with EMO's battery systems and includes cell-level modelling, thermal management, active balancing BMS, and fleet diagnostics. It supports 20-minute fast charging.

The centre had earmarked ₹1,772 crore under the PM E-DRIVE Scheme to incentivise 24.79 lakh e-2Ws between April 1, 2024 and March 31, 2026. As of Feb 5, 2026, **₹1,182.32 crore has been reimbursed to support 14,39,244 e-2Ws** under the scheme.

Maharashtra, Karnataka and **Tamil Nadu** account for the maximum number of incentivised e-2Ws.

VINFAST is set to introduce an ICE-to-EV exchange program in India, allowing customers to trade in ICE cars for its locally assembled VF 6 and VF 7 electric SUVs. Similar exchange initiatives have previously been implemented in Vietnam. The programme will offer exchange bonuses and financing options. According to a company statement, VinFast is also providing up to 10 years of warranty coverage, along with select charging and maintenance benefits.

In another update, **Bank of Baroda will establish a dealer invoice financing program for VinFast** India's dealer network, extending INR 200 Cr in dealer financing.

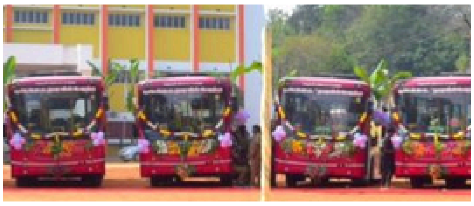
Talbros Automotive Components, along with its joint ventures, has secured **EV-related orders worth around ₹100 crore as part of its multi-year ₹1,000 crore order wins.** A key component includes export orders of approximately ₹90 crore through its JV, Marelli Talbros Chassis Systems, for Body-in-White (BIW) components for luxury electric vehicles and SUVs from a multinational automobile manufacturer.

ZF Group secures an order from a leading **e-bus OEM in India to supply several thousand units of its AxTrax 2 LF electric portal axle** for its city buses destined for the Indian as well as export market. First deliveries scheduled for 2026 under the multi-year agreement.

GreenCell Mobility will deploy 570 electric buses in Delhi over the next few months. The deployment follows the completion of a USD 89M investment round by IFC, British International Investment, and Tata Capital.

The Delhi Government conducted a flag-off event at Ramlila Maidan for 500 electric buses. As part of the Delhi electric bus project, GreenCell Mobility will provide 12-metre, AC e-buses.

Switch Mobility flagged off 272 electric buses for city transport in Delhi under the CESL tender. Under the tender, SWITCH Mobility will deploy a total of **950 electric buses** across key depots in the national capital, with 93 buses delivered in Phase 1 and 272 buses scheduled for delivery in Phase 2. SWITCH EiV12 low-floor buses are manufactured at SWITCH's facility in Tamil Nadu.



GreenCell Mobility to deploy 75 e-buses in Puducherry, as part of the Puducherry electric bus project, comprising 25 (9m) and 50 (12m) buses. **EKA Mobility** will supply these buses. The buses will operate from Mettupalayam Bus Depot.

Telangana State Road Transport Corporation has awarded EveyTrans two orders to operate **1,085 intra-city e-buses in the state.** The value of the supply would be ~ **INR 1,800 Crores for Olectra Greentech**, who will manufacture and supply these vehicles over 20 months. Olectra and Evey are subsidiaries of **Megha Engineering and Infrastructures Ltd.** The CESL contract includes the supply, operation, and maintenance of a diverse fleet intended for intra-city operations.

Switch Mobility introduces Delhi's first electric double-decker sightseeing bus experience under the Hinduja Group Limited's CSR initiative. Key specifications of SWITCH EiV 22 AC bus:

- Liquid-cooled 231 kWh NMC battery pack
- Range up to 250 kms | Seats 65 passengers
- 650V architecture | Dual gun charging system

Bluwheelz has signed a long-term leasing partnership with **Drivn** to deploy **300 electric trucks (19T+ GVW)** over the next 12-month period. Bluwheelz also signed MoUs with **Vinayak Logistics Enterprises and Enetra EV** to deploy up to 100 heavy electric trucks with a GVW of 19T+ over the year.

IKEA and **Flipkart pilot long-distance electric trucking in India,** with implementation support from Climate Group's EV100 programme. IKEA deployed a 55-tonne electric truck on a 1,200 km round trip between Pune and Hyderabad, carrying commercial loads and using only public charging infrastructure at highway motels.

Delhivery partners with **RIDEV (ANV Web Ventures Pvt Ltd) to deploy 150 electric 2Ws** in last-mile operations over the next 3 months across North East India, Bengaluru, and Hyderabad. Delhivery's delivery partners will be able to lease these vehicles through an "EV-as-a-Service" leasing model. Delhivery has already integrated nearly 1,000 EVs, including 2Ws, 3Ws, and 4Ws, in recent years, the company said.

Ecofy plans to deploy INR 100 crore towards financing Ather Energy e-2Ws. Ecofy is an NBFC backed by Eversource Capital that offers loans for e-2Ws, e-3Ws, rooftop solar, and SMEs. Ecofy will offer Ather Energy customers access to its suite of financing options, including vehicle loans, leasing solutions, assured buyback structures and Battery-as-a-Service.

bob Green Wheels

Bank of Baroda has introduced **"bob Green Wheels", an electric vehicle financing scheme** aimed at supporting EV adoption in India. According to the bank, the scheme offers features such as competitive interest rates, reduced processing charges, higher funding eligibility, and simplified loan processing for eligible customers.

RCJ Auto Forge Private Limited has entered into a partnership with **Mufin Green Finance** to provide financing support across its dealer network in India. Mufin Green Finance will offer vehicle financing solutions for customers purchasing RCJ Auto's electric 3Ws in the last-mile mobility segment. The financing will be extended through RCJ Auto Forge's dealer network, which operates in 35 cities across 15 states.

Switch Mobility has signed an MoU with **YES BANK to facilitate retail and channel financing for its electric vehicles.** The partnership is expected to support customers and dealers with structured financing options, including flexible repayment tenures.

Qualcomm Technologies will manufacture its automotive module products in India at **Tata Electronics' upcoming semiconductor assembly and test (OSAT) facility in Jagiroad, Assam.** This is India's first indigenous OSAT facility, being built with a USD 3 billion investment.

Kinetic Watts And Volts Limited (KWV) receives approval under the Maharashtra EV Policy, with a **benefit of ~ INR 42 crores, phased over 10 years.** KWV is the EV arm of the Kinetic Group, which has entered the e-2W market with Kinetic DX. The vehicles are produced in Ahilyanagar, Maharashtra. Investments supported by the subsidy will be deployed to expand production of the Kinetic DX range, battery assembly operations, and chassis and sub-assembly lines.

JSW Greentech receives CMVR Type Approval Certificate for its **Electric Bus model "JSW 12M 51 +D AC SDX" from ARAI.**

Established in 2024, JSW Greentech represents JSW Group's foray into sustainable commercial mobility, including electric buses and trucks. Its manufacturing facility is being developed in Chhatrapati Sambhajinagar, Maharashtra.

Mahindra Group has announced plans to establish its largest integrated **automobile and tractor manufacturing facility in Nagpur, Maharashtra,** with a total investment commitment of ₹15,000 crore over 10 years. The facility will be developed across 1,500 acres in Vidarbha, supported by a 150-acre supplier park in Sambhajinagar.

Once operational, it is expected to have an annual production capacity of over 5 lakh vehicles and 1 lakh tractors. Production is scheduled to begin in 2028.

Commercial EV OEM **Euler Motors** and **Jio-bp will collaborate to expand EV charging infrastructure across high-demand logistics hubs.** Euler Motors will introduce Jio-bp to existing and potential fleet customers ("Site Hosts") interested in hosting EV charging stations. Jio-bp would leverage its platform to introduce Euler Motors to its fleet customer base and facilitate the adoption of Euler Motors' offerings.

Volvo Car India and **ChargeZone** launch ultra-fast EV charging station on the Mumbai-Nashik Highway near Igatpuri, featuring a **360kW StarCharge power unit with two dynamic load-balancing dispensers.**

The charging station offers dedicated bays for Volvo EVs. This installation follows the MoU signed in 2025 between the two companies to expand access to high-speed EV charging across key national corridors, and the plan is to get a few more charging stations added in 2026.

Bolt.Earth enables DC Fast-Charging for Simple Energy Gen 2 electric 2Ws. Simple Energy Gen 2 vehicles are compatible with Bolt’s Blaze DC fast chargers. The two companies have partnered to expand access to Bolt's Blaze DC Type-6 chargers (LEVDC standard), available in 3kW and 6kW variants. Compatibility for Gen 1 vehicles will be enabled via an upcoming update rollout, said an official release.

BatteryPool has signed an MoU with **Numeros Motors, an e-2W OEM, to deploy Battery-as-a-Service (BaaS) for their electric 2Ws.** BaaS aims to provide lower upfront cost for buyers, predictable operating costs for fleets, and battery monitoring with lifecycle management.

VOLTMART | rapido BIKE TAXI

VoltMart and **Rapido announce a partnership in Delhi-NCR** to enable EV purchase through Voltmart and onboarding of Rapido Captains. Voltmart will provide EVs for purchase with EMI options, and riders will be onboarded as Rapido Captains directly from Voltmart showrooms. Rapido will promote Voltmart as its EV partner, enabling EV owners to join the Rapido platform and begin operations.

Tata Motors to deploy 40 H2-ICE prime movers at V.O.Chidambaranar Port Authority, Tuticorin, Tamil Nadu. The Ministry of Ports, Shipping and Waterways will fund the project. Tata Motors will commence trials with a hydrogen-powered prime mover, followed by the phased deployment of H2 ICE-powered prime movers over the next 2 years. The project's fleet includes the Tata Motors Prima 55-tonne prime mover.

Uber has introduced Uber Air in Dubai, powered by Joby Aviation, to enable users to book an all-electric air taxi through the Uber app. Initial operations are expected to begin later this year, with bookings integrating ground transport and flight segments. Joby’s eVTOL aircraft is designed to carry up to four passengers.

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