



Environmental impact studies for gas hydrate production test in the Ulleung Basin, East Sea of Korea

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To develop potential future energy resources, the Korean National Gas Hydrate Program has been carried out since 2005. The program has been supported by the Ministry of Trade, Industry and Energy (MOTIE), and carried out by the Korea Institute of Geoscience and Mineral Resources (KIGAM), the Korea Gas Corporation (KOGAS) and the Korea National Oil Corporation (KNOC) under the management of Gas Hydrate R&D Organization (GHDO). As a part of this national program, geophysical surveys, geological studies on gas hydrates and two deep drilling expeditions were performed. Gas hydrate-bearing sand layers suitable for production using current technologies were found during the Second Ulleung Basin Gas Hydrate Drilling Expedition (UBGH2) in 2010. Environmental impact studies (EIS) also have been carried out since 2012 by KIGAM in cooperation with domestic and foreign universities and research organizations to ensure safe production test that will be performed in near future. The schedule of production test is being planned. The EIS includes assessment of environmental risks, examination on domestic environmental laws related with production test, collection of basic oceanographic information, and baseline and monitoring surveys. Oceanographic information and domestic environmental laws are already collected and analyzed. Baseline survey has been performed using the in-house developed system, KIGAM Seafloor Observation System (KISOS) since 2013. It will also be performed. R/V TAMHAE II of KIGAM used for KISOS operation. As a part of this EIS, pseudo-3D Chirp survey also was carried out in 2014 to determine the development of fault near the potential testing site. Using KIGAM Seafloor Monitoring System (KIMOS), monitoring survey is planned to be performed from three month before production test to three months after production test. The geophysical survey for determining the change of gas hydrate reservoirs and production-efficiency around the production well would also be conducted before and after the production test. KIMOS will be developed as the planning that was drawn up already. A period for monitoring survey and geophysical survey type, such as AUV or EM surveys will be decided according to the budget.