Powering ahead in the future

We can ensure that manufacturers overcome their reluctance to enter the electric vehicles market

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Several things are going right regarding two-wheeler electrification in India. First, the government increased the FAME-II incentives for electric two-wheelers (E2W) to ₹15,000/kWh. Second, more States such as Gujarat and Maharashtra have announced State-level electric vehicle incentives as part of their State policies. Third, many startups are launching new electric two-wheeler models.

As a result, E2W sales in India are likely to at least double in 2021 compared with 2020 levels. Yet, even if that happens, E2Ws will account for less than a per cent of new two-wheeler sales. This is in part because the industry leaders (Hero MotoCorp, Honda, TVS, Bajaj, Suzuki, Royal Enfield and Yamaha), who account for nearly 99% of all two-wheelers sold in India, offer only two electric models between them, and only in a handful of cities.

Overcoming reluctance

The most active electric vehicle markets of the world have overcome this reluctance of leading companies to make and sell electric vehicles in two ways. The first is to establish a zero emission vehicles (ZEV) credit programme. This requires manufacturers of vehicles to ensure that either a certain fraction of their sales are ZEVs or that they purchase ZEV credits from manufacturers who have sold more ZEVs than required by the credit programme. There are many possible regulatory approaches by which India could set up such a programme. California and several U.S. States as well as China have used such an approach to stimulate model availability of electric vehicles.

The second is by putting in place a fuel efficiency/CO_2 emission standard stringent enough that it can best be met by making and selling ZEVs. As the example of the European Union's passenger car CO_2 standards shows, if CO_2 standards are sufficiently stringent, mainstream manufacturers introduce electric vehicles in meaningful numbers. In a recent briefing paper, my colleagues argued that India could use such an approach with great effect. If the 2W CO_2 standards for FY2025-26 are set at 25gCO_2/km (compared with 38gCO_2/km in 2020-21), our research shows the cost-effective market share could be as high as 19% for electric motorcycles and 13% for electric scooters, for a 32% electric vehicle share of the total two-wheeler market. Similarly, if the two-wheeler fuel consumption standard were set at or below 20gCO_2/km for 2030, that would likely ensure that at least 60% of new two-wheeler sales are electric that year. Conversely, if the 2025-26 standards are lenient, say as high as 30gCO_2/km, then it will be cheaper to comply with ICE technology, and the standards will create no incentive in the market for E2Ws.

Environment friendly

In short, there are two reliable ways to overcome manufacturers' reluctance to enter wholeheartedly into the electric vehicles market: a mandate requiring them to build and sell electric vehicles, or efficiency standards stringent/ambitious enough to make building and selling electric vehicles the most profitable thing for them to do. We know that the total cost of ownership of E2W is already competitive with petrol two-wheelers thanks to generous State and national incentives, and petrol prices being above ₹100/litre. We also know that an E2W purchased today will contribute to an absolute reduction in greenhouse gas emissions. E2W are cost effective on total cost of ownership basis today, and likely to reach upfront cost parity later this decade. E2W will reduce greenhouse gas emissions and will be a cost-effective alternative for manufacturers to do so if tailpipe CO_2 standards are set at stringent levels.

What we need now is for the Bureau of Energy Efficiency and the Ministry of Road Transport and Highways to set 2W fuel consumption standards at 25gCO_2/km in 2025 and 20gCO_2/km in 2030. Doing so will not only ensure a 30% E2W share in 2025 and a 60% E2W share in 2030, but it will also pave the way for India to transition completely to E2W across all two-wheeler segments by 2035.

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