

GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY

LOK SABHA

STARRED QUESTION NO. 139

TO BE ANSWERED ON 24.11.2016

STORAGE TECHNOLOGY FOR RENEWABLE ENERGY

*139. SHRI K. ASHOK KUMAR

SHRI BIDYUT BARAN MAHATO:

Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

- (a) the electricity generation capacity through the renewable energy sources in the country at present;
- (b) whether the country has adequate storage technology for renewable energy and if so, the details thereof;
- (c) whether the natural variations in wind and solar energy and lack of adequate storage facilities result in loss/waste of 15-20 per cent of all renewable energy generated in the country and if so, the details thereof;
- (d) whether the Government is considering Lithium-ion to be used for battery storage technology for renewable sector and if so, the details thereof; and
- (e) the steps taken/being taken by the Government to develop storage technology for renewable energy in the country?

ANSWER

THE MINISTER OF STATE FOR POWER, COAL & NEW AND RENEWABLE ENERGY (INDEPENDENT CHARGE) (SHRI PIYUSH GOYAL)

(a),(b),(c),(d)&(e): A Statement is laid on the Table of the House.

STATEMENT

STATEMENT REFERRED TO IN REPLY TO PARTS(a),(b),(c),(d)&(e) OF THE LOK
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(a): As on 30.09.2016, the electricity generation capacity through the renewable energy sources in the country is 45917 MW.

(b): Lead Acid battery storage technology for Renewable Energy is already available in the country and is being used in off-grid/grid interactive solar photovoltaic systems/projects as also in small wind generator-solar photovoltaic hybrid systems in the country. Little experience is available for other technologies such as Li-on and vanadium-redox flow batteries in the country.

(c): No loss/waste of renewable energy generated is reported in the country at present.

(d): Among the all available options such as Sodium Sulphur, Vanadium redox, Zinc-air batteries, pumped-hydro, compressed air etc. for renewable energy power generation projects, Lithium-ion battery storage technology is one the prominent options to meet the anticipated challenges of frequency variation, load leveling, load shifting congestion in transmission and distribution etc.

(e): To get experience and develop storage technology for renewable energy in the country, Ministry of New and Renewable Energy (MNRE) has sanctioned following Research & Development (R&D) projects in energy storage area in the country:

i. One MW electrical (3.5 MW) solar thermal power plant with 16 hours thermal storage for continuous operation at Mount Abu (Thermal cast iron cavity receiver with heat storage).

ii. High Energy Density Thermal Energy Storage for Concentrated Solar Plant at RKDF University, Bhopal.

iii. Development of a Modular Central Receiver Concentrated Solar Power Plant for Decentralized Power Generation at NISE, Gurgaon (Cylindrical conical thermal heat storage).

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iv. Development of Solar PV and wind hybrid power plant and large scale battery storage at Kaza, Himachal Pradesh. (one MWh various technologies battery storage).

In addition to above, three more projects with aggregate energy storage capacity of 8.424 MWh by Indian Oil Corporation Ltd. (IOCL), Rajasthan Electronics and Instruments Limited (REIL) and Bharat Heavy Electrical Limited (BHEL) have been finalized to demonstrate energy storage for supporting Renewable Generation in the country. Solar Energy Corporation of India (SECI) has also issued a request for selection (RfS) for 100MW of grid-connected solar PV projects with large-scale battery energy storage systems at Kadapa Solar Park, Andhra Pradesh and 200MW in Pavagada Solar Park, Karnataka.
