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Energy generation and coal bed methane recovery via CO₂ - N₂ sequestration and their environmental consequences

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Demand for natural gas continues to increase all over the world, but reserves of conventional natural gas are declining. The increasing price of natural gas and, in some cases, government policies have encouraged the exploration and development of gas from unconventional sources which further have lead to lead to the development of sophisticated technologies for enhancing hydrocarbon recoveries. The research and experiments conducted wholly over the world have shown that coal containing gas is not much efficient in terms of power, cost, and environment-friendly energy source. The major objective is to study the effective, feasible, efficient methodology for the extraction of methane gas from coal seams; coupled with the injection of CO₂ and N₂ into the coal seam complex structure.

It provides a method for generation of electric power and energy in which CBM gas is used as an input source whilst the combustion gas, CO₂ emissions are sequestered into coal seams for environmental protection, extending the CBM recovery and reducing CO₂ availability cost. This annexure focuses on how to improve exploitation rate of coal bed methane (CBM). To enhance the efficiency of exploitation of coal bed methane when carbon dioxide or nitrogen gasses are injected into the coal bed The injection of CO₂ and N₂ gasses in the coal bed increases the methane permeability, stability, and productivity