
A CDM Methodology for CCS in Aquifers

Carbon Sequestration Leadership Forum

Delhi, India

April 3-5, 2006

- Title of the Methodology

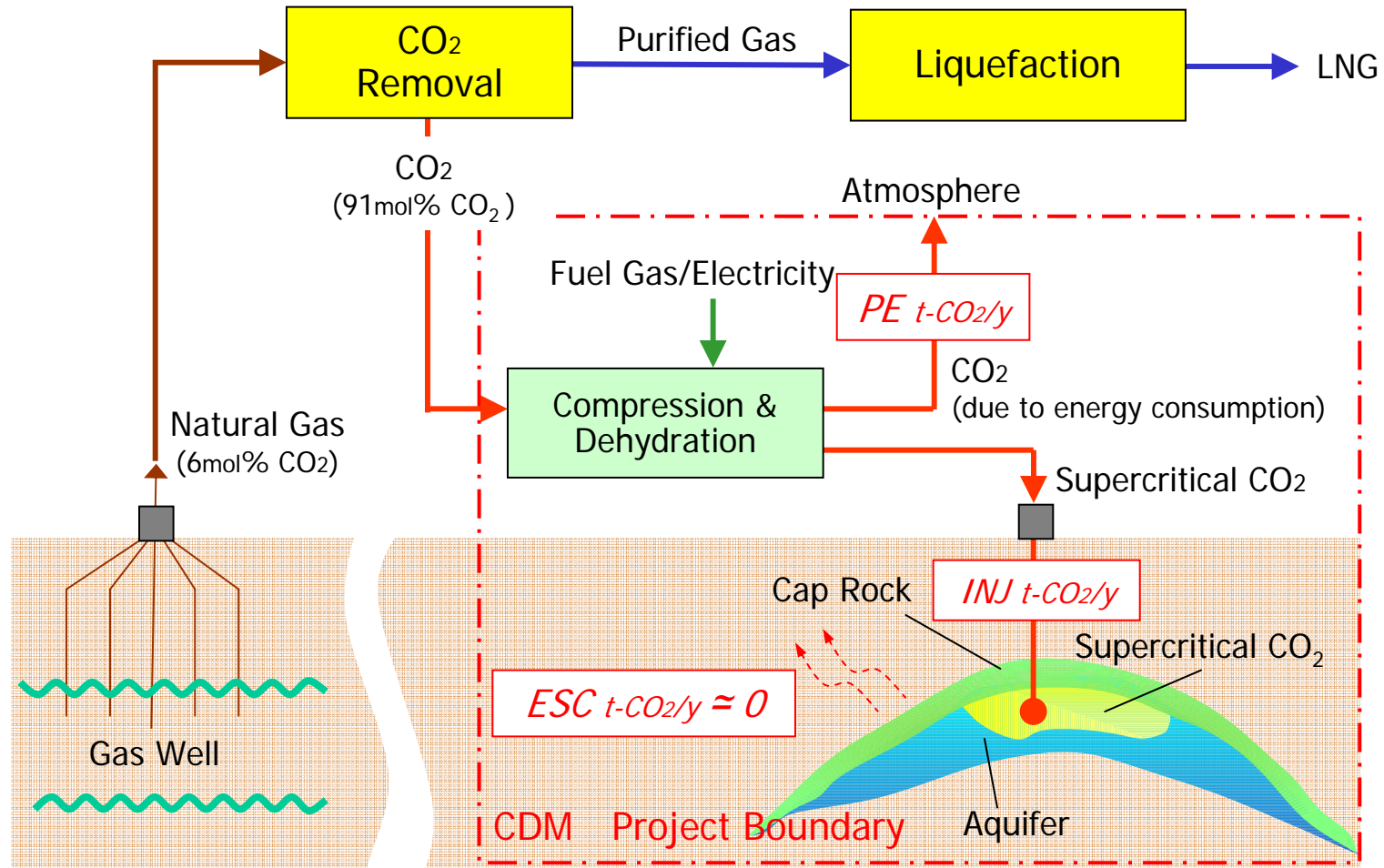
The capture of CO₂ from natural gas processing plants and liquefied natural gas (LNG) plants and its storage in underground aquifers or abandoned oil/gas reservoirs

- Status

- The New Methodology was submitted to the CDM EB by the Mitsubishi Research Institute, Inc on 10 January, 2006.
- It has been made publicly available on the UNFCCC CDM web site together with a preliminary Project Design Document (PDD).

<http://cdm.unfccc.int/methodologies/PAmethodologies/publicview.html?OpenRound=14&OpenNM=Nm0168&cases=B#Nm0168>

Outline of the CDM project



- The fraction retained in **appropriately selected and managed geological reservoirs** is
 - very likely to exceed 99% over 100 years, and
 - is likely to exceed 99% **over 1,000 years.**

“Likely” is a probability of between 66 and 90%, and
“very likely” means a range of between 90 and 99%

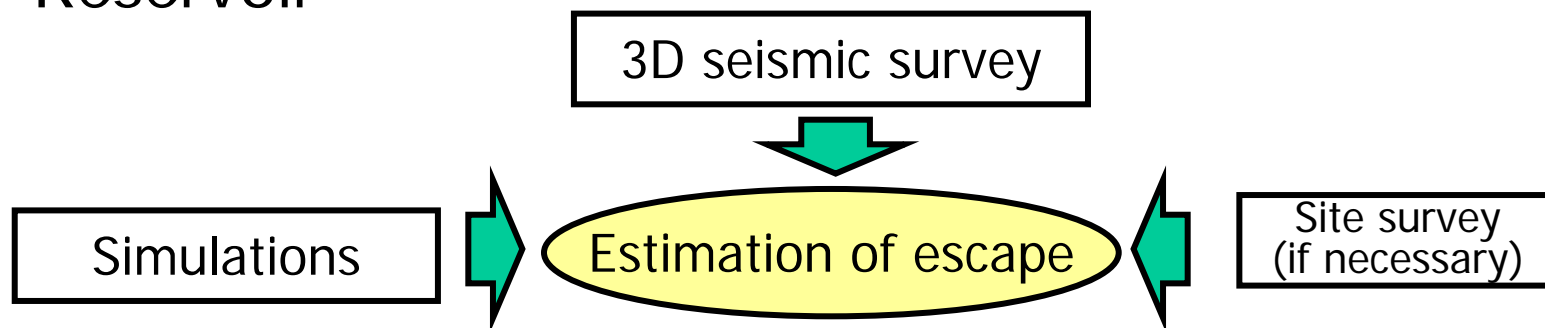
(IPCC Special Report)

Selection of appropriate reservoir

- Geological conditions vary widely from site to site
- Site-specific evaluations with data and their analytical methods selected on a site specific basis

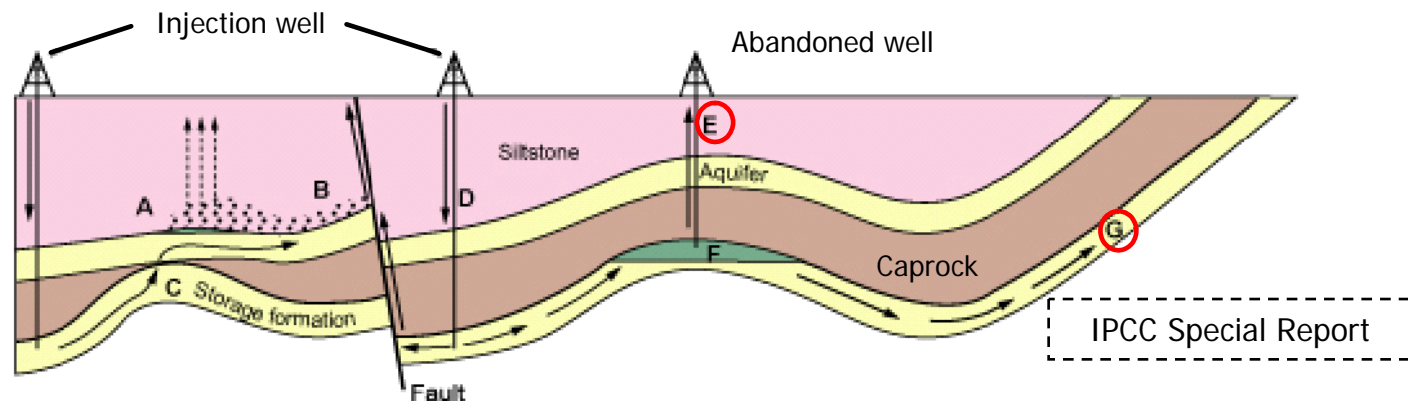
Item	Types of Data in General
Reservoir	Reservoir structure
	Physical properties of the reservoir
	Lateral/vertical stratigraphical and hydraulic continuity of the reservoir
	Pressure and flow regimes of formation waters
	Chemical reactions with CO ₂
Cap rock	The extent, nature and sealing capacity of the cap rock
	Chemical reactions with CO ₂
Geological stability	Documentation and maps of fractures and faults
	Seismological data, geomorphological data and tectonic investigations to indicate neotectonic activity.
	Historical geology
Others	Sealing condition of existing or abandoned wells

- Downhole monitoring to obtain the data for simulations
- 3D seismic surveys every 7 years (to end of the crediting period):
 - To confirm that the injected CO₂ behaves as expected
 - To help determine the volume of escape if it occurs
- Estimation of the amount of escape from the Reservoir



■ Potential escape routes:

- Dissolution (G) ➡ Simulations
- Abandoned wells (E) ➡ Simulations
- Unpredicted escape routes ➡ 3D seismic & site survey



■ Project boundary:

- Escape from the project boundary is in the project emission
- Region where behavior of CO₂ can be reasonably estimated as well as geological structure of reservoir

Accounting of the escape

- Estimated escape during the crediting period is canceled retrospectively at the end of the period.
- Estimated escape for the future is counted in the present project emissions considering discount factors,

