



## CAPACITY DEVELOPMENT ISSUES BRIEF 2011

### KEY MESSAGES

- Capacity is one precondition for rapid demonstration and commercial CCS deployment.
- Developing countries have a real need for continued capacity development if CO<sub>2</sub> emission reduction targets will be achieved.
- Funding mechanisms have been established to support CCS capacity development in developing countries.

CCS is an important mitigation option that will contribute to achieving global emission reduction targets. However, deployment is still in the early stages in both developed and developing countries. The necessary deployment required cannot be achieved without expertise, experience, knowledge and tools in the workforce.

Capacity development is a process by which skills can be attained and individuals and organisations can enhance their capabilities at any level. Targeted capacity development activities across a range of aspects are required to build skill sets that will help to achieve the deployment of CCS.

The purpose of capacity development is to develop the information, tools, skills, expertise and institutions required to implement CCS demonstration projects and commercial operation. Capacity development strengthens the understanding, knowledge, abilities and skills of individuals, organisations, industry and governments to enable them to facilitate the deployment of CCS. For instance, capacity might be developed around:

- government understanding of legal and policy issues and how this applies to regulatory application;
- technical knowledge and skills in engineers, geologists, and project managers;
- understanding financial and commercial issues, risks and incentives by policy makers, lenders, and companies; and
- the ability of companies and governments to effectively and genuinely engage with the public and local stakeholders around a specific CCS project.

### 1.1 SCOPE

Capacity development, and developing in-country expertise and skills is a crucial part of increasing the human capacity of countries to engage in CCS dialogue and action. Organisations and Governments are becoming more involved in capacity development and the scope of activities that have taken place in the past 12-18 months are varied, ranging from raising a basic awareness and understanding of CCS to increasing specialist technical knowledge. The majority of the former activities have taken place in developing countries to address the need for greater participation in the CCS sphere.

<sup>1</sup>The Human Development Index (HDI) has been used in this brief to define the term 'Developing Country'. The term 'Developing Country' refers to all countries listed in the HDI that are not classified as 'Very High Human Development'.



The implementation of CCS technologies in developing countries is essential to the overall reduction of greenhouse gas emissions in the long term. Energy demand is expected to grow by nearly 40 per cent by 2030 and non-OECD countries are expected to account for over 90 per cent of this increase (IEA 2010). Accordingly, a number of CCS capacity development funds have been created to focus on engaging with developing countries to facilitate an understanding of CCS and to develop key skill sets.

Given the emerging considerations around CCS in developing countries and the funding mechanisms that have been implemented to support CCS capacity development, this brief provides a snapshot of key activities that have taken place in developing countries in the past 18 months. The funds and activities discussed are not a definitive list and are intended to provide insight into the range of activities that have occurred. Many activities in the past 18 months have focused on building a greater awareness and understanding of CCS. This is in recognition of governments beginning to consider the role CCS can play in environmental policies and economies.

## 1.2 KEY COUNTRIES AND ORGANISATIONS

Between June 2009 and December 2010 countries and organisations contributed or allocated hundreds of millions of dollars to current and future activities to support CCS capacity development activities in developing countries.

Organisations and countries that have contributed significant funds in this space include:

- The European Union;
- The Global CCS Institute;
- The Norwegian Government; and
- The United Kingdom Government.

These contributors have provided direct support by financing specific activities as well as contributing to CCS capacity development funding mechanisms. For example, Norway has contributed or allocated over US\$200 million to be spent between 2009 and 2014. Significant contributions have been made to capacity development funding mechanisms that are managed by the World Bank and the Carbon Sequestration Leadership Forum (CSLF). In terms of individual projects (amongst others) Norway provides financial support to the International Energy Agency Greenhouse Gas R&D Programme (IEAGHG) international summer school, the South African Centre for Carbon Capture and Storage (SACCCS) as well as the United Nations Industrial Development (UNIDO) Global CCS Industrial Roadmap which will provide relevant information on actions and milestones to government and industry decision-makers to facilitate the deployment of CCS in industry.

The Institute provided over US\$25 million to capacity development activities, including the UNIDO roadmap. The Institute has also contributed to the Asian Development Bank, World Bank and CSLF funds. In addition to committing to funding mechanisms and activities managed by others, the Institute also has its own capacity development program. For instance, in 2010, the Institute organised a capacity development workshop in Vietnam in conjunction with Alstom Power and another in Malaysia in partnership with the Malaysia Ministry for Energy, Green Technology and Water.



The United Kingdom Government, through the British Embassy in Beijing has been particularly active in providing support to capacity development activities in China. Events such as the Local Clean Coal Seminar and the CCS Symposium in South West China have raised CCS awareness with Chinese stakeholders, including generation companies and local and regional government. Activities such as these and the China Low-carbon Energy Action Network have brought together relevant industries and academics to introduce and discuss in detail the issues related to CCS with target audiences. Additionally, the United Kingdom has provided strong support to the CSLF capacity development fund and the SACCCS.

**Table 1** lists the key CCS capacity development funding mechanisms that are supported by organisations and countries but are separately managed by the Asia Pacific Economic Cooperation (APEC), the Asian Development Bank (ADB), the CSLF and the World Bank. The overarching goal of these funding mechanisms is to accelerate the deployment of CCS through supporting capacity development activities. Over the past 18 months over US\$24 million has been provided to these funding mechanisms to support capacity development activities in developing countries. Countries targeted span across continents and have varying degrees of economic wealth and development.

Whilst the long-term objective of the funding mechanisms is similar, the way in which they are managed does vary. For example, programs managed by the World Bank, the Institute and the CSLF have created funds that are specifically for CCS capacity development activities. However, funds operated by the ADB and APEC are region driven and capacity development activities are part of a wider CCS program. Other funds such as those driven by EuropeAid, Norway and the United Kingdom are part of foreign policy programs and support foreign policy objectives.

Funding mechanisms will have identified specific approaches detailing the ways in which they will engage with partner countries. For example, the Institute, in its capacity development engagements with developing countries will be guided by a number of different factors including the desire of countries to engage with the Institute, their emission profiles, development status, potential for storage capacity and regional influence.

### 1.3 CCS CAPACITY DEVELOPMENT ACTIVITIES AND DEVELOPING IN-DEPTH KNOWLEDGE

Some of the major CCS capacity development activities that have occurred around the world in the past 18 months are listed in **Table 2**. Most of these activities have taken place in Asia and focus on raising awareness and understanding around CCS, what it is and identifying country-specific concerns and barriers that may inhibit deployment. Workshops have brought together relevant stakeholders such as government officials, researchers and industry representatives to raise awareness of CCS and to discuss concerns. For the most part, the content of these workshops has been high level and includes presentations and discussions on technical expertise, policy, storage and financial and environmental issues.

While most capacity development activities focused on awareness-raising, the CCS schools aim to develop more in-depth knowledge of CCS. These CCS schools, run by the International Energy Agency Greenhouse Gas Research and Development Programme and CO2CRC, focus on students from related CCS disciplines such as geology, engineering, economics and early stage professionals. Participants are from developed and developing countries. Teaching sessions included topics such as capture, transport, storage, economics, health and safety, risk assessment, legal and regulatory requirements, monitoring and verification, and community consultation. In addition, concurrent in-depth storage technology sessions were conducted.



There will be an ongoing role for capacity development activities to focus on preliminary issues such as raising awareness and identifying initial concerns. This will be of particular importance to governments who are beginning to consider CCS as part of domestic policies. However, there remains significant knowledge and capacity gaps that impede progress toward demonstration and commercial deployment of CCS. If global emissions targets are to be reached through the deployment of CCS projects, the capacity development focus needs to shift toward developing specific skill sets such as technical and policy expertise. Future activities will need to address the limited public and government understanding that exists in some markets. They will also need to address the lack of legal and regulatory frameworks that exist. Encouraging the development of technical expertise in areas such as storage skills are of particular importance, and examples of the types of skills that are required can be found in the storage chapter of the Institute's *Global Status of CCS: 2010* report. By extending resources into more advanced CCS training, skills across the workforce will be enhanced and the momentum toward CCS deployment will continue.

The following case studies provide examples of two separate workshops that focused on developing an understanding of CCS through raising awareness, identifying potential next step activities and starting the knowledge transfer processes.

#### Case study: APEC Expert Group on Clean Fossil Energy Projects: Indonesian Workshop

##### **Increasing the Knowledge and Awareness of Carbon Capture and Storage: Capacity-Development in the APEC Region – Indonesia.**

The APEC Expert Group on Clean Fossil Energy project 'Increasing the Knowledge and Awareness of Carbon Capture and Storage: Capacity-Development in the APEC Region' was instigated to help increase the capacity of developing APEC economies to assess the potential of CCS technologies and evaluate options for the implementation and potential uptake of CCS. As part of this project, APEC held a training workshop 'Carbon Capture and Storage in Indonesia' in November 2009, which was organised in collaboration with the International Energy Agency (IEA), hosted by the Indonesian Ministry of Energy and Mineral Resources with assistance from the United Kingdom Embassy in Jakarta. The workshop brought together researchers, industry representatives and government officials to provide them with an overview of CCS and an opportunity to consider the steps needed to implement CCS in Indonesia.

The objectives of the workshop were to:

- disseminate in-depth CCS information;
- develop a greater understanding of the options and uptake potential for CCS;
- provide CCS technology transfer opportunities for governments and energy companies; and
- report on the potential for CCS technologies and recommendations to advance CCS technologies in Indonesia.

Participant feedback was very positive and provided key recommendations for the way forward for CCS in Indonesia. Recommendations included the need to:

- develop a pilot project in Indonesia which would provide a mechanism for developing legislation and technical expertise as well as raising public awareness and confidence in CCS technology;
- investigate funding mechanisms for future projects; and
- support more Capacity Development activities.

Important initiatives emerging out of the workshop, to be pursued by other international agencies, were:

- a scoping study considering possible CCS projects; and
- the development of a regulatory framework for CCS in Indonesia.



### Case Study: CCS in Southern Africa

#### **An assessment of the rationale, possibilities and capacity needs to enable CO<sub>2</sub> capture and storage in Botswana, Mozambique and Namibia.**

In April 2010, the Energy Research Centre of the Netherlands partnered with EECG Consultants (Botswana), the Eduardo Mondlane University (Mozambique) and the Desert Research Foundation of Namibia to deliver a series of workshops in Southern Africa on CO<sub>2</sub> capture and storage.

The objectives of the workshops were to:

- provide a thorough introduction to CCS to participants from relevant public, private and academic organisations; and
- explore the potential rationale, possibilities and capacity needs in each of the three countries.

Participants discussed the general energy situation in the countries, potential capture sources, suitability for geological CO<sub>2</sub> storage, and policy and regulatory needs. In addition, an open debate took place on whether CCS makes sense for their country, which often led to a lively debate regarding the possible conflicts between climate concerns and development needs.

Three common issues regarding CCS specific to the Southern African region emerged during the debate from the views and comments expressed by participants of the workshops. These were:

- power demand—all three countries are experiencing difficulties meeting the demand for power, relying on South Africa for a significant portion of their electricity requirements;
- sustainable economic diversification and industrialisation—ambitions exist to develop and diversify economies and industries; this creates the challenge of requiring more base load power. Not only does this increase reliance on external providers but also creates the potential for greater emissions. In this regard exploring CCS options, particularly for storage or for enhanced coal bed methane recovery could potentially generate income; and
- there is a lack of human and institutional capacity to address these concerns and it is likely that international assistance will be required to do so.

A key finding of the workshops was that the level of institutional and human capacity in the field of energy in general and CCS specifically is insufficient for safe and efficient deployment of CCS. There is a general shortage of skilled, aware and well-informed industry, government employees and academics.

Engineering Consultants Norway is now in the process of developing informed country work plans that will implement the workshop outcomes depending upon what the countries considered desirable and relevant.



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Table 1: Key funding mechanisms for CCS capacity development (between June 2009 and December 2010)

Organisation	Funding Mechanism	Funding Available (\$US)	Funding Focus
Asia Pacific Economic Cooperation (APEC)	APEC Support Fund	Approved annually 88,000 expended	APEC's 21 Member Economies are Australia, Brunei Darussalam, Canada, Chile, People's Republic of China, Hong Kong, China, Indonesia, Japan, Republic of Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, Peru, The Republic of the Philippines, The Russian Federation, Singapore, Chinese Taipei, Thailand, United States of America and Viet Nam.
Asian Development Bank (ADB)	Carbon Capture and Storage Program	17.3 million 3.9 million allocated	The ADB Program focuses on The People's Republic of China, India, Indonesia, and Viet Nam.
Carbon Sequestration Leadership Forum (CSLF)	Capacity Development Program	3 million Not yet allocated	The CSLF Fund will focus on the seven emerging economy CSLF Member countries which are Brazil, China, Colombia, India, Mexico, Saudi Arabia and South Africa.
EuropeAid	Grant Program for Cooperation on clean coal technology (CCT) and carbon capture and storage (CCS)	Up to 4 million <sup>2</sup> Not yet allocated	The Grant Program targets India, Indonesia, Kazakhstan, The Russian Federation, South Africa and Ukraine.
The World Bank Group	CCS Capacity Building Trust Fund	7.3 million 7.3 million allocated	Possible focus on: Botswana, China, Egypt, India, Indonesia, Jordan, Kosovo, Maghreb, and Republic of South Africa.

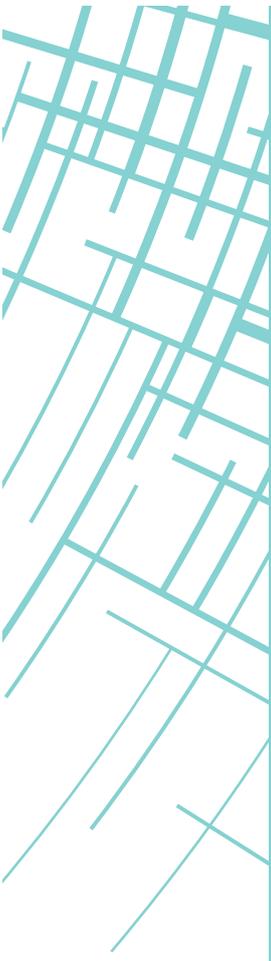
<sup>2</sup> This amount is an approximation due to exchange rates as of 10 January 2011.



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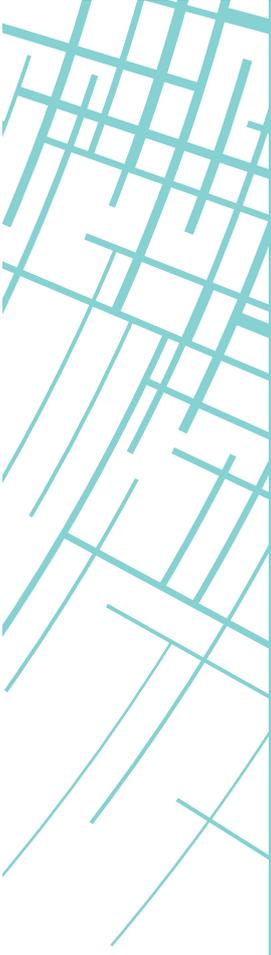
Table 2: CCS capacity development activities occurring in the past 18 months

Organisation	Activity/Event Name	Invitees	Description of Activity and Focus	Partner Organisations
<b>Brazil</b>	<b>International Energy Agency</b>	Business, Government, NGO's	A Roundtable meeting that sought engagement from stakeholders regarding the status of, and unique issues concerning, deployment of CCS in different key regions of the world.	
<b>China</b>	<b>The Administrative Centre for China's Agenda 21 (ACCA21)</b>	Government, Industry and Academics	The CAGS project aims to help to accelerate the development and deployment of geological storage of CO <sub>2</sub> in both China and Australia through a number of capacity development and research programs. This workshop was a part of the CAGS program and was aimed at improving China's capacity for CO <sub>2</sub> aquifer storage.	<ul style="list-style-type: none"> <li>Ministry of Science and Technology</li> <li>Geoscience Australia</li> </ul>
<b>ACCA21</b>	China-Australia Geographical Storage (CAGS) CCS Summer School	60 graduate students and 20 experts from Europe and China	This summer school was a part of the CAGS program. CO <sub>2</sub> capture technology, safety assessment and monitoring, site exploration and characterisation, storage capability assessment, economic problems and project implementations were conveyed in this training.	<ul style="list-style-type: none"> <li>Ministry of Science and Technology</li> <li>Geoscience Australia</li> </ul>



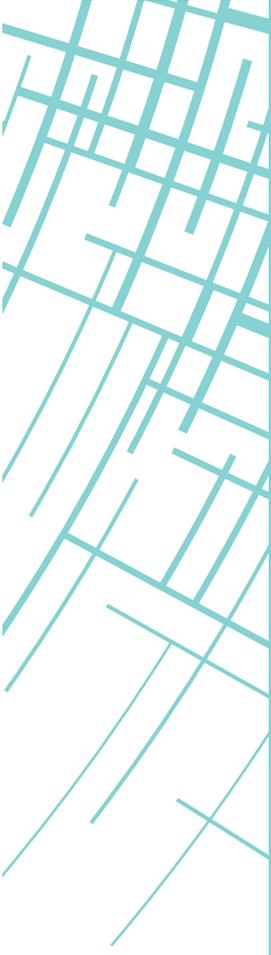
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Organisation	Activity/Event Name	Invitees	Description of Activity and Focus	Partner Organisations
ACCA21	China-Australia Geographic Storage (CAGS) CCS Summer School	60 graduate students and 20 experts from Europe and China		<ul style="list-style-type: none"> <li>Ministry of Science and Technology</li> <li>Geoscience Australia</li> </ul>
ACCA21	The first China-Australia Geographic Storage (CAGS) technical workshop	70 delegates from China, Australia, the UK and the US	The workshop enabled researchers to share their knowledge and experience, and to build valuable networks with representatives across government, academia and industry from both China and Australia.	<ul style="list-style-type: none"> <li>The Climate Group</li> <li>Ministry of Science and Technology</li> <li>Geoscience Australia</li> </ul>
ADB	Mid-term workshop regarding People's Republic of China Technical Assistance Project	CCS stakeholders	This workshop presented the initial findings regarding the Technical Assistance Project 'Carbon Capture and Storage Demonstration – Strategic Analysis and Capacity Strengthening'.	<ul style="list-style-type: none"> <li>Global CCS Institute</li> </ul>
APEC	China Capacity Development Workshop	Chinese industry and government professionals	<p>The aim of this workshop was to draw together Chinese stakeholders to discuss a broad overview of CCS and the steps needed for implementation of CCS technologies.</p> <p>The workshop catered to a wide audience whose knowledge ranged from those with expertise to those interested in broad policy or environmental issues.</p>	<ul style="list-style-type: none"> <li>CO2CRC</li> </ul>



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Organisation	Activity/Event Name	Invitees	Description of Activity and Focus	Partner Organisations
British Embassy Beijing	Launch Event of Guangdong CCS Readiness Project	Industry, Chinese central government, Guangdong local government, CCS researchers, NGOs	Developing provincial drivers for CCS-readiness (CCSR) in South China. The launch event has provided critical early momentum and political credibility to the consideration of CCS in Guangdong.	<ul style="list-style-type: none"> <li>UK FCO Strategic Programme Fund (SPF)</li> <li>Global CCS Institute</li> <li>Department of Energy and Climate Change (DECC) of UK</li> </ul>
British Embassy Beijing	Local Clean Coal Seminar	Industry, Chinese central government, Chongqing local government	The workshop provided awareness raising and capacity development to Chinese stakeholders, including state owned coal and power generation companies, central and regional government.	<ul style="list-style-type: none"> <li>UK FCO Strategic Programme Fund (SPF)</li> <li>National Development and Reform Commission of China (NDRC)</li> <li>Chongqing DRC</li> </ul>
British Embassy Beijing	Launch Event of CLEAN - the China Low-carbon Energy Action Network	Industries, CCS researchers, Government officials	The event brought together the relevant industries and researchers to discuss the possibility of future CCS deployment. The event received good industrial attendance from GD power companies and large state-owned energy companies.	<ul style="list-style-type: none"> <li>UK FCO Strategic Programme Fund (SPF)</li> <li>Global CCS Institute</li> </ul>



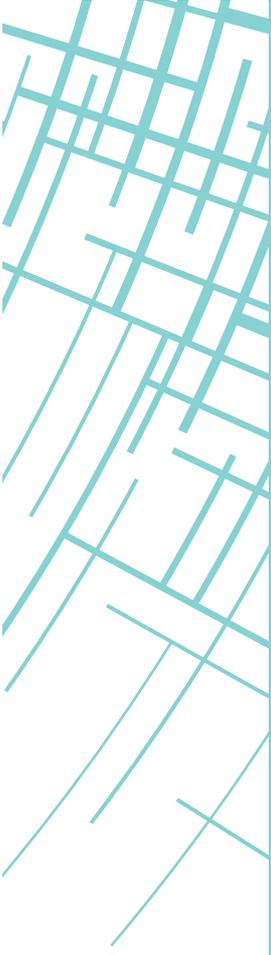
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Organisation	Activity/Event Name	Invitees	Description of Activity and Focus	Partner Organisations
British Embassy Beijing	CCS Symposium - CCS: the technology of future	Industries, CCS researchers and Gov. officials.	This was the first CCS event in South West China, and it introduced the concept to target audiences and explored the local interests. The event generated interest and kicked off a series of follow-up activities with local businesses, such as CPI (China Power Investment) Yuanda, Chongqing energy investment group and Wuhan Institute of Rock and Soil Mechanics, China Academy of Science.	<ul style="list-style-type: none"> <li>Science &amp; Innovation (S&amp;I) Small Projects Fund</li> <li>Ministry of Science and Technology</li> <li>Chongqing Municipal Government</li> <li>Chongqing Science and Technology Commission</li> </ul>
The Climate Group	Towards Market Transformation: CCS in China report launch forum & study tour	Industry, Chinese central government, NGOs, Researchers	An opportunity for CCS debate among different government departments, researchers and industries.	<ul style="list-style-type: none"> <li>British Embassy Beijing</li> <li>UK FCO Strategic Programme Fund (SPF)</li> </ul>
The Climate Group	CCS in China: Current Status and Future Options Workshop		To share the preliminary findings of 'Needs Assessment of Carbon Capture and Storage Technologies (CCS) in China' study. Meanwhile, the workshop aims to facilitate an in-depth discussion kicked-off by report findings. New thoughts were integrated into the final report.	<ul style="list-style-type: none"> <li>China Coal Information Institute</li> <li>British Embassy Beijing</li> <li>UK FCO Strategic Programme Fund (SPF)</li> <li>International Energy Agency</li> </ul>



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Organisation	Activity/Event Name	Invitees	Description of Activity and Focus	Partner Organisations
<b>International Energy Agency</b>	CCS Roundtable Programme	Government, business, NGOs	A Roundtable meeting that sought engagement from stakeholders regarding the status of, and unique issues concerning, deployment of CCS in different key regions of the world.	
<b>Indonesia</b>				
<b>APEC</b>	Indonesian Capacity Development Workshop	Indonesian industry and government decision makers	This workshop drew together Chinese stakeholders to discuss a broad overview of CCS and the steps needed for implementation of CCS technologies.	<ul style="list-style-type: none"> <li>• CO2CRC</li> <li>• Global CCS Institute</li> </ul>
<b>International Energy Agency</b>	CCS Roundtable Programme	Government, business, NGOs	A Roundtable meeting that sought engagement from stakeholders regarding the status of, and unique issues concerning, deployment of CCS in different key regions of the world.	
<b>Malaysia</b>				
<b>Global CCS Institute</b>	Malaysian CCS Workshop	Industry and government stakeholders	This workshop provided participants with a broad overview of CCS, including: what it is, why it is important, the key technologies, key storage issues, costs, legal and regulatory issues, and identification of steps and organisations that can support further consideration.	<ul style="list-style-type: none"> <li>• Malaysian Ministry of Energy, Green Technology and Water</li> </ul>



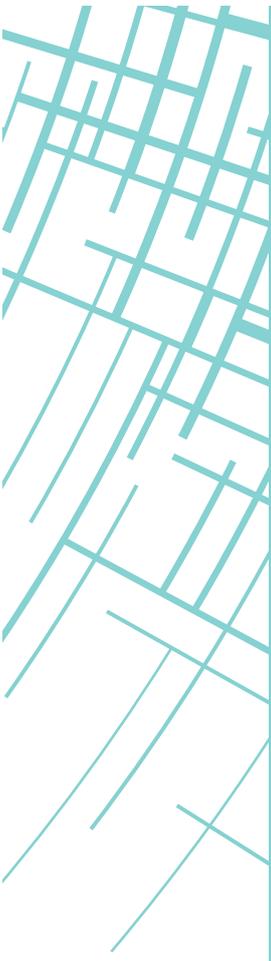
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Organisation	Activity/Event Name	Invitees	Description of Activity and Focus	Partner Organisations
<b>International Energy Agency</b>	CCS Roundtable Programme	Government, business, NGOs	A Roundtable meeting that sought engagement from stakeholders regarding the status of, and unique issues concerning, deployment of CCS in different key regions of the world.	
<b>Poland</b>				
<b>International Energy Agency</b>	CCS Roundtable Programme	Government, business, NGOs	A Roundtable meeting that sought engagement from stakeholders regarding the status of, and unique issues concerning, deployment of CCS in different key regions of the world.	
<b>South Africa</b>				
<b>International Energy Agency</b>	CCS Roundtable Programme	Government, business, NGOs	A Roundtable meeting that sought engagement from stakeholders regarding the status of, and unique issues concerning, deployment of CCS in different key regions of the world.	
<b>South Africa National Energy Research Institute (SANERI)</b>	CCS Workshops and Conference	Industry and government stakeholders. The two day conference built knowledge and capacity in developing a CCS demonstration project.	Two workshops which were held in association with the conference, focused on: geological modelling and injection techniques.	<ul style="list-style-type: none"> <li>Global CCS Institute</li> </ul>



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Organisation	Activity/Event Name	Invitees	Description of Activity and Focus	Partner Organisations
<b>Vietnam</b>				
<b>Global CCS Institute</b>	Vietnamese CCS Workshop	Industry and government stakeholders	This workshop provided participants with a broad overview of CCS, including: what it is, why it is important, the key technologies, key storage issues, costs, legal and regulatory issues, and identification of steps and organisations that can support further consideration and key steps forward.	<ul style="list-style-type: none"> <li>• Vietnamese Ministry of Industry and Trade.</li> <li>• Alstom Power</li> </ul>
<b>International Energy Agency</b>	CCS Roundtable Programme	Government, business, NGOs	A Roundtable meeting that sought engagement from stakeholders regarding the status of, and unique issues concerning, deployment of CCS in different key regions of the world.	



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Target Group	Organisation	Activity/Event Name	Invitees	Description of Activity and Focus	Partner Organisations
Asia Pacific Region	CO2CRC	CCS Summer School	PhD students and early career professionals researching or working in CCS-related fields	The School covered all aspects of CCS, including capture, transport, storage, economics, health and safety, risk assessment, legal and regulatory requirements, monitoring and verification, and community consultation. In addition, concurrent in-depth capture technology sessions and in-depth storage technology sessions were conducted.	
Developing Economies	United Nations Industrial Development Organisation (UNIDO)	CCS Sectoral Workshops	Predominantly industry stakeholders	UNIDO held two workshops in Abu Dhabi and Amsterdam to: 1. provide a thorough introduction to CCS; 2. explore the potential rationale, possibilities and capacity needs; 3. discuss concrete steps to deploy industrial CCS; and 4. present the draft Carbon Capture & Storage – Industrial Sector Roadmap to stakeholders for comment. The insights drawn from the workshops have informed the assessments in the Roadmap.	<ul style="list-style-type: none"> <li>Global CCS Institute</li> <li>Norwegian Ministry for Petroleum Energy</li> <li>MASDAR</li> </ul>



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Organisation	Activity/Event Name	Invitees	Description of Activity and Focus	Partner Organisations
World Bank	CCS Capacity Development and Technology Development Workshop	Developing economy stakeholders		<ul style="list-style-type: none"> <li>Global CCS Institute</li> </ul>
<b>Global</b>				
International Energy Agency Greenhouse Gas Programme (IEAGHG)	IEA GHG CCS Summer School	Young scientists, PhD students and Post Doc students	The summer school lasts for one week and includes presentations and discussion groups led by international experts in the field of CCS. In addition to the discussion program, the students are divided into teams to undertake short research activities on issues of importance within the CCS area, with a presentation to their peers at the end of the week. Time is also allocated for networking and for informal discussions with the assembled experts. This year the summer school was held in Norway.	<ul style="list-style-type: none"> <li>CO2CRC</li> <li>Global CCS Institute</li> </ul>
<b>Southern Africa</b>				
Energy Research Centre of the Netherlands	CCS in Southern Africa	Industry and government stakeholders	The objectives of the workshops were to provide a thorough introduction to CCS to participants from relevant public, private and academic organisations and to explore the potential rationale, possibilities and capacity needs in each of the three countries.	<ul style="list-style-type: none"> <li>Global CCS Institute</li> <li>Norwegian Ministry for Petroleum Energy</li> <li>Dutch Ministry for Economic Affairs</li> </ul>



**KEY REPORTS:**

1. United Nations Industrial Development Organisation, Carbon Capture & Storage – Industrial Sector Roadmap.

The Roadmap focuses on developing countries and concentrates on five sectors, namely high-purity CO<sub>2</sub> sources; iron & steel, cement, refineries, and biomass-based CO<sub>2</sub> sources and will aim to inform and engage relevant policy makers and decision makers in CCS technology development and deployment in industry.