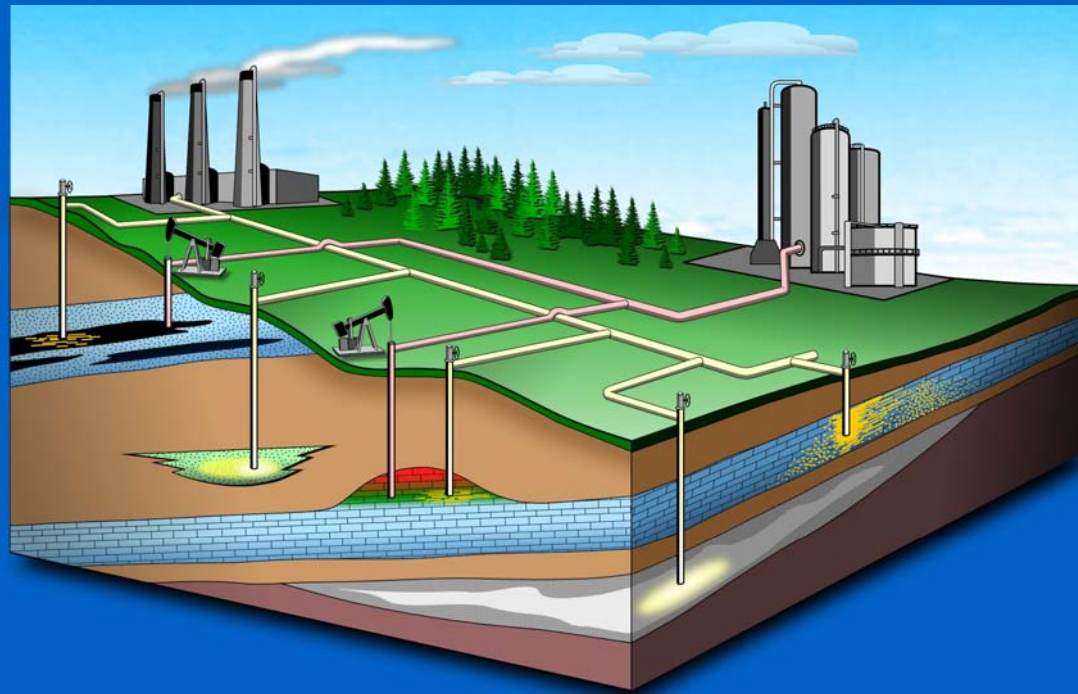


The Joint Canada – U.S. Monitoring Project of the Zama Acid Gas Enhanced Oil Recovery Pilot Project in Northern Alberta

Dr. Stefan Bachu, Canada



Project Characteristics

- Industrial operator: Apache Canada Ltd.
- Site: Zama oil field in northern Alberta, Canada
- Original solution gas: 6% CO₂ & 5% H₂S
- Injected stream: 70% CO₂ & 30% H₂S from a nearby gas plant
- Injection rate: ~1.5 MMcf/day (~100 tonnes/day)
- Enhanced oil recovery, produced acid gas is recirculated

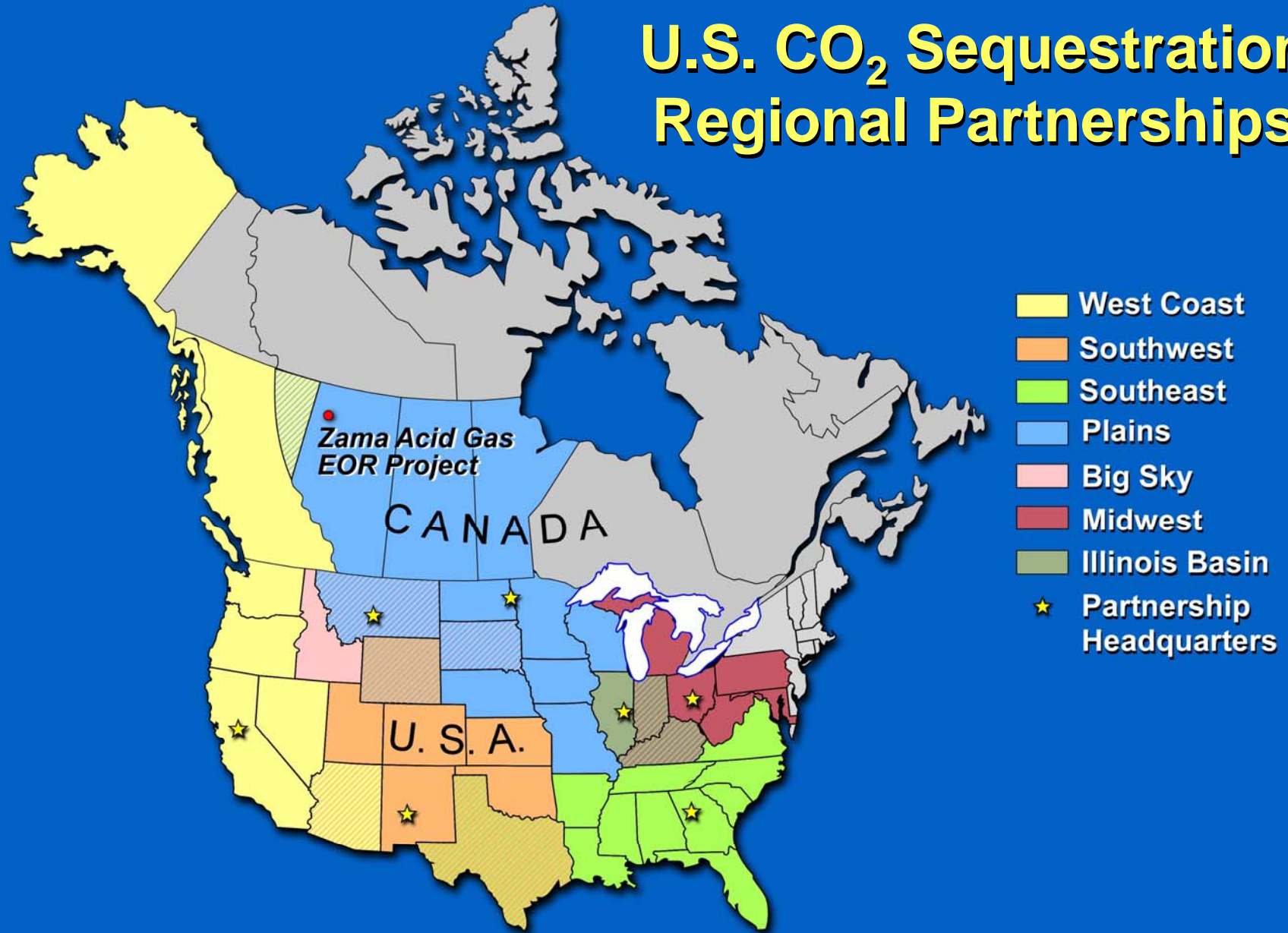
Project Characteristics

- Injection starting date: February 2005
- Pilot life: 10-15 years
- Expansion to other up to 400 pinnacle reefs
- Injection unit: Devonian carbonate reefs
- Depth: 1450 m
- Vertical displacement: acid gas injected at the top, oil produced at the bottom

Characterization and Monitoring Project

- Joint Canada – U.S. through the Plains CO₂ Reduction (PCOR) Partnership
- Participants: NRCan, Alberta Energy and Utilities Board, Alberta Environment, U.S. DOE, Energy and Environment Research Center (North Dakota)....
- Starting date: October 1, 2005
- Duration: 4 years
- Objective: prove monitoring technology in a vertical displacement process, as opposed to the standard horizontal CO₂-EOR process

U.S. CO₂ Sequestration Regional Partnerships



Location of Current CO₂ EOR Operations in Canada

