



Update from IEAGHG

Tim Dixon

General Manager IEAGHG

CLSF Technical Group Virtual Meeting, hosted by Delegation of Saudi Arabia
30 September 2020



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 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



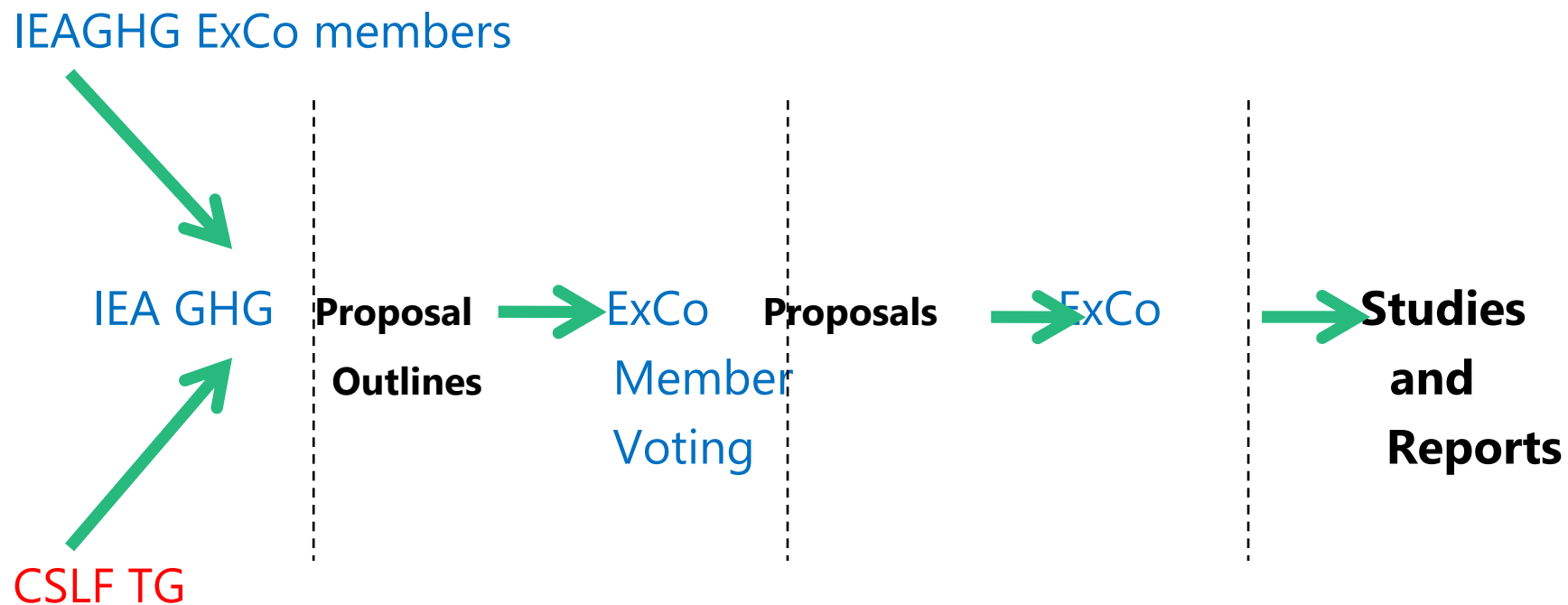
Arrangement between CSLF Technical Group and IEAGHG



- How CSLF TG/PIRT and IEAGHG will interact for mutual benefit through increased co-operation
 - Mutual representation of each at CSLF TG and IEAGHG ExCo (no voting)
 - Liaison with PIRT co-chairs to discuss potential activities or projects – two way process
 - Activities would require approval by ExCo or TG
 - Due reference to organisation providing the resource
- Agreed by IEAGHG ExCo Oct 2007 and CSLF Technical Group Jan 2008



IEAGHG – Study generation





CSLF proposed/related studies

- 'Development of Storage Coefficients for CO₂ Storage in Deep Saline Formations'. IEAGHG Report 2009/13. Presentation at CSLF TG Mar 2010
- 'Geological Storage of CO₂ in Basalts', IEAGHG Report 2011/TR2. Presentation at CSLF TG Sep 2011
- Potential Implications of Gas Production from Shales and Coal for CO₂ Geological Storage. ARI. Report published 2013. IEAGHG Report 2013/10. Presentation at CSLF TG Nov 2013
- 'LCA of CCUS – Benchmarking'. Developed as round-table/workshop: 11-12 Nov 2015 London. CSLF on Steering Committee. Report "Workshop on LCA in CCUS", IEAGHG 2016/03, March 2016. Presented to CSLF TG June 2016.
- International Workshop on Offshore Geological CO₂ Storage, 2016-TR2, July 2016. Presented at CSLF TG June 2016
- 2nd International Workshop on Offshore CCS. 2017/TR12. Nov 2017
- 3rd International Workshop on Offshore Geologic CO₂ Storage. 2018/TR02. Aug 2018
- 4th International Workshop on Offshore Geologic CO₂ Storage. 2020/TR02. April 2020

Additional new study ideas invited from CSLF TG

Outline required by Jan 2021

IEAGHG



- Flagship activities:
- **Technical Studies** >350 reports published on all aspects of CCS
- **International Research Networks**
 - Risk Management - Meeting postponed from Jun 2020 to 2021
- Webinar in Fall 2020
 - Monitoring - Webinar on 12 August 2020
 - Modelling
 - Environmental Research
 - High Temperature Solid Looping
 - Costs
- **GHGT conferences**
- GHGT-14, Melbourne, Australia, Oct 2018 – papers published on SSRN
- **PCCC conferences**
- PCCC6, UK, date tbc Fall 2021
- **Negative CO₂ Emissions conference** – postponed to Fall 2021



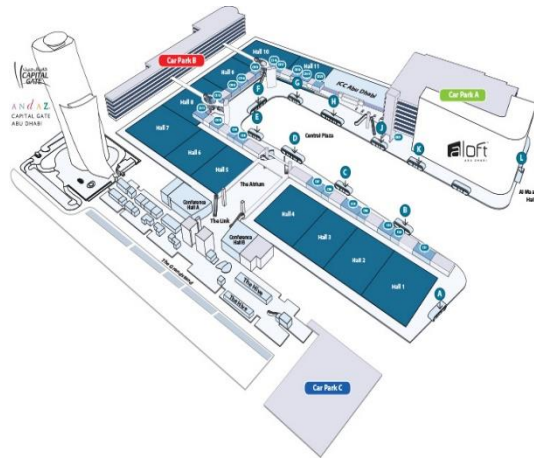


ghgt-15

Postponed to 15th to 21st March 2021



Hosted by Khalifa University
Abu Dhabi, UAE



- Deadline to submit an abstract – 8th January 2020 – 770 abstracts
- Early Bird registration opens October 2020
- Draft Technical programme announced online May 2020
- Visit <https://ghgt.info/> for all conference information

International CCS Summer Schools



- 636 alumni, 58 countries
- **2020 in Bandung, Indonesia, hosted by ITB**
- **Postponed to 11–17 July 2021**
- **CCS Course online for ASEAN students – Nov 2020**



IEAGHG Recent Reports (1)



Title	Contractor	Report number	Published
Integrated Greenhouse Gas Accounting Guidelines for Carbon Dioxide Capture, Utilisation and Geological Storage		2019-TR03	14/11/2019
CO2StCap (Cutting Cost of CO ₂ Capture in Process Industry)		2019-TR02	18/11/2019
Further Assessment of CO ₂ Capture Technologies for the Power Sector and the Potential to Reduce Costs	CSIRO	2019-09	5/03/2020
Guide to Front End Engineering Design Studies for Selected CO ₂ Capture and Storage Projects		2019-TR01	16/09/2019
The Monitoring Network and Environmental Research Network combined meeting 20 th – 22 nd August 2019.		2020-02	26/03/20
Fault workshop 23 rd August 2019		2020-03	26/03/20
Hydrogen Production with CCS Workshop – 6 November 2019		2020-TR01	12/02/2020
Monitoring and Modelling of CO ₂ Storage: The Potential for Improving the Cost-Benefit Ratio of Reducing Risk	Battelle	2020-01	20/02/2020

IEAGHG Recent Reports (2)



Title	Contractor	Report number	Published
4 th International Workshop on Offshore CCS		2020/TR02	4/2020
PCCC5 Summary			2020
The Clean Refinery and the Role of Electricity Generation	Wood	2020-04	5/2020
Value of Emerging and Enabling Technologies in Reducing Costs, Risks & Timescales for CCS	Element Energy	2020-05	7/2020
Update techno-economic benchmarks for fossil fuel-fired power plants with CO2 capture	Wood	2020-07	7/2020
The Status and Challenges of CO2 Shipping Infrastructures	Element Energy	2020-10	7/2020
Review of Constructability and Operational Challenges faced by CCUS Projects	Element Energy	2020-12	9/2020
IEAGHG Monitoring Network Virtual Discussion Panel: Regulation, Industry and Research - Translating Monitoring Research to Meet Commercial Needs		2020-TR03	9/2020

IEAGHG Reports due soon



Title	Contractor	Report number	Published
Waste to Energy and CCS	CSIRO		
Beyond LCOE - Value of CCS in Different Generation and Grid Scenarios	Imperial College		
CCS and Sustainable Development Goals	TNO		

IEAGHG Webinars



- **Value of Emerging and Enabling Technologies in Reducing Costs, Risks & Timescales for CCS**
- Samantha Neades, Katherine Orchard. 8 September 2020
- **IEAGHG Monitoring Network: 'Regulation, Industry and Research - Translating Monitoring Research to Meet Commercial Needs'**
- Tim Dixon, Sue Hovorka, Sunil Varma, Scott Wehner, Katherine Romanak, Eva Halland, Jørg Aarnes. 12 August 2020
- **Reducing Water Usage in Coal and Gas Fired Power Plants with CCS**
- Monica Garcia, Regina Sander and Paul Feron. 25th June 2020
- **Launching CO₂ DataShare – a digital portal for making CO₂ storage data available**
- Grethe Tangen , Odd Andersen, Philip Ringrose, Anne-Kari Furre. 27th February 2020
- **COP-25 Summary Highlights**
- Arthur Lee and Tim Dixon. 14th January 2020

• <https://ieaghg.org/publications/webinars>

IEAGHG Information Papers (recent)



Information Paper Title	IP No.	Issue Date	Author
The Hydrogen Economy Outlook released by BloombergNEF	2020-IP06	14/04/2020	MG
New paper on GHG life cycle emissions of a DAC + FTS process for synfuel production	2020-IP07	05/05/2020	JK
Global Energy Review 2020: The impacts of the COVID-19 crisis on global energy demand and CO ₂ emissions	2020-IP08	11/05/2020	KB
ADB report on CCUS readiness	2020-IP10	16/07/2020	KB
DOE Report on Petra Nova	2020-IP11	02/09/2020	KB
Artificial Intelligence and CCS	2020-IP12	03/09/2020	SN
CCUS in the EU Recovery Plan	2020-IP13	04/09/2020	SN
Release of the IEA's Energy Technology Perspectives 2020	2020-IP14	15/09/2020	KB

IEAGHG Blogs (recent)



Title	Author	Date
GoMCarb Annual Meeting 2020	TD	30/03/20
Kick-off meeting of the C4U project (Advanced Carbon Capture for Steel Industries Integrated in CCUS Clusters)	MG	27/04/20
Review of Aquistore Webinar presented on 12 th May 2020	JC	15/05/20
CCUS in ADB's Asia Clean Energy Forum 2020	TD	19/06/20
The CO ₂ DataShare Digital Platform has Launched and is Open for International Research	JC	25/06/20
IEA Special Report on Clean Energy Innovation	KB	03/07/20
Summary of the IEA Clean Energy Transitions Summit	KB	13/07/20
Value of Emerging and Enabling Technologies in Reducing Costs, Risks & Timescales for CCS	SN	14/07/20
US DOE-NETL's 2020 Integrated Project Review Meeting (Virtual)	JC/MG/SN/TD	01/09/20
News from US DOE-NETL's 2020 Carbon Storage Project Review Meeting (Virtual)	SN/TD/JC	16/09/20
Key Financing Principles for CCUS – launch event by CEM CCUS Initiative	TD	16/09/20



International Energy Agency



United Nations Framework Convention on Climate Change

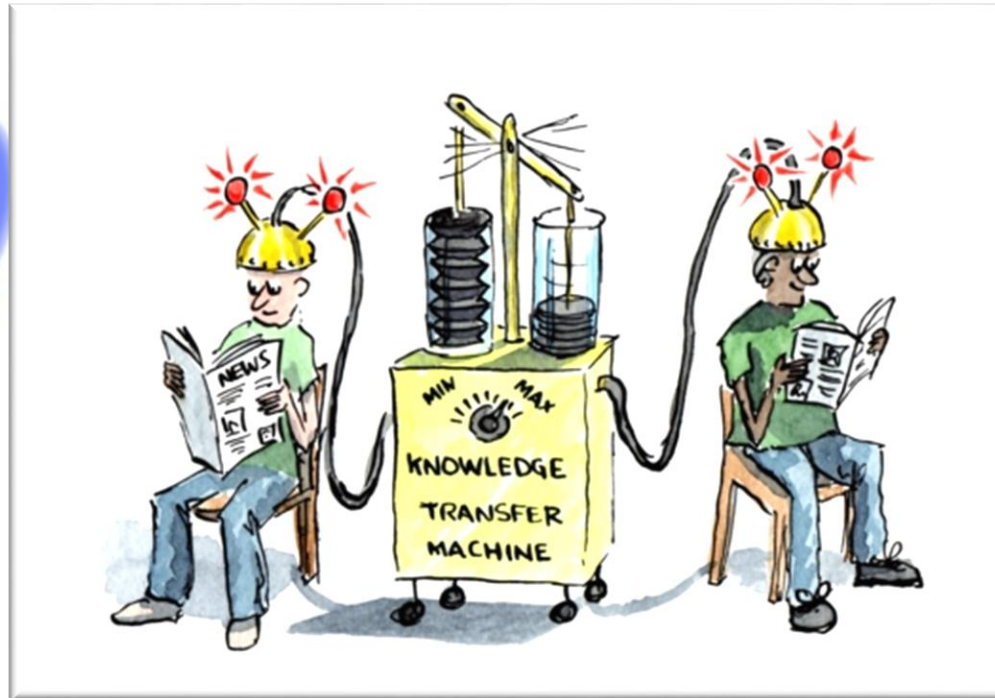


CCS Side Events at COP20, COP21, COP22, COP23, COP24, **COP25**

Input to WPFE



IEAGHG
Technical reports to CSLF
Technical Group



Expert Reviewers, Accredited Observer



ISO Technical Committee on CCS, TC-265
4 draft standards, 2 technical reports
IEAGHG input



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

UNFCCC COP-25 Side-event

Carbon Removal and Return – Can CCS Decarbonise Industry in South America and help the oceans? ?

Organisers: IEAGHG, University of Texas, International CCS Knowledge Centre, Bellona and CCSA. COP-25, Madrid, 4th Dec, 16:45.

- **CCS introduction and context setting** – Tim Dixon IEAGHG (Chair)
- **IPCC SR on Oceans and the Cryosphere** - Carol Turley, PML, UK
- **Direct Air Capture** - Jen Wilcox, Worcester Polytechnic, USA
- **Monitoring, Safety and Technology Transfer** - Katherine Romanak, The University of Texas, USA
- **Developing a National CCS Programme in Trinidad and Tobago** - Andrew Jupiter, University of the West Indies, T&T
- **CCS to Decarbonize Cement** – Beth Hardy, International CCS Knowledge Centre, Canada
- **Sustainable Jobs from BECCS in South America** - Piera Patrizio, IIASA, Austria
- **CO2 Transport and Storage: A Flexible Low Carbon Infrastructure**, Keith Whiriskey - Bellona, EU
- **Summing Up and Key messages** - Tim Dixon IEAGHG, UK

100 attendees and IISD coverage

Photos and captions courtesy of IISD <https://enb.iisd.org/climate/cop25/side-events/4dec.html>



United Nations
Framework Convention on
Climate Change



Tim Dixon, General Manager, IEAGHG, addresses participants.



Katherine Romanak, Bureau of Economic Geology, University of Texas at Austin



Carol Turley, Plymouth Marine Laboratory, UK



Andrew Jupiter, University of the West Indies, Trinidad and Tobago



A view of the room



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