

Development of China's Coalbed Methane Technology / Carbon Dioxide Sequestration Project

(Enhanced Coalbed Methane at South Qinshui Basin, China)



This pilot, conducted in the south Qinshui Basin in North China's Shanxi Province, is testing the viability of storing CO₂ in deep, unmineable coalbeds, and of enhancing coalbed methane recovery by CO₂ injection. 192 metric tonnes of liquid CO₂ have been injected into a single coal seam in 13 injection cycles, soaked, and produced back. The initial goals of this project have been met:

- to accurately measure data while injecting into and producing from a single well;
- to obtain estimates of reservoir properties and sorption behaviour; and
- to use calibrated simulation models to predict the behaviour of a larger scale pilot project or full field development.



This project, co-funded by the Canadian and Chinese governments, aims to successfully demonstrate that coal seams in this part of China are permeable and stable enough to absorb CO₂ and enhance methane production, leading to a clean energy source for China.

The Alberta Research Council Inc., Sproule International and the Computer Modelling Group (CMG) led the Canadian consortium that provided the core technology of the project and are working in partnership with the China United Coalbed Methane Corporation. The next step will be to design and implement a multi-well pilot phase and to evaluate the commercial prospects of this technology.

Major Tasks

- Potential pilot site selection
- Geological/engineering/environmental characterization and ranking of selected 3 pilot sites
- Design of micro-pilot field test procedures to evaluate CBM reservoir properties
- Carry out a single well micro-pilot field test at the best suitable site to show commercial potential
- Micro-pilot test evaluation and numerical model calibration and fine tuning
- Large-scale pilot design leading to commercial production
- Training and technology transfer to be conducted in Canada and China

Final Major Tasks:

- Multi-well pilot design for verification of Micro-pilot reservoir simulator predictions
- Initial commercial economic evaluation
- Training and technology transfer being conducted in Canada and China



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