



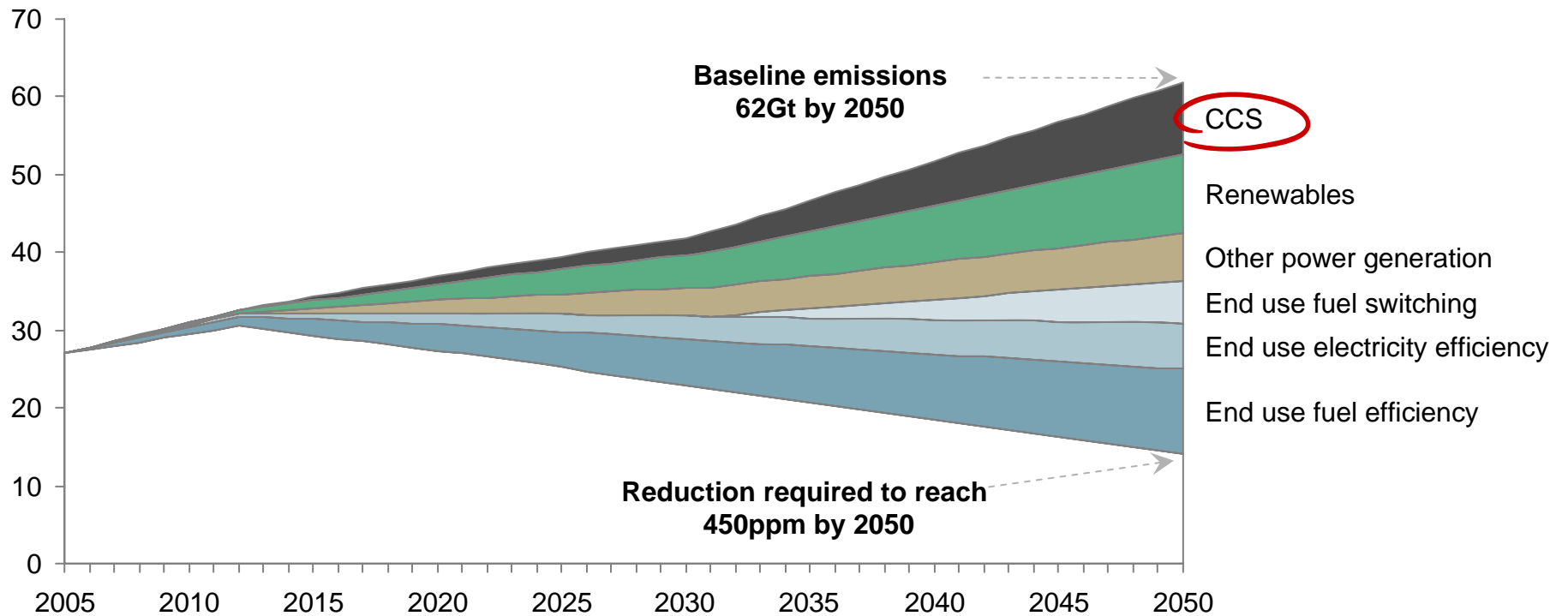
**Australian Government**

**Global Carbon Capture and Storage Institute**  
CSLF Financial Issues Task Force

December 2008

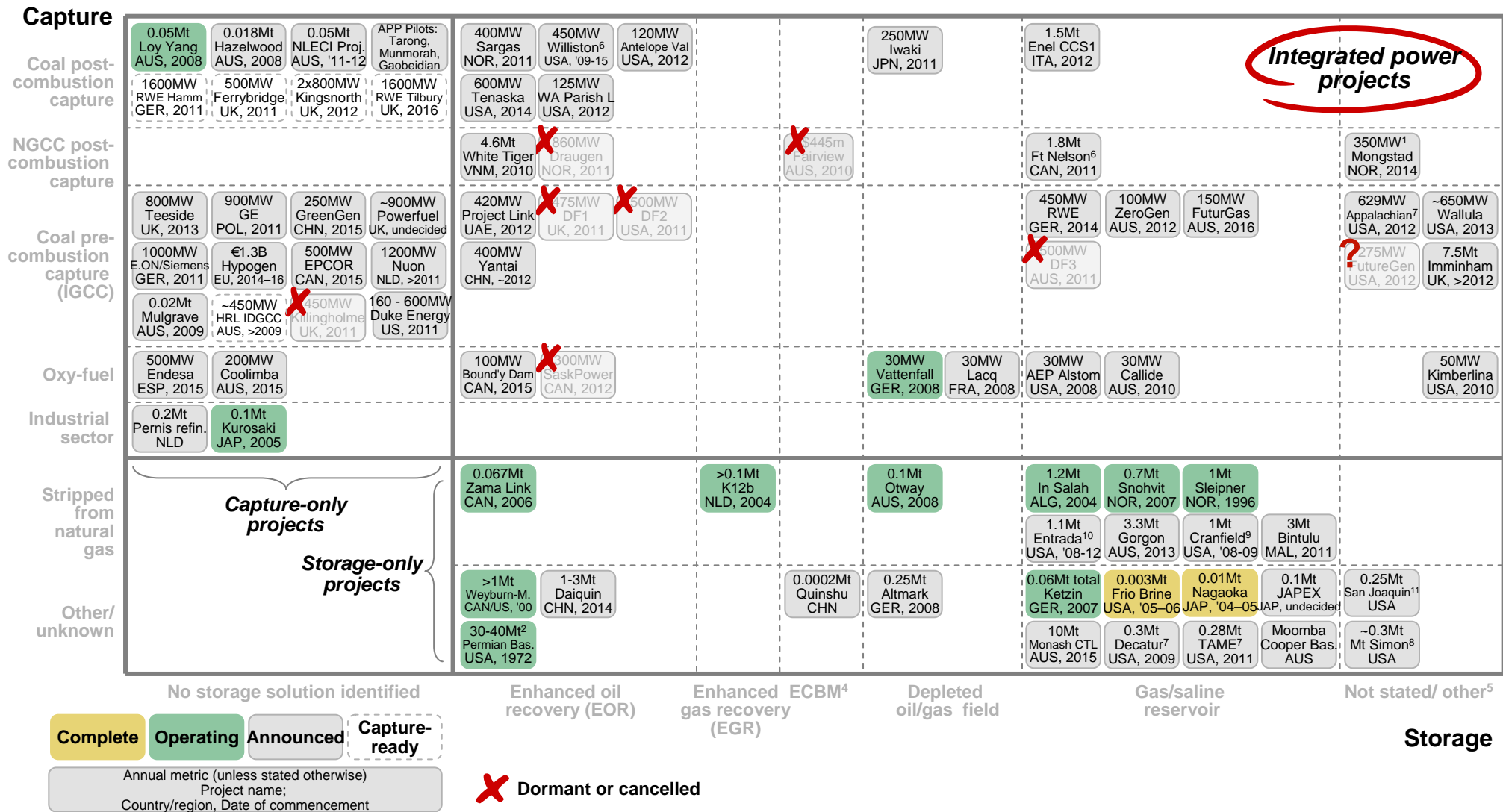
# CCS is needed as part of CO<sub>2</sub> reduction efforts

Contributions of global emission reduction options  
(Gt CO<sub>2</sub>)



**IEA estimates that CCS can contribute  
~9 Gt CO<sub>2</sub> emission reduction per year by 2050**

# Many integrated projects are needed for portfolio

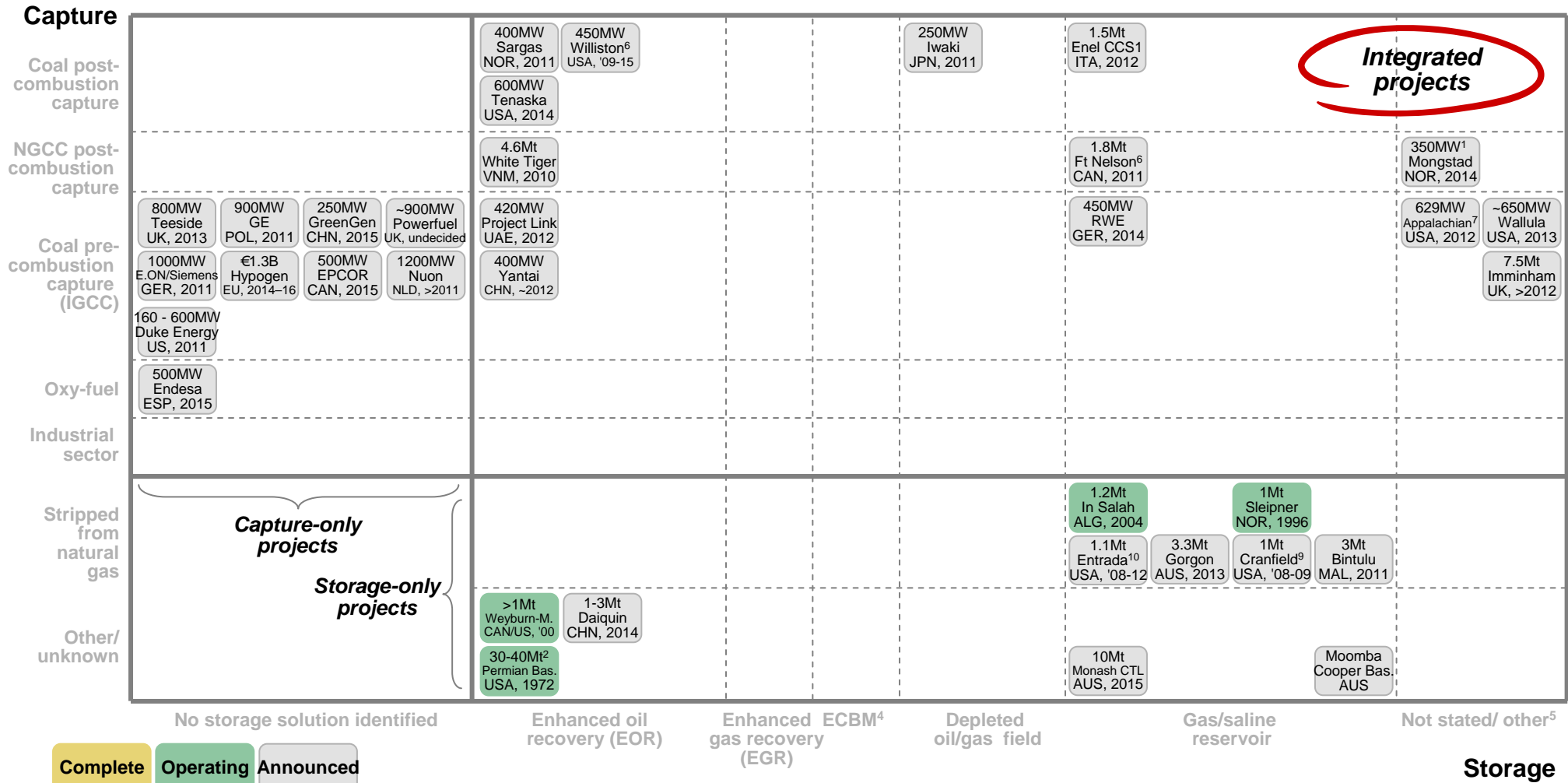


1. "CHP with post-combustion CCS" 2. Permanency of storage is unclear 3. Potential EOR storage 4. Enhanced coalbed methane recovery 5. eg. Depleted coal seams 6. PCOR 7. MRCSP 8. MGSC 9. SECARB 10. SWP 11. WESTCARB. Source: IEA, *Fossil fuel-fired power plants and CO2 capture and storage*; CSIRO, *Australian CCS Commercial and R&D Projects, 2007*; Gassnova, *International CCS technology survey*; Carbon Capture and Sequestration Technologies @ MIT, <http://sequestration.mit.edu/tools/projects/index.html>; Gassnova *International CCS Technology Survey 2008*; RET interviews



# Many more industrial-scale projects needed

Projects of greater than 250 MW power generation or 1Mtpa CO2 storage




Annual metric (unless stated otherwise)  
Project name;  
Country/region, Date of commencement

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# Need for concerted global action is broadly accepted

## G8-IEA-CSLF recommendations

- 1 Demonstrating CO<sub>2</sub> capture and storage and bridging the financial gap**
  - Commitment by 2010 to at least 20 fully integrated industrial-scale demonstration plants, for broad deployment of CCS by 2020
  - Addressing financial gaps and risks in early CCS projects
- 2 Taking concerted international action**
  - Fostering international action to partner, financially support, build capacity and share information
  - Including CCS in the CDM in December 2008
- 3 Creating a value for CO<sub>2</sub> for commercialisation of CCS**
  - Creating long-term policy certainty
  - Introducing appropriate instruments to create a value for CO<sub>2</sub> and incentives for RD&D
- 4 Establishing legal & regulatory frameworks**
  - Necessary for large-scale geological storage of CO<sub>2</sub>
- 5 Communicating with the public**
  - Dedicating resources to disseminate information and public outreach
- 6 Infrastructure**
  - Developing perspectives for the availability of a CO<sub>2</sub> transport infrastructure
- 7 Retrofit CO<sub>2</sub> capture**
  - Development of new fossil fuel power stations should have regard to what might be required for retrofit of CCS

 Areas for global co-operation

Source: Hokkaido G8 Summit recommendations

# A global institute would deliver concerted global action

Potential high-level activities of a global institute

## Flagship Demonstration Projects

- Define and commit to a shared target portfolio of industrial scale projects and track global progress toward the target
- Bring government/industry consortia together to deliver those projects
- Provide full-time, funded expertise to assist in demonstration project implementation

## Research and Technology

- Identify and, if necessary, support targeted R&D on the critical path to deploying demonstration projects

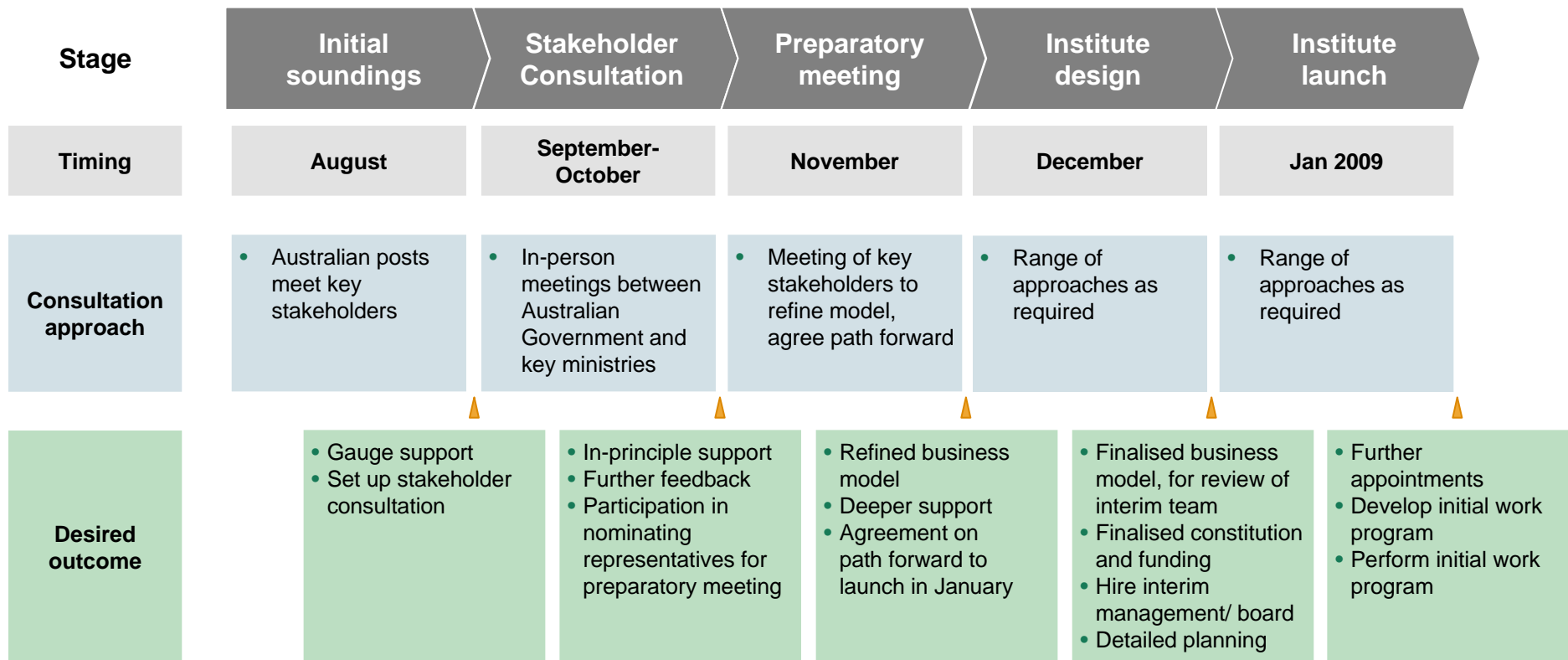
## Knowledge Sharing and Communication

- Share non-proprietary information and lessons from the demonstration projects
- Deliver an annual assessment of CCS demonstration project progress
- Build public awareness and acceptance of CCS

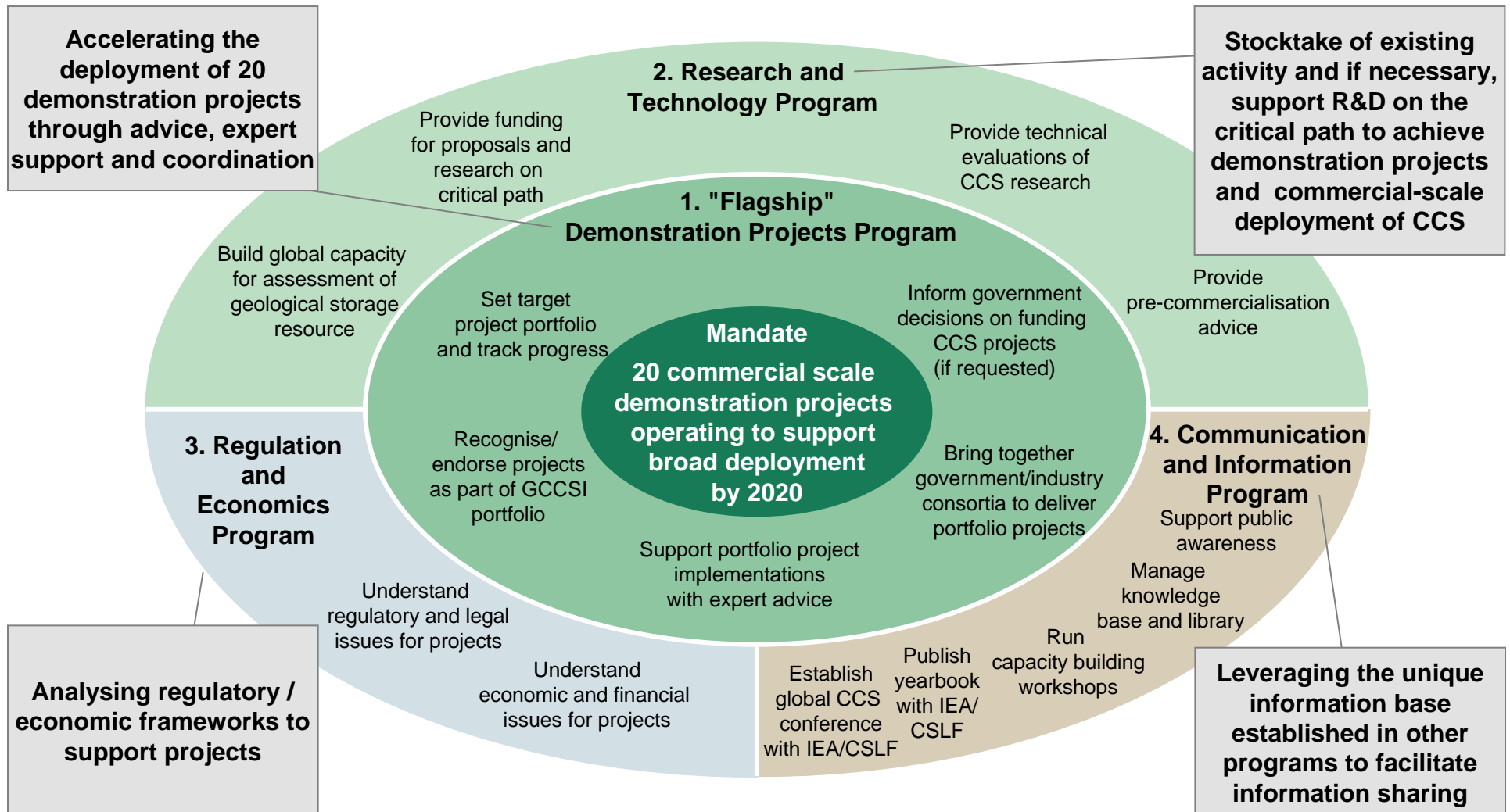
# Institute would complement and extend existing bodies

<p><b>IEA GHG</b> "Program Aims"</p>	<p>"IEA GHG focuses its efforts on studying technologies to reduce greenhouse gas emissions. IEA GHG was established in 1991 and aims to provide its members with informed information on the role that technology can play in reducing greenhouse gas emissions. The Programme has three main activities which are</p> <ul style="list-style-type: none"> <li>• Evaluation of technologies aimed at reducing greenhouse gas emissions,</li> <li>• Promotion and dissemination of results and data from its evaluation studies,</li> <li>• Facilitating practical research, development and demonstration activities (R,D&amp;D) "</li> </ul>	<p>Have successfully driven R&amp;D, information sharing, legal frameworks, pilot projects for CCS</p> <p>Will facilitate development, diffusion, deployment, and transfer of existing and emerging technologies</p> <p>Will drive industrial-scale demonstration and deployment</p>
<p><b>CSLF</b> "Purpose"</p>	<p>"To facilitate the development of improved cost-effective technologies for the separation and capture of carbon dioxide for its transport and long-term safe storage; to make these technologies broadly available internationally; and to identify and address wider issues relating to carbon capture and storage. This could include promoting the appropriate technical, political, and regulatory environments for the development of such technology"</p>	
<p><b>APP</b> "Shared Vision"</p>	<p>"The Partners have come together voluntarily to advance clean development and climate objectives, recognizing that development and poverty eradication are urgent and overriding goals internationally. By building on the foundation of existing bilateral and multilateral initiatives, the Partners will enhance cooperation to meet both our increased energy needs and associated challenges, including those related to air pollution, energy security, and greenhouse gas intensities, in accordance with national circumstances. The Partners recognize that national efforts will also be important in meeting the Partnership's shared vision."</p>	
<p><b>Potential Global Institute</b> "Mandate"</p>	<p>The GCCSI is mandated to accelerate the global adoption of commercially and environmentally sustainable Carbon Capture and Storage. Initially it will drive cooperation to deliver a diverse portfolio of 20 integrated demonstration projects operating by 2020</p> <ul style="list-style-type: none"> <li>• Across a range of emitters (power generation, industrial, natural gas stripping)</li> <li>• Across a range of technologies</li> <li>• Along the entire capture, transport and storage chain</li> </ul>	

# Proposed stages for developing the Global CCS Institute



# Four programs centred on delivering mandate



# Global CCS Institute Preparatory Meeting

- An International Preparatory Meeting was held on 24-25 November in London

## The Meeting:

- Affirmed the core focus and rationale of the Global CCS Institute to support international efforts to meet the G8's goal of commitment to at least 20 fully integrated industrial-scale CCS demonstration projects by 2010 and operating by 2020
  - Agreed that the Global CCS Institute could do much in filling the needed gap in the current international CCS architecture by bringing together industry partnerships, governments and researchers to develop and invest in commercial-scale CCS demonstration projects, track the progress and provide the expertise to assist in demonstration project implementation.
  - Fine tuned the governance and administrative architecture of the Institute.
  - Continued to shape the Institute in particular its relationship to existing international bodies.
    - Built on the support that has already been offered during the international consultations. Announced Foundation Members are Shell International Petroleum, Rio Tinto Ltd, Mitsubishi Corporation, Anglo American, Xstrata Coal, Services Petroliers Schlumberger, Alstom and The Climate Group.
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- For more information, please visit the following website

[www.eventsforce.net/gccsinstitutemeeting](http://www.eventsforce.net/gccsinstitutemeeting)

# Key messages

- **CCS is an important part of the response to global warming, but it faces significant challenges.**
- **There is global recognition of the need to have a diverse portfolio of industrial-scale CCS projects by 2020, but many more successful projects will be needed to deliver this.**
- **On 19 September 2008, the Prime Minister of Australia, Kevin Rudd announced a \$100 million Global Carbon Capture and Storage (CCS) Institute, as part of a new Global CCS Initiative to speed up the development of CCS technology.**
- **We believe the level of concerted international action required to achieve these targets needs a new approach and a new mechanism - but one which complements and leverages the work in existing international forums (in particular, the CLSF/IEA) and other international partnerships.**
- **Australia will take the lead in establishing and funding a dedicated global institute for this purpose and will design it in collaboration with the international community.**
- **We engaged The Boston Consulting Group as an independent consultant to develop a business model for the institute in collaboration with potential members.**
- **We have road-tested the rationale and business model at our international Preparatory Meeting in London, 24-25 November.**
- **The core focus on demonstration projects was universally supported with broad agreement that the Global CCS Institute could fill a gap in the current international CCS architecture.**
- **We will launch the Institute in January 2009.**