

Battery Swapping Policy

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In news— Recently, NITI Aayog has released the Draft Battery Swapping Policy for Stakeholder Comments.

Key proposals of the policy-

- The **vision is to catalyze the large-scale adoption of EVs by improving efficient and effective use of scarce resources** (viz. public funds, land, and raw materials for advanced cell batteries) for the delivery of customer centric services.
- It has proposed to **offer incentives to electric vehicles (EVs) with swappable batteries, subsidies to companies manufacturing swappable batteries**, a new battery-as-a-service business model, and standards for interoperable batteries, among other measures.
- The policy is **targeted at supporting the adoption of battery-swapping, primarily for battery swapping systems used in electric scooters** and three-wheeler electric rickshaws.
- It has **suggested that the GST Council consider 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 per cent, and 5 per cent on the latter.**
- It also proposes to **offer the same incentives available to electric vehicles that come pre-equipped with a fixed battery** to electric vehicles with swappable batteries. The size of the incentive could be determined based on the kWh (kilowatt hour) rating of the battery and compatible EV..
- The policy also **requires state governments to ensure public battery charging stations are eligible for EV power connections with concessional tariffs.**
- It also **proposes to bring such stations under existing**

or future time-of-day (ToD) tariff regimes, so that the swappable batteries can be charged during off-peak periods when electricity tariffs are low.

- **Transport Departments and State Transport Authorities will be responsible for easing registration processes for vehicles sold without batteries** or for vehicles with battery swapping functionality, the draft says.
- Municipal corporations will be responsible for planning, zoning permissions and land allocation for battery swapping stations.
- The policy also proposes to **assign a unique identification number (UIN) to swappable batteries** at the manufacturing stage to help track and monitor them. Similarly, a **UIN number will be assigned to each battery swapping station**.
- It also proposes to install battery swapping stations at several locations like retail fuel outlets, public parking areas, malls, kirana shops and general stores etc.
- **Niti Aayog said 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.
- **Apart from the batteries themselves, major battery providers will be encouraged to sign data-sharing agreements** to provide information on battery health and performance, and to enable more flexibility to consumers through peer-to-peer roaming networks.
- For the classification of collected data under the broad categories of proprietary, restricted-access, private and open-data, a non-restrictive detailed guideline will be developed for adherence by all industry players.
- **This policy requires ecosystems to be 'open' to allow participation from other market players** in order to be considered for support under the policy.
- **The policy will only support batteries using Advanced**

Chemistry Cells (ACC), with performance that is equivalent or superior to EV batteries supported under the government's FAME-II scheme.

- **As of now, two-wheel EV maker Bounce has launched an electric scooter with a swappable battery.** Under the company's business model, customers can pay to swap their battery at one of their stations, whenever it runs out of juice.
- **The battery management system, which is a software that controls battery functions, will have to be self-certified and open for testing** to check its compatibility with various systems, and capability to meet safety requirements, it added.
- **The draft says that batteries shall be tested and certified as per AIS 156 (2020) and AIS 038 Rev 2 (2020) standards** for safety of traction battery packs, as well as additional tests that may be prescribed for swappable batteries which are subject to multiple coupling/decoupling processes at the connectors.
- **The Aayog has proposed that all metropolitan cities with a population of more than 40 lakh will be prioritised for the development of battery swapping networks under the first phase,** which is within 1-2 years of the draft policy getting finalised.
- **Other major cities** such as state capitals with a population greater than 5 lakh will be **covered under the second phase.**

What is Battery Swapping?

- Battery swapping is an alternative which involves exchanging discharged batteries for charged ones.
- Battery Swapping de-links the vehicle and fuel (Battery in this case) and hence reduces the upfront cost of the vehicles.
- It is popularly used for smaller vehicles such as 2 and 3 wheelers which have smaller batteries that are easier

to swap compared to other automotive segments wherein the same can be implemented mechanically.

- It offers three key advantages relative to charging: it is time, space, and cost efficient, provided each swappable battery is actively used.
- It provides a level playing field to innovative and sustainable business models such as 'Battery As a Service'.

Government's initiatives-

- Several supporting initiatives have been implemented, such as the Faster Adoption and Manufacturing of Electric (Hybrid) Vehicles in India (**FAME I and II**), and the Production Linked Incentive (PLI) for National Programme on Advanced Cell (ACC) Battery Storage (NPACC), to boost indigenous battery manufacturing capacity.
- State governments are developing complementary policies to promote EV adoption.
- India's e-mobility revolution is led by the two-wheeler (2W) and three-wheeler (3W) vehicle segments.
- The **Budget 2022-23 had announced that the Government of India will be introducing Battery Swapping policy** and interoperability standards in order to improve efficiency in the EV Ecosystem.