

# Field Demonstration Breakout Session Notes – J. C. Pashin

## Regulatory issues

CO<sub>2</sub> Sequestration = Goal of all projects

ECBM = Existing regulatory pathway in US, Europe; no regulations in Japan

## Operational issues

Downspacing of wells through drilling of new injectors

- Reduce amount of CO<sub>2</sub> needed to obtain results

- Reduce time required to obtain results

Injection rates and pressures currently unknown

- Low pressures required in mature CBM fields (<250 psi in some cases)

- High pressures exceeding hydrostatic required in virgin areas

Duration of projects variable

- Dictated by funding

- Optimal durations unknown

Definition of unmineable coal uncertain, varies by region/basin

Subsurface/subsurface monitoring designs

- Should be tailored to each project

- Best management practices indeterminate

Cost of new injection wells versus conversion of existing wells uncertain

Characterization of geological integrity

- Subseismic deformation and fracturing sources of uncertainty

- Reservoir stress conditions may be important

Swelling/permeability issues important but difficult to gauge

## Research and other activities

Characterize coal before and after injection

- Sidewall cores?

Continuous monitoring at injector wells, monitor wells, and producer wells

- Gas composition

- Water chemistry

- Pressure

Gas tracers

- Noble gases may act differently than CO<sub>2</sub>

- Isotopic CO<sub>2</sub> tracers may thus be best – rely on  $\delta^{13}\text{C}$  values.