



Introduction to GHG TCP / IEAGHG (IEA Greenhouse Gas R&D Programme)

Tim Dixon

General Manager IEAGHG

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Who are we?

Our internationally recognised name is the IEA Greenhouse Gas R&D Programme (IEAGHG). We are a Technology Collaboration Programme (TCP) and are a part of the International Energy Agency's (IEA's) Energy Technology Network.

Disclaimer

The IEA Greenhouse Gas R&D Programme (IEAGHG) is organised under the auspices of the International Energy Agency (IEA) but is functionally and legally autonomous. Views, findings and publications of the IEA Greenhouse Gas R&D Programme do not necessarily represent the views or policies of the IEA Secretariat or its individual member countries.

IEA Greenhouse Gas R&D Programme (IEAGHG)



- A collaborative international research programme founded under International Energy Agency in 1991
- Aim: To provide information on the role that technology can play in reducing greenhouse gas emissions from use of fossil fuels and biomass in power and industrial systems.
- Focus is on Carbon Dioxide Capture and Storage (CCS)
- Producing information that is:
 - ✓ Objective, trustworthy, independent
 - ✓ Policy relevant but NOT policy prescriptive
 - ✓ Reviewed by external Expert Reviewers



ieaghg

Evaluating technology options to mitigate greenhouse gas emissions

drax **SOUTHERN COMPANY** **Chevron** **Shell** **INSTITUT TEKNOLOGI BANDUNG** **TotalEnergies** **eni**

POWER **EPRI**

CIAB **JÜLICH FORSCHUNGSZENTRUM**

ExxonMobil **equinor**

INSTITUTO DE INVESTIGACIONES ELECTRICAS

SOTACARBO SUSTAINABLE ENERGY RESEARCH CENTRE **bp** **Baker Hughes** **JGC** **RWE**

ExCo63 – 17-18 May, Bali
ExCo64 – tbc, UK



IEAGHG Primary Activities



- Funding research into development and deployment of CCUS technologies
- Technical Reports >360 reports published on all aspects of CCUS
- International Expert Networks Risk Management; Monitoring; Modelling; Environmental Research; High Temperature Solid Looping; Costs; Social Research
- Conferences
 - GHGT conferences (the largest global conference on CCS)
 - GHGT-16: 23-27 Oct 2022, Lyon France. GHGT-17: 20-24 Oct 2024. Calgary
 - PCCC conferences – PCCC7: NETL Pittsburgh, 25-27 Sep 2023
 - Negative CO₂ Emissions conference – Summer 2024 Oxford
 - International CCS Summer Schools



IEAGHG Team



- Tim Dixon – General Manager
- Marinel Jocson – Office and Finance Manager
- Samantha (Sam) Neades – Technical Programme Resource Manager
- Jasmin Kemper – Technical Programme Technical Advisor and Negative Emissions
- Keith Burnard – Lead on Capture and Energy Systems, and membership
- Nicola (Nikki) Clarke – Senior Geologist
- Abdul’Aziz Aliyu – Industrial CCS and Hydrogen
- Suzanne Killick – Event Programme Manager
- Tom Billcliff – Communications Manager

Studies reported at ExCo62



Title	Contractor	Proposal number	Proposed by
Cost-curves for Electrochemical CO ₂ Conversion Technologies	TNO	59-03	USA
Baseline Techno-Economic Assessment of Small-Scale Carbon Capture for Industrial and Power Systems	Element Energy	58-12	USA
The Role of Indices in Assessing the Maturity of CCUS Technologies and Readiness for Deployment <i>(was titled: Maturity of CCUS Technologies and Readiness for Deployment)</i>	Foresight Transitions Ltd	58-03	Norway

Studies underway [1]



Title	Contractor	Proposal number	Proposed by
CO ₂ Storage Site Catalogue	IEAGHG	57-12	Equinor, ExxonMobil
Evolution of Conformance and Containment Risk Over Time in CO ₂ Storage Projects	BGS	59-12	Shell
Compatibility of CCUS with Net Zero Power	Wood Italiana Srl	59-02	Southern Company
Components of CCS Infrastructure – Temporary CO ₂ Storage Options	TNO	59-05	UK
Prospective Integration of Geothermal Energy with CCS	BRGM	60-11	IEAGHG
Power CCUS – Potential for Cost Reductions and Improvements in the Power Sector	Element Energy	60-03	UK

Studies underway [2]



Title	Contractor	Proposal number	Proposed by
The Value of CCUS in an Article 6 Format	Carbon Counts	58-10	Chevron, IEAGHG
Co-benefits of CCS Deployment in Industry	Element Energy	60-02	USA
Reviewing the Environmental and Public Health Implications of CO ₂ Migration to the Surface or Shallow Subsurface	CSIRO	61-07	Equinor, Norway, Shell
SRMS-Derived Total Storage Resources and Storage Coefficients	BGS	60-10	Total, ExxonMobil, Shell
Clean Steel: Environmental and Technoeconomic Outlook of a Disruptive Technology	Element Energy	61-01	Netherlands

Studies about to commence



Title	Expected start	Proposal number	Proposed by
International Standards and Testing for Novel Carbonaceous Building Materials	Oct 2022	61-05	USA
Multi-metric Analysis of Dispatchable Gas and Coal Power Plants with CCS in the Energy Storage Industry	Nov 2022	61-04	Equinor
CCUS and Public Perception	Mar 2023	60-14	UK
Monitoring, Reporting and Verification (MRV) for Greenhouse Gas Removals (GGRs)	Mar 2023	61-12	IEAGHG

ExCo62 Proposals Approved



Proposal number	Title	Normal Votes	First Choices	Weighted Votes
62-04	Comparative Study on Electrolytic Hydrogen Production Technologies from Renewables with Low-carbon Hydrogen Production Pathways	12	3	18
62-13	Market Models for CCS, a Global Screening	14	2	18
62-06	Managing the Transition of Depleted O&G Fields to CO ₂ Storage	11	3	17
62-09	Seal Integrity Review	10	3	16
62-12	The Value of Direct Air Carbon Capture and Storage (DACCS)	7	4	15



16TH GREENHOUSE GAS CONTROL TECHNOLOGIES CONFERENCE

23 - 27 OCTOBER 2022



Hosted by  Club CO₂

With



- The leading conference for CCUS for more than 30 years returned for an ‘in person’ attendance. Hosted by Club CO₂ in Lyon, France.
- Over 700 presentations in 71 sessions, 7 parallel streams, panel sessions, keynotes, plus social events
- Over 800 abstracts received. 1200 attendees
- Refer to www.ghgt.info
- Proceedings on [SSRN 16th Greenhouse Gas Control Technologies Conference 2022 \(GHGT-16\)](https://www.ssrn.com/conference/16th-Greenhouse-Gas-Control-Technologies-Conference-2022-GHGT-16/)





IEAGHG International CCS Summer Schools

- 2007 - [Germany](#), FzJ, Kloster Seon
- 2008 - [Canada](#), University Regina, Vancouver Island
- 2009 – [Australia](#), CO2CRC, Lorne
- 2010 – [Norway](#), NTNU-SINTEF, Svalbard
- 2011 – [USA](#), ISGS, Champaign
- 2012 – [China](#), Tsinghua University, Beijing
- 2013 – [UK](#), The University of Nottingham
- 2014 – [USA](#), University of Texas at Austin
- 2015 – [Australia](#), UWA/CSIRO/CO2CRC, Perth
- 2016 – [Canada](#), SaskPower, Regina
- 2017 – [Canada](#), International CCS Knowledge Centre, Regina
- 2018 – [Norway](#), NCCS, Trondheim
- 2019 - [Canada](#), International CCS Knowledge Centre, Regina
- (2020+2021 – Indonesia virtual, ITB)
- 2022 – [Indonesia](#), ITB Bandung
- 2023 - [Canada](#), International CCS Knowledge Centre, Regina



676 alumni, 58 countries



Input to WPFE



United Nations
Framework Convention on
Climate Change

CCS in CDM 2011

CCS Side Events at COP20, COP21, COP22,
COP23, COP24, COP25, COP26, COP27



CSLF Technical Group
IEAGHG inputs



CCUS Initiative
IEAGHG inputs

Knowledge Transfer



Expert Reviewers,
Accredited Observer
AR6 reviews
AR6 – 98 comments
provided



London Convention:
Regular updates on CCS:
ROAD permit assessment, Offshore workshops
CO₂ Export Resolution 2019

ISO TC-265
IEAGHG inputs





COP27 IEAGHG-organised Side-events

CCS in Africa (UNFCCC Side-event)

(IEAGHG and UT, CCSA, International CCS Knowledge Centre, Bellona)

- Tim Dixon IEAGHG – Moderator and Scene Setting
- Brad Crabtree, Assistant Secretary at the US Department of Energy - Welcome
- Dr David Khoza, **South African Council for Geoscience** – South Africa’s CCS programme
- Dr. Peter C. Ekweozoh, Federal Ministry of Science, Technology and Innovation, **Nigeria**
- Dayo Adeshina, OVP, **Nigeria**
- Abdelghafour Zaabout, University Mohammed 6 Polytechnic, **Morocco**
- Dr Katherine Romanak, University of Texas – Experience in storage for Africa
- Ruth Herbert, CEO CCSA – The role of trade associations in moving CCS forward in Africa
- Lina Strandvåg Nagell, Bellona - Lessons from Norway and EU to help Africa progress CCS
- Beth Hardy-Valiaho – International CCS Knowledge Centre – Industry applications of CCS

CCS in the Caribbean (IEAGHG and UT, CATF Pavilion)

- Tim Dixon, IEAGHG – Moderator and **Scene-setting**
- Mrs Sandra Fraser, Permanent Secretary, Ministry of Energy, Trinidad and Tobago
- The Development of a Storage Atlas for Trinidad and Tobago - Professor Andrew Jupiter (UWI), Dr Donnie Boodlal (UTT) and Dr David Alexander (UTT).
- CCS in Guyana - The University of Guyana - Ms. Denise Simmons
- Caribbean and possible funding opportunities - Mr Donnell Cain - Caribbean Community Climate Change Centre (CCCCC).
- Wrap up - Dr Katherine Romanak, University of Texas



<https://enb.iisd.org/carbon-capture-storage-africa-emerging-economies> and <https://lnkd.in/gWtn6pCA> ;
<https://www.youtube.com/watch?v=j88EVTSpez0>



IEAGHG events 2023



- High Temp Solid Looping Capture Network – 14-15 Mar, Piacenza, Italy
- IEAGHG Webinar: 22 March 2023 - IEAGHG Technical Report: 2023-01 Integrating CCS in international cooperation and carbon markets under Article 6.
- Costs Network – 12-13 April, Netherlands
- Risks Network – 28-29 Jun, Edinburgh
- Summer School – 9-15 July, Regina, Canada
- Monitoring Network – 8-9 Aug, Baton Rouge, USA
- Offshore CCS Workshop – 13-15 Sep, Aberdeen
- PCCC7 – 25-27 Sep, Pittsburgh



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