

Study on Development of CO₂ Sending Method for Geological Storage in Lake Sediments -Application to CO₂ - CH₄ Cycle-

Susumu Nishimura[1], Ikuo Katsura[1]

[1] NPO ThinkTank Kyoto Institute of Natural History

To be reduced CO₂ in air for reducing uncertainties of global warming, it must be developed CO₂ sending for geological storage. One of the carbon-cycle, CO₂ - CH₄ cycle in sediments would be discussed and planned in this report.

Around Lake Biwa, some CH₄ gas has been used for a source of energy during these hundred years. The conceptual system proposed here would close the carbon-cycle loop for fossil energy by converting CO₂ produced by bio-power plants into CH₄.

For example, it is observed that 7 layers in the lake sediments of Ko-Biwako Group have been contained CH₄ gas at Shin-asahi Town, northwestern part of Shiga Prefecture. Its thickness of sediments is about 900m. We have another example of 850m deep basement drilling near Biwako Bridge, Moriyama City. From this drilling hole, it is observed CH₄ gas in the shallow part (240m depth) and in the deeper part (750-780m depth) of the drilling hole.

We have been surveyed the thickness of sediments for the mechanical safety to introduce CO₂ by using gravity measurements.

The carbon cycle in lake sediments is not clear in precisely, then it must be discussed and surveyed how to on carbon cycle using the undisturbed core.

On the other hands, it needs CO₂ source. It has been discussed on the electric power plant using refuse derived fuel (RDF) and the burn-refuses plant. It needs no saving to establish monitoring system on this procedure.