

# **IEA CSLF Workshop on Near Term Opportunities for Carbon Capture and Storage**

## **Report to the Final Plenary Session**

### **Commercial and Financial Issues**

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**Commercial/Financial Issues**

## Summary of Issues

- Where is the value from CCS?
- What is an appropriate government role?
- How can viable markets related to CCS be created?
- How can commercial risks be managed?
- How can cost be reduced along the value chain?
- How can we build the necessary commercial expertise?

# Considerations Related to Issues

- Value Creation
  - Deciding who pays, what, when and why
  - How do we create and link together a viable value chain?
  - How do we enable viable commercial arrangements?
- Government Role
  - Providing a framework for CCS to provide business value
  - Creating an enabling legal/regulatory framework
  - CCS as an economic development tool
  - Addressing the issues globally
- Market Creation
  - How do we create a market framework for CO<sub>2</sub> reduction?

## Considerations Related to Issues (Cont.)

- Risk Mitigation
  - Long-term storage liability,
  - Legal/regulatory uncertainty
  - Technology immaturity
  - Uncertain market structure
- Cost Reduction
  - Making CCS cost competitive for producing outputs such as electricity
- Capacity Building
  - Parties needed to implement CCS do not have the expertise.

# Cross-Cutting Issues

CROSS-CUTTING ISSUES						
Breakout: Commercial-Financial Issues						
Issue	Commerical - Financial	Technical	Legal - Regulatory	Public Education - Outreach	International Mechanisms	
<u>Government Role</u>						
Long term regulatory framework (Government)			X			
Short term government incentives			X	X		
Closing the Gap in Government Funding		X	X			
Why is government funding needed?			X	X		
Incentives vs Penalties (Carrots or sticks)			X		X	
<u>Market Creation</u>						
Global view of the problem				X	X	
Enabling the linking sources and sinks		X	X			
Long-term commercial framework			X			
Creating a market for carbon and commodity CO2			X		X	
Making the playing field level for CCS			X			
<u>Value Creation</u>						
Who Pays? What will create incentives			X	X		
Risk and Return for players in the value chain						
Public acceptance				X		
<u>Risk Mitigation</u>						
Long-term liability for storage		X	X		X	
<u>Cost Reduction</u>						
Making projects economically viable (reducing costs)		X	X		X	
Incentives to learn by doing		X				

## Commercial/Financial Issues

# Some of What Needs to be Done

## Analyses or activities

- Ensure global applicability
- Share info about commercial experience, demonstrations, and costs.
- Explore lessons from ongoing projects
- Explore business analogs from different industries
- Explore how to build commercial expertise

## Suggestions Agenda Items

- Appropriate role of government
- Building commercial expertise
- How to ensure that first movers are not penalized
- Intellectual property
- Linking near-term opportunities with long-term options

**Commercial/Financial Issues**

# Possible Business Analogs

- Nuclear power
- Gas storage
- Pipeline construction
- Interstate highway system
- Renewables in Europe
- Ethanol in Brazil
- Hydrogen in Iceland
- Airbus
- German brown coal licensing
- Sulfur dioxide markets

## **Burning Issues Summary**

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### Government Role

Long term regulatory framework (Government)  
Short term Government incentives  
Gap in Govt Funding  
Why Govt Funding  
Incentives vs Penalties (Carrots or sticks)

### Market Creation

Global view of the problem  
Linking sources and sinks  
Long term commercial framework  
Define market for carbon and commodity CO2  
How to create a competitive playing field for CCS?

### Value Creation

Who Pays? What will create incentives?  
Risk and return for players on value chain  
Public acceptance

### Risk Mitigation

Long term liability for storage

### Cost Reduction

Making projects economically viable (reducing costs)  
Incentives to learn by doing

### Capacity Building

Capacity building in financial community

## **Commercial/Financial Issues**