

## **Site Selection – A key to Underground Coal Gasification (UCG)**

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UCG is a very site specific technology. It cannot be used to extract all the unmineable coal that is available. The stringent conditions with rigid technical and environmental requirements, constrain all the available coal and lignite reserves from being amenable to UCG. As a result, site selection forms the most critical part of any UCG Project. It requires proper understanding and knowledge of geology, tectonics, hydrogeology etc. of the area.

UCG has an intrinsic environmental risk in the form of ground-water contamination. The spatial distribution of coal/ lignite, its thickness, number of seams, its relationship with the surrounding rock strata (tectonic disturbance, petro-physical & geo-mechanical properties) and hydrogeology of the system play an important role in determining the suitability of a site for UCG. The paper deals with the considerations that should be given to the nature of a potential UCG project site during the site selection process. These considerations will allow the environmental aspects associated with the project to be managed most effectively. They include the nature of the coal seam characteristics; the nature of the site in terms of the risks posed to groundwater; and the nature of the adjacent land use and associated planning.

The paper also covers ONGC's experience in selecting sites for UCG through various stages of exploration.