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## What India must do to spur sale of electric vehicles

India can save Rs 3.900 trillion by 2030 if it switches to green mobility. To do so, additional benefits must be available to consumers such as exemption from road taxes, value-added taxes or service taxes and also increase the charging infrastructure

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In 2014-15, India's transport sector was responsible for 7.5% of the total greenhouse gas (GHG) emissions, and it consumed 23.58% of petrol and diesel. In 2015-16, the country spent around Rs 4.160 trillion to import 83% of its crude oil consumption. According to the NITI Aayog, India can save Rs 3.900 trillion by 2030 if it switches to green mobility.

### Current policy initiatives aimed at promoting electric vehicles

In 2013, the Centre announced the National Electric Mobility Mission Plan (NEMMP) with an aim to deploy six to seven million electric vehicles (EVs) by 2020. If this plan succeeds, the Centre estimates, 9,500 million litres of fuel will be saved and there will be a reduction of 2 million tonnes of GHG emissions by 2020.

In 2015, the Faster Adoption and Manufacturing of Electric Vehicles scheme, the government announced incentives of up to Rs 6.6 million per unit for electric buses and Rs 138,000 per unit for four wheelers.

The government is now aiming for 100% EVs by 2030. To achieve this, it has announced that new EVs will be floated by 2017.

The Atal Mission for Rejuvenation and Urban Transformation (AMRUT) has also given the EV sector an indirect push. Out of the Rs 1 trillion allocated for AMRUT, a significant amount will be spent on modernising the transport sector, targeting mass-scale EV penetration in the future.

### **Despite these measures adoption of electric vehicles remains low. Why is that?**

These initiatives are not enough to increase EV adoption. The reasons: First, absence of proper EV charging infrastructure. India has only 222 public charging stations. This is low compared to the 22,000 EV sales in 2015-16.

Second, the cost of ownership of EVs is much more than the cars we use today. The battery pack of a pure EV run by lithium ion battery constitutes 40% of a vehicle's cost.

The cost of the battery pack, however, is declining gradually.

According to McKinsey, the price of lithium ion battery pack has come down from \$1,000 per kWh in 2010 to about \$227 per kWh in 2016. Apart from the reduction in the global price of battery packs, in-house manufacturing of key vehicle parts in India will reduce the cost of EVs.

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### **What can be done to stimulate sale of electric vehicles?**

First, the government must give additional benefits available to consumers such as exemption from road taxes, value-added taxes, or service taxes.

Second, parking permits in dense urban areas, special driving lanes, and exemption from toll fees and free parking. Recently, Maharashtra waived off VAT, road tax, and registration for EVs in the state. Nagpur has deployed 200 public EVs to become the first city with an electric mass mobility system in India.

Third, reduce GST on EVs, which is now at 12%.

Fourth, since April 2017, the Centre has withdrawn incentives for mild hybrid vehicles as it is fuel inefficient and more polluting as compared to electric and heavy hybrid vehicles. This will open up the incentive amount of the FAME scheme for the benefit of electric mobility.

Fifth, individual cities must have their own EV roadmaps to meet their targets.

Sixth, the Centre should encourage private investors to develop charging infrastructure under public-private partnerships.

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