



DEVELOPMENT OF UNDERGROUND COAL GASIFICATION AND IGCC TECHNOLOGY IN INDIA



Presented by:

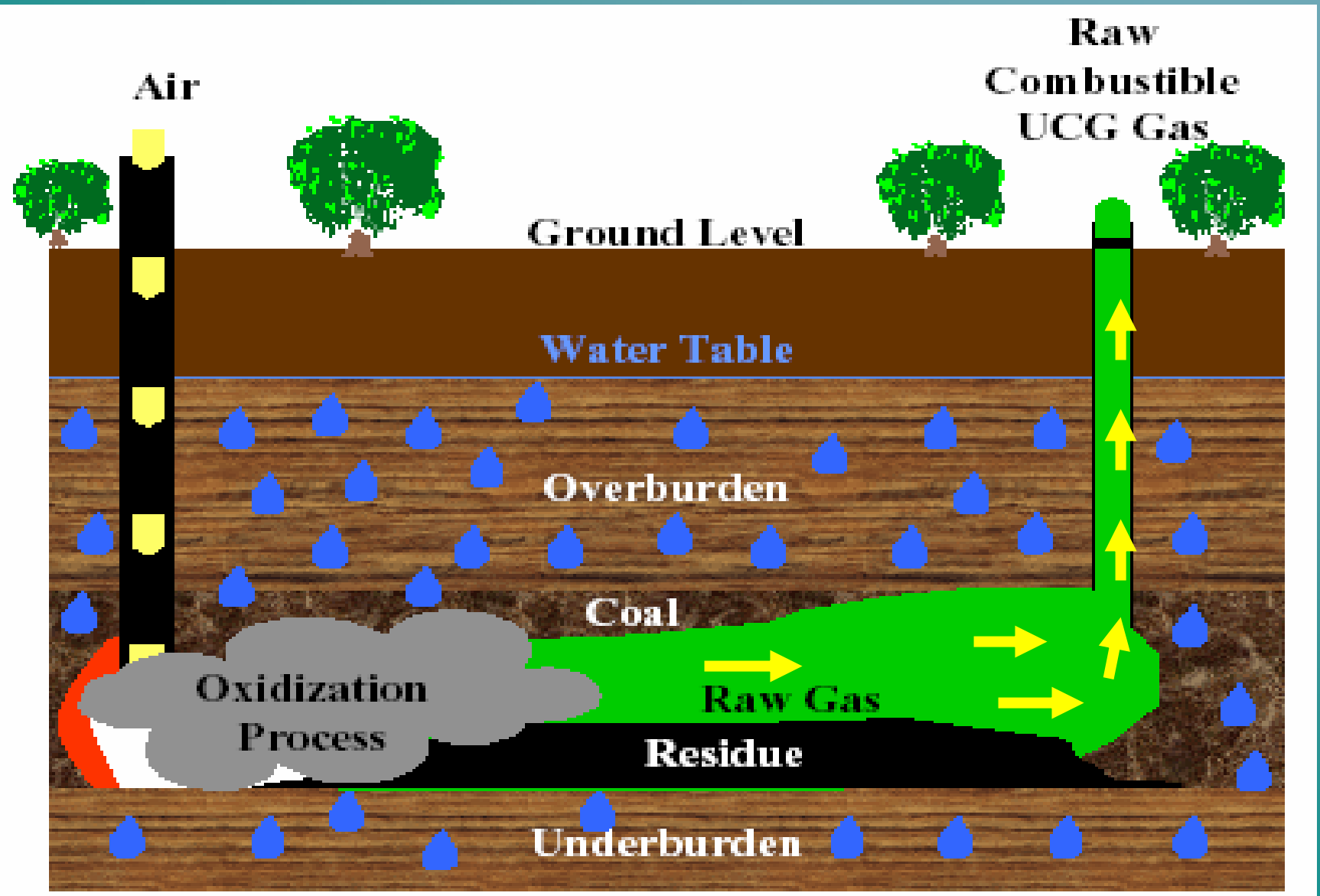
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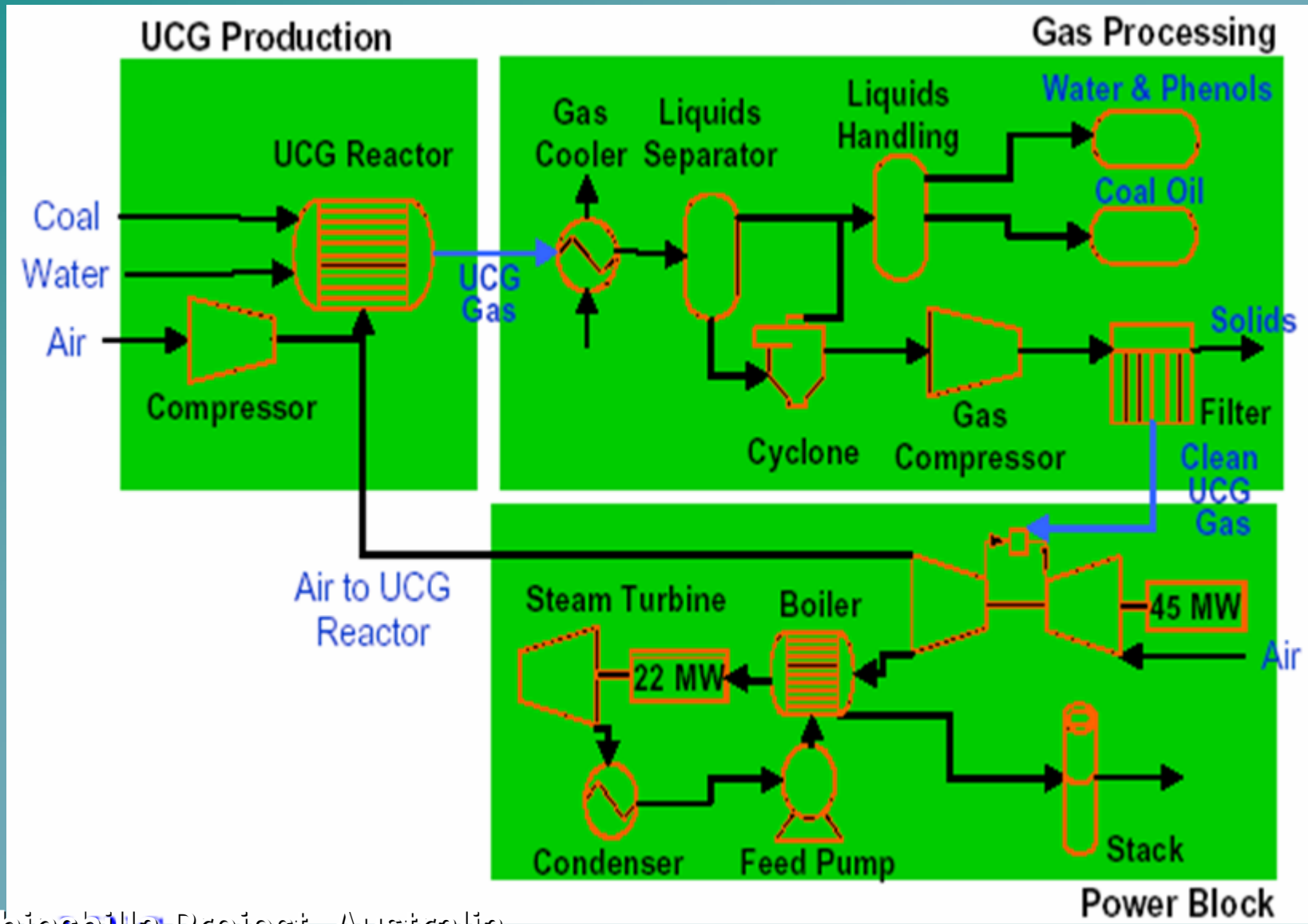
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UCG Production Process





UCG – IGCC Project Flow Diagram



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 in-seam 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.

UCG Potential In India



- ▶ 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 by CMRI. Similar studies must be extended for coals from different coalfields.