Alberta’s Progress on Accelerating CCS Development

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May 27, 2014
Generalized Areas of Hydrocarbon Resources

- Oil
- Coal
- Gas
- Oil Sands
- Coal Bed Methane Potential
- Mountain Coal Mine
- Plains Coal Mine
- Municipality
- National Park
- Lakes & Rivers
2008 Climate Change Strategy

Conservation & Energy Efficiency 24Mt
Carbon Capture & Storage 139Mt
Greening Energy Production 37Mt
Total Reductions 200Mt

200Mt reduction or 50% below projected business as usual and 14% below 2005 levels

Source: Alberta 2008 Climate Change Strategy
Objectives of Alberta’s CCS Program

• Demonstrate integration of CCS technologies at a large scale
• Build public confidence in technologies
• Contribute to global effort to close the cost gap – “learning by doing”
• Reduce Alberta’s carbon emissions
• Develop a world class regulatory framework for CCS
Alberta’s CCS Projects

- **Alberta Carbon Trunk Line**
  - Nov 2012 – North West Sturgeon Refinery announced formal approval of Phase 1
  - Construction for pipeline and refinery ongoing

- **Quest Project**
  - Sept 2012 – Project partners approved the final investment decision
  - Injection late 2015

- **2.76 Mt annual reduction**
Alberta’s CCS Funding Program

• 40/20/40 model
• All payments backed by financial security until commercial operation
• Milestones certified by third parties
CCS Legislation in Alberta

- CCS Statutes Amendment Act, 2010
  - Pore space ownership
  - Tenure agreements
  - Long-term liability
  - Post Closure Stewardship Fund

- Carbon Sequestration Tenure Regulation
  - Evaluation permits
  - Carbon sequestration leases
  - MMV and closure plans
CCS Regulatory Framework Assessment

• 18-month review of our existing framework

• Assessed regulatory gaps:
  • Applications, Approvals and Regulatory Framework
  • Risk Assessment, Monitoring, and Technical Requirements
  • Public Consultation and Notification, Surface Access and Public Safety
  • Site Closure and Long Term Liability

• 71 recommendations to Alberta Government in 2013
RFA Recommendations – Site Selection

• Adopt general site selection criteria
  – Volume capacity
  – Sufficient injectivity
  – Suitable containment
RFA Recommendations – MMV and Closure Plans

• Based on project-specific risk assessment

• Use of best available technologies to monitor atmosphere, surface, ground and surface water, and subsurface
  • Shallow groundwater monitoring plans

• Be submitted in tandem with other regulatory approvals
Site Closure

- **Performance criteria:**
  - Conformance to regulatory requirements
  - Containment
  - Predictable CO$_2$ behaviour
  - Decreasing risk profile
  - Decommissioning is complete
  - Surface reclamation adequately complete

- **Minimum** 10 years
Post Closure Stewardship Fund

• Project-specific

• Rate components:
  • Long-term monitoring and maintenance
  • Unforeseen events - climate liability
  • Administration

• Pooled funds

• Methodology development underway
Path Forward

• Public release of final report
• Implementation of recommendations
  • PCSF rate
  • Improve inventory of pore space
    • Northern Alberta
  • Regulatory amendments?
• Knowledge sharing
Current and Future Focus

- Commercial operations
- ISO Standard (TC 265)
- Knowledge sharing
- International engagement

Please contact us!
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Thank You

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