Draft Battery Swapping Policy

Why in news?

Amid several instances of Electric Vehicles (EVs) erupting into flames, Niti Aayog has released a draft battery swapping policy.

What is battery swapping?

- Battery swapping is an alternative which involves exchanging discharged batteries for charged ones and provides flexibility to charge them separately.
- This de-links charging and battery usage and keeps the vehicle in operational mode with negligible downtime.
- Battery swapping is generally used for smaller vehicles such as 2 wheelers and 3 wheelers with smaller batteries that are easier to swap**.**
- Battery swapping offers three key advantages relative to charging
    1. Time
    2. Space
    3. Cost efficient

To know about the incidents of EV fire, click here

What are the key proposals of the policy?

- The policy has proposals offering
    - Incentives to electric vehicles (EVs) with swappable batteries
    - Subsidies to companies manufacturing swappable batteries
    - A new battery-as-a-service business model
    - Standards for interoperable batteries
- **Rollout of the policy**
    - **Phase 1**- All metropolitan cities with a population of more than 40 lakh will be prioritised within 1-2 years of the draft policy getting finalised.
    - **Phase 2-** Other major cities with a population greater than 5 lakh will be covered under the second phase.
- **Applicability**- The policy will only support batteries using Advanced Chemistry Cells (ACC) that are equivalent or superior to EV batteries supported under the government's FAME-II scheme.
- **Tax reduction**- The draft policy 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 %, and 5 % on the latter.
- **Incentives**- The policy 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.
- **Contract duration-** The government will specify a minimum contract duration for a contract

to be signed between EV users and battery providers.
- This is to ensure that they continue to provide battery swapping services after receiving the subsidy.
- **Charging stations**- The policy requires state governments to ensure public battery charging stations are eligible for EV power connections with concessional tariffs.
- It 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.
- **Nodal agency**- The Bureau of Energy Efficiency (BEE), the Central Nodal Agency responsible for the rollout of EV public charging infrastructure, will be responsible for the implementation of battery swapping networks across the country.
- **Authority**- 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.
- Municipal corporations will be responsible for planning, zoning permissions and land allocation for battery swapping stations.
- **UIN**- 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.
- **Data-sharing agreements-** Major battery providers will be encouraged to sign data-sharing agreements to provide information on battery health, performance, and to enable more flexibility to consumers through peer-to-peer roaming networks.
- **Grievance redressal**- Battery Providers shall be designated as the Point of Contact with EV owners and shall be responsible for grievance redressal.
- **Battery reuse and recycling**- To address the concerns related to battery life and resale value, BIS or other relevant organizations shall develop regulations.
- Battery Management Rules shall be released separately to cover the end-of-life handling of the batteries in detail and fix the Extended Producer Responsibility (EPR).

What is the battery-as-a-service model?

- Niti Aayog said battery swapping will fall under the battery-as-a-service (BaaS) business model.
- It involves users purchasing an EV without the battery and paying a regular subscription fee to service providers for battery services throughout the vehicle lifetime.
- BaaS is applicable for both fixed and removeable batteries and is the channel to implement swapping solutions.
- The business models would have to ensure interoperability between EVs and batteries for a successful mainstreaming of battery swapping as an alternative.

What does the draft policy say on EV safety?

- A rigorous testing protocol will be adopted to ensure a high level of protection (avoid any unwanted temperature rise) at the electrical interface.
- 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 and capability to meet safety requirements.
- Batteries shall be tested and certified as per AIS 156 (2020) and AIS 038 Rev 2 (2020) standards for safety of traction battery packs.
- Swappable batteries have to be equipped with advanced features like IoT-based battery

monitoring systems, remote monitoring and immobilisation capabilities for better protection of assets.

References

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