GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 3494
ANSWERED ON 24.03.2022

INTEGRATION OF RENEWABLE ENERGY WITH MAIN GRID

+3494. SHRI GANESH SINGH

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

(a) whether there is a need to work on the integration of renewable energy with the main grid other than need for the resolution of issues like large scale power storage for growth in the renewable energy sector;
(b) if so, the details thereof;
(c) whether renewable energy resources are a bit more expensive than traditional sources and if so, the details thereof;
(d) whether sustenance and twenty four hour power supply are major challenges aside from storage system and if so, the details thereof;
(e) whether too much power is consumed in the agriculture sector and if so, the details thereof;
(f) whether there is a challenge to ensure proper power supply to every household as well as to agriculture sector; and
(g) if so, the details thereof?

ANSWER
THE MINISTER OF NEW & RENEWABLE ENERGY AND POWER
(SHRI R.K. SINGH)

(a) & (b) The intermittency in Renewable Energy (RE) generation which is caused due to variability in availability of natural resources during a day poses a challenge in its integration with the grid. The Government in order to ensure smoother integration of RE generation with the grid has taken several measures including the following:

i. Construction of Intra-State and Inter-State transmission systems for evacuation of Renewable power.
ii. Setting up of Renewable Energy Management Centers (REMCs) for accurate forecasting of renewable power and for assisting grid operators to manage variability and intermittency of renewable power.
iii. Innovative products like solar-wind hybrid projects, RE projects with energy storage systems and supply of RE power balanced with power from non-RE sources started to reduce intermittency.
iv. Implementation of Green Term Ahead Market (GTAM) and Green Day Ahead Market (GDAM) for sale of renewable energy.
v. Flexibility in Generation and Scheduling of Thermal/Hydro Power Stations through bundling with Renewable Energy and Storage Power.

(c) The country has seen record low RE tariffs of Rs 1.99 per KWh for solar power and Rs 2.43 per KWh for wind power which are quite favourable as compared to tariff of electricity produced from non-renewable energy sources.
(d) Solar energy, for example is available effectively for 6-8 hours only during the day (besides seasonal variation) and wind power can also have significant intra-day as well as inter-seasonal and inter-annual variations. Therefore, storage systems are critical for ensuring reliable supply of renewable energy in the country's energy mix, especially as the share of renewables in the overall energy mix of the country increases.
(e) The details of electricity consumption in agriculture sector during the year 2015-16 to 2019-20 is given below:

Year	Electricity consumption in Agriculture sector (in GWh)
2015-16	173185.37
2016-17	191150.89
2017-18	199246.85
2018-19	213409.18
2019-20	211294.89

(f) & (g): The responsibility of providing reliable and quality power supply to all consumers including every household and agriculture sector rests with the respective Distribution Utilities. To provide reliable power supply to all the consumers, the distribution utilities have to maintain adequate distribution infrastructure alongwith availability of power for meeting the full demand.

Government of India supplements the efforts of States/UTs/Distribution Utilities by launching various schemes from time to time such as Integrated Power Development Scheme (IPDS), Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY), Saubhagya, Revamped Distribution Sector Scheme (RDSS) etc. to improve the Distribution network.

*****