

# Barriers to The Implementation of CCUS in Japan

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# Barriers to the implementation of CCUS

- ◆ Cost
- ◆ CO<sub>2</sub> storage
- ◆ CCS chain
- ◆ Regulatory
- ◆ Social acceptance
- ◆ CO<sub>2</sub> utilization

# Cost

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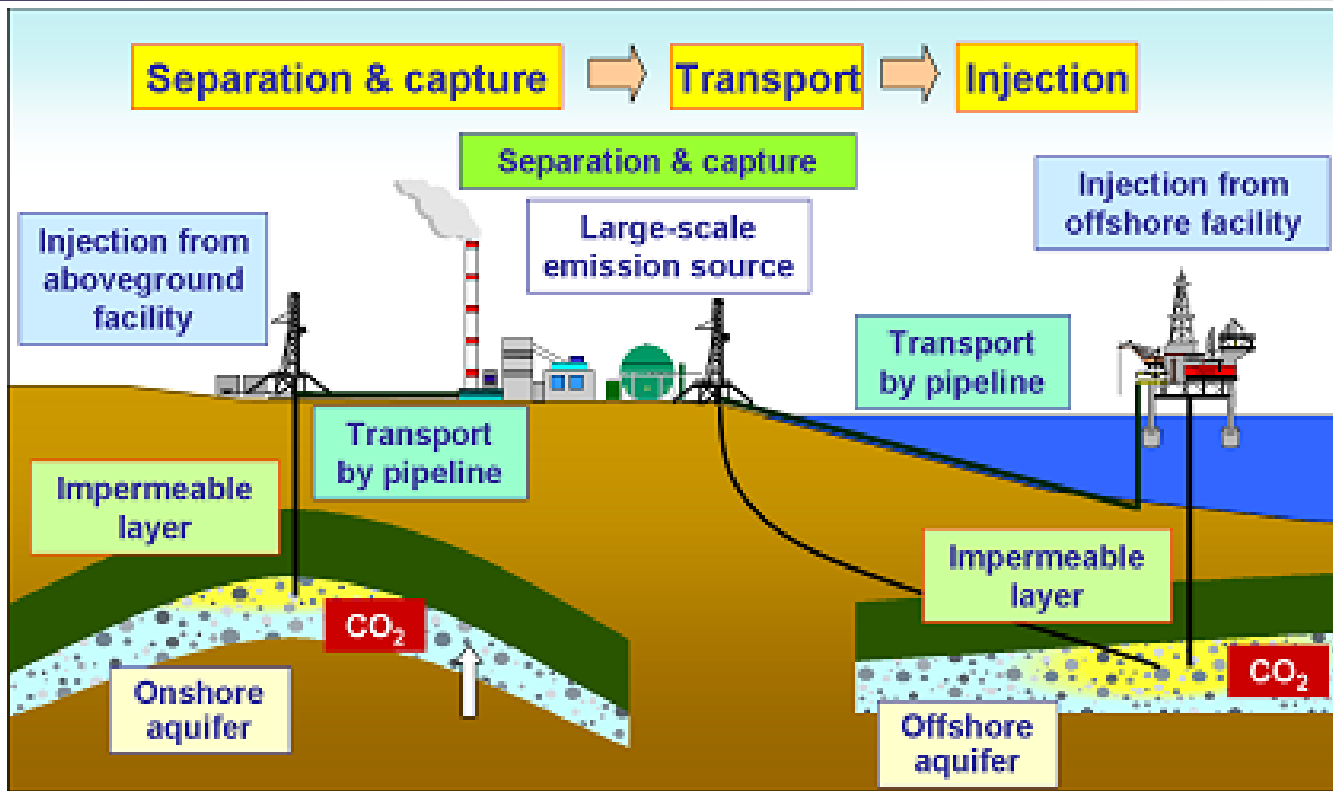
- ◆ CCS specialized in correspondence to the issue of global warming which is external diseconomies has difficulty in introduction only in a market mechanism.
- ◆ Incentives to introduce CCS
- ◆ Cost reduction of CCS

# CO<sub>2</sub> storage

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- ◆ Uncertainty of underground structure evaluation
- ◆ Precise and reliable evaluation of storage capacity
- ◆ Leakage risk evaluation
- ◆ Monitoring technologies for safe operation

# Concept of CCS



From RITE HP: <https://www.rite.or.jp/English/lab/geological/concept.png>

# CCS Chain

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- ◆ Demonstration and cost evaluation of full CCS chain
- ◆ System construction of full CCS chain overlooking emission sites, storage sites, and transportation methods of CO<sub>2</sub> in Japan.
- ◆ Sharing role and responsibility of CCS chain
- ◆ Risk coverage
- ◆ Environmental impacts

# Lows and regulations for CCS

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- ◆ Eternal responsibility of stored CO<sub>2</sub>
- ◆ Capture methods other than Amine-based method
- ◆ Lows and regulations for CCS

# Public acceptance

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- ◆ Recognition of importance of CCS as a method tackling global warming problem
- ◆ Public understanding and agreement for CCS
- ◆ Proof of the safety of CCS chain



# CCU (CO<sub>2</sub> utilization)

- ◆ Life cycle assessment
- ◆ CO<sub>2</sub> emission reduction volume by CCU
- ◆ Commercialization
- ◆ Contribution to the local community

# Conclusion

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- ◆ Still many barriers to implement CCUS in Japan
- ◆ Need proof and cost reduction of full CCS chain