GOVERNMENT OF INDIA
MINISTRY OF HEAVY INDUSTRIES
LOK SABHA
UNSTARRED QUESTION NO. 2637
ANSWERED ON 05.08.2025

INITIATIVES TO IMPROVE EV SECTOR

2637. DR. NISHIKANT DUBEY:

Will the Minister of HEAVY INDUSTRIES be pleased to state:

(a) the details of initiatives taken to improve Electric Vehicle (EV) infrastructure in the country;

(b) whether the Government is adopting new technologies and spending on Research and Development (R&D) related to EV; and

(c) if so, the details thereof?

ANSWER
THE MINISTER OF STATE FOR HEAVY INDUSTRIES
(SHRI BHUPATHIRAJU SRINIVASA VARMA)

(a) The Government has launched following schemes to improve Electric Vehicle (EV) infrastructure in the country: -

1. **Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles in India (FAME India) Scheme Phase-II**: The Government implemented this scheme for a period of five years from 1st April, 2019 to 31st March 2024 with a total budgetary support of Rs.11,500 crore. The scheme provided demand incentive for e-2Ws, e-3Ws, e-4Ws and grant for e-buses and setting up of EV public charging stations (EV PCS).

2. **PM Electric Drive Revolution in Innovative Vehicle Enhancement (PM E-DRIVE) Scheme:** This scheme with an outlay of Rs. 10,900 crore is being implemented from 1st April 2024 to 31st March 2026. PM E-DRIVE aims to support electric vehicles including e-2W, e-3W, e-Trucks, e-buses, e-Ambulances, EV PCS and upgradation of testing agencies.

3. **PLI Scheme for Advanced Chemistry Cell (ACC):** The Government on 12th May, 2021 approved PLI Scheme for manufacturing of ACC in the country with a budgetary outlay of Rs. 18,100 crore. The scheme aims to establish a competitive domestic manufacturing ecosystem for 50 GWh of ACC batteries.

4. **Production Linked Incentive (PLI) Scheme for Automobile and Auto Component Industry in India (PLI-Auto)**: The Government approved this scheme on 23rd September, 2021 with a budgetary outlay of ₹25,938 crore. The scheme provides financial incentives to boost domestic manufacturing of Advanced Automotive Technology (AAT) products with minimum 50% Domestic Value Addition (DVA) and attract investments in the automotive manufacturing value chain.

5. **Scheme for Promotion of Manufacturing of Electric Passenger Cars in India** (SPMEPCI): The scheme was notified on 15th March, 2024 to promote the manufacturing of electric cars in India. This requires applicants to invest a minimum of Rs. 4150 crore and to achieve a minimum DVA of 25% at the end of the third year and DVA of 50% at the end of the fifth year.

6. **PM e-Bus Sewa-Payment Security Mechanism (PSM) Scheme**: This Scheme notified on 28.10.2024, has an outlay of Rs. 3,435.33 crore and aims to support deployment of more than 38,000 electric buses. The objective of scheme is to provide payment security to e-bus operators in case of default by Public Transport Authorities (PTAs).

Besides above following initiatives have been taken by other Ministries :

i. Ministry of Power has issued guidelines and standards for EV Charging Infrastructure titled, "Guidelines for Installation and Operation of Electric Vehicle Charging Infrastructure-2024" on 17th September, 2024. These revised guidelines outline standards and protocols to create a connected and interoperable EV charging infrastructure network in the country. These guidelines also facilitate electricity connections for EV charging stations.

ii. Ministry of Finance has reduced GST on EVs from 12% to 5%.

iii. Ministry of Road Transport & Highways (MoRTH) announced that the battery operated vehicles will be given green plates and be exempted from permit requirements. MoRTH issued a notification advising states to waive road tax on EVs, which in turn will help reduce the initial cost of the EVs.

iv. Ministry of Housing and Urban Affairs has amended the Model Building Bye-Laws, mandating the inclusion of charging stations in private and commercial buildings.

(b) & (c): Yes, the Government is promoting new technologies and spending on Research and Development (R&D) related to EVs through the following :

1. The expenditure incurred on Engineering R&D and product design & development is allowed to be considered as part of Eligible Investment under PLI-Auto, PLI ACC and SPMEPCI schemes.

2. Under the Capital Goods scheme of MHI, up to 80% of the cost of R&D projects including those on EVs is supported. These projects are housed in leading academic institutes like IITs, IISc., etc. The balance 20% is borne by the industry partners.

3. Centres of excellence have been set up for development of niche technologies not available in India, including technologies related to EVs.

4. An amount of Rs.780 crore is allocated under PM E-DRIVE for upgradation of testing agencies especially for EV related testing. This will also facilitate EV related R&D efforts of the automotive industry.

5. Further, the International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad, an autonomous R&D centre under Department of Science and Technology (DST), has developed several advanced battery technologies. These are as under : -

I. Development of materials for Lithium and Sodium ion and Lithium Sulphur (LiS) batteries; Fabrication and validation of cylindrical and pouch cells.

i. Cobalt free High Voltage Cathode Materials ($LiMnFePO_4$ & LiNi0.5Mn1.5O4 for High Energy Li-ion Battery Application
ii. High Performance NVP, layered oxides as cathodes and Hard Carbon from Bio-waste as anode for Na-ion Battery Applications
iii. Metal oxide modified Carbon Sulphur composite cathodes for high performance and stable Li-S batteries.

II. Development of cost-effective and high-performance composite PCMS for battery thermal management systems in EV Applications.
III. Development of Aluminium-ion Battery as alternative to LIBs in EV and ESS applications
IV. Development of Hybrid-models for accelerated service life predication of LIBs and other battery systems.
V. Development of Eco-friendly process (wet & dry) for battery electrode fabrications
VI. Developing a scalable method for tuning the internal pore structure and porosity of a metal or alloy for thermal energy absorption, storage, and conversion applications.

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