

**GOVERNMENT OF INDIA
MINISTRY OF POWER**

**LOK SABHA
UNSTARRED QUESTION NO.1767
TO BE ANSWERED ON 28.11.2019**

EFFICIENCY OF THERMAL POWER PLANTS

1767. SHRI PRATAPRAO JADHAV:

SHRI BIDYUT BARAN MAHATO:

SHRI SANJAY SADASHIV RAO MANDLIK:

SHRI SUDHEER GUPTA:

SHRI GAJANAN KIRTIKAR:

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

- (a) whether studies done by the Centre for Science and Environment have shown that the efficiency of India's coal based power plants is one of the lowest among major coal-based thermal power generating countries and if so, the details thereof;**
- (b) whether the Government proposes to take any measures to improve the efficiency of these plants and improving the air quality in the vicinity at the same time;**
- (c) if so, the details thereof and if not, the reasons therefor;**
- (d) the budgetary allocation made by the Government in this regard; and**
- (e) the steps taken/being taken by the Government to provide superior quality of coal to the thermal power plants?**

A N S W E R

THE MINISTER OF STATE (INDEPENDENT CHARGE) FOR POWER, NEW & RENEWABLE ENERGY AND THE MINISTER OF STATE FOR SKILL DEVELOPMENT & ENTREPRENEURSHIP

(SHRI R.K. SINGH)

- (a) to (c) : In order to improve the efficiency of coal based thermal power plants and also to improve the air quality in their vicinity, the Government has taken the following measures:**
- i. The Ministry of Power had decided in 2009 that all coal based generation capacity addition from 2017 onwards shall be based on supercritical technology. The thermal efficiency of Supercritical units is typically about 2% point higher than that of Subcritical units. Till August 2019, 75 numbers of Supercritical / Ultra supercritical units (which are about 1.5% point over Supercritical units) of total capacity of 51,770 Mega Watt (MW) have been commissioned.**
 - ii. Indigenous manufacturing of supercritical power equipment with higher steam parameters (i.e. ultra supercritical technology) is available in the country. Indigenous manufacturers, who have established manufacturing facilities for supercritical power equipments are capable of manufacturing and supply of ultra supercritical class of power equipment.**

- iii. **For further improvement in efficiency of thermal power plants, indigenous research, for development of advanced ultra supercritical technology (A-USC) with steam parameters of around 300 kg/cm² pressure and 700 deg C steam temperature with targeted efficiency of about 46% which is an improvement of about 6% point over supercritical unit, has already been initiated. In this regard, Indira Gandhi Centre for Atomic Research (IGCAR), NTPC and BHEL had signed an MoU in August, 2010 for development of 800 MW A-USC indigenous demonstration plant with main steam pressure of 310 kg/cm² and temperature of 710/720 degree centigrade.**
- iv. **Bureau of Energy Efficiency (BEE), a statutory body under Ministry of Power, Government of India have implemented Perform, Achieve and Trade (PAT) Scheme under National Mission for Enhanced Energy Efficiency (NMEEE) for enhancing efficiency in energy intensive sectors and to enhance cost effectiveness of improvements in energy efficiency, including thermal power stations consuming more than 30000 tonne of oil equivalent (toe) of energy per annum. Currently, 225 numbers of thermal power stations having capacity of about 181 Giga Watt (GW) are covered under this scheme.**
- v. **The Government has granted approval with regard to Annual Contracted Quantity (ACQ) of coal based on efficiency.**
- vi. **All the thermal power stations that are in operation are equipped with high efficiency Electrostatic Precipitators (ESP) for control of Particulate Matter (PM).**
- vii. **Ministry of Environment, Forest and Climate Change (MoEF&CC) has notified the Environment (Protection) Amendment Rules, 2015 on 7th December 2015 stipulating revised emission norms for Thermal Power Plants to improve air quality in the vicinity of these power plants.**

Centre for Science and Environment (CSE) had published a report "Heat on Power- Green Rating of Coal-Based Thermal Power Plants" in February 2015. This report contains a chapter on energy efficiency of power plants under the heading "Energy and Greenhouse Gases". This study compared efficiencies of coal based power plants in various countries in 2011 and from India it had studied 47 thermal power plants operating in 2012. The study is dated.

The Government have been taking measures continuously for improving efficiency of coal based power plants.

(d) : No separate budgetary allocation has been made in this regard by Ministry of Power, Government of India.

(e) : In order to address the issue of quality of coal dispatched by coal companies to the power plants, the Government has decided on Third Party Sampling and Analysis of coal at loading-end (mine end) as well as at unloading-end (power plant end). Based on the results of the Third Party Sampling analysis by a Third Party Agency i.e. Central Institute of Mining and Fuel Research (CIMFR), credit/debit notes are issued by Coal companies to the power plants in case of difference between declared grade of coal and analyzed grade of coal.