

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

**LOK SABHA**  
**UNSTARRED QUESTION NO.2447**  
**TO BE ANSWERED ON 02.01.2018**

**Research and Development in Electric Vehicles**

2447. KUNWAR BHARATENDRA:  
SHRI ANURAG SINGH THAKUR:

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;
- (b) if so, the details thereof;
- (c) the measures taken/being taken by the Government to promote Research and Development in electric vehicles in the country; and
- (d) 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 (d): As per the FAME India Scheme of the Government, specific projects / proposals received under the different focus areas namely Technology Development (Research & Development); Pilot Projects; Charging Infrastructure are funded by the Government. These include proposals received from consortium of the Government and Industry partners for Research & Development projects for improving electric vehicle technology and charging infrastructure technology. A statement of such projects approved / sanctioned under the scheme by the Government is given in ANNEXURE.

\*\*\*\*\*

**R&D Projects and Charging Infrastructure Projects approved under FAME India Scheme  
by the Government**

S.No.	Name of the Project	Name of the Operating Agency
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 (ARAI), Pune
3	Proposal for specifications and Finalizing Draft Standards of xEV Charging Stations, ARAI, Pune	Automotive Research association of India (ARAI), Pune
4	Proposal for Charging Infrastructure Management System, IIT Madras	Indian Institute of Technology, Madras
5	Proposal for putting up of Solar Based Charging Infrastructure for EVs in NCR by REIL, Jaipur	REIL, Jaipur Rajasthan Electronics & Instrumentation Limited (REIL), 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 (BHEL)
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 Materials Technology Development Centre (NFTDC), 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 (AMU)
9	Project for Centre for Battery Engineering	Indian Institute of Technology, 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>	Indian Institute of Technology, Kanpur

11	<p>Financial Support for UAY Project concerning Automobile Sector-Development of Light Weight REEV with Renewable Energy Based Fuel Cell Range Extender</p> <p><i>[Development of Light Weight Aluminum intensive electric vehicle]</i></p>	Indian Institute of Technology, Madras
12	Proposal of Setting-up 200 Charging Stations by REIL, Jaipur	Rajasthan Electronics & Instrumentation Limited (REIL), Jaipur
13	Proposal for Providing 75 AC Smart Chargers by consortium of Mahindra Reva – Ola Asia Electric	Consortium of Mahindra Reva – Ola Asia Electric
14	Proposal for 60 Nos. Charging Infrastructure of Lithium Urban Technologies Pvt. Ltd.	Lithium Urban Technologies Pvt. Ltd.
15	Design & Development of AC-DC Combined Public Charging Stations by ARAI	Automotive Research association of India (ARAI), Pune
16	<p>Technology Pilot for DC Charging for EV Bus</p> <p><i>[To design High Power DC Chargers for Electric Vehicles]</i></p>	K.K.Wagh Institute of Engineering Education and Research, Nasik, Maharashtra
17	<p>Development and Prototyping of ICT enabled Smart Charging Network Components</p> <p><i>[To design a bidirectional Electric Vehicle Supply Equipment for charging station]</i></p>	IIT Delhi

18	<p>Development of Indian Urban Driving Cycle for xEV</p> <p><i>[To ascertain/develop Driving Cycle for electric/hybrid vehicles in Indian conditions]</i></p>	<p>IIT Madras [Department of Electrical Engineering / Computer Science &amp; Engineering / Civil Engineering], IISc Bangalore (Department of Civil Engineering)</p>
19	<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>NFTDC, Hyderabad</p>
20	<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>NITK Surathkal</p>
21	<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>IIT Madras</p>

Concluded.