



Draft Battery Swapping Policy for Electric Vehicles

For Prelims: Battery Swapping, NITI Aayog, Government Schemes for EV Promotion

For Mains: Draft Battery Swapping Policy for Electric Vehicles, Net-zero target by 2070

Why in News?

Recently, the [NITI Aayog](#) released the **draft battery swapping policy for [Electric Vehicles \(EVs\)](#)** in the country.

- The policy aims to **improve the efficiency of the battery swapping ecosystem** for electric scooters and three-wheeler electric rickshaws, thereby driving EV adoption.
- As per the draft policy, **all metropolitan cities with a population above 40 lakhs will be prioritized** for the development of a battery swapping network under the first phase.

What is Battery Swapping?

- **Battery swapping is a mechanism** that involves exchanging discharged batteries for charged ones.
- This provides the flexibility to **charge these batteries separately** and keeps the vehicle in operational mode with negligible downtime.
- Battery swapping is generally used for smaller vehicles such as **two-wheelers and three-wheelers with smaller batteries** that are easier to swap, compared to four-wheelers and e-buses, although solutions are emerging for these larger segments as well.

What are the key points of the draft Policy?

- **About:** As per the draft policy, battery swapping will **fall under the Battery-as-a-Service (BaaS) business model**, and such models would have to **ensure interoperability between EVs and batteries** for a successful mainstreaming of battery swapping as an alternative.
- **Objectives:**
 - **Minimum Technical Standards:** This Policy stipulates the **minimum technical and operational requirements** that battery swapping ecosystems would need to fulfil, to enable effective, efficient, reliable, safe, and customer-friendly implementation of battery-swapping infrastructure.
 - **Financial Support:** Providing direct and indirect financial support **to Battery Providers** (for the cost of batteries) and EV users.
 - **Lowering Taxes:** The draft policy has suggested that the [Goods & Services Tax Council](#) considers reducing the differential across the tax rates on [Lithium-ion batteries](#) and electric vehicle supply equipment.
 - Currently, the tax rate on the former is 18% and 5% on the latter.

- **Unique Identification Number:** The policy also proposes to assign a **Unique Identification Number (UIN)** to swappable batteries at the manufacturing stage to help track and monitor them.
- **Nodal Agency:** The **Bureau of Energy Efficiency (BEE)** is the Central Nodal Agency responsible for the rollout of EV public charging infrastructure and will be responsible for the implementation of battery swapping networks across the country.

What is the Need for the Policy?

- EVs are traditionally purchased with “fixed” batteries which can only be charged using the power supply while housed within the EV.
- Like fueling stations for conventional vehicles, adequate, affordable, accessible, and **reliable charging networks are a prerequisite for mass EV adoption.**
- Efforts are underway in India to boost the availability of charging infrastructure
- However, **developing charging infrastructure still takes a significantly longer time** and there is a constraint of space in urban areas.
- Therefore, the Government of India in **Budget speech 2022-23** had announced that the Centre would be introducing a battery swapping policy and interoperability standards in order to improve efficiency in the EV ecosystem.

What is the Significance of the Policy?

- **Decarbonizing Transport Sector:** India is a signatory to the **United Nations Framework Convention on Climate Change (UNFCCC)**, which was signed in 2021.
 - Under the mandate, India is committed to achieving a net-zero target by 2070.
 - To decarbonize transport, the transition to clean mobility, led by electric vehicles (EVs), is paramount.
 - The road transport sector is one of the major contributors to carbon emissions and forms nearly 33% of the particulate matter emissions.
- **Leveraging EV Market:** The overall Indian EV market was pegged at USD 1,434.04 Billion in 2021 and is expected to grow to USD 15,397.19 Billion by 2027 at a CAGR of 47.09%.

What are Related Government Schemes for EV Promotion?

- The government had launched the **Faster Adoption and Manufacturing of (Hybrid and) Electric Vehicles (FAME) scheme** in 2015 to give a push to EVs and hybrid vehicles.
- Apart from that, it also approved the **Production Linked Incentive (PLI) scheme** for manufacturing **Advanced Chemistry Cell (ACC)** batteries in 2021.
- Another PLI Scheme, which also covers EV startups, was also approved for the automotive sector with a budgetary outlay.

Source: IE

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