Carbon Management Technology Conference 2017

Presented By: Mike Monea

INTERNATIONAL
CCS KNOWLEDGE
CENTRE

Organization	A Not for Profit Corporation with an Independent Board of Directors
Sponsors	BHP Billiton – Funding Sponsor ($20 million over 5 years) SaskPower – Knowledge Sponsor
Vision	Projects undertaken at the Knowledge Centre will help inform stakeholders regarding “real world” considerations in the use of CCUS and advance the practical knowledge of CCUS as a viable solution. • Promote open exchange of information • No technology ownership • No membership costs

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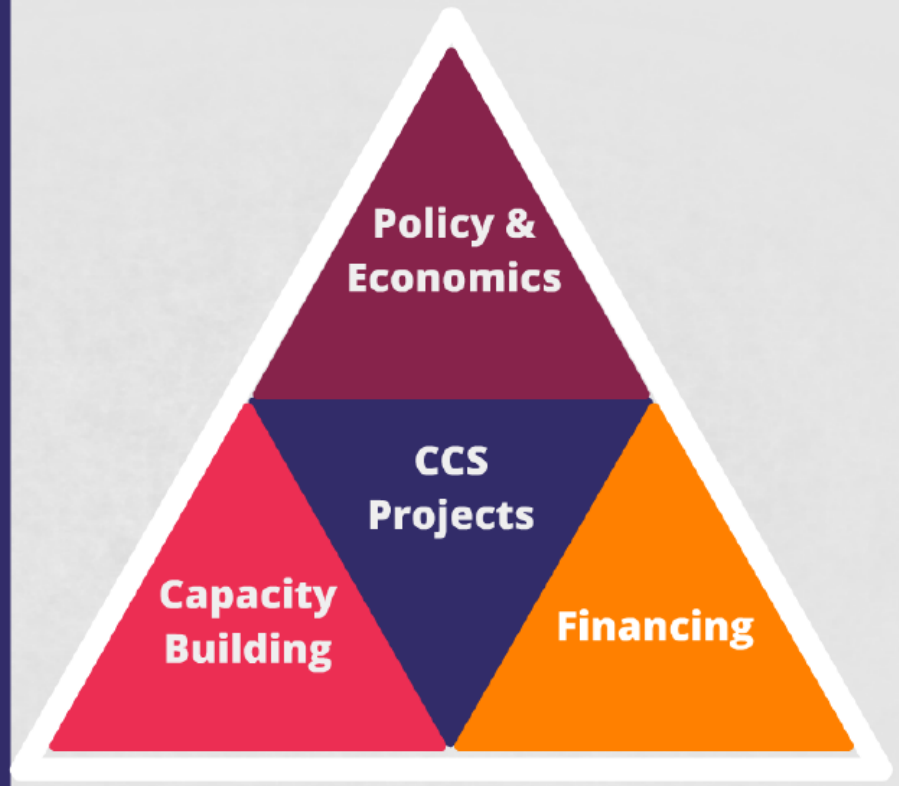
THE INTERNATIONAL CCS KNOWLEDGE CENTRE

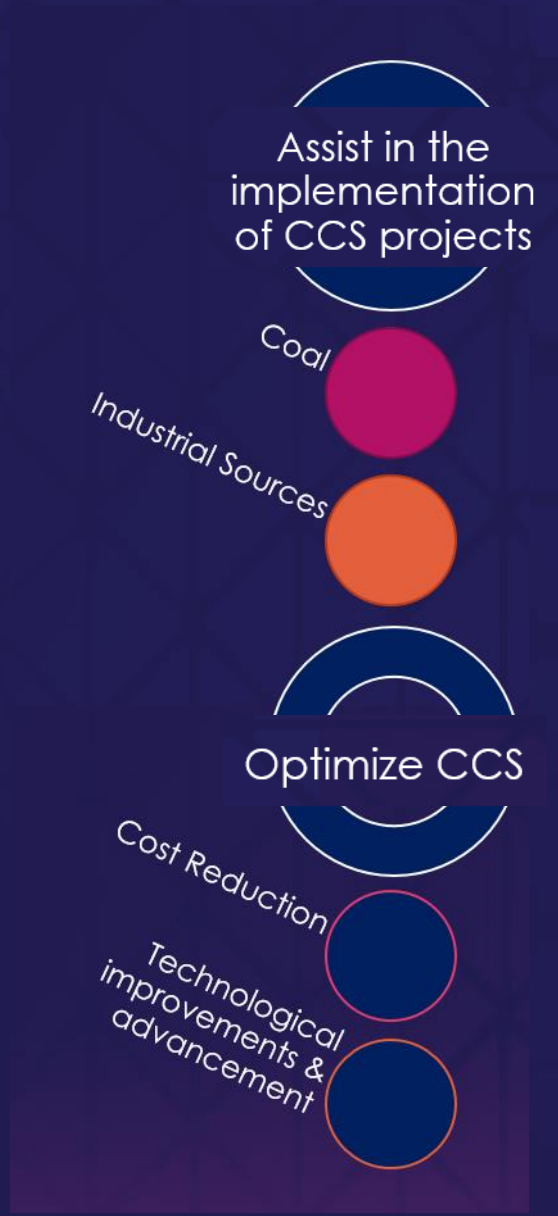
Facilitates in an advisory role
Based on expertise and lessons learned



MANDATE:
Advance the understanding and use of CCS as a means of managing GHG emissions

MISSION:
To accelerate deployment of CCS worldwide

YEAR 1 – OPERATING PLAN PROGRESS



Major Goal	Initiative	*Pathways Created*
A. Advance CCS in China	National CCUS Centre	• MOUs signed on Knowledge Sharing and Capacity Building • CEM side event • MOUs to be signed • Facilitating subnational commitments • Federal Joint Declaration update
	Commercial Demonstration Project	
B. Breaking Down CCS Barriers	Workshop Series - TBD	• October Symposium • Links with the Asia Development Bank & CSLF • GLOBE Series Workshops • Creating Training Modules • Modelling of CCS costs
C. Collaborate on industrial CCS applications	CCS Cement Project – Quebec	• Research in progress • EIT paper to release • Symposium panel with industrial CCS movers Expanding to natural gas, cement, iron and steel / metallurgical coal, and fertilizers • Still to pursue – Quebec and cement association
	Industrial Applications on Steel - TBD	
A. Collaborative Global Technical Community	CCS Cost Reduction and Optimization through Testing	This is now one larger project. • Amine Degradation Alliance potential • Analysis of linked international labs for lessons learned on amine reactions to date • Rapid testing • Create open source data from generic models • Drives down the cost of amines
	Advanced Chemistry Laboratory to Support Test Facilities	
B. Modelling CCS Possibilities	Creation of Generic Models	
C. Breaking Down CCS Barriers	Series of Workshops - TBD	• Workshop on Amines with TNO – TBD • Attending Mission Innovation technical workshop on CCS

BOUNDARY DAM

LEARNING STARTS HERE:
NEXT PLANT WILL BE UP TO 30% CHEAPER

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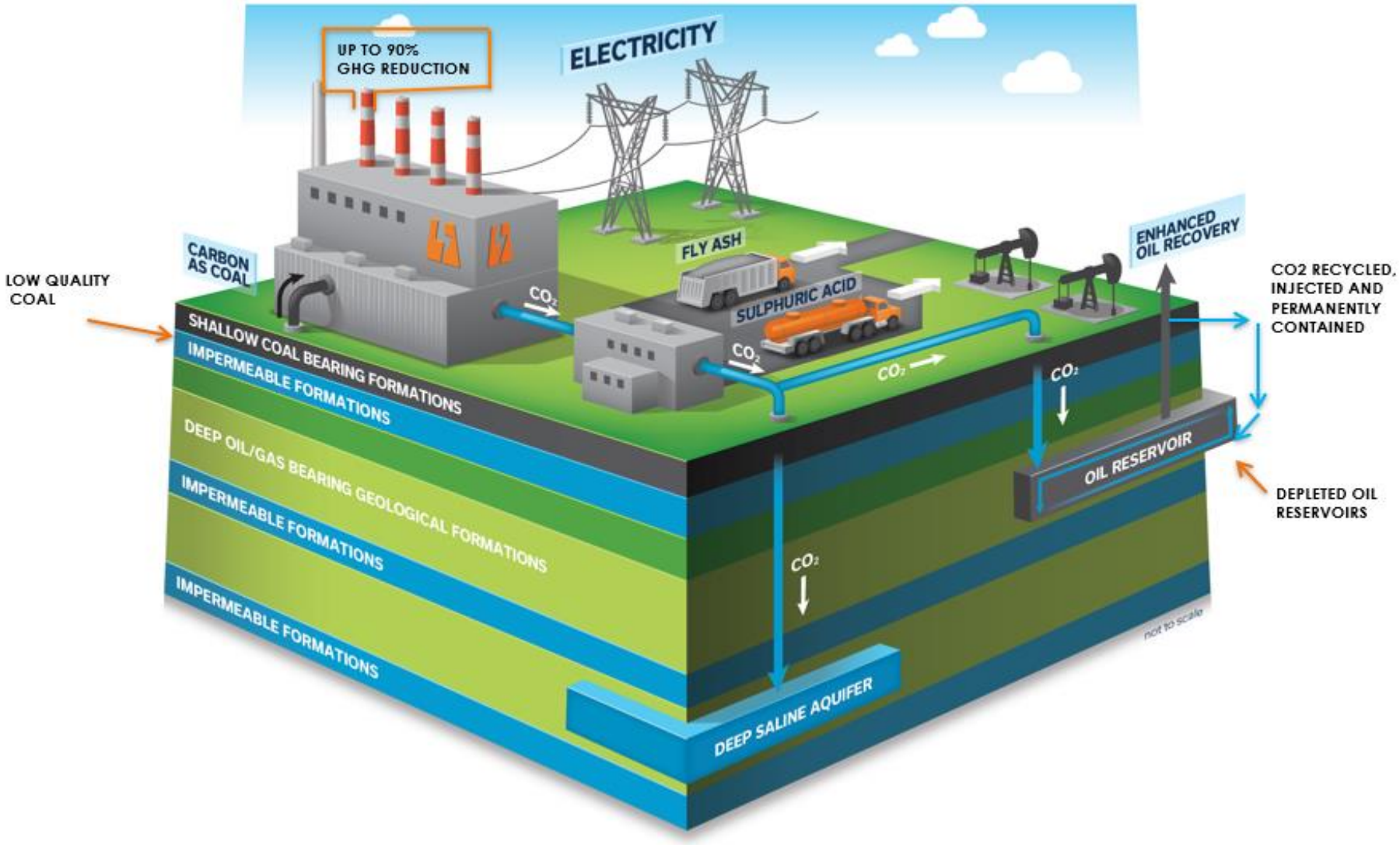
Experiences of Full Chain Commercial CCUS



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Regulations in Canada

1100 t/GWh = Lignite Coal Plant

550 = Current Natural Gas Plant

420 = Canadian Regulations on Power Plant

400 = New Natural Gas Plant

120-140 = CCS on Boundary Dam 3

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BOUNDARY DAM CCS PERFORMANCE

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Canada's Commercial CCS: Securing Off-Takers

CO2 EOR

Sale of CO2 to oil company for EOR

Sale of sulphuric acid, ex. fertilizer

Sale of fly ash for concrete production

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WHAT WE KNOW

- Canada has committed to develop and deploy clean technologies.
- China and India are not on the path to eliminate coal.
  (IEA, 2015)
- CCS is a valuable tool in the toolbox – alongside solutions like renewable and energy efficiency.
- Without CCS, global GHG mitigation costs increase 138%.
  (IPCC, 2014)
- There are hardly any non-CCS pathways to 1.5°C.
  (GCCSI, 2016)

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SUMMARY

- Saskatchewan has proven results on CCS
- Knowledge Center can go beyond borders to reduce GHGs at a global level
- Knowledge from Saskatchewan's CCS activities can be used to help achieve Canada's emission reduction targets
- This knowledge can be used to accelerate CCS deployment globally
- Open sharing of information a key to long term success of CCS world wide.

Thank You

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For more information please visit our website at:

CCSKnowledge.com

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