

## Economic Analysis of CO<sub>2</sub> Injection System to Coal Seam

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<http://prelude.geosys.t.u-tokyo.ac.jp/index-j.html>

At COP3 held in Kyoto in 1997, the reduction target of greenhouse gas was set up for each developed country. Then it is necessary to develop the technology of CO<sub>2</sub> sequestration in addition to develop the technology of new energy resources and energy saving. This study deals with geologic CO<sub>2</sub> sequestration system among others. The purpose of this study is to analyze the economics of system of ECBMR by CO<sub>2</sub> injection.

At first optimum system analysis is made. In case 1 and 2, CO<sub>2</sub> exhausted from 100MW natural gas fired power plant is separated from exhaust gas and compressed, and then it is transported by the pipeline to the coal seam, and injected into it. Produced CH<sub>4</sub> is transported to the power plant and used for the power generation. In case 3 and 4, exhausted gas is injected in to the coal seam directly, without separation of CO<sub>2</sub>. In case 5, coal is used for fuel for natural gas/coal multifueled fired power plant. In case 6, gas turbine is installed near coal seam and uses power from it for energy of whole system. As a result, it is recognized that it is possible to increase profit by direct injection of exhausted gas into coal seam and coal production and setting of gas turbine. And it is found that it is suited for CO<sub>2</sub> injection to coal seam to carry out in China and India because of low wage of worker and engineer and energy cost.

And sensitivity analysis was made for the result of economic analysis. As a result it is showed that adsorption characteristics of coal seam and price charge of CH<sub>4</sub> is the most important factor for economics in this system. And the study about the influence of carbon credit is made.