

**GOVERNMENT OF INDIA
MINISTRY OF POWER**

**LOK SABHA
UNSTARRED QUESTION NO.300
TO BE ANSWERED ON 19.07.2018**

SHORTAGE OF WATER FOR THERMAL POWER PLANTS

300. SHRI PONGULETI SRINIVASA REDDY:

**Will the Minister of POWER
be pleased to state:**

- (a) whether nearly 90% of thermal power plants in the country which rely on fresh water for cooling face risk of serious outages because of shortage of water;
- (b) if so, the details thereof and the reasons for such prevailing situation in the country, thermal power plants, unit-wise and State-wise;
- (c) the findings of the World Resources Institute about our country's situation of each thermal plant in this regard;
- (d) whether the Government has any details of the loss of terawatt hours of thermal power generation due to water shortages during each of the last three years and the current year and cancelling out the growth in the country's total electricity generation during the last three years and the current year and if so, the details thereof and if not, the reasons therefor;
- (e) whether about 40% of the country's thermal power plants are facing great stress in terms of water availability, if so, the details thereof and the reasons therefor; and
- (f) the corrective steps being taken to avoid such situation in future at each thermal plant?

A N S W E R

**THE MINISTER OF STATE (INDEPENDENT CHARGE) FOR POWER AND
NEW & RENEWABLE ENERGY**

(SHRI R. K. SINGH)

(a) & (b) : No, Madam. Details of the loss of generation (state-wise & unit-wise) incurred due to water shortage during the financial year 2017-18 in the thermal stations in the country is annexed.

(c) & (d) : The World Resources Institute in one of its working papers published in January 2018, has stated that India's thermal power sector is dependent on water and has been suffering from water shortages. However, as the details below will show, losses because of shortage of water are virtually negligible.

The details of loss of terawatt hours (TWh) of thermal power generation due to water shortages reported by the stations during the last three years i.e. from years 2015-16 to 2017-18 & current year 2018-19 (Up to May 2018) are given as under:

Year	Losses due to Water shortage (TWh)	Percentage of Losses due to water Shortage with respect to Total Generation
2015-16	1.00	0.08
2016-17	9.57	0.77
2017-18	4.21	0.32
2018-19 (Up to May 2018)	0.75	0.32

Loss of generation due to outages on account of water shortages however, does not lead to overall reduction in growth of electricity generation, as the generation requirements are met through other generation units in the country.

(e) : No, Madam.

(f) : The corrective steps/remedial measures being adopted to reduce consumption of water in Thermal Power Plants are as under:

- I. Ash water recirculation system- Water from ash pond is recovered and reused in the system.**
- II. Dry fly ash handling system & High concentration slurry disposal system (HCSD)- These ash handling techniques reduce the ash handling water requirement thereby reducing the water consumption.**
- III. Zero water discharge system – Treating the total waste water produced in the plant and recycling back in to the consumptive water system reduces water consumption.**
- IV. Operating cooling towers at higher Cycle of Concentration(COC). This reduces the waste water generated by the plant. Further, this waste water generated is used for low grade applications like ash handling, coal dust suppression and gardening etc.**
- V. Ministry of Environment, Forest & Climate Change (MoEF&CC) has notified Environment (Protection) Amendment Rules, 2015 dated 07.12.2015 and Environment (Protection) Amendment Rules 2018 related to water consumption limit for existing and future thermal power plants, which are as under:**
 - i. All the existing thermal plants with Once-Through-Cooling(OTC) system shall install Cooling Tower(CT) and achieve specific water consumption upto Maximum of 3.5 m³/MWh within a period of two years from the date of notification.**
 - ii. All existing Cooling Tower based plants to reduce specific water consumption upto maximum of 3.5 m³/MWh within a period of two years from the date of publication of this notification.**
 - iii. New plants to be installed after 1st January, 2017 shall have to meet specific water consumption upto Maximum of 3.0 m³/MWh and achieve zero waste water discharge.**

Further, the aforesaid provision is not applicable to Thermal Power Plants using sea water.

- VI. The Tariff Policy, 2016 mandates use of treated sewage water from Sewage Treatment Plants (STP) of Municipality/local bodies by the Thermal Power Plants that are located within 50 km radius. All Thermal Power Plants have been advised to use STP water for cooling purpose, wherever possible.**

ANNEX**ANNEX REFERRED TO IN REPLY TO PART (a) & (b) OF UNSTARRED QUESTION NO. 300 TO BE ANSWERED IN THE LOK SABHA ON 19.07.2018.**

Outage due to Water Shortage from 01-Apr-2017 to 31-Mar-2018

STATE	STATION	UNIT	CAPACITY (MW)	TRIP DATE	SYNC DATE	Duration Days
PUNJAB	TALWANDI SABO TPP	2	660	09-Apr-17	17-Apr-17	8
CHHATTISGARH	NAWAPARA TPP	1	300	19-May-17	21-Jun-17	33
CHHATTISGARH	NAWAPARA TPP	2	300	20-May-17	24-Jun-17	35
KARNATAKA	BELLARY TPS	2	500	07-Jun-17	13-Sep-17	98
BIHAR	MUZAFFARPUR TPS	3	195	11-Aug-17	14-Oct-17	64
BIHAR	MUZAFFARPUR TPS	2	110	28-Aug-17	07-Sep-17	10
BIHAR	MUZAFFARPUR TPS	1	110	03-Nov-17	22-Nov-17	19
BIHAR	MUZAFFARPUR TPS	4	195	04-Nov-17	23-Dec-17	49
BIHAR	MUZAFFARPUR TPS	2	110	30-Dec-17	06-Jan-18	7
MAHARASHTRA	CHANDRAPUR (MAHARASHTRA) STPS	6	500	04-Jan-18	01-Feb-18	28
MAHARASHTRA	CHANDRAPUR (MAHARASHTRA) STPS	3	210	03-Dec-17	Continued	118
MAHARASHTRA	CHANDRAPUR (MAHARASHTRA) STPS	4	210	03-Dec-17	Continued	118
MAHARASHTRA	PARAS TPS	4	250	12-Jan-18	22-Jan-18	10
GUJARAT	BHAVNAGAR CFBC TPP	1	250	07-Feb-18	15-Feb-18	8
GUJARAT	BHAVNAGAR CFBC TPP	1	250	02-Mar-18	26-Mar-18	24
