Update from IEAGHG

Tim Dixon
General Manager IEAGHG

CSLF Technical Group Virtual Meeting, hosted by Research Council of Norway
28 April 2021
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
Arrangement between CSLF Technical Group and IEAGHG

• How CSLF TG/PIRT and IEAGHG will interact for mutual benefit through increased co-operation
• Agreed by IEAGHG ExCo Oct 2007 and CSLF Technical Group Jan 2008
IEAGHG – Study generation

IEAGHG ExCo members

IEA GHG

Proposal
Outlines

ExCo

Proposals

ExCo

Studies
and
Reports
C SLF proposed/related studies

Recent reports:

- Hydrogen Production with CCS workshop. 6th November 2020, Paris. IEAGHG 2020/TR01
- 4th International Workshop on Offshore CCS. IEAGHG Report 2020/TR02

- Additional new study ideas invited from CSLF TG
- Outline required by June 2021
IEAGHG

• Flagship activities:

• Technical Studies >356 reports published on all aspects of CCS

• International Research Networks
  • Risk Management - Meeting postponed from Jun 2020 to 2022
  • Monitoring - Webinars in Aug 2020, Jan 2021
  • Modelling
  • Environmental Research
  • High Temperature Solid Looping
  • Costs

• GHGT conferences
  • GHGT-15, Virtual from UAE, Mar 2021 – papers published on SSRN

• PCCC conferences
  • PCCC6, UKCCSRC, virtual, 19-21 Oct 2021

• Negative CO₂ Emissions conference – postponed
Virtual
15th to 21st March 2021

Hosted by Khalifa University,
Abu Dhabi, UAE

- Over 500 presentations
- 956 delegates from 41 countries
- Papers on SSRN by end April 2021 and some selected for IJGGC
- GHGT-15 Summary report
International CCS Summer Schools

• 636 alumni, 58 countries

• 2020 in Bandung, Indonesia, hosted by ITB - Postponed to 2022

• CCS Virtual Course with ITB
  • for ASEAN students – Nov 2020
  • 82 students

• CCS Virtual Course with ITB 2021
  • 26 Jul to 6 Aug 2021
## Recent Reports

<table>
<thead>
<tr>
<th>Title</th>
<th>Contractor</th>
<th>Report number</th>
<th>Proposed by</th>
<th>Publication date</th>
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<tbody>
<tr>
<td>Beyond LCOE: Value of technologies in different generation and grid scenarios</td>
<td>Imperial College</td>
<td>2020-11</td>
<td>UK</td>
<td>29/09/2020</td>
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<tr>
<td>CCS and the Sustainable Development Goals</td>
<td>TNO</td>
<td>2020-14</td>
<td>Shell &amp; IEAGHG</td>
<td>15/12/2020</td>
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<td>IEAGHG High Temperature Solid Looping Cycles Network – Combined meeting report</td>
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<td>2020-13</td>
<td></td>
<td>16/10/2020</td>
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<td>Techno-economic Potential of Biorefineries with CCS</td>
<td>VTT</td>
<td>2021-01</td>
<td>IEAGHG</td>
<td>26/03/2021</td>
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<td>IEAGHG Risk Management Network Webinar December 2020</td>
<td></td>
<td>2021-TR01</td>
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<td>25/01/2021</td>
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<tr>
<td>Exporting CO₂ for Offshore Storage – The London Protocol’s Export Amendment and Associated Guidelines and Guidance</td>
<td></td>
<td>2021-TR02</td>
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<td>April 2021</td>
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Expert Networks and other events

2020 / 2021


• Risk Management Network virtual Discussion Panel webinar was held on 2nd December 2020. Reported in Technical Review 2021-TR01.

• The Monitoring Network held a second virtual webinar on 26th January 2021 entitled ‘Monitoring Expertise Showcase for Post Closure Monitoring’ – report in progress.
# Webinar series

- Established June 2015
- 29 webinars to date

<table>
<thead>
<tr>
<th>Webinar title</th>
<th>Date</th>
<th>Presenter</th>
<th>No. attendees</th>
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<tbody>
<tr>
<td>Beyond LCOE: Value of technologies in different generation and grid scenarios</td>
<td>15/12/2020</td>
<td>Keith Burnard, IEAGHG Professor Niall MacDowell, Imperial College London</td>
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<td>123</td>
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<tr>
<td>High-level analysis of the integration of WtE with CCS/CCU</td>
<td>20/01/2021</td>
<td>Mónica García, IEAGHG Vincenzo Tota, Process Manager, Wood, Italy</td>
<td>85</td>
<td>270</td>
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<td></td>
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<td>Federico Viganò, Assistant Professor, LEAP</td>
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<td>CO₂ DataShare: Sleipner Benchmark study</td>
<td>25/02/2021</td>
<td>James Craig, IEAGHG Sarah Gasda, NORCE Odd Andersen, SINTEF Tore Ingvald Bjørnarå, NGI Tor Harald Sandve, NORCE Adeel Zahid, Equinor. Philip Ringrose, Equinor.</td>
<td>78</td>
<td>797</td>
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IEAGHG Webinars

- **Value of Emerging and Enabling Technologies in Reducing Costs, Risks & Timescales for CCS**
  - Samantha Neades, Katherine Orchard. 8 September 2020

  - 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 CO$_2$ DataShare – a digital portal for making CO$_2$ 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](https://ieaghg.org/publications/webinars)
<table>
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<tr>
<th>Information Paper Title</th>
<th>IP No.</th>
<th>Issue Date</th>
<th>Author</th>
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<tr>
<td>IEA Press Webinar: Special Report on Carbon Capture Utilisation and Storage: CCUS in Clean Energy Transitions</td>
<td>2020-IP15</td>
<td>01/10/2020</td>
<td>KB</td>
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<td>G20 Energy Ministerial Communique</td>
<td>2020-IP18</td>
<td>15/10/2020</td>
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<td>World Energy Outlook 2020</td>
<td>2020-IP19</td>
<td>03/11/2020</td>
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<td>Virtual Workshop on CO\textsubscript{2} Infrastructure and Industrial Clusters</td>
<td>2020-IP21</td>
<td>17/11/2020</td>
<td>JC</td>
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<td>The Adopted Provisional Application of the London Protocol's CCS Export Amendment</td>
<td>2020-IP22</td>
<td>13/11/2020</td>
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<td>CCUS for Low Carbon Strategies in Industries Workshop</td>
<td>2020-IP23</td>
<td>10/12/2020</td>
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<td>Lessons from Longship</td>
<td>2020-IP24</td>
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<td>WPFE Energy Water Workshop</td>
<td>2021-IP02</td>
<td>08/01/2021</td>
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<tr>
<td>IEA Key Priorities and Special Projects for 2021</td>
<td>2021-IP03</td>
<td>20/01/2021</td>
<td>KB</td>
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<tr>
<td>ICEF Roadmap on Biomass Carbon Removal and Storage (BiCRS)</td>
<td>2021-IP04</td>
<td>25/02/2021</td>
<td>JK</td>
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<tr>
<td>UNFCCC Synthesis Report on Nationally Determined Contributions</td>
<td>2021-IP05</td>
<td>08/03/2021</td>
<td>TD and Juho Lipponen (CEM)</td>
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London Convention & Protocol:
Regular updates on CCS:
ROAD permit assessment,
Offshore workshops

IEAGHG
Technical reports
to CSLF
Technical Group

ISO Technical Committee
on CCS, TC-265
IEAGHG input

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

Input to WPFE

Expert Reviewers,
Accredited Observer
AR6 – 98 comments
provided

ISO

IMO

CO₂ Export Resolution

IEAGHG

Zep

Zero emissions platform

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

Carbon Sequestration Leadership Forum

United Nations
Framework Convention on Climate Change
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