International Energy Forum – Global CCS Institute
Symposium on Carbon Capture and Storage

Hosted by the Ministry of Energy and Mines, Algeria.
31 May – 01 June 2010, Hotel El Aurassi, Algiers, Algeria

Carbon Capture and Storage
Current Perspectives

John Panek
Deputy Director
CSLF Secretariat
We Have a Global Problem

- An international effort is needed
- Solutions require unprecedented level of technical, political and scientific cooperation
Major Operating Projects

- Three large-scale CO2 storage projects (Sleipner, Weyburn, In Salah) — injecting 1–3 million tons annually — have operated for several years.
Key Issues

• Capture
• Compression
• Transport
• Storage
• Monitoring
• Legal and Regulatory
• Public Acceptance
CCS Framework

A legal and regulatory framework specifically for CCS is under development in some countries

• Effective regulatory development process in individual countries needed for successful CCS implementation
Mission
An international initiative focused on improved cost-effective technologies for the separation and capture of carbon dioxide for its transport and long-term safe storage.

Purpose
Make technologies broadly available internationally;
Identify and address wider issues

24 members
CSLF Policy Group Governs Overall Framework and Policies of CSLF

- Financing Carbon Capture and Storage (CCS) Task Force (France chair)
- Communications Task Force (United States chair)
- Capacity Building Task Force (Saudi Arabia chair)
Policy Group

- Capacity Building Task Force
  - Six Capacity Building Workshops
  - Expanded global CCS Capacity Building Initiative
- Communications Task Force
- Financing CCS Task Force
CSLF Technical Group Reviews Progress of Collaborative Projects and Identifies Promising Directions for Research

- Projects Interaction and Review Team (Australia chair)
- Risk Assessment Task Force (United States chair)
- CCS in Academic Community Task Force (Brazil chair)
Technical Group

• Projects Interaction and Review Team (PIRT)
• Risk Assessment Task Force
  – Working Group on Safety and Integrity
• Formation of New Task Force for Assessing Progress on Closing the Gaps
  – Capture Technologies
  – Transport and Infrastructure
  – Storage
  – Integration
We affirm that the development and deployment of CCS requires the active involvement of stakeholders, including business and civil society.
268 CSLF Stakeholders

- CO₂ Storage: 84%
- Energy Policy: 71%
- CO₂ Capture: 76%
- Environmental Policy: 69%
- Legal/Regulatory Issues: 68%
- Economics: 58%
- CO₂ Transport: 57%
- Capacity Building: 54%
- Financing: 54%
CSLF Mission

“Facilitate the development and deployment of CCS technologies via collaborative efforts that address key technical, economic and environmental obstacles”
London Ministerial Meeting

Key areas of work to be taken forward by the CSLF Policy and Technical Groups

- Development of business models for commercial CCS
- Knowledge sharing principles
- Implementation of a capacity building program for developing country members
Major Ongoing CSLF Activities

- Recommendation to G8: CO$_2$ capture and storage with at least 20 integrated industrial-scale projects;
- Take concerted international action to accelerate the development and deployment of CCS;
- Address the financial gap and risks facing early CCS projects;
- Establish legal and regulatory frameworks for CCS; and
- Raise public education and awareness of CCS.
Major Ongoing CSLF Activities

• Expanded global CCS capacity building initiative
• Develop Technical Group action plan
• CSLF Incentives Registry
• Coordination with other international organizations
  – Asian Development Bank
  – The Global Carbon Capture and Storage Institute
  – International Energy Agency
  – World Bank
Recent Events

• 01-03 February – CSLF PIRT Working Session Meeting in Canberra, Australia
• 05 February – CSLF PIRT Visit to the CO2CRC Otway Project
• 11 March – CSLF “CCS Ready” Definition Meeting in Ottawa, Canada
• 15-16 March – CSLF Technical Group Meeting in Pau, France
• 17 March – CSLF Technical Group Visit to the Lacq Integrated CCS Project
• 06 April – CSLF Financing CCS Task Force Financing Roundtable in Washington, D.C., United States
• 15-16 April – CSLF Secretariat Participation in a Peer Review Workshop in Genoa, Italy
Carbon Sequestration leadership Forum

www.cslforum.org

CSLF Projects
Interaction Review Team (PIRT) Working Session visit to the C02CRC Otway Project

Canberra, Australia
05 February 2010
CSLF Projects Interaction Review Team (PIRT)

Working Session at the C02CRC Otway Project Canberra, Australia

05 February 2010
CSLF Technical Group at the
Lacq Integrated CCS Project ■ 17 March 2010
Carbon Sequestration Leadership Forum
www.cslforum.org

http://www.cslforum.org

The Carbon Sequestration Leadership Forum is an international initiative to develop affordable technologies to separate and securely store carbon dioxide produced by energy facilities, and reduce its potential impacts on global climate change.

A Global Response to the Challenge of Climate Change

...and in the News

May 5, 2010 (United States)
The U.S. Interagency Task Force on Carbon Capture and Storage will host a public meeting on May 6. The meeting will give the public the opportunity to provide ideas for moving forward with carbon capture and storage projects. More

May 4, 2010 (United Kingdom)
Detailed work on six continents has convinced hundreds of impartial geoscientists that massive capacity for CO2 storage exists. The UK is especially fortunate as rocks similar to those which host our oil are anticipated to store 100 years of CO2 from all north-west Europe’s power plants. More
Key to Success For CCS Deployment

The level of success achieved in finding a solution will likely correspond to how well the international community cooperates on a technical, scientific, and political basis.
Thank You
Carbon Capture and Storage
Current Perspectives

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Carbon Sequestration Leadership Forum

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Back Up Slides
Targets Propel Urgency

Example

- G-8: “20 in 2020” and reduce emissions 80 percent from 1990 levels by 2050
CSLF Snapshot

• Formed in 2003; Ministerial-level initiative
• 24 members, including European Commission; nations in every stage of economic development
• 268 Stakeholders
• Member countries represent approximately 75 percent of world energy consumption and CO$_2$ emissions
• Focused on development of improved, cost-effective technologies for separating and capturing, transporting, and long-term CO$_2$ storage
CSLF Initiatives

• Forum members committing billions of dollars to CCS technology and demonstration projects.
• Formally recognized 30 demonstrations around the world.
Potential Global Storage Capacity
• Sequestration in coal seams
• Large-Scale Commercial Deployment of CCS
• CO₂ Storage in Geological Media
• MMV
• Capture Technologies and Costs
2nd Capacity Building Workshop

Porto Alegre, Brazil
October 18–19, 2007

- Legal and Regulatory Aspects of CCS
- CCS Safety and Analogues
- Sustainable Oil and Gas Production
- CO2 Storage in Saline Reservoirs
- CO2 Well Integrity and Wellbore Monitoring
- Understanding Risks
- Source-Sink Matching
3rd Capacity Building Workshop

- Storage of CO₂ in oil and gas reservoirs
- Technology Roadmaps
- Legal, regulatory and risk issues
- The needs of emerging economy countries
4th Capacity Building Workshop

• Identification and quantification of capacity of CO₂ storage sites
• Enhanced oil recovery using CO₂
• PEMEX experience in CO₂ injection
• Development of a Framework for a Proposed CCS Action Road Map in Mexico
• Scenarios for electrical power generation and CO₂ emissions in Mexico for year 2050
• Technologies for CO₂ emissions reduction
5th Capacity Building Workshop

Salvador, Brazil
Sept. 8–19, 2008

- Why CCS?
- Why CCS in Brazil?
- Carbon Capture
- Legal Frameworks to Enable CCS in Offshore Waters
- An Quick Overview of CCS Projects Around the World
- Stakeholder Integration and Involvement
- Measurement, Monitoring and Verification (MMV) of CCS Projects
- Risk Analysis — Geologic and Policy Issues
Financing the First CCS projects
Getting Large-Scale Geological Sequestration Projects Started: What Does it Take?
CCS Legal & Regulatory Developments: A Global Round-up
The Role of CCS in the EU
International Marine Regulation of CO₂ Geological Storage
The EU Enabling Legal Framework for Carbon Capture and Geological Storage
Informed Public Opinion on CCS
Designing and Implementing Regulatory Frameworks
TRANSPORT

Pipelines for the transport of CO$_2$

• Most existing CO$_2$-dedicated pipelines (about 4,000 miles) located in western U.S.

• Pipeline-supplied CO$_2$ for EOR used since the 1970s