

**GOVERNMENT OF INDIA
MINISTRY OF POWER**

**LOK SABHA
UNSTARRED QUESTION NO.268
TO BE ANSWERED ON 25.02.2016**

USE OF COAL IN POWER GENERATION

268. SHRI K.N. RAMACHANDRAN:

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

- (a) whether the Government has any mechanism to assess the total quantity of coal used for purpose of power generation in the country, if so, the details thereof;**
- (b) the details of estimated cost of production of power per unit from this source;**
- (c) whether it is a fact that thermal power is not cost effective, if so, the details thereof; and**
- (d) the steps taken by the Government to reduce the cost of production of power from this source?**

A N S W E R

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

(SHRI PIYUSH GOYAL)

(a) : The Central Electricity Authority (CEA) has issued on 15th January, 2015 the norms for annual coal consumption in thermal power plants at 85% Plant Load Factor (PLF) for different grades of coal. The details of the norms is given at Annex.

(b) : The cost of production of coal based power plants depends on various factors i.e. grade/ gross calorific value (GCV) of coal, moisture content, ash content, distance from mine to plant and unit size of the power plant etc. In addition, the cost of power production for the coal based power plants designed on imported coal depends on various factors such as country of origin of coal, GCV, moisture content, ash content, Ocean freight, distance of plant from the port etc. As per CERC Annual Report 2014-15, the tariff for coal based power plants of central generating stations under the regulated tariff regime varied from Rs. 1.58 per kWh to Rs. 5.53 per kWh.

(c) : Coal based thermal power plants are cost effective and get scheduled as per their merit order. During the year 2015-16 (upto January, 2016), coal based generation was around 77% of the total power generation in the country.

(d) : In order to reduce cost of power generation from coal based power plants, the Government has taken various measures viz. coal linkage rationalisation, coal swaps, correction in coal grade slippage by introducing independent third party sampling and allocating coal linkages at notified price etc. In addition, replacing the old inefficient thermal generating units by super critical units and Renovation & Modernisation / life extension of old inefficient units is also being undertaken to reduce cost of power generation.

ANNEX REFERRED TO IN REPLY TO PART (a) OF UNSTARRED QUESTION NO. 268 TO BE ANSWERED IN THE LOK SABHA ON 25.02.2016.

Norms for Coal consumption in TPPs issued on 15.01.2015

Annual coal consumption at 85% PLF (Tones per MW per Annum)

| Grade | GCV Considered (kcal/kg) | Sub Critical Technology | | | | Super-critical units # |
|-------|--------------------------|--|----------------------------|----------------------------|--------------------|------------------------|
| | | Less than 100MW | 100MW to less than 200 MW* | 200MW to less than 250 MW* | 250 MW and above # | |
| | | Unit Heat Rate (kcal/kWh) | | | | |
| | | 2770 | 2615 | 2500 | 2375 | 2250 |
| | | Annual coal consumption at 85% PLF (Tonnes per MW per Annum) | | | | |
| G4 | 6100 | 3381 | 3192 | 3052 | 2899 | 2746 |
| G5 | 5800 | 3556 | 3357 | 3209 | 3049 | 2889 |
| G6 | 5500 | 3750 | 3540 | 3385 | 3215 | 3046 |
| G7 | 5200 | 3966 | 3744 | 3580 | 3401 | 3222 |
| G8 | 4900 | 4209 | 3974 | 3799 | 3609 | 3419 |
| G9 | 4600 | 4484 | 4233 | 4047 | 3844 | 3642 |
| G10 | 4300 | 4797 | 4528 | 4329 | 4113 | 3896 |
| G11 | 4000 | 5156 | 4868 | 4654 | 4421 | 4188 |
| G12 | 3700 | 5574 | 5263 | 5031 | 4780 | 4528 |
| G13 | 3400 | 6066 | 5727 | 5475 | 5201 | 4928 |
| G14 | 3100 | 6653 | 6281 | 6005 | 5705 | 5404 |
| G15 | 2800 | 7366 | 6954 | 6648 | 6316 | 5983 |

Note: In case of power projects where approved heat rate by Regulator is higher than above considered value, the Heat Rate approved by Regulator would be considered for the purpose of working out normative coal consumption requirement.

* In case of main steam pressure is 150 ata or above the Unit Heat Rate shall be reduced by 100 kcal/ kWh

In case of units having Motor Driven Boiler Feed Pump (MDBFP) of 500 MW and above size units including Super Critical units, the unit heat rate shall be reduced by 50kcal/kWh.

Following formula may be used for conversion of coal consumption to MTPA per 1000 MW:

MTPA per 1000 MW = Tonnes per MW per Annum/1000.

These norms will be applicable for Captive Power Plants (CPP) also.
