Electric Vehicles in India

What is the issue?

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Electric vehicles (EVs) are growing in popularity and certainly in mind space. They are cleaner and more efficient. Their growth, however, is still considered just a market problem.

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Where does EVs fit in Indian context?

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- The cost of EVs depends on electricity price, which varies significantly.
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- EVs are expensive, primarily because of the battery.
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- A single kWh of electricity is enough to go about 6km, so a 200km “full tank” range requires about 35 kWh of battery.
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- When battery prices fall to $100/kWh, as projected a few years out, EVs can become a game changer.
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- 5,000km per year is only about 15km per day on average, while an urban taxi may do 300km daily. Higher range means not only more battery cost but weight as well.
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- In an ideal world, we would have a smaller battery pack and simply recharge periodically.
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Is it a win-win for stakeholders?

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- The power grid is also a key stakeholder in the ecosystem.
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- The worst-case scenario is consumers coming home after work and plugging in at the same time, which also happens to be the grid's demand peak.
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- **One solution is charging consumers a variable rate based on time of day**, but that isn't yet the norm for most users in India, and certainly not households.
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- EVs and the grid can have enormous synergy.
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- Not only can EVs charge whenever there is "surplus" power, they have a battery useful for absorbing variable renewable energy. They can even offer backup power for the grid.
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- This is one reason we should create a new electricity consumer category for EVs, one that includes aggressive time-of-day pricing (cheap charging when power is surplus).
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- Not only are EVs efficient—with regenerative braking capturing energy otherwise wasted and also due to the inherent efficiency of motors, especially at low speeds—they pollute less.
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- We should value such environmental co-benefits, not just carbon reductions (which are roughly a wash, but avoided local air pollution.
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- We could compensate cleaner vehicles through reduced registration charges, or even aim for mandating EVs for taxis and selected (urban) public transport vehicles. These are often diesel, and thus far worse polluters.
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What are the ways to spur EV?

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- The EVs can be spurred by including dedicated charging spots, and discounted or free parking.
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- The long-run goal isn't just to make vehicles electric but to reduce personal driving.
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- This means urban redesign for walking/biking, more shared services, and more and better public transport (convenient and fast enough that the rich will also choose it).
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- Instead of trying to pick technology winners, the government mainly needs to create the right frameworks and help overcome “network effect” problems, covering both the grid and charging infrastructure.
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Source: Live Mint

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