



CFE-06-13: CO₂ Enhanced Coal Bed Methane

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Energy Transformed Flagship
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National Research
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Objectives for APP – ECBM project

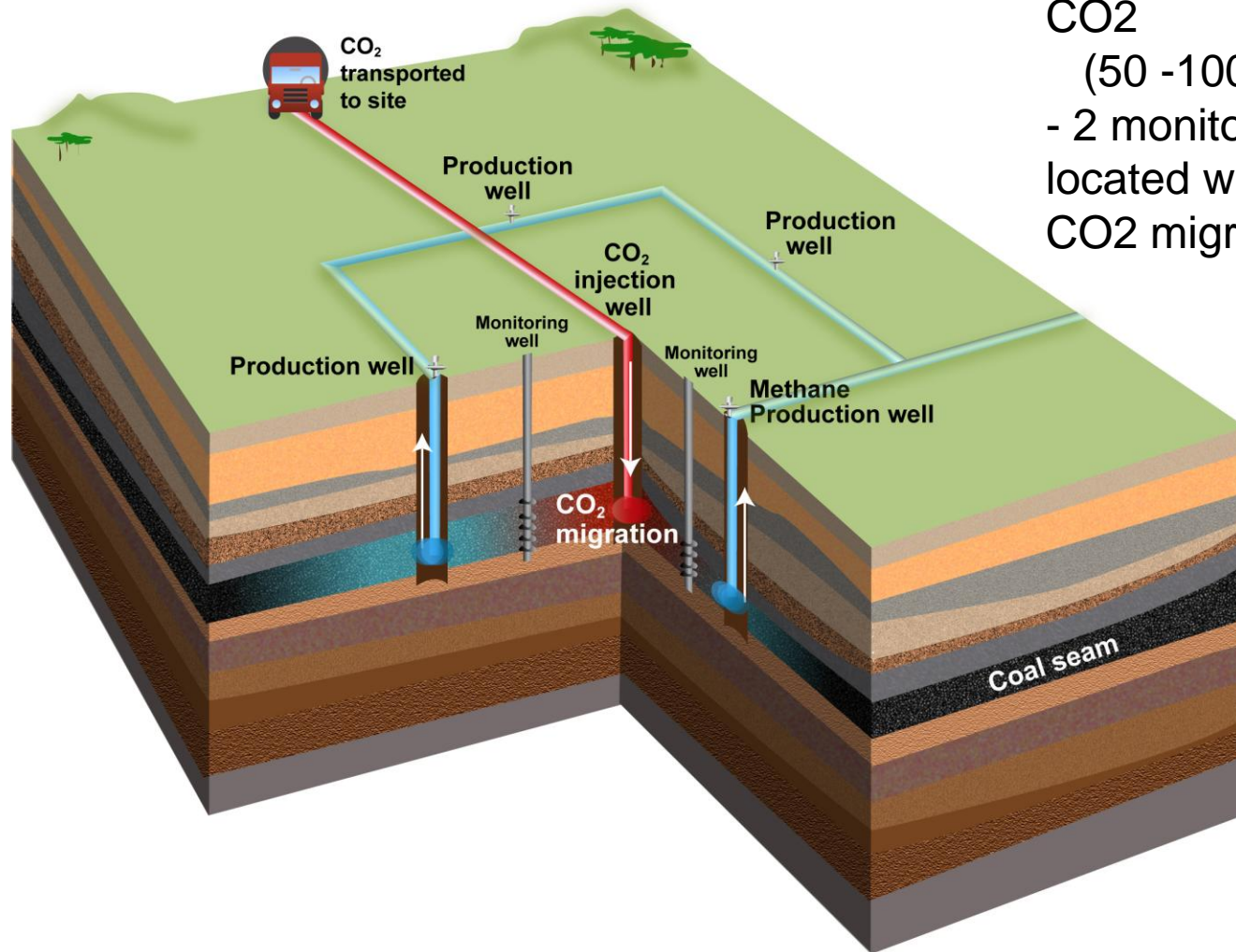
- **Overall Objective**

- To develop technologies for ECBM that can be used with lower permeability coal seams

- **Specific objectives**

- To develop injection technologies to overcome the swelling of coal and permeability loss on adsorption of CO₂
- To assess the developed technologies
- To increase the yield of produced gas
- To demonstrate the major role ECBM can play to harness seam gas resources as well as a greenhouse gas reduction technology

ECBM concept – Australia



~1000-2000 tonnes
CO₂
(50 -100 truck loads)
- 2 monitoring wells
located within zone of
CO₂ migration

ECBM Partners and Roles – Australian Trial

- DRET – APP Funding Agreement
- Origin Energy and Asia Pacific LNG (APLNG)
 - Hosting Site
 - Site Works and Drilling
- JCOAL – ECBM expertise from Yubari field trial
- CSIRO – Project Management, Modelling, Simulation and Monitoring

Key Project Components

- Project design
- Regulatory approvals
- Site characterisation
- Installation of monitoring system
- Production
- CO₂ injection
- Monitoring and verification
- Data analysis and interpretation
- Site decommissioning

Progress

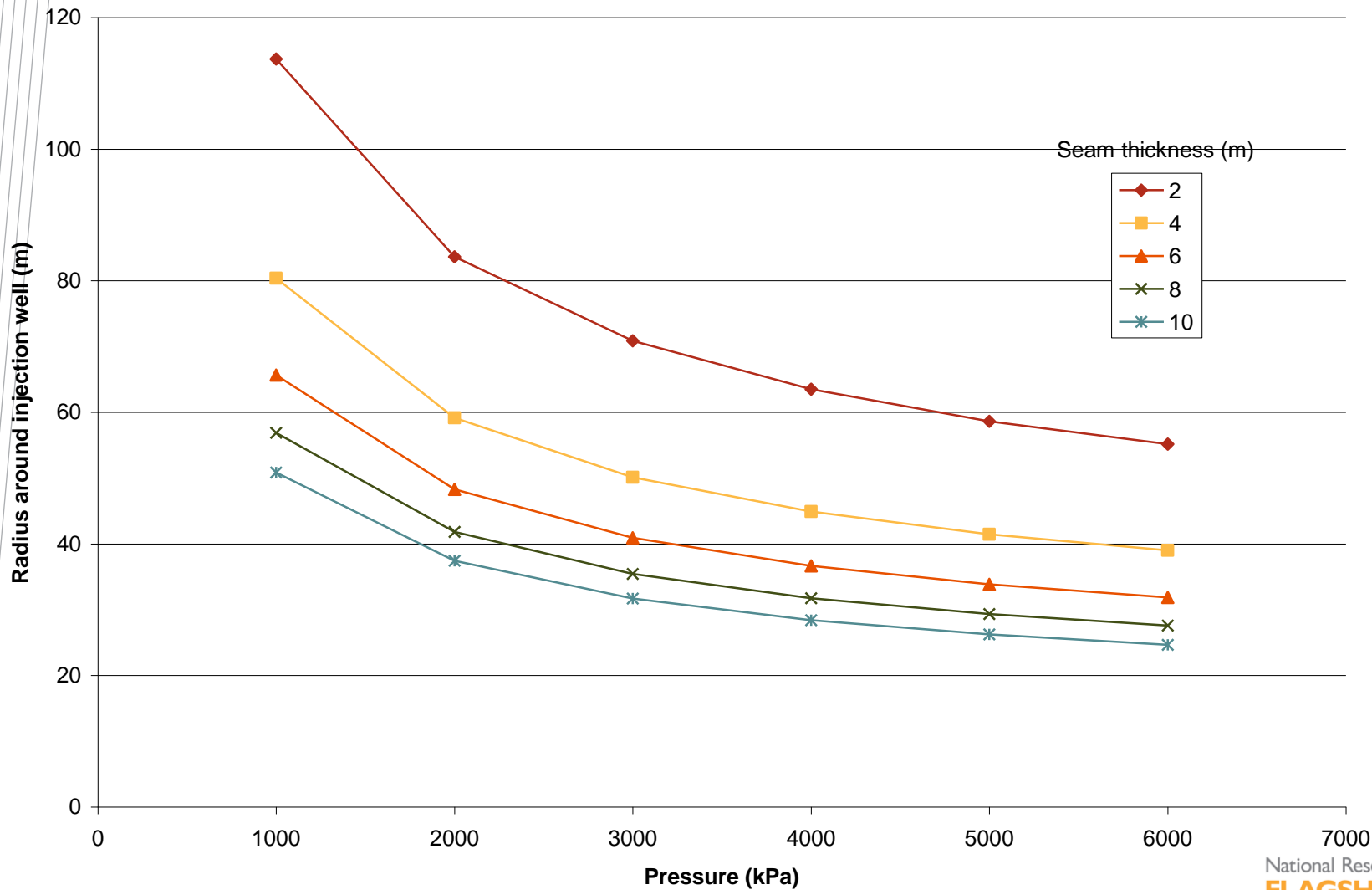
In Australia

- Site for trial chosen and development planning well advanced
- Initial modelling of injection at the site completed and results have been used to guide experimental design
- Approvals for injection being sought from local authorities
- Injection wells already drilled
- CO2 sources being assessed

In China

- Discussions continuing with China United Coal Bed Methane (CUCBM) re the China field trial

Radius around injector for 1000 tonnes CO2 wrt pressure and coal seam thickness



SUMMARY

- ECBM holds out the promise of
 - Increasing gas yields from CBM fields
 - Simultaneously storing CO₂ and reducing GHG emissions
- However, technical challenges include
 - How to access gas in deep and tight coal seams (~1mD)
 - How to overcome coal swelling with CO₂ adsorption which acts to reduce the permeability
- Field trials on ECBM to date have shown that ECBM can enhance methane production and store CO₂
- APP ECBM is an exciting international opportunity to share knowledge and expertise to develop ECBM as a low emission energy technology

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Thank you

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CFE-07-15: Coal Gasification Performance Assessments for Low Emissions IGCC Systems

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