UNDERSTANDING THE ELECTRIC TRANSITION IN BIHAR

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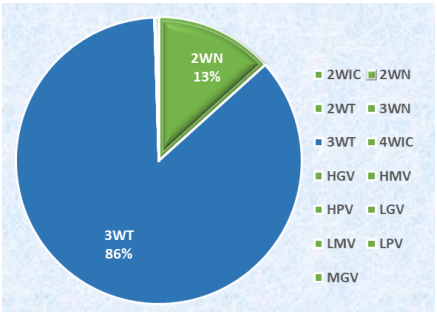
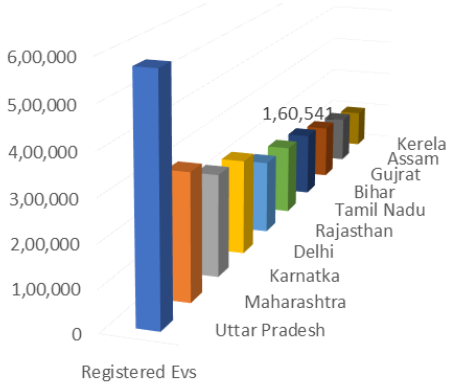
EV SEGMENT: BIHAR

EV penetration rate in Bihar doubled over the past 2 years, from 2.75% to 5.20%, led by 3-wheeler E-rickshaws at 4.34%. It is among the top 10 states of India for EV adoption.





- Total EV registrations till July 2023: 1,60,541 units.
- 3-wheelers dominance with 86% (1,38,333 units), followed by 2-wheelers at 13% (21,411 units).

EXISTING OPERATIONAL PRACTICES : A SURVEY OF 3W E-RICKSHAW

Dominance of Lead-Acid Batteries

(100%)

Preferred for lower cost and backup power even after complete discharge.

Overnight Charging & Parking

(100%)

8-12 hours for a full charge. Stations provide secure parking, easing theft and space anxieties.

Daily Travel in Single Charge

(90%)

E-rickshaw owners travel 80-100 km per day.

Working Hour and Monthly Earning

(94%)

Work 8-14 hours per day and earn 15-18000 rupees per month.

CHARGING INFRASTRUCTURE AND PERCEPTION

Charging Habits

70% of drivers charge their e-rickshaw overnight at Private Unauthorized Charging Stations.

Satisfaction Rate

78% of E-3W owners content with current charging practices. Concerns over expensive, low-range battery swapping without parking space.

COST-BENEFIT ANALYSIS (5 YEARS)

CHARGING

Lead-Acid Battery with Daily Charging:

- Cost of a new lead-acid battery per year: ~Rs. 40,000
- Selling price of old battery (after 1 year): Rs. 8,000
- Cost of daily charging: 100 rupees

Rs. 3,74,500

SWAPPING

Lithium-Ion Battery with Daily Swapping:

- One-time subscription fee for a lithium-ion battery: Rs. 12,000 (valid for 5 years)
- Cost per daily swap: Rs. 140

Rs. 2,67,500

Solar Energy: Empowering Zero-Emission EVs

"Electric Vehicles (EVs) produce zero tailpipe emissions but require electricity, often sourced from fossil fuels. To truly reduce carbon emissions, adopting renewable alternatives like SOLAR ENERGY is essential for a greener future."