

Development of the Oceanic Methane Hydrate as Energy Resource

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Methane hydrate may have a huge potential as the next cleaner carbon-based fuel. A few developed countries, including the US, have begun research on methane hydrate at the national level. My presentation will address what methane hydrate is and where it is located. Interesting aspects of methane hydrate as a fuel and research status of some countries also will be considered. Finally I will discuss a possible conflict over methane hydrate surveying and development--a case between Korea and Japan.

Methane hydrate is a crystalline structure that taps the high concentration of methane in the frozen water molecules (methane clathrate). It is found in the permafrost regions and under the deep-water continental shelves. As the consumption of fossil fuels continues, the supply declines. If ratified, the Kyoto Climate Change Protocol would require the U.S. to reduce its CO² emissions by as much as 7% by 2010. Therefore, a new cleaner energy source needs to be developed and many scientists think methane hydrate is one of the answers.

We do not know enough about methane hydrate to make a final decision. Though it has much potential as a substitute for natural gas and it draws attention of nations which import oil, it's development also has much potential to damage deep-water ecosystems and the earth climate system. Because some countries have already started research in methane hydrate with the aim of commercial production, and because it is mainly found in the ocean, we should develop, a precautionary, rather than a reactive, management regime for methane hydrate before it is actively developed from the ocean.