DEVELOPMENT OF UNDERGROUND COAL GASIFICATION AND IGCC TECHNOLOGY IN INDIA

Presented by:

A.K. SINGH
Methane Emission & Degasification
Central Mining Research Institute
Dhanbad - 826001
Many dimensions of the process need to be examined

- Reaction Kinetics
- Heat Transfer
- Gas Flow
- Hydrology
- Thermally affected Geophysics
- Several Others Geological Controls
The rate of production and composition of the function is a direct function of the following:

- Pressure, flow rate and composition of the input gas, and catalyst.
- Characteristics of coal.
- Geologic conditions.
- Conditions created locally during linkage and gasification.
- Advanced knowledge on simulation of UCG-IGCC process is very much required.
UCG and Directional Drilling

• A worldwide review of directional drilling in coal has identified a small number of specialist contractors with lateral seam drilling experience, and it is recommended that these be used in any early UCG trial.
• Although inseam process wells were successfully constructed in the Spanish UCG trial, application of these newer coal-drilling techniques to UCG still has to be fully demonstrated.
• There is a knowledge gap in this area.
The country has very large deposits of deep seated coal and lignite which is not amenable to conventional mining methods of coal.

The present coal reserve 2,53,359 million tones as on 1 January 2006 (by GSI). Recoverable reserve has been estimated as 95,866 million tones, only 37.8%.

Lignite resource of the country is 37,154 million tones as on 1 April 2005 (by GSI). Recoverable reserve has been estimated as 4,260 million tones, only 11.5%.

Some preliminary laboratory work has been carried out by CMRI. Similar studies must be extended for coals from different coalfields.