**Renovation of power plants**

1178. SHRI A. ELAVARASAN: Will the Minister of POWER be pleased to state:

(a) whether the coal based power plants account for around 60 per cent of country's total carbon emission and NTPC has already spent lakhs of rupees to renovate and modernize its coal based plants;

(b) whether NTPC is also using ultra super critical technology and working on the Integrated Gasification Combined Cycle (IGCC); and

(c) if so, the details thereof?

THE MINISTER OF STATE IN THE MINISTRY OF POWER (SHRI BHARATSINH SOLANKI): (a) As per the data available in Central Electricity Authority, it is estimated that during the year 2008-09 about 548.3 Million Tones of Carbon di-oxide was emitted by grid connected power stations in the country, out of which 508 Million Tones of Carbon di-oxide was emitted by coal based thermal power plants connected to the Grid. NTPC Ltd. has approved a provision of around Rs.2788 Crores for Renovation & Modernization for their aging thermal power plants. Out of this amount more than Rs.1600 Crores have already been spent by NTPC. The R&M works/schemes are mostly focused on addressing the issues of technological obsolescence, compliance to statutory/environmental norms, life extension, sustain plant availability etc.

(b) and (c) While planning any new power plants in NTPC, it is ensured that techno-economically viable and efficient technology is adopted for power generation. In this regard, following initiatives have been taken by NTPC in the areas of supercritical/ultra-supercritical and IGCC technologies:

(i) NTPC is inducting coal based units having supercritical steam parameters. These have higher overall efficiencies. Studies are also on for any possible adoption of ultra-supercritical steam parameters, which will further enhance the power plant efficiency.

(ii) Integrated Gasification Combined Cycle (IGCC) technology has also been identified as technology which has the potential for higher efficiency and hence benefits of reduced carbon emissions. It is also a clean technology having little emission of other pollutants like NOx and SOx. IGCC technology, as of now, is not available commercially for typical Indian coals which are characterized with very high ash contents. However, efforts are being made in NTPC for development and induction of IGCC technology as suited to high ash Indian coal, by way of setting up a technology demonstration plant.

**Power situation**

1179. SHRI B.K. HARIPRASAD: Will the Minister of POWER be pleased to state: