



## **Energy Security Dialogue**

### **Accelerating clean coal technologies for power generation in India: What does it take?**

(July 03, 2007; New Delhi)

Coal is likely to remain the predominant energy resource for India in the foreseeable future. During 2006-07, a total of 460 MT was produced domestically and an additional 20 MT was imported from Australia/Indonesia/South Africa. Out of the total coal produced and imported, approximately 78% was used for thermal power generation. Presently coal based power generation contributes nearly 57% of the installed capacity at 70682 MW. Considering the environmental costs – local regional, and global, associated with coal based power generation, there is an urgent need to explore ways of mitigating these impacts through use of cleaner technologies and more efficient processes. These technologies include Super-critical and Ultra-supercritical steam cycle, Integrated Gasification Combined Cycle (IGCC), Oxy-fuel combustion, and Carbon Capture & Sequestration (CCS).

To discuss the key issues related to Clean Coal Technologies (CCT) in the Indian context, the second Energy Security dialogue was held on 3 July 2007 at TERI to bring together views of various stakeholders on 3 key issues:

- Key technology development needs specific for different types of coal available in the country
- Specification of benefits to future domestic and export business, and to the Indian economy of coal technology development
- Key actions required to accelerate CCTs' development, diffusion and uptake.

#### **Key takeaways**

- Prevailing CCTs like Super critical/Ultra super critical/Integrated coal gasification technology (IGCC) which are well-established and commercially demonstrated in other parts of the world, have not taken off in India so far. Clearly market economics (efficiency, fuel scarcity and costs) has not been able to push CCTs. There are uncertainties associated with operating costs, performance and reliability. CCTs have so far been demonstrated with high quality coal only and still need to be demonstrated with coal of lower calorific value and high ash context (Indian coals).

- Indigenous development of these technologies needs government support in terms of policy direction and financial assistance. Risk mitigation interventions should involve participation of all stakeholders.
- It was suggested that there is a need to set up institutions to keep track of efficiency improvements and commercial viability of technologies.
- One possible route for introducing CCTs through public policy interventions is the incorporation of provisions for the same in the National Electricity Plan that is to be prepared by the Govt. of India/ CEA as per the provisions of the Electricity Act 2003. Provisions for incentivising achievement of plant efficiency can be framed in order to promote technically and commercially proven CCTs.
- Manufacturing units should also be equipped with R& D facilities, and alliances should be institutionalised between scientific institutions and enterprises.
- Since India is slated to be a net importer of coal, the IGCC technology chosen could be an internationally commercialised technology based on non-India coal. In this case, the importance of developing Indian-coal specific IGCC technology reduces considerably.