GOVERNMENT OF INDIA MINISTRY OF POWER

LOK SABHA UNSTARRED QUESTION NO.4594 TO BE ANSWERED ON 22.03.2018

SHORTAGE OF WATER FOR POWER PLANTS

4594. SHRI V. ELUMALAI: SHRI JOSE K. MANI: SHRI RAM CHARITRA NISHAD:

Will the Minister of POWER be pleased to state:

(a) whether it is a fact that the country's thermal power plants, about 90% of which rely on fresh water for cooling, are facing serious outages because of shortage for water, if so, the details thereof;

(b) whether it is also true that between 2013 and 2016, 14 of country's 20 largest thermal utility companies experienced one or more shutdowns due to water shortage, if so, the details thereof;

(c) whether it is also true that this cost the power producers more than Rs. 91 billion in potential revenue from the sale of power, if so, the details thereof;

(d) whether water scarcity is set to worsen as India's thermal power sector expands and demand for water from other sectors increases, if so, the details thereof;

(e) whether by 2030, 70% of country's thermal power plants are likely to experience increased competition for water from agriculture, industry and municipalities, if so, the details thereof and the steps taken/proposed to be taken up by the Government in this regard;

(f) whether the Government has recently mandated limits for specific water consumption at thermal power plants, if so, the details thereof; and

(g) whether the Government plans any policy incentives to encourage water conservation, water efficiency across the power sector, if so, the details thereof?

ANSWER

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

(SHRI R. K. SINGH)

(a) & (b): No, Madam. The total Outage Losses due to water shortage reported by the stations in the current year, upto February, 2018, are about 3400 Million Units (MU), which is about 0.38% of total coal/lignite based generation during the period.

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Losses due to water shortage reported by the Thermal Stations during 2013-14 to 2016-17 are as follows:

S.No.	Year	Losses in MU
1	2013-14	4375.8
2	2014-15	1155.9
3	2015-16	995
4	2016-17	9565.2

Details of the Outage of Thermal Generating Plants due to water shortage for the last four years are furnished at Annexure.

(c): Information in this regard is not maintained in Central Electricity Authority/Ministry of Power. However, it is informed that the outage of a thermal power plant due to shortage of water will cause loss of revenue in terms of variable charge as well as loss of fixed charge if the plant availability falls below the normative value.

(d) to (e): As per the Central Water Commission guidelines issued in November, 2014, for Improving Water Use Efficiency in Irrigation, Domestic & Industrial Sectors, the National Commission for Integrated Water Resources Development (NCIWRD) estimated water utilization in power development as only 3% out of the total withdrawal/ utilization for 2010 for all types of uses.

The Government has taken following steps to encourage water conservation, water efficiency across the power sector:

- 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. This waste water generated is used for low grade applications like ash handling, coal dust suppression and gardening etc.
- V. Most of inland thermal power plants use closed cycle cooling water system with Cooling Tower and high level of COC to recirculate the water in operation for reducing the water requirement.

(f): Ministry of Environment, Forest & Climate Change (MOEF&CC) has notified Environment (Protection) Amendment Rules, 2015 on 7th December 2015 related to water consumption limit for existing and future thermal power plants:

- (i) All plants with Once-Through-Cooling (OTC) shall install Cooling Tower (CT) and achieve specific water consumption upto a maximum of 3.5 m³/MWh within a period of two years from the date of publication of this notification.
- (ii) All existing Cooling Tower based plants to reduce specific water consumption up to a maximum of $3.5m^3/MWh$ 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 a maximum of 2.5m³/MWh and achieve zero waste water discharge.

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

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ANNEXURE

ANNEXURE REFERRED TO IN REPLY TO PARTS (a) & (b) OF UNSTARRED QUESTION NO. 4594 TO BE ANSWERED IN THE LOK SABHA ON 22.03.2018.

DETAILS OF OUTAGE OF THERMAL GENERATING PLANTS DUE TO WATER SHORTAGE OF LAST FOUR YEARS

		LOSS IN 2013-14	LOSS IN 2014-15	LOSS IN 2015-16	LOSS IN 2016-17
ORGANIZATION	STATION	(in MU)	(in MU)	(in MU)	(in MU)
MAHAGENCO	PARLI TPS	3889.6	1032.8	0.0	3931.5
RRVUNL	GIRAL TPS	28.6	0.0	0.0	0.0
APL	TIRORA TPS	80.5	0.0	0.0	2375.1
UPRVUNL	HARDUAGANJ TPS	29.0	0.0	0.0	0.0
SEL	STERLITE TPP	292.9	0.0	0.0	1122.3
MPPGCL	SATPURA TPS	32.8	0.0	0.0	0.0
TNGDCL	NORTH CHENNAI TPS	22.2	20.9	0.0	16.2
BEPL	UTRAULA TPS	0.1	0.4	0.0	0.0
EPGL	SALAYA TPP	0.0	6.1	100.8	50.9
NTPC Ltd.	RIHAND STPS	0.0	91.6	0.0	0.0
SCPL	RATIJA TPS	0.0	4.1		46.5
NTPC LTD.	BARH II	0.0	0.0	17.4	0.0
АСВ	KASAIPALLI TPP	0.0	0.0	6.6	0.0
KPCL	RAICHUR TPS	0.0	0.0	130.5	0.0
GSECL	SIKKA REP. TPS	0.0	0.0	23.0	0.0
NTPL	TUTICORIN (JV) TPP	0.0	0.0	2.0	0.0
UPCL	UDUPI TPP	0.0	0.0	672.2	0.0
нирс	VIZAG TPP	0.0	0.0	42.4	0.0
KPCL	BELLARY TPS	0.0	0.0	0.0	77.9
NTPC Ltd.	FARAKKA STPS	0.0	0.0	0.0	339.8
GMR ENERG	GMR WARORA TPS	0.0	0.0	0.0	611.0
SVPPL	SVPL TPP	0.0	0.0	0.0	58.6
TSPL	TALWANDI SABO TPP	0.0	0.0	0.0	666.3
TNGDL	TUTICORIN TPS	0.0	0.0	0.0	269.0
GRAND TOTAL		4375.8	1155.9	995.0	9565.2
