

GOVERNMENT OF INDIA  
MINISTRY OF HEAVY INDUSTRIES AND PUBLIC ENTERPRISES  
DEPARTMENT OF HEAVY INDUSTRY

**LOK SABHA**  
**UNSTARRED QUESTION NO. 5819**  
**TO BE ANSWERED ON 03.04.2018**

**R&D in Electric Vehicle Technology**

5819. SHRIMATI POONAMBEN MAADAM:

Will the Minister of HEAVY INDUSTRIES AND PUBLIC ENTERPRISES be pleased to state:

- (a) whether the Government has any proposal for Research and Development projects with private players for improving electric vehicle technology and if so, the details thereof;
- (b) the measures taken/being taken by the Government to promote Research and Development in electric vehicles in the country; and
- (c) whether the Government has started the process of establishing electric vehicles charging infrastructure in the country and if so, the details thereof?

**ANSWER**

**MINISTER OF STATE IN THE MINISTRY OF HEAVY INDUSTRIES AND  
PUBLIC ENTERPRISES (SHRI BABUL SUPRIYO)**

(a) to (c): Specific Projects received under Technology Platform / R&D ; Pilot Projects and Charging Infrastructure focus areas of the FAME India Scheme [Faster Adoption and Manufacturing of (Hybrid &) Electric vehicles in India], including those of consortium with private players, are considered and approved for sanctioning grant under the scheme. A list of such approved projects / proposals is annexed.

**Projects approved by DHI under FAME India Scheme (Pilot Projects, Charging Infrastructure and Technology Development)**

<b>S.No.</b>	<b>Name of the Project</b>	<b>Name of the Operating Agency</b>
1	Public Fast Charging Infrastructure Network for Electric Vehicles at Bangalore	M/s Mahindra Reva Electric Vehicles Pvt. Ltd. in collaboration with Lithium Urban Technologies Pvt. Ltd.
2	Establishment of Testing Infrastructure for Certification of Testing of Electric & Hybrid Vehicles at ARAI Pune	Automotive Research Association of India
3	Proposal for specifications and Finalizing Draft Standards of xEV Charging Stations, ARAI, Pune	Automotive Research Association of India
4	Proposal for Charging Infrastructure Management System, IIT Madras	IIT, Madras
5	Proposal for putting up of Solar Based Charging Infrastructure for EVs in NCR by REIL, Jaipur	Rajasthan Electronics & Instruments Limited, Jaipur
6	Proposal for putting up of Solar Based Charging Infrastructure for EVs in the premises of Udyog Bhawan by BHEL	Bharat Heavy Electrical Limited
7	Technical Development Project for advanced Gen-IV Lead Acid Battery & Gen-Nickel-Zinc Battery for EVs <i>{Development of Ni-Zn Battery (Advanced Battery) for Electric Vehicles}</i>	Non-Ferrous Technology Development Corporation, Hyderabad
8	Proposal for Centre of Advanced Research in Electrified Transportation (CARET) at AMU <i>[Development of Indigenous Chargers (AC/DC/Solar)]</i>	Aligarh Muslim University
9	Project for Centre for Battery Engineering	IIT, Madras
10	Proposal received under IMPRINT initiative of MoHRD for Hierarchical Nanostructure Carbon Materials Derived from Candle Soot and Graphine for High Rate & High Performance Electrodes for Automotive Batteries and Supercapacitors <b>[Development of Rechargeable Lithium Ion Battery]</b>	IIT, Kanpur

11	Financial Support for UAY Project concerning Automobile Sector-Development of Light Weight REEV with Renewable Energy Based Fuel Cell Range Extender <i>[Development of Light Weight Aluminum intensive electric vehicle]</i>	IIT , Madras
12	Proposal of Setting-up 200 Charging Stations by REIL, Jaipur	Rajasthan Electronics & Instruments Limited, Jaipur
13	Proposal for 60 Nos. Charging Infrastructure of Lithium Urban Technologies Pvt. Ltd.	Lithium Urban Technologies Pvt. Ltd.
14	Design & Development of AC-DC Combined Public Charging Stations by ARAI	Automotive Research Association of India
15	Technology Pilot for DC Charging for EV Bus  <i>[To design High Power DC Chargers for Electric Vehicles]</i>	<u>Principal Investigator</u> Panva Engineering Pvt. Ltd., Nasik, Maharashtra <u>Co- Principal Investigator</u> K.K.Wagh Institute of Engineering Education and Research, Nasik, Maharashtra
16	Development and Prototyping of ICT enabled Smart Charging Network Components  <i>[To design a bidirectional Electric Vehicle Supply Equipment for charging station]</i>	<u>Principal Investigator</u> IIT Delhi <u>Co- Principal Investigator</u> Thapar University, Amrita Vishwa Vidyapeetham, Lithium Urban Technologies <u>Industry Partners</u> Elecsys Technologies Pvt. Ltd., Engie (GDF Suez Energy) , Linkwell Telesystems , Yexcube Technologies
17	Development of Indian Urban Driving Cycle for xEV  <i>[To ascertain/develop Driving Cycle for electric/hybrid vehicles in Indian conditions]</i>	<u>Principal Investigator</u> IIT Madras [Department of Electrical Engineering / Computer Science & Engineering / Civil Engineering], IISc Bangalore (Department of Civil Engineering) <u>Industry Partners</u> Mahindra Electric; Bosch Limited, Bangalore; Robert Bosch Engineering & Business Solutions Pvt. Ltd., Coimbatore

18	<p>HUB and SPOKE consortium for e-2W and e-3W Electric Drives</p> <p><i>[To design &amp; develop Non-Permanent Magnet Motor Drives for e2W and e-3W based on actual Drive Cycles in Indian conditions]</i></p>	<p><u>Principal Investigator</u> TVS-Lucas Limited; NFTDC, Hyderabad</p> <p><u>Institutions</u> IIT Guwahati; IIT Jodhpur; IIT BBSR; VIT Chennai; NITTEE, Surathkal</p> <p><u>Industry Partners</u> Lucas TVS, Chennai; Ampere Vehicles, Coimbatore; Electrotherm; Lohia Auto Industries</p>
19	<p>Switched Reluctance Traction motor and controller for 2W &amp; 3W</p> <p><i>[Due to advances in power Electronics, researches are being done in the field of motor development for EVs].</i></p> <p><i>This project is for the development of Switched Reluctance Motor for EVs, which allow for sophisticated control &amp; monitoring of the characteristic of the motors]</i></p>	<p><u>Principal Investigator</u> Aditya Auto Products &amp; Engg. (I) Pvt. Ltd.; NITK Surathkal</p> <p><u>Industry Partners</u> Hero Eco; Ampere Vehicles Pvt. Ltd.</p>
20	<p>Synchronous Reluctance Motor Drive for Indian Electric Vehicle applications</p> <p><i>[Due to advances in power Electronics, researches are being done in the field of motor development for EVs].</i></p> <p><i>This project is for the Development of Synchronous Motor for EVs, , which allow for sophisticated control &amp; monitoring of the characteristic of the motors]</i></p>	<p><u>Principal Investigator</u> IIT Madras</p> <p><u>Industry Partners</u> Mahindra Reva Electric Vehicles Ltd., Bengaluru.</p>

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