



CHINA AUSTRALIA
GEOLOGICAL STORAGE OF CO₂
中澳二氧化碳地质封存

China Australia Geological Storage of CO₂ Project: 10 years of achievement

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Australian Government
Geoscience Australia



About CAGS

CAGS is a bilateral project between China-MOST and Australia-DIIS

Jointly managed by:

- **Geoscience Australia,**
Department of Industry, Innovation and Science
- **The Administrative Centre for China's Agenda 21,**
Ministry of Science and Technology
- Letter on Intention (2008)
- CAGSI (2010-2012), CAGSII (2012-15), CAGSIII (2016-18)



Australian Government
Geoscience Australia



中国 21 世纪议程管理中心
The Administrative Center for China's Agenda 21

**The focus for CAGS is capacity building in China and
Australia for geological storage of CO₂**

cags

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CCUS : International Collaboration with China



Project	Partner	Duration
China-Australia Geological Storage of CO ₂ (CAGS)	RET/DIIS, GA	2008-
China-EU NZEC Cooperation	UK, EU, Norway	2007-
China-EU Carbon Capture and Storage Cooperation (COACH)	EU	2007-2009
Sino-Italy CCS Technology Cooperation Project(SICCS)	ENEL	2010-2012
China-US Clean energy Research Center	MOST, NEA, DOE	2010-2015
CSLF Capacity Building Projects	CSLF	2012-
MOST-IEA Cooperation on CCUS	IEA	2012-



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Focus of CAGSI and CAGSII

- Capacity building of Chinese researchers and central government officials at a national level.
- Scientific exchanges, mostly junior Chinese academics in Australia
- Fully Australia Government funded research projects in China; smaller, desktop or laboratory studies
- Built a large CCUS network within China



Focus of CAGSIII

- Bilateral relationship maturing
- Scientific exchanges, especially supporting Australian researchers to gain practical geological storage experience in China (5 Australian, 5 Chinese)
- Provincial level capacity building at Xinjiang (high priority region)
- Supporting larger priority research projects, with Chinese co-funding
- Support more senior Chinese researchers to share experience in Australia



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Example: CAGS Workshop and School in Xinjiang 2017

- Limited CCUS knowledge base in region
- Highly prospective for CCUS, especially for CCUS applied to industrial emissions with saline aquifer storage or EOR
- Brought Australian and international expertise to region (first bilingual conference on CCUS)
- Launch of Xinjiang CCUS Research Centre at workshop



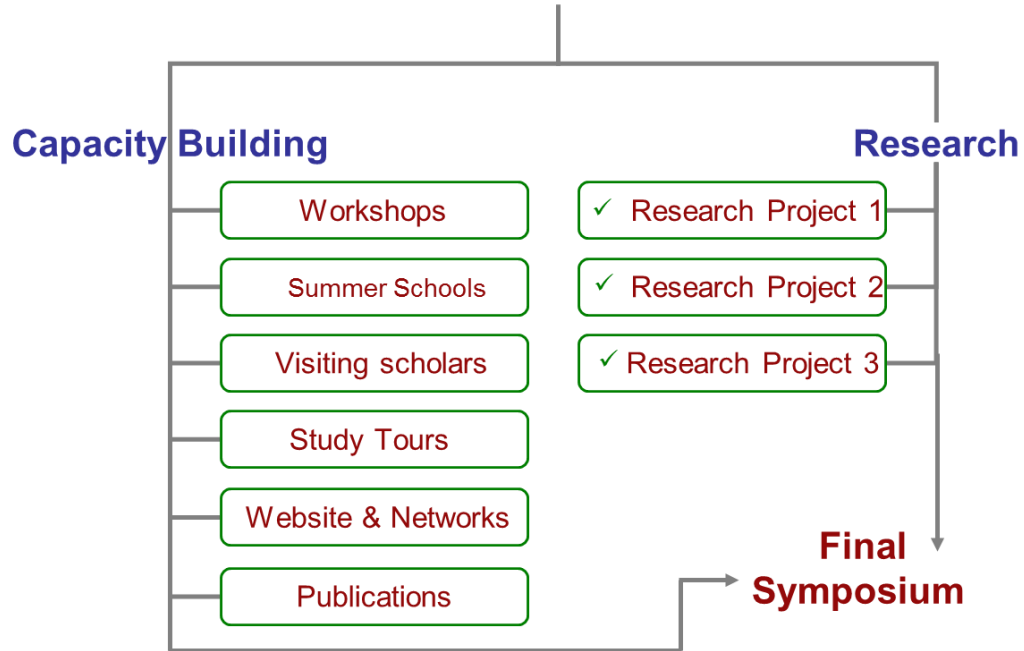
CAGSIII Research Projects

- Integrated monitoring research of CO₂-EOR demonstration project at Yanchang oilfield
- Assessment of potential CO₂ geological and storage in the Junggar Basin and early demonstration opportunities in East Junggar
- Feasibility study of the Xinjiang Guanghui CCUS Pilot Project



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CAGS Activities

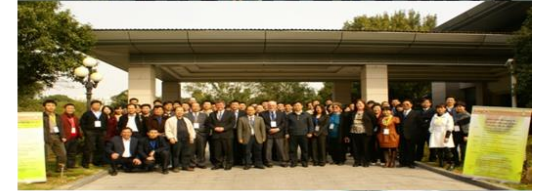


CAGS Outputs: Knowledge Sharing

- 8 Workshops
500 participants attended
- 6 CCS summer schools
350 students from China and Australia
- Scholar exchange
30 Chinese and Australian researchers
- Networking and linking: Gov, institute, enterprise, NGOs
**80 Chinese organisations and
35 Australian / Int'l organisations**
- 10 Research projects in China



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CAGS Outputs: Supporting Policy

Research results were used to inform policy in China:

- Storage capacity assessment methods and tools (EOR and aquifers)
- Storage site selection and assessment criteria
- Environmental Impact Assessment guidelines
- Risk assessment and management guidelines



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CAGS Outputs: Public Awareness Raising

Brochures

cagsinfo.net (bilingual)

Newsletters



CAGS supported symposiums (2018)



- Forums for sharing Chinese CCUS research in Australia

CAGS Impacts: Leveraging further investment

CAGS used as seed funding to attractive additional investment into CCUS :

- Funding provides ability to build up research teams and capacity to undertake more research
- Inspiring students to undertake CCUS research
- Leverage for additional Chinese Central Government funding and upgrading of scientific equipment within Chinese institutes
- Reclassification of Chinese laboratory or institute to a National Level Facility – access to a wider pool of Chinese funding mechanisms



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CAGS Impacts: Increasing collaboration

Very successful exchange program:

- Increased cultural understanding
- Adopting and implementing new techniques/technologies (e.g. monitoring, modelling, etc)
- Joint papers in higher impact English language journals
- Can help with career advancement and promotion
- Joint funding applications, joint supervision of students
- Facilitating lasting personal linkages



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CAGS Impacts: Spreading CCUS knowledge

Training schools have lasting impact:

- Training schools target postgraduate students, junior scientists and engineers
- Highly interdisciplinary (e.g. ecology, geology, engineering)
- Has resulted in students undertaking CCS-related studies
- Students gain access to international experts
- International experts can establish wider Chinese networks and better appreciate Chinese domestic concerns (e.g. air quality)



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Near future CCUS developments

- Several large pilot projects (>100,000t/yr) underway in China
- At least seven +1Mt/yr CCUS projects planned (two in Xinjiang)
- CCUS part of China's National Key R&D Program on clean and high efficiency coal technology
- CCUS gaining new momentum in Australia (Gorgon + pilot/demo projects)



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Thanks!



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**Department of Industry,
Innovation and Science**



中华人民共和国科学技术部

Ministry of Science and Technology of the People's Republic of China