



# Assessment of CAGS II

The Administrative Centre for China's Agenda 21

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China Australia Geological Storage of CO<sub>2</sub>

中澳二氧化碳地质封存



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- Major achievements
  - Possible future Australia-China collaboration



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# CAGSII: Major Achievements

- For Attracting additional CCS funding

CAGS has been a catalyst for attracting additional CCS funding with another 2 projects funded the China Clean Development Mechanism Fund.

1. The studies for environmental impacts of carbon capture, transport and storage. Fund: 1200 thousand RMB.

2. Optimization of site selection of carbon storage: from the perspective of environmental protection. Fund: 900 thousand RMB.



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# CAGSII: Major Achievements

- **Capacity building**

Workshops, technical schools and visiting scholars formed a key part of the program which targeted Chinese, Australian and international researchers and professionals working on geological storage in academia, industry and as well as government officials and policy makers.

These activities have had a tangible influence on the development of participants and the network of geological storage experts. There are more than 150 experts, young researchers and college students from about 30 organizations over the world participated in CAGSII.



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# CAGSII: Major Achievements

- **Impact on CCS policy and roadmap in China**

1. A technology roadmap study on carbon capture, utilization and storage (CCUS) in China, which aims to make clear the role, development target, research and development priorities and deployment strategy of carbon capture, utilization and storage technology in China.

2. Notice on strengthening the environmental protection of pilot and demonstration projects for carbon capture, utilization and storage is released by China's Ministry for Environmental Protection (MEP) at the end of 2013. MEP took the first steps to implement a national approach to environmental regulation of CCUS projects with the release of a Notice to strengthen the environmental protection requirements for CCUS pilot and demonstration projects. This document briefly addresses the general tasks of environmental risk management in CCUS projects.



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# CAGSII: Major Achievements

- **Breakthroughs: new technologies**

1. CO<sub>2</sub> enhanced shale gas recovery technology is an emerging technology that providing an alternative for CO<sub>2</sub> storage and shale gas recovery. “Possibility and potential of CO<sub>2</sub>-enhanced shale gas recovery in the Ordos Basin” is the first basin scale technology feasibility research of ESGR in China.

2. With CAGS2 support, the research about target scale evaluation and screening methods of CO<sub>2</sub> geological storage established a relatively complete a target scale evaluation index system of CO<sub>2</sub> geological storage, and took a case study in Sichuan Basin on CO<sub>2</sub> geological storage to evaluate this index system, which fill the gap of the evaluation methodology system, and improve evaluation capacity of CO<sub>2</sub> geological storage suitability in China, and provide technical support for CO<sub>2</sub> geological storage site selection.



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# CAGSII: Major Achievements

- **Breakthroughs: R&D**

CAGS potentially helped accelerate the development and deployment of geological storage of CO<sub>2</sub> in China. The Chinese Government is keen to further develop CCUS and adopted a series of steps in policy making, R&D, capacity building and international cooperation.

The 12th Five-Year plan for Scientific and Technological Development of Carbon Capture, Utilization and Storage, lays out the priorities for the R&D and demonstration of CCUS technology on technical policy aspect. The plan was launched in July, 2012.



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# CAGSII: Major Achievements

- **Breakthroughs: new collaborative relationships/ research corporation**
  - Institute of Rock and Soil Mechanics, Chinese Academy of Sciences(IRS M) & University of Queensland: Multiscale multiphysical fracturing investigation associated with CCUS
  - Institute of Rock and Soil Mechanics, Chinese Academy of Sciences(IRS M) & University of Adelaide: Characteristics of deformation and failure of typical EGS reservoir rocks under triaxial compression between Univ. of Adelaide and IRS M



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# CAGSII: Major Achievements

- **Publications**
  - About 10 research articles have been published in the academic journals over the world



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# Possible future Australia-China collaboration



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# Possible Future Australia-China Collaboration

- **CCUS technology**
  - Site selection criteria and monitoring system for CO<sub>2</sub> geological storage
  - CCS technical readiness
  - CCS environmental impact evaluation, economic evaluation and social impact
  - CO<sub>2</sub> enhanced shale gas recovery (ESGR)



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# Possible Future Australia-China Collaboration

- Capacity building on CCUS

- For the public:

CCUS capacity building activities can be organised, i.e. CCUS week, teaching CCUS in schools or colleges, producing educational videos for media or online, to create public awareness and acceptance of CCUS.

- For policy maker:

Study tours and seminars can be organised, firstly to provide policy makers a basic knowledge of CCUS and issues related to CCUS, including environmental, regulatory and technology issues and secondly to gain firsthand experience of CCS deployment from successful and advanced CCS projects and technologies.



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# Possible Future Australia-China Collaboration

- **Capacity building on CCUS**

- For stakeholders:

Site visits and workshops can be organised to improve stakeholder's engagement with CCUS, i.e. to encourage their early adoption of CCUS technology, to discuss business models, to improve communication, and to eventually establish successful demonstration projects.

- For experts:

Workshops and exchanges can be organised for experts to analyse the outcomes of CCUS projects, to share knowledge and to improve technical knowledge of CCUS, to gain international working experience, and to develop different perspectives.



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# Possible Future Australia-China Collaboration

- Capacity building on CCUS

- For young researchers:

- CCUS training schools and site visit can be organised to invite experts to present on CCS technologies, environmental and risk assessment, monitoring technologies, and case studies summarising experience from existing CCUS projects.



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*Thank You !*



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