Reference

Status of KORDI marine underground CO_2 storage technology development

1 Objective of the research

○ Develop technology to transport to and store captured CO_2 generated from power plant etc. in sedimentary layer

- Secure base technology to implement national 1,000,000 tons CCS demonstration project planned after 2016 by securing and transporting large-scale marine CO2 storage managed by MLTM, developing marine environment management technology etc. in accordance with the division of roles between departments in “National CCS Comprehensive implementation plan(’10.7)”.

2 Research performances to date

○ Provided method to commercialize large-scale CCS with "marine" as a medium for the first time in Korea.
- 'Process 10% of national greenhouse gas reduced with CCS technology after 2030, starting to supply 3000,000 tons a year from 2020,' Green Growth Committee, 2010

○ Analyzed potential storage of 2 structures in Ulleung Basin and checked that at least 0.25 billion tons of CO_2 can be stored

○ Developed basic design technology for marine sedimentation layer linked over 3,000,000 tons large-scale CO_2 transporting-injecting process plan

○ Researched simulation on the movement of injected CO_2 in the geological structure and marine environment management technology, etc.

3 Major research contents for 2011

○ Establish national CO_2 wastes marine underground storage mapping and select appropriate site (KNOC/jointly participate)
- Evaluate CO_2 storage capacity in sedimentary layer in Korea and planed to establish DB
- Select candidate site for large-scale CO_2 underground storage in Ulleung basin (To be completed by 2013)

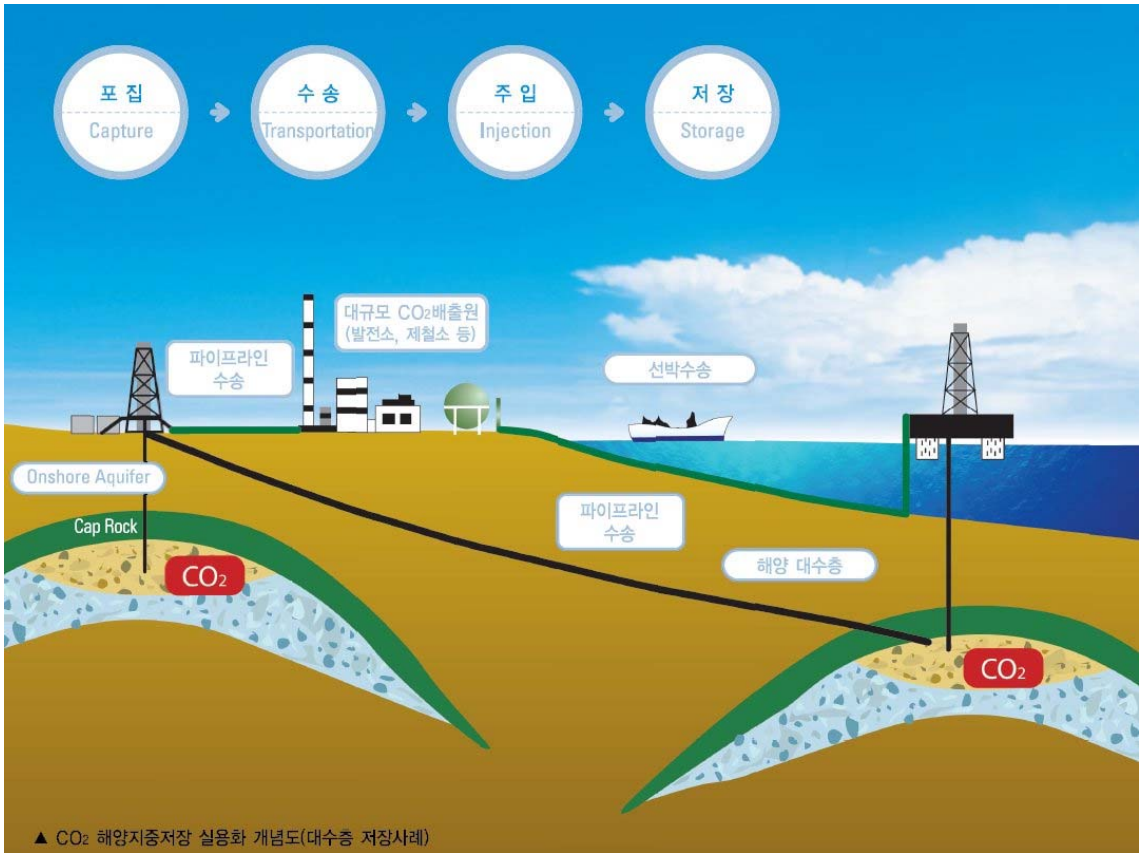
○ Establish large-scale marine CO_2 transportation system and develop

technology to prevent any process leakage

- Establish large-scale marine CO_2 transportation system, design safe transfer and injection process/ develop guideline etc.

○ Monitor marine underground CO_2 storage and manage environment

- Prepare draft to evaluate and manage degree of harm in CO_2 marine underground storage environment, suggest related management system, etc.



▲ CO_2 해양지중저장 실용화 개념도(대수층 저장사례)