



# The Global Carbon Capture and Storage Institute GCCSI

A major initiative by Australia – Status as of 29<sup>th</sup> June 2009

**Nick Otter**

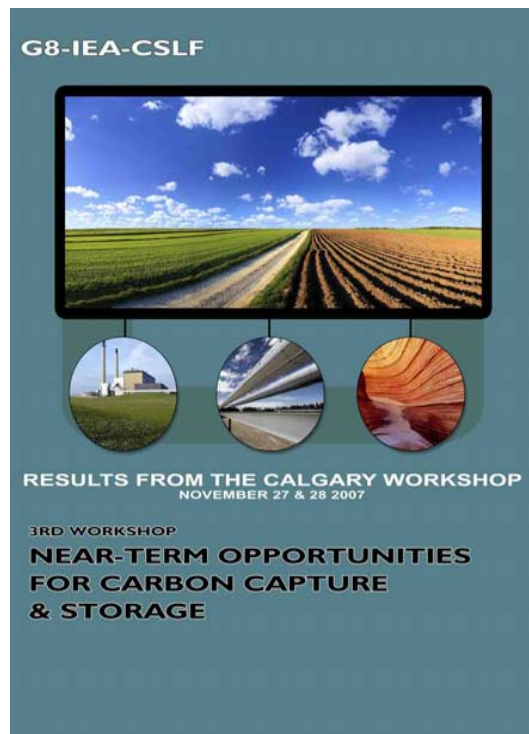
CEO of the GCCSI

CSLF Policy Group Meeting

San Francisco

29 - 30<sup>th</sup> June 2009

# Basic rationale



***“we strongly support the recommendation that 20 large scale CCS demonstration projects need to be launched globally by 2010, with a view to supporting technology development and cost reduction for the beginning of broad deployment of CCS by 2020”***

***G8 Statement of June 2008***

**The GCCSI is a major response by Kevin Rudd Prime Minister of Australia**

## Mandate and objectives of the GCCSI

- Acceleration of the global adoption of safe, commercially and environmentally sustainable CCS
- Drive co-operation to deliver a diverse portfolio of 20+ fully integrated industrial scale demonstration projects by 2020:
  - Across a range of emitters
  - Across a range of technologies
  - Along the entire capture, transport and storage chain
- Work in concert with existing bodies to overcome barriers to broad industrial scale deployment of CCS

**The GCCSI is a global action with budget of 100mA\$ pa  
Focus is on taking projects forward on an urgent basis**



## History and background to date

- **19<sup>th</sup> September 2008:** Announcement by the Australian Prime Minister Kevin Rudd to form a Global Institute addressing the acceleration of the deployment of CCS worldwide.
- **24-25<sup>th</sup> November 2008:** Preparatory stakeholder workshop held in London to refine the initial planning work, following a series of preliminary meetings indicating of a high level of support worldwide ... attended by over 160 people from 40+ countries.
- **12<sup>th</sup> January 2009:** Interim management team established to implement the GCCSI ... Nick Otter as CEO plus 20 secondees from Australian Government.
- **15-17<sup>th</sup> April 2009:** Launched by Kevin Rudd and inaugural meeting of the GCCSI in Canberra, Australia.

# Membership and support:

## Foundation Members as of June 2009

### Founding Members

The Government of Australia  
The Emirate of Abu Dhabi  
The Government of Canada  
European Commission  
The Government of the Peoples Republic of China  
The Government of France  
The Government of Germany  
The Government of Indonesia  
The Government of Japan  
The Government of the Republic of Korea  
The Government of Mexico  
The Government of Netherlands  
The Government of New Zealand  
The Government of Norway  
The Government of Papua New Guinea  
The Government of South Africa  
The Government of United Kingdom  
The Government of United States of America

The State Government of New South Wales  
The State Government of Queensland  
The State Government of South Australia  
The State Government of Victoria  
The State Government of Western Australia

Asian Development Bank  
Japan Bank for International Cooperation  
Alstom Power Ltd  
AMEC Plc  
Anglo American Services (UK) Limited  
ARUP Pty Ltd  
BHP Billiton  
BP Australia Pty Ltd  
Chevron Australia Pty Ltd  
China Huaneng Group  
Chiyoda Corporation

Doosan Babcock Energy Limited  
The Dow Chemical Company  
ENEL  
Exxon Mobil Australia Pty Ltd  
General Electric International Inc  
Golder Associates Pty Ltd  
Greenhouse Gas Storage Solutions (GGSS)  
Hatch Associates Pty Ltd  
Hitachi Limited  
HTC Pureenergy Inc  
Hydrogen Energy International Limited  
INPEX Corporation  
IHI Corporation  
JGC Corporation  
Nippon Steel Engineering Co. Ltd  
Macquarie Capital Advisers Ltd  
Mitsubishi Corporation  
Mitsui & Co Ltd  
Parsons Brinckerhoff Australia Pty Ltd  
Peabody Pacific Pty Ltd  
PricewaterhouseCoopers  
Rio Tinto Ltd  
RWE Power AG  
Samsung Techwin Co Ltd  
Santos Limited  
Senergy Alternate Energy Ltd  
Services Petroliers Schlumberger  
Shell International Petroleum Company Ltd  
Southern States Energy Board  
StatoilHydro ASA  
Taisei Corporation  
Toshiba Corporation  
Total S.A.  
TRUenergy Development Pty Ltd  
Woodside Energy Ltd  
Worley Parsons Services Pty Ltd  
Xstrata Coal Pty Ltd  
ZEEP Australia Pty Ltd

Australian Coal Association  
British Geological Survey  
Carbon Capture and Storage Association  
Cooperative Research Centre for Greenhouse Gas Technologies (CO2CRC)  
Commonwealth Scientific and Industrial Research Organisation (CSIRO)  
demosEUROPA  
Electric Power Research Institute (EPRI)  
The Clinton Foundation  
Główny Instytut Górnictwa (Poland)  
IEA Greenhouse Gas R&D Programme  
Japan Coal Energy Center (JCOAL)  
National Low Emissions Coal Research Ltd  
Petroleum Technology Research Centre  
Research Institute of Innovative Technology for the Earth (RITE)  
South African National Energy Research Institute (SANERI)  
The Climate Group  
Underground Coal Gasification Association  
United States Energy Association  
University College of London  
World Coal Institute

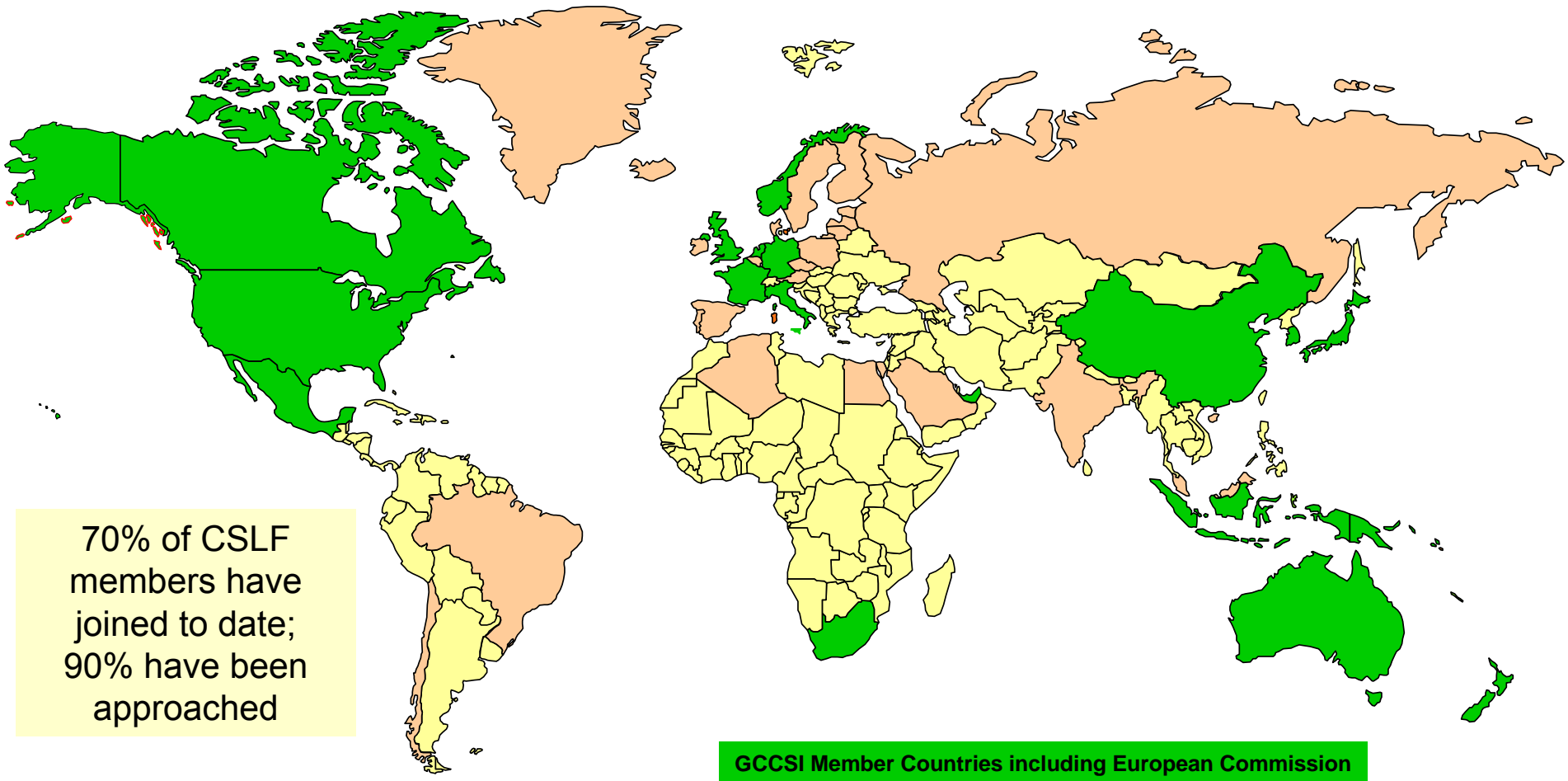
### Collaborating Participants

International Energy Agency  
International Energy Forum  
The World Bank

Foundation Members: 93  
Collaborating Participants: 3

# Country Membership

As of June 2009



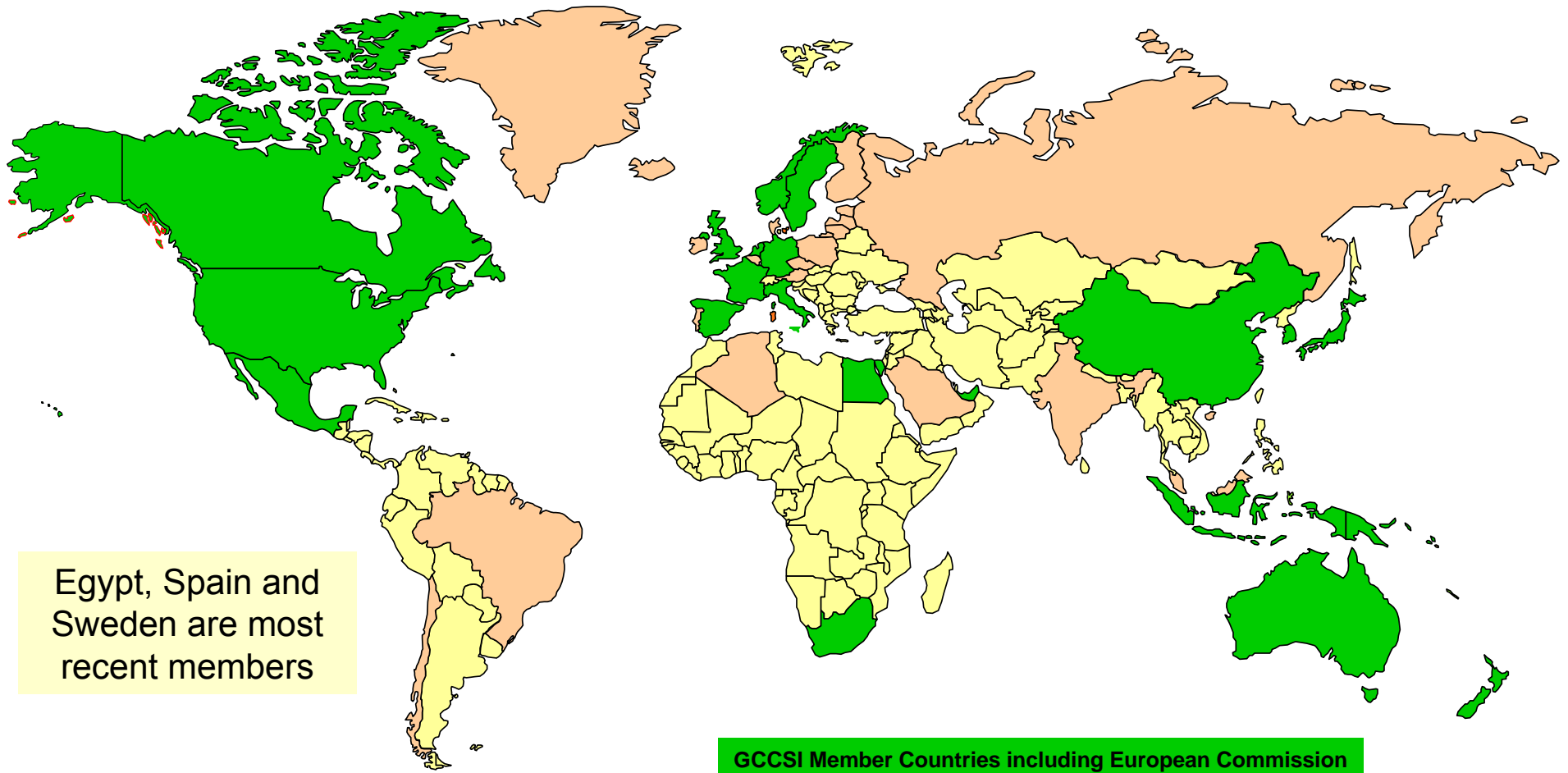
70% of CSLF members have joined to date; 90% have been approached

**GCCSI Member Countries including European Commission**

**Other countries approached**

# Country Membership

As of 29<sup>th</sup> June 2009



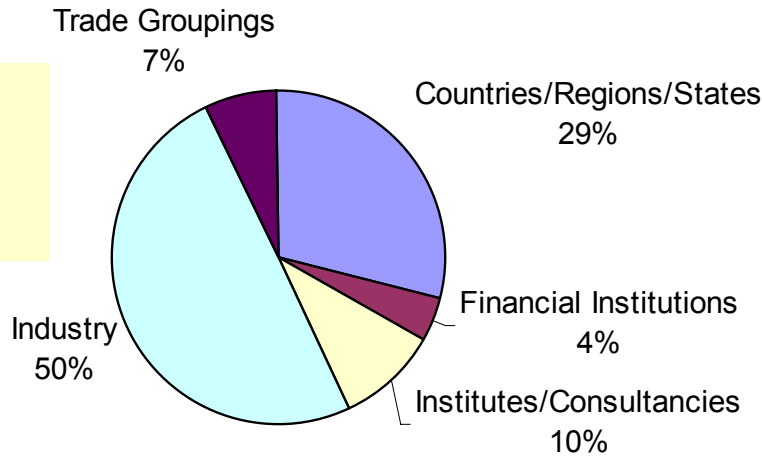
Egypt, Spain and Sweden are most recent members

**GCCSI Member Countries including European Commission**

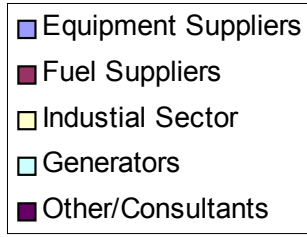
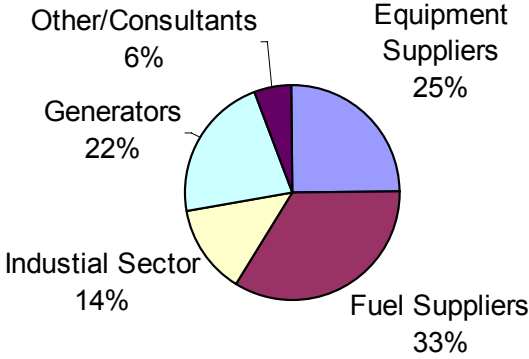
**Other countries approached**

# Balance of the GCCSI participants

The GCCSI co-operating organisations as of June 2009



Company breakdown as of June 2009



The GCCSI is set on maintaining a balance in organisational, political and geographical representation – a true public private partnership.

Total as of 29<sup>th</sup> June 2009 : 108





# Organisation and International Reach

## Non Government Legal Entity

- Non profit company limited by guarantee: ready for 1<sup>st</sup> July 2009
- Skill-based board of directors
- International Advisory Panel of senior international advisors
  - Chair - James Wolfensohn
- Technical Advisory Committee for peer review/advice

## Organisational aspects

- Australia/Canberra hub: 40-50 individuals plus corporate function
- Linkages/actions worldwide: 'hub and spoke' model, could include:
  - Europe
  - North America
  - Asia
- 'Business build' underway
  - Focus on countries active in the GCCSI plus regions having high project needs or project potential
  - Focus on 'where the projects are'



## Added value of the GCCSI

The GCCSI brings to the arena a much needed resource:

- Budget commitment of AUD\$100m pa from Australian Government
- Initially provide financial support but increasingly remove barriers to deployment of CCS
- Provide full time funded expertise to assist in demonstration CCS project implementation in all aspects of capture, transport and storage
- Underpin and expand the capability of other international organisations, in particular CSLF and IEA

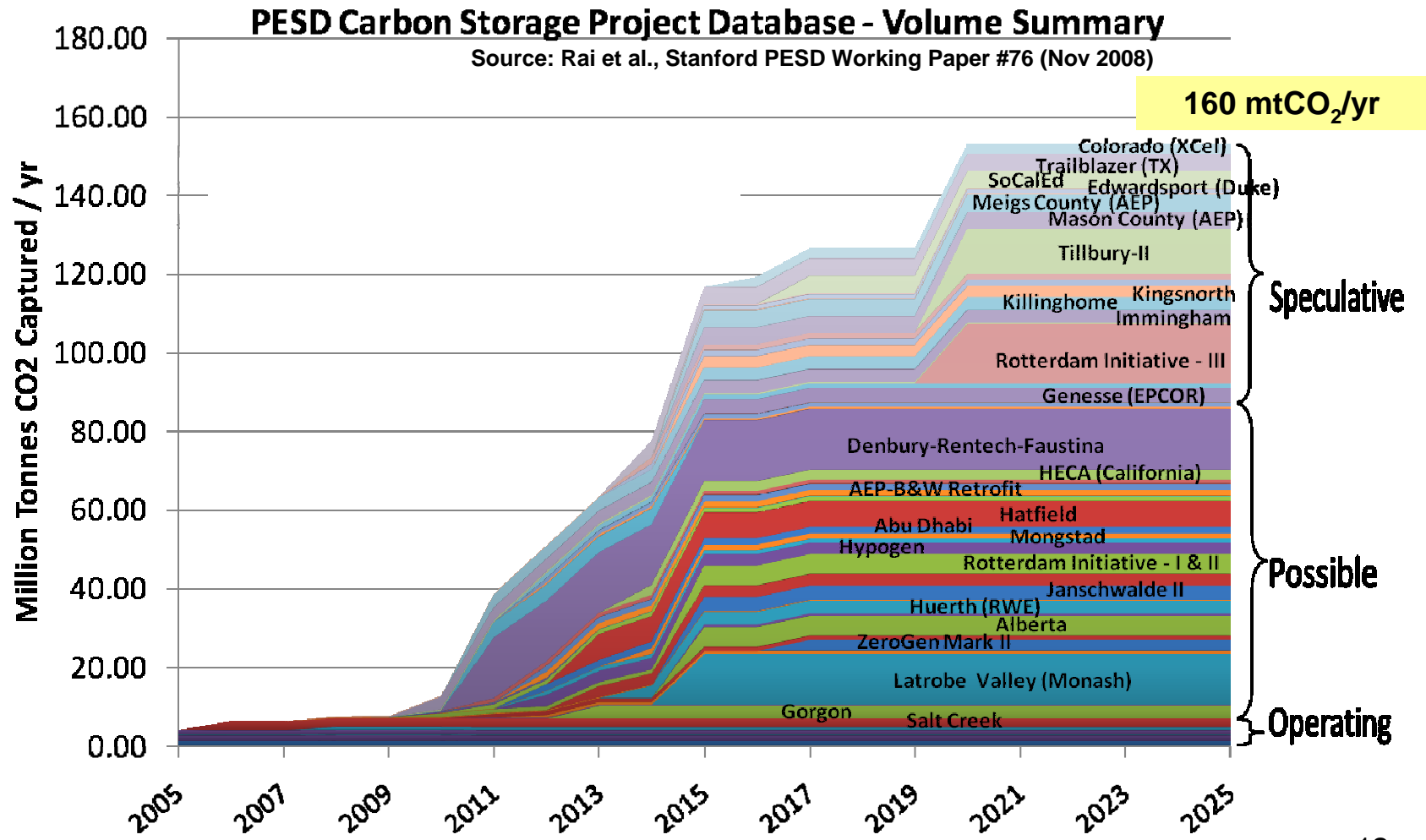
The GCCSI injecting additional impetus into CCS Global Arena



## Primary work themes

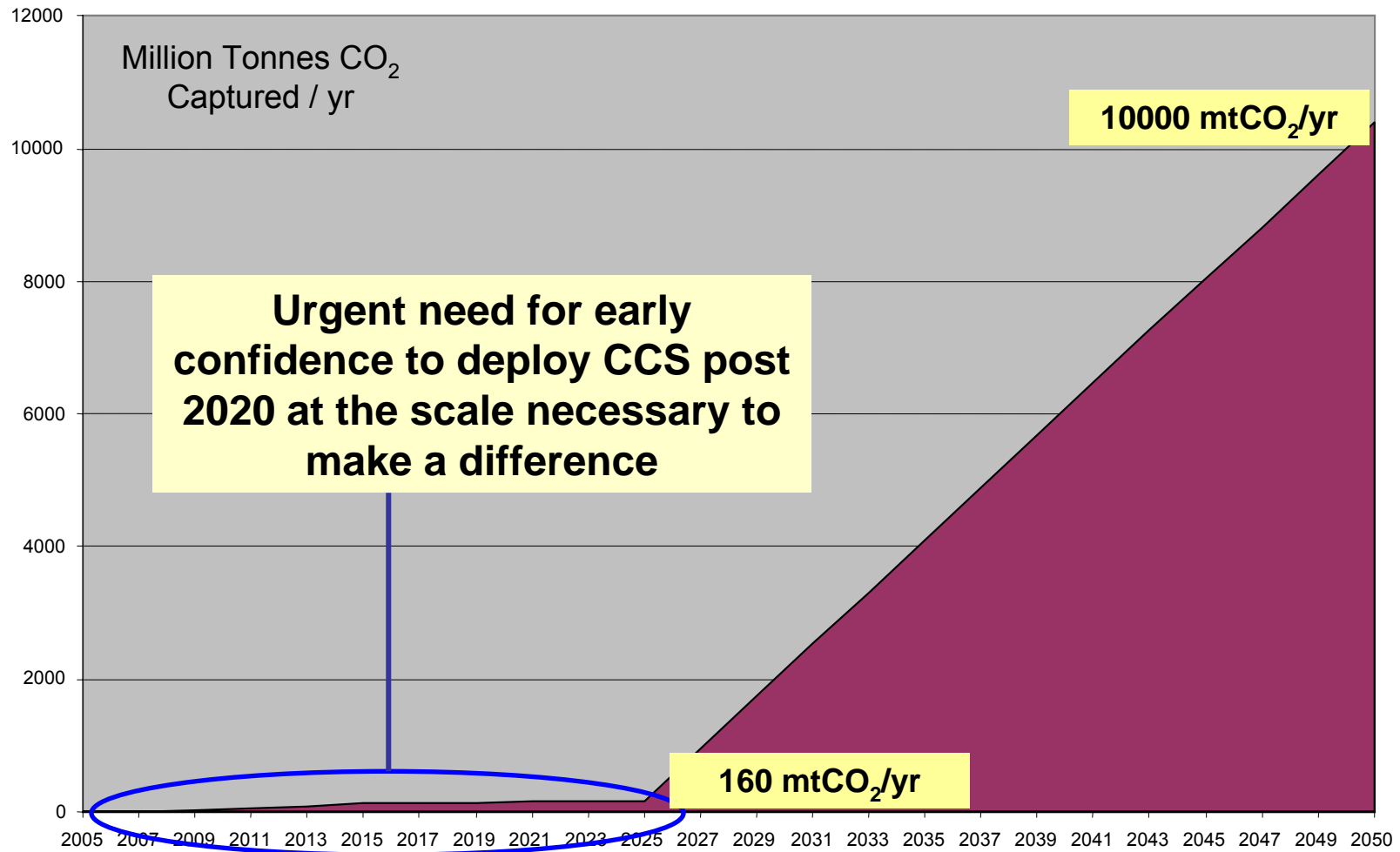
- Drive development of CCS projects
- Support CCS uptake globally
- Build CCS capability

# Deployment of CCS: A 'Stanford' view of the short term



# Deployment of CCS: The magnitude and importance of the issue

CCS deployment needed to contribute ~10 Gt of CO<sub>2</sub> by 2050





## Some basic questions

- What is the 'real' position with large scale integrated projects, the projects that are needed to provide the necessary level of confidence? What is stopping projects from moving forward?
- What is the impact of the financial crisis and the subsequent recession on the investment in CCS? How can the increased government action be built upon?
- What is the 'desired' portfolio required to give confidence in the breadth of application of CCS at scale? What are the criteria and rationale for support?
- How to share the knowledge gained and 'learn by doing'?

# Immediate Work Programme - 1

## Demonstration project related actions

- Strategic Analysis of the Global Status of CCS: a global survey of projects to provide a 'hard nosed' assessment of the real status and to identify what the barriers are and what can be done about them Worley Parson Consortium
- Global Projects Portfolio and Rationale for Support LEK Final reports due Sept 2009
- Strategic Alliances – working with the early mover of projects : Clinton Foundation, Climate Group; ADB, World Bank; EC, EPRI
- Initiate more Projects – methodology and process for identification; tracking and monitoring action; creation and encouragement of consortia; facilitation actions and removal of barriers

Projects are the primary focus

# Immediate Work Programme - 2

## Knowledge Sharing and Community Acceptance

- Understanding and guidance on 'Knowledge Sharing'
  - Working with EC, EPRI and others to get best practice
- Community Outreach and Public Awareness action
  - Support to international CCS Social Science Network over 3 years
    - Assessment of public awareness to date
    - Analysis of local and global factors
    - Assessment of approaches, materials and efforts to engage effectively

## Baseline and Supporting Actions

- Definition of 'CCS Ready'
- Global CO<sub>2</sub> Storage Atlas
- Capacity building in Emerging Markets Economies
  - Work with CSLF and others as appropriate





# The GCCSI roles: Accelerating demonstration projects

Roles of the GGCSI will develop as the GCCSI goes forward

- Initially the GCCSI will have little internal resource bar its funding
- Resource will be established in line with 'business build'

Range of roles anticipated

- 'portfolio monitor': Identify portfolio and track project developments
- 'trusted advisor': Use information coming out of early study work to provide advice
- 'activist advisor': Proactive role initially working in concert with organisations with the same set of objectives
- 'consortium builder': As set of skills get established the GCCSI takes on the role itself of identifying/initiating/facilitating proposals

## CCS International Landscape

- ‘Calgary’ recommendations to G8+ in June 2008 becoming the ‘accepted’ way of accelerating the deployment of CCS globally
- Informal co-ordination function established, first meeting held in Paris on 13<sup>th</sup> March 2009 with follow-up in Bergen on 27<sup>th</sup> May 2009 and in Paris on 25<sup>th</sup> June 2009
- Responsibility assignment to ‘Calgary’ recommendations
  - The GCCSI will focus/lead on CCS demonstration related issues
  - The GCCSI assist/accelerate actions in other areas through additional support

## International Partnerships

### Carbon Sequestration Leadership Forum (CSLF)

- 1.2m A\$ over 2 years
  - technical route map development
  - capacity building

### IEA : at all levels – in excess of 20m A\$ over ~3 years

- `core secretariat
- Implementing Agreements
  - GHG R&D Programme
  - Clean Coal Centre
- CCS and Route Map development
- Working Party on Fossil Fuels (WPFF)
- Coal Industry Advisory Board (CIAB)

The GCCSI will provide support and work to ensure strong and effective management and co-ordination

# Deployment of CCS

Holistic approach needed by all players to address:

- Early large scale demonstration...knowledge sharing and 'learning by doing'
- Development of legal and regulatory frameworks
- Provision of short term financial incentives and longer term fiscal framework
- Understanding and development of infrastructure requirements
- Continued technology research and development
- Public awareness and acceptance

The GCCSI ready to work in a co-operative manner with the key CCS stakeholders worldwide



[www.globalccsinstitute.com](http://www.globalccsinstitute.com)



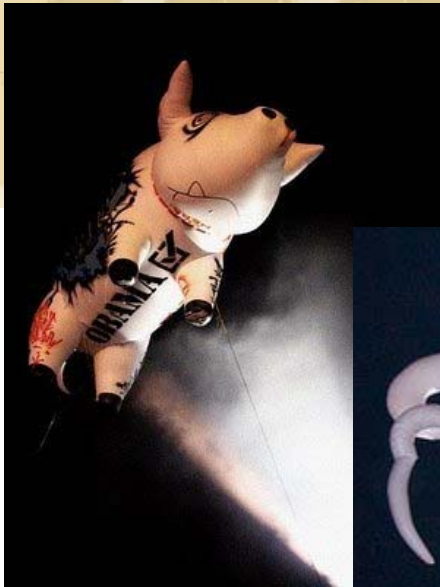
**An Australian Government Initiative**

....and help change some minds ....



Canberra, February 2009

..... it does happen  
..... just ask President Obama



Real value will be lessons learned from early set of projects

# 2009: an extremely important year

Key inputs and positions required to ensure that CCS is fully embraced as an important element of tools to mitigate impact of climate change

An early role for the GCCSI

