GOVERNMENT OF INDIA
POWER
LOK SABHA

STARRED QUESTION NO:221
ANSWERED ON:09.12.2011
COST OF POWER GENERATION
Swamygowda Shri N Cheluvaraya Swamy

Will the Minister of POWER be pleased to state:

(a) the details of factors determining production cost of electricity from various sources;

(b) the weighted average cost of generation per unit of power on all India basis for power projects during the last three years, source-wise;

(c) the present estimated per megawatt cost of power generation in the country, source-wise;

(d) whether the Government has taken steps to reduce the cost of power generation including use of appropriate technologies; and

(e) if so, the details and the outcome thereof ?

Answer

THE MINISTER OF POWER (SHRI SUSHILKUMAR SHINDE)

(a) to (e) : A Statement is laid on the Table of the House.

STATEMENT

STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (e) OF STARRED QUESTION NO. 221 TO BE ANSWERED IN THE LOK SABHA ON 09.12.2011 REGARDING COST OF POWER GENERATION.

(a) : The cost of generation of electricity from various sources is determined by capital cost of the project, cost of capital, operation & maintenance charges, depreciation, fuel cost wherever applicable, cost of working capital, taxes and duties.

(b) : The source-wise weighted average rate of sale of power from generating stations to Power Utilities, as per data available in CEA, is given below :

Source (Figures in Paise / kWh)

	2007-08	2008-09	2009-10#
Hydro	153.85	201.26	214.70
Thermal	202.80	242.49	252.98
Nuclear	227.82	231.18	223.50
All India	210.67	236.00	239.00

Latest available

(c) : Cost of generation from power plants depends on type of project such as hydro, thermal, or gas etc., location of the project (i.e. remoteness from the raw material for hydro project, distance from the fuel source etc.) type of technology (i.e. Super- Critical or Sub-critical), type and quantity of fuel (i.e. coal or gas or lignite), works involved (i.e. dam, water conductor system, under-ground or surface power house depending upon the topography and geology of the project for hydro project), construction period of the project and its life, operation & maintenance charges, cost of inventory of fuel and spares, financing cost of the project, etc.

The estimated per MW cost of thermal projects recently commissioned was of the order Rs.4 to 5.77 crore per MW. Further, the estimated capital cost of hydro power projects concurred by CEA during the year 2011 was generally in the range of Rs.6.10 crore per MW to Rs.8.02 crore per MW. The capital cost of a last few commissioned nuclear units was in the range of Rs.6.03 to 6.36 crore per MW.

(d) & (e) : For reducing the cost of electricity generation, Government has taken following steps including use of improved technology :

(i) Promoting use of more efficient super-critical technology in thermal power generation with a view to reduce the cost of fuel required per unit of generation.

(ii) Encouraging captive coal mining for thermal power projects with the object of inter alia lowering cost of fuel for coal-fired stations.

(iii) Renovation and Modernization of ageing / not well performing thermal and hydro power stations for improving operational efficiency.

(iv) Use of technical developments including greaseless turbine components, improved generator components, variable speed technologies, double-stage adjustable pump turbines, governor technology, state-of-art diagnostic and analytical methods, welding materials, high strength steel, improved F-class insulation, vacuum circuit breakers, micro-processor based numerical relays as well as site-specific developments to suit Indian conditions in hydro power stations.

(v) Tariff Policy notified on 06.01.2006 mandates procurement of power by distribution licensees competitively except in cases of expansion ofexistingprojects of where there is a State controlled/owned company as an identified developer. For Public Sector projects also, the tariff of all new generation projects is to be decided on the basis of competitive bidding after 5th January, 2011.

(vi) Improved operational norms in the tariff regulations issued by the Central Electricity Regulatory Commission (CERC) for the period 2009-14.

(vii) Promotion of higher unit size / plant capacity to reduce capital cost on account of economy of scale.

(viii) Initiative to set up Ultra Mega Power Projects (UMPPs) of 4000 MW capacity each through tariff-based International Competitive Bidding to reap benefits of economy of scale.

(ix)Revised mega power project policy issued by Ministry of Power in December, 2009 under which payment of custom duty is exempted for power generating equipments of certain specified capacity of projects and excise duty is also exempted for certain categories of projects.

Competitive tariffs have been discovered through tariff based competitive bidding for procurement of power. Improvement in operational norms specified by CERC have resulted in reduction of tariff. Introduction of super-critical technology in new thermal projects would result in saving of fuel, reduction in CO2, NOx, SOs and particulate emissions, etc.