

Non-Conventional / Renewable Energy and Nuclear Energy Resources -- Issues and Challenges

A National Seminar on the above topic, organized by The Institution of Engineers (India) with technical support from the WFEO Committee on Technology (WFEO-ComTech), was held during 17-18 May 2008 at Jabalpur, India.



The release of Technical Volume brought out on the occasion.
Mr R P Gupta, Chairman, WFEO-ComTech is also seen (third from right).

The Seminar focused on the challenges of energy sector in view of rapidly growing demand, depleting resources and environmental degradation. The options available for power generation are hydro power, thermal power and nuclear power. Globally, with the limited resources of coal and oil and with growing concerns of greenhouse gases generated by fossil fuel-fired thermal power stations, the hydro power and nuclear power are going to be called upon to play a greater role in medium- and long-term perspective.

The wind power is widely used in several European countries and the USA. The photovoltaic industry is also popular, particularly in Germany. The solar thermal power stations are operating in the USA and Spain, the 'Geysers' in California being the world's largest geothermal power installation. Brazil also has one of the largest renewable energy programmes in the world, involving production of ethanol fuel sugarcane which is also practiced in the USA.

In order to bridge the gap between the demand and supply of power, it has become imperative to look for new technological options through intensive R & D in order to develop the alternative sources of energy, either from the renewable sources like solar power, hydrogen technology, cold fusion or any other sources which are not known to mankind at present. A requisite thrust is essential for the development of clean technologies.

The present-generation technologies in the power sector include wind power, photovoltaic cells, fuel cells, etc. These sources may be inter-connected to the distribution systems so as to form a new type of power system, the micro-grid, which in turn can be connected to the main power grid or can be operated autonomously. The Seminar explored various technologies and their adoption methodology to bridge the gap between energy demand and supply.