

CAGS

# Studies of Environmental Impact and Risk Management of CO<sub>2</sub> Storage

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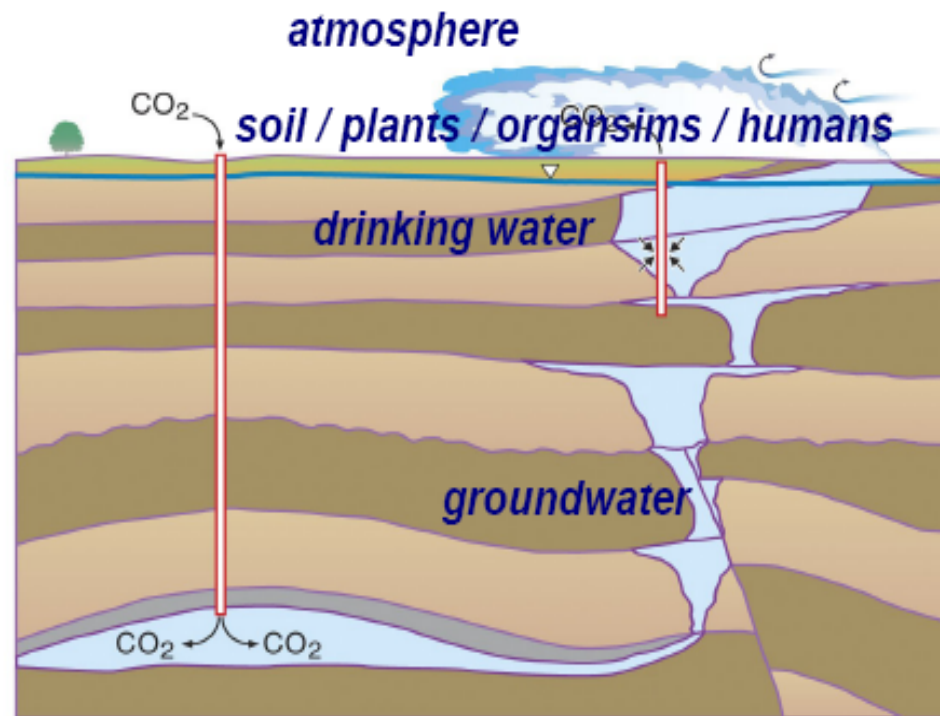
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- ◆ Project Activity
- ◆ Review of the management measures for CO<sub>2</sub> storage
- ◆ Management Suggestions for environmental impact and risk of CO<sub>2</sub> storage

# Environmental impact and risk



## Project Activities

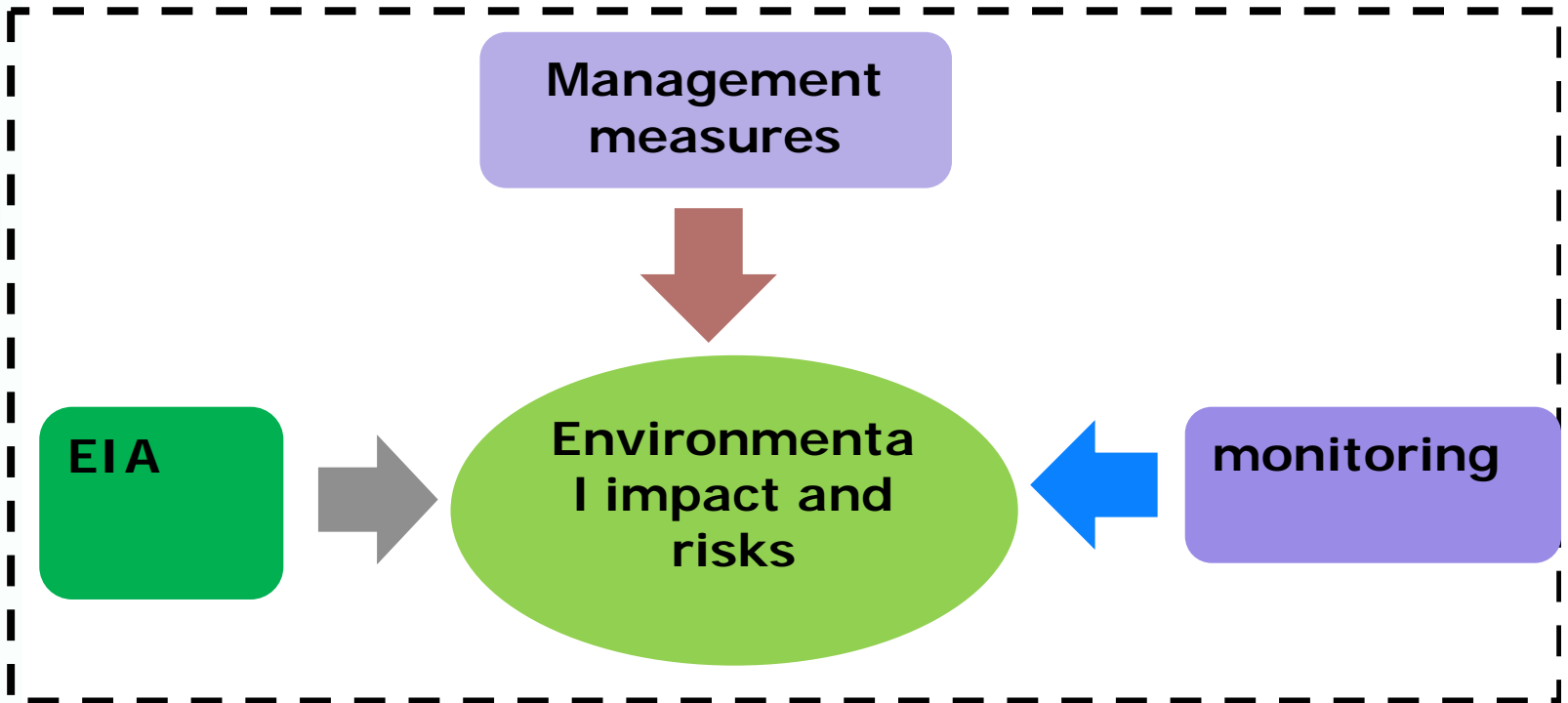
Study on potential environmental impact and risk of CO<sub>2</sub> storage

Review of the management measures for environmental impact and risks of CO<sub>2</sub> storage outside China

Study on monitoring technologies and methods of CO<sub>2</sub> geological storage

Develop environmental management framework of CO<sub>2</sub> storage for China

The project is intended to finalise the report and policy recommendations for environmental impact assessment and risk management of CO<sub>2</sub> storage.



**Suggestions for Management**

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# National regulations for CO<sub>2</sub> storage



- ◆ **Australia:** Environmental Guidelines for Carbon Dioxide Capture and Geological Storage – 2009
- ◆ **EU:** Directive 2009/31/EC of the European Parliament and of the council
- ◆ **US:** Federal Requirements Under the Underground Injection Control (UIC) Program for Carbon Dioxide (CO<sub>2</sub>) Geologic Sequestration (GS) Wells; Final Rule
- ◆ **UK:** The Storage of Carbon Dioxide (Licensing) Regulations 2010
- ◆ **Japan:** Amendment of Marine Pollution Prevention Law




CCS projects will **be subject to the principles which underpin the resource management and environmental protection regulatory framework** that has been endorsed over time by the Council of Australian Governments (COAG);

**EU:** Directive 2009/31/EC of the European Parliament and of the council



The purpose of environmentally safe geological storage of CO<sub>2</sub> is **permanent containment of CO<sub>2</sub> in such a way as to prevent and, where this is not possible, eliminate as far as possible negative effects and any risk to the environment and human health.**





**US:** Federal Requirements Under the Underground Injection Control (UIC) Program for Carbon Dioxide (CO<sub>2</sub>) Geologic Sequestration (GS) Wells; Final Rule

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This final rule establishes a new class of well, Class VI, and sets minimum technical criteria for the permitting for the purposes of **protecting underground sources of drinking water (USDWs)**.



**UK:** The Storage of Carbon Dioxide  
(Licensing) Regulations 2010

This regulation provides guidance for CO<sub>2</sub> storage permit.

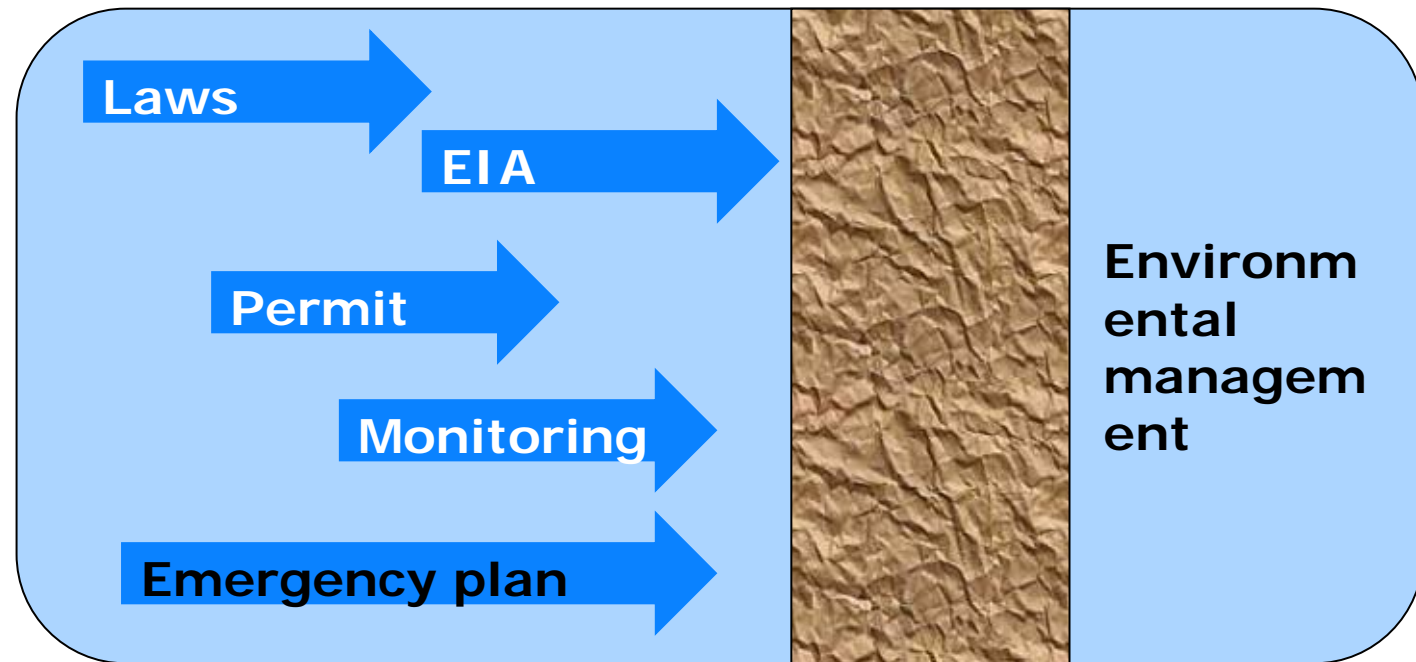
**Japan:** Amendment of Marine Pollution Prevention Law: provides guidance for CO<sub>2</sub> stream storage under the seabed.



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	<b>Australia</b>	<b>EU</b>	<b>US</b>	<b>UK</b>	<b>Japan</b>
<b>Permit</b>	✓	✓	✓	✓	✓
<b>Environmental impact</b>	✓	✓		✓	✓
<b>Monitoring</b>	✓	✓	✓	✓	✓
<b>Remedy plan</b>		✓	✓	✓	

# Environmental Management suggestions





## Laws for CO<sub>2</sub> storage

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- ◆ There is no any laws or regulations for CO<sub>2</sub> storage In China.
- ◆ Emphasizing site selection
- ◆ Environmental impact assessment
- ◆ Monitoring
- ◆ CO<sub>2</sub> stream purity
- ◆ Responsibility transfer
- ◆ Remedy plan

# CO2 storage permit regulations



- ◆ EU, US , UK and Japan take CO2 storage permit management as an effective measure to avoid leakage risk of CO2 storage.
- ◆ Site selection
- ◆ Minimum criteria
- ◆ Permit contents
- ◆ Permit grant
- ◆ Permit change, review and withdraw

## Guideline for EIA



- ◆ There is no EIA requirements for CO<sub>2</sub> storage and no guideline .
- ◆ Emphasizing environmental risk assessment
- ◆ Environmental risk matrix
- ◆ The first grade for purpose of CO<sub>2</sub> storage to mitigate climate change
- ◆ Risk management
- ◆ The minimum Acceptable risk level

# Mandatory Environmental monitoring

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- ◆ Mandatory Monitoring scheme
- ◆ Monitoring technology and method guideline
- ◆ Reporting rules
- ◆ QC for Monitoring data



# Emergency plan



- ◆ Environmental impact on ecological system and human health of leakage accidents
- ◆ The emergency organizations and their functions ;
- ◆ The range of plume emergency planning zone and ingestion emergency planning zone ;
- ◆ implementing procedures ;
- ◆ Emergency facilities, equipments, apparatus, other related materials and goods ;



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**Thanks for your  
attention!**