

# **The Global Carbon Capture and Storage Institute GCCSI**

## **PROGRESS AND OBJECTIVES**

**Nick Otter**

CEO of GCCSI

**New Zealand CCS Symposium**

Wellington

27<sup>th</sup> April 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***


G8-IEA-CSLF



RESULTS FROM THE CALGARY WORKSHOP  
NOVEMBER 27 & 28 2007

3RD WORKSHOP

**NEAR-TERM OPPORTUNITIES  
FOR CARBON CAPTURE  
& STORAGE**



# Mandate and Objectives

- 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
- Be responsible for effective sharing of non-proprietary knowledge of CCS among shareholders and interested parties

**The GCCSI is a global action**



## 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 meeting indicating of a high level of support worldwide ....meeting attended by over 160 people from 40+ countries.
- **12<sup>th</sup> January 2009:** Interim management team established to implement the GCCSI .... CEO, Nick Otter and Deputy CEO, Dale Seymour now replaced by Bob Pegler.
- **15-17<sup>th</sup> April 2009:** launched by Kevin Rudd and inaugural meeting of the Global CCS Institute in Canberra

## Membership/Support : as of 16<sup>th</sup> April 2009

**The Government of Australia  
The Emirate of Abu Dhabi  
The Government of Canada  
The Government of the Peoples Republic of China  
European Commission  
The Government of France  
The Government of Germany  
The Government of Indonesia  
The Government of Italy  
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**

**Countries and  
Regions : 24**



# Membership/Support : as of 16<sup>th</sup> April 2009

**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**  
**Greenhouse Gas Storage Solutions (GGSS)**  
**Hitachi Corporation**  
**Hydrogen Energy International Limited**  
**INPEX Corporation**  
**Ishikawajima-Harima Heavy Industries Corp**  
**Nippon Steel Engineering Co. Ltd**  
**Mitsubishi Corporation**  
**Mitsui & Co Ltd**  
**Parsons Brinckerhoff Australia Pty Ltd**  
**Peabody Pacific Pty Ltd**  
**PricewaterhouseCoopers**

**Rio Tinto Ltd**  
**RWE Power AG**  
**Santos Limited**  
**Senenergy Alternate Energy Ltd**  
**Services Petroliers Schlumberger**  
**Shell International Petroleum Company Ltd**  
**Southern States Energy Board (US)**  
**StatoilHydro ASA**  
**Taisei Construction Corporation**  
**Toshiba Corporation**  
**Total E&P**  
**TRUenergy Development Pty Ltd**  
**Woodside Energy Ltd**  
**Worley Parsons Services Pty Ltd**  
**Xstrata Coal Pty Ltd**  
**ZEEP Australia Pty Ltd**

**Companies : 42**

## Membership/Support : as of 16<sup>th</sup> April 2009

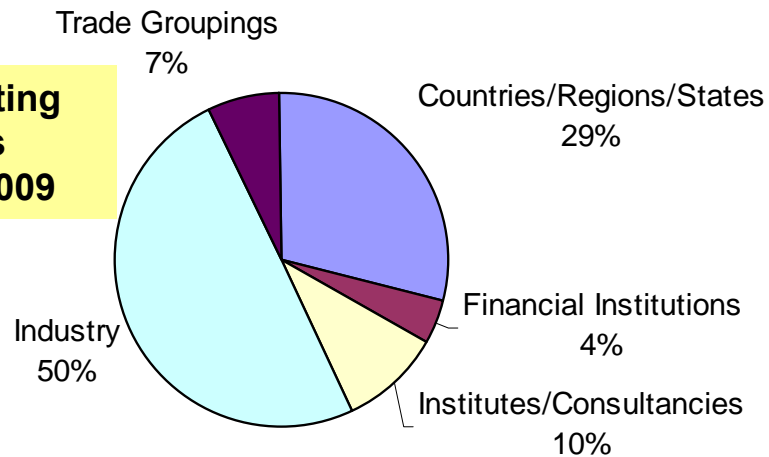
**Australian Coal Association**  
**Carbon Capture and Storage Association**  
**Cooperative Research Centre for Greenhouse Gas Technologies (CO2CRC)**  
**Electric Power Research Institute (EPRI)**  
**Commonwealth Scientific and Industrial Research Organisation (CSIRO)**  
**The Clinton Foundation**  
**Główny Instytut Górnictwa (Poland)**  
**Japanese Coal Energy Center (JCOAL)**  
**National Low Emissions Coal Research and Development Ltd (Australia)**  
**Research Institute of Innovative Technology for the Earth (RITE, Japan)**  
**South African National Energy Research Institute (SANERI)**  
**The Climate Group**  
**Underground Coal Gasification Association**  
**University College of London**  
**World Coal Institute**  
**International Energy Agency**

**The World Bank**  
**Asian Development Bank**  
**Japan Bank for International Cooperation**  
**Macquarie Capital Advisers Ltd**

**Other organisations : 19**

# Balance of GCCSI Participants

## GCCSI Co-operating Organisations as of 16<sup>th</sup> April 2009



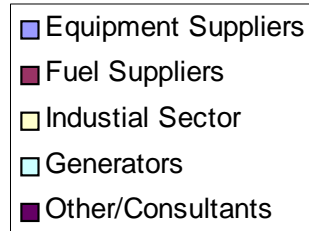
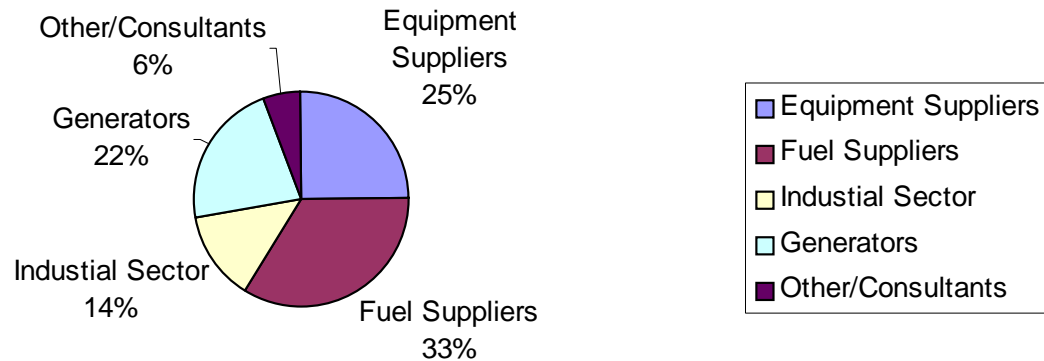
**Total : 85**



**Seeking a representative balance across geography and type of organisation**

**Foundation Membership open to 30<sup>th</sup> June 2009**

## Company Breakdown as of 16<sup>th</sup> April 2009



### It is still early days for the GCCSI

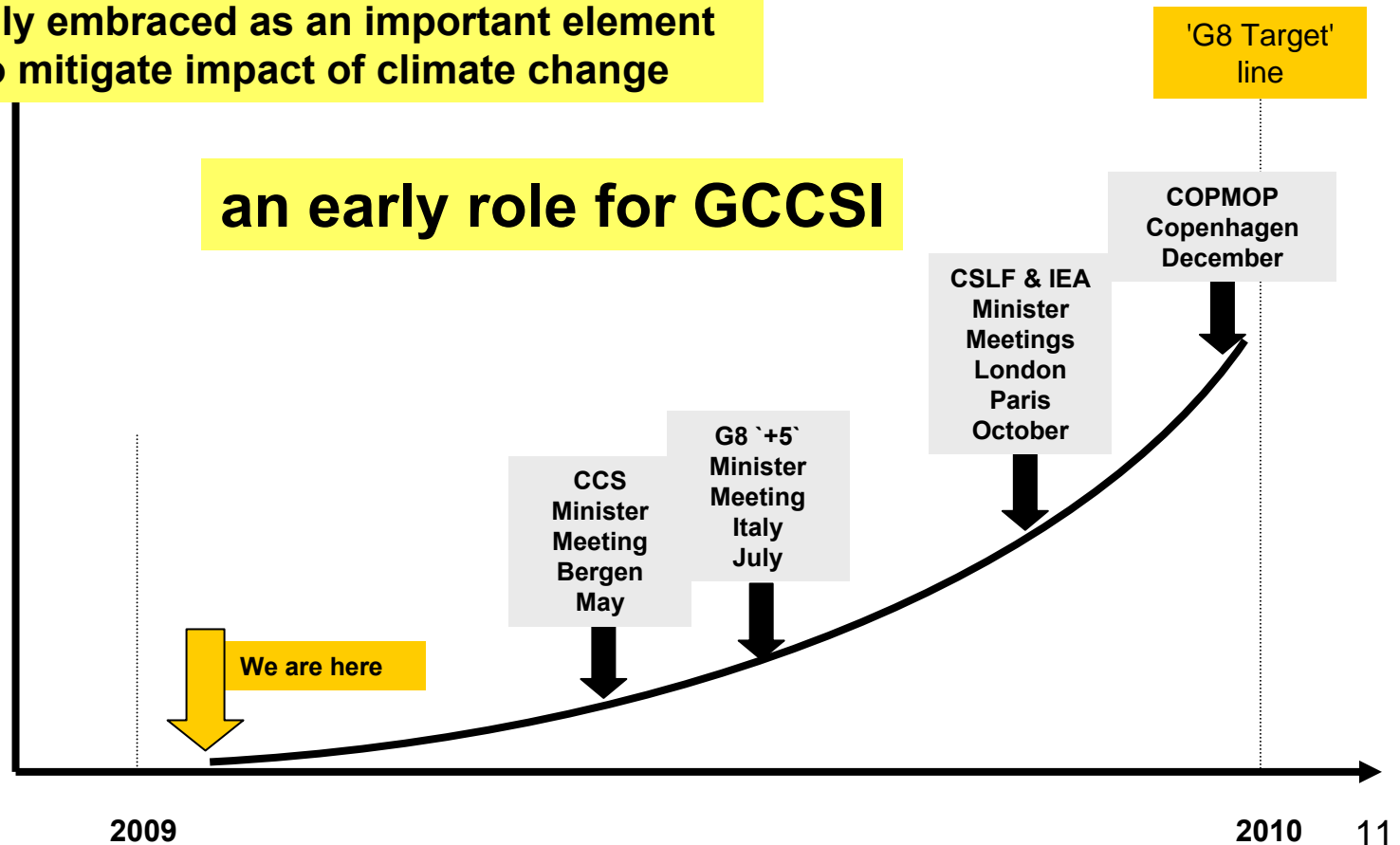
Interim team of 25 established on 2<sup>nd</sup> February 2009 to :

- Set the `trajectory` for the new Institute into the future
- Define an initial work programme to establish the basis for the activity of the GCCSI in the context of a longer term time frame
- Continue to attract participating countries, companies and organisations and manage their engagement
- Prepare the way for the permanent team through the establishment of a legal and physical entity
- Provide input into the important international actions of 2009

# 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 GCCSI



2009

2010

11



## Added Value of GCCSI

The GCCSI brings to the arena a much needed resource

- Budget commitment of \$100m AUD pa from Australian Government
- Initially provide financial support but increasingly through resource to address removal of barriers to deployment of CCS
- Provide full time funded expertise to assist in demonstration CCS project implementation embracing full CO<sub>2</sub> value chain
- Underpin and expand the capability within other international actions


# Organisation and Internationalisation

- Legal Entity
    - Non profit company limited by guarantee: target date of 1<sup>st</sup> July 2009
    - Skill based board of directors
    - International Advisory Panel of senior international advisors
      - Chair/James Wolfensen
    - 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 GCCSI plus those of strategic orientation
- Focus on `where the projects are`, the aim is to have co-incidence

# GCCSI Roles

- accelerating demonstration projects

- **Roles of the GCCSI will develop as the Institute 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 GCCSI takes on the role itself of identifying/initiating/facilitating proposals



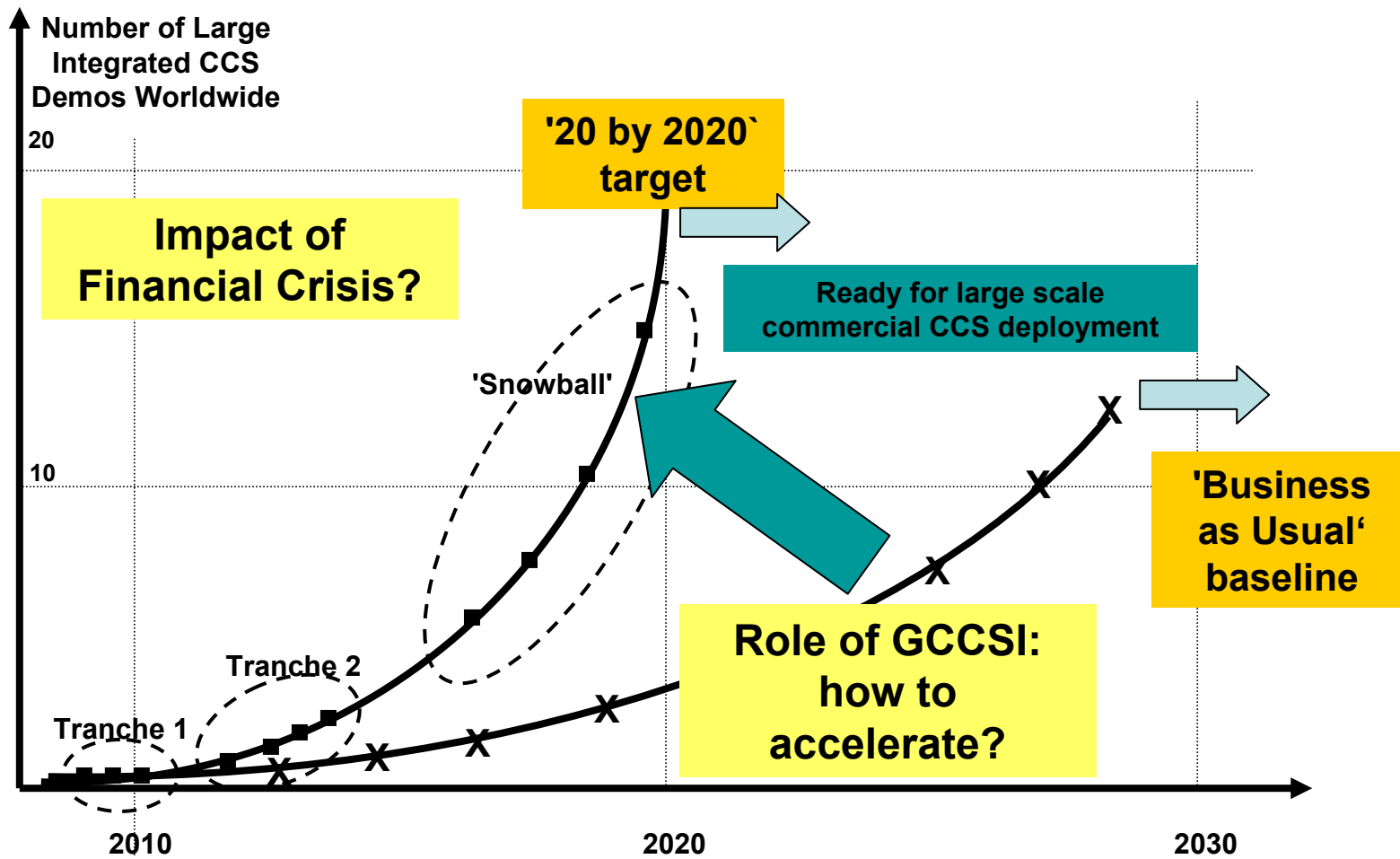
## Primary work themes

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

### **Initial key activities :**

- Establish the baseline for CCS as of March 2009, in particular an analysis of the `real` status of CCS demonstration projects
- Establish strategic partnerships with organisations with common aims
- Define a commonly accepted position for GCCSI in the international CCS landscape – consistent with the G8 recommendations
- Develop a consensus on the understanding of knowledge sharing

# Initial focus of GCCSI





# Immediate Work Programme - 1

## **Demonstration project related actions**

- Strategic Analysis of the Global Status of CCS
- Global Projects Portfolio and Rationale for Support
- Global Projects – methodology and process for identification; tracking and monitoring action; creation and encouragement of consortia; facilitation actions and removal of barriers
- Strategic Partnerships – early mover projects



## Immediate Work Programme - 2

### **Knowledge Sharing and Community Acceptance**

- Understanding and guidance on `Knowledge Sharing`
- Community Outreach and Public Awareness action

### **Baseline and Supporting Actions**

- Definition of `CCS Ready`
  - preparing the pathway to `zero emission` deployment
- Global CO<sub>2</sub> Storage Atlas
- Capacity building in Emerging Markets Economies
  - link with CSLF and others as appropriate

## – **CCS Demonstration**

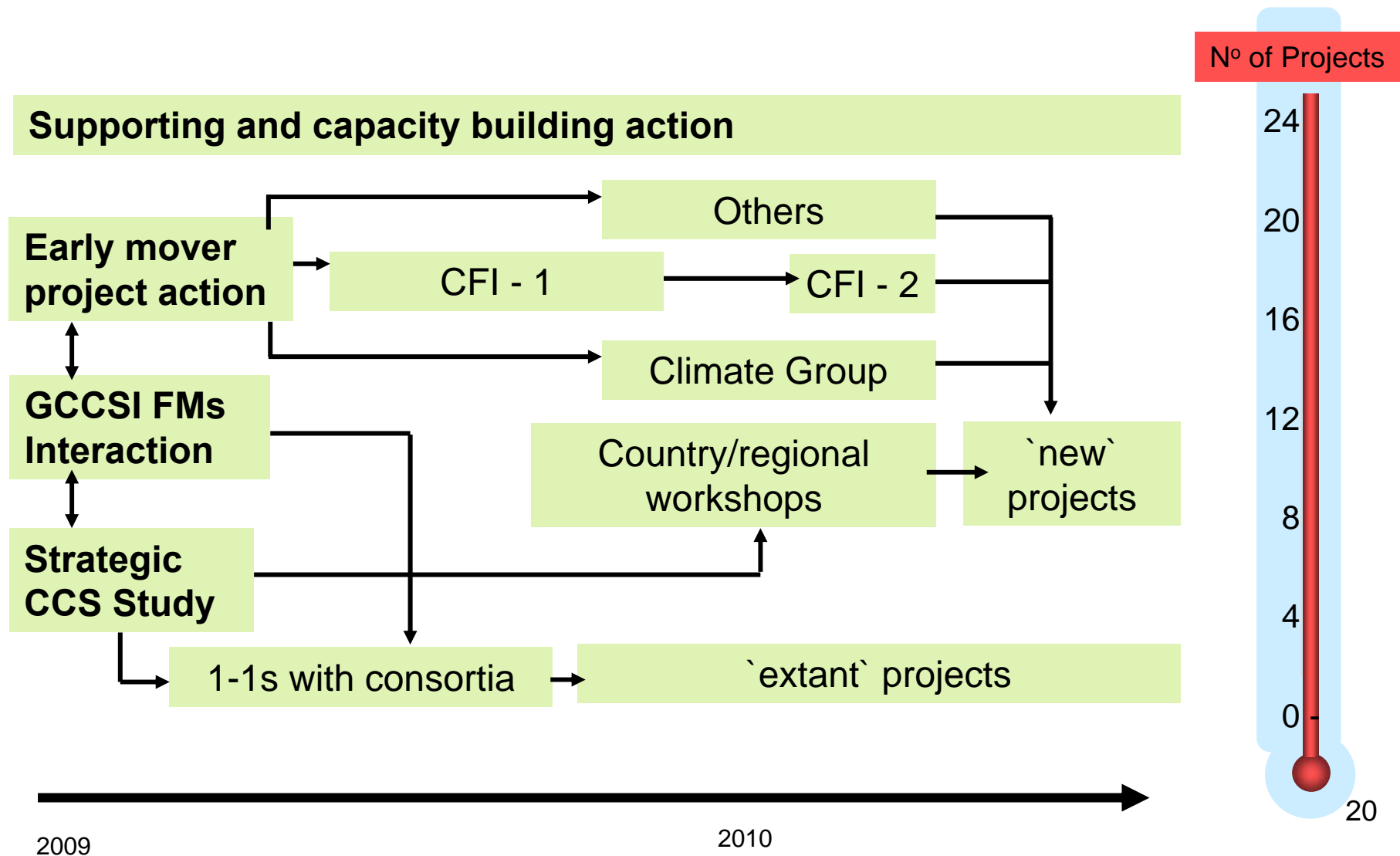
- strategic consortia and organisations driving early demonstration anywhere in the world with commonality of aim
- Clinton Foundation
- Climate Group, .....

## – **R&D Alliances**

- GCCSI will not do R&D but will establish links with R&D community to ensure flow of appropriate information and to initiate actions to address blockages to specific CCS projects and deployment
- alliances with global ring of world class CCS R&D institutes

# Immediate Work Programme

- accelerating demonstration projects



## – International Partnerships

- IEA : at all levels
  - 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]
- Carbon Sequestration Leadership Forum [CSLF]
  - technical route map development and identification of technical priorities
  - capacity building
  - advice on policy aspects

**GCCSI will need to ensure strong management and co-ordination**

- **CCS International Landscape**

- G8 recommendations becoming the `accepted` way of proceeding to accelerate 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
- Responsibility assignment to Calgary G8/CSLF/IEA CCS recommendations
  - GCCSI will focus on CCS demonstration related issues
  - How can GCCSI assist/accelerate?



# 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 .....

.....and help change some minds



Canberra February 2009