6th International Workshop on Offshore Geologic CO₂ Storage

13-14 September 2023
Contents

About the workshop................................................................................................................................................................................4
The Centre for Energy Transition..........................................................................................................................................................5
Storgegga........................................................................................................................................................................................................6
Programme....................................................................................................................................................................................................7
About the workshop

The International Workshop on Offshore Geologic CO2 Storage series began in 2016 as a collaboration between the Bureau of Economic Geology’s Gulf Coast Carbon Center and IEAGHG. The workshop was conceived in response to a Carbon Sequestration Leadership Forum (CSLF) Task Force report, led by the United States, on technical barriers and R&D opportunities for offshore CO2 storage, which called for international knowledge sharing through workshops and international collaborative projects. The main objective of the series is for countries that want to do offshore storage to learn from those who are doing it. The series has grown in popularity over the years as more countries look towards the vast storage potential found in the deep geologic formations of the offshore.

Our thanks go to Storegga for their sponsorship of this edition in Aberdeen, and to the University of Aberdeen for hosting.

Co-chairs of workshop
Tim Dixon,
IEAGHG
Katherine Romanak,
Gulf Coast Carbon Centre

About the University of Aberdeen

Founded in 1495, the University of Aberdeen is Scotland’s third oldest university and the fifth oldest in the UK. It is a community of more than 130 nationalities, with 14,000 students and 3,600 staff.

Established to serve the north-east of Scotland, today our university is a global presence in higher education. A dual focus on our region and the wider world is as important to us today as it was five centuries ago.

The University is committed to four key areas which guide our present work and future direction.

- **Inclusive** – we value diversity
- **Interdisciplinary** – we learn together
- **International** – we think across borders
- **Sustainable** – we work responsibly
The Centre for Energy Transition

Our integrated centers bring together academics from across the University to work on key global challenges. For more than 40 years experts at the University of Aberdeen have been combining our academic excellence with industry expertise to innovate and make positive change for the future of global energy.

Alongside our research, the University of Aberdeen offers a wide range of courses aimed at the Energy Transition, including the world’s first and only Masters degree in decommissioning oil rigs, platforms and offshore structures. With different study options available, including online study and short courses, why not browse our energy courses and see how we can prepare you for a career in Energy Transition.

Energy Masters Programme
Masters Programmes | Research | The University of Aberdeen (abdn.ac.uk)

Online Learning
Energy Courses - Online Degrees and Short Courses | University of Aberdeen | UK (abdn.ac.uk)

Continual Professional Development
CPD Programmes | Research | The University of Aberdeen (abdn.ac.uk)
**Just Transition Lab**

The Just Transition Lab is a cross School research group involving the School of Geosciences, School of Law, School of Social Sciences and the Business School working on advancing interdisciplinary impact-driven research on Just Transition. Based in Aberdeen, the Lab researchers work at the forefront of Just Transition challenges, employing action and participatory research to facilitate insightful policy analysis and engagement with key stakeholders.

**School of Geosciences**

Our diverse community of academics and students is united by a common interest in the Earth – its past, present and future – and how we as humans interact with the planet we inhabit. Research ranges across the social and natural sciences, addressing topics such as: future energy options, development of digital societies, catastrophic natural processes, hydrology and drainage evolution and human impacts on the natural environment. Much of our ground-breaking research is encompassed with the Centre for Energy Transition and the Just Transition Lab, in areas such as geothermal energy, carbon capture and storage, nuclear waste storage and critical materials for the energy transition.
Storegga is an independent developer of low-carbon solutions including industrial carbon capture, storage and hydrogen.

Our founders were integral to the earliest work on carbon capture and storage in the UK.

Since 2007 we have been leveraging experience from the offshore oil and gas sector to screen, identify and develop geological storage for industrial carbon dioxide (CO₂) emissions.
## Programme

**WEDNESDAY 13 SEPTEMBER**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>09.00</td>
<td>Arrival &amp; Tea &amp; Coffee</td>
</tr>
<tr>
<td>09.30</td>
<td><strong>Session 1 - Welcome &amp; Scene Setting</strong></td>
</tr>
<tr>
<td></td>
<td>Welcome from Prof Nick Forsyth, Vice Principal Research, University of Aberdeen</td>
</tr>
<tr>
<td></td>
<td>Welcome from Steve Murphy, Chief Commercial Officer, Storegga</td>
</tr>
<tr>
<td>09.40</td>
<td>Welcome from Tim Dixon, IEAGHG &amp; Katherine Romanak, University of Texas at Austin</td>
</tr>
<tr>
<td>09.50</td>
<td>Scene setting from Owain Tucker, Shell</td>
</tr>
<tr>
<td>10.00</td>
<td><strong>Session 2 - Project Roundups</strong></td>
</tr>
<tr>
<td></td>
<td>Session Chairs: Tim Dixon, IEAGHG &amp; Clare Bond, University of Aberdeen</td>
</tr>
<tr>
<td>10.00</td>
<td>Acorn, UK</td>
</tr>
<tr>
<td></td>
<td>Iain Morrison, Storegga</td>
</tr>
<tr>
<td>10.05</td>
<td>Prinos, Greece</td>
</tr>
<tr>
<td></td>
<td>Katrina Sardi, Energean</td>
</tr>
<tr>
<td>10.10</td>
<td>Corpus Christi, USA</td>
</tr>
<tr>
<td></td>
<td>Tip Meckel, University of Texas</td>
</tr>
<tr>
<td>10.15</td>
<td>Viking CCS, UK</td>
</tr>
<tr>
<td></td>
<td>Andrew Hood / Johnathan Murray – Harbour Energy</td>
</tr>
<tr>
<td>10.20</td>
<td>Pilot Strategy, Portugal</td>
</tr>
<tr>
<td></td>
<td>Helena Caeiro - University of Évora</td>
</tr>
<tr>
<td>10.25</td>
<td>Northern Lights</td>
</tr>
<tr>
<td></td>
<td>Catalina Acuna, Northern Lights</td>
</tr>
<tr>
<td>10.30</td>
<td>South Korea</td>
</tr>
<tr>
<td></td>
<td>Axel Lemus, CCUS</td>
</tr>
<tr>
<td>10.35</td>
<td>Porthos, Netherlands</td>
</tr>
<tr>
<td></td>
<td>Kike Beintema, EBN</td>
</tr>
<tr>
<td>10.40</td>
<td>Liverpool Bay CCS, UK &amp; Ravenna CCUS project, Italy</td>
</tr>
<tr>
<td></td>
<td>Manotti Matteo - ENI</td>
</tr>
<tr>
<td>10.45</td>
<td>Project Greensand, Denmark</td>
</tr>
<tr>
<td></td>
<td>Søren Reinhold Poulsen - INEOS</td>
</tr>
<tr>
<td>10.50</td>
<td>Deep C Store, Australia</td>
</tr>
<tr>
<td></td>
<td>Daein Cha – Deep C Store</td>
</tr>
<tr>
<td>11.00</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>11.20</td>
<td>Taiwan</td>
</tr>
<tr>
<td></td>
<td>Cheryl Yang - ITRI</td>
</tr>
<tr>
<td>11.25</td>
<td>Poseidon</td>
</tr>
<tr>
<td></td>
<td>Nick Terrell, Carbon Catalyst</td>
</tr>
<tr>
<td>11.30</td>
<td>Gulf of Mexico, USA</td>
</tr>
<tr>
<td></td>
<td>Rahul Umrani, Talos Energy</td>
</tr>
<tr>
<td>11.35</td>
<td>Petrobras, Brasil</td>
</tr>
<tr>
<td></td>
<td>Ana Paula Musse, Petrobras</td>
</tr>
<tr>
<td>11.40</td>
<td>Pelican project, Australia</td>
</tr>
<tr>
<td></td>
<td>Victoria Fitzgerald, Victoria State Government</td>
</tr>
<tr>
<td>11.45</td>
<td>Enping, China</td>
</tr>
<tr>
<td></td>
<td>Liwei Zhang, Chinese Academy of Science</td>
</tr>
<tr>
<td>11.50</td>
<td>Timor Leste</td>
</tr>
<tr>
<td></td>
<td>Francelino Antonio Xavier, ANPM</td>
</tr>
<tr>
<td>11.55</td>
<td>Discussion</td>
</tr>
<tr>
<td>Time</td>
<td>Session</td>
</tr>
<tr>
<td>-------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>12.25</td>
<td>Lunch</td>
</tr>
<tr>
<td>13.15</td>
<td>Session 3 - Injection &amp; Wells</td>
</tr>
<tr>
<td>13.15</td>
<td>Capacity/pressure space – Gulf of Mexico</td>
</tr>
<tr>
<td>13.30</td>
<td>100 sq miles question – is that the right size?</td>
</tr>
<tr>
<td>13.45</td>
<td>Managing our well stock</td>
</tr>
<tr>
<td>14.00</td>
<td>Discussion</td>
</tr>
<tr>
<td>14.30</td>
<td>Comfort Break</td>
</tr>
<tr>
<td>14.45</td>
<td>Session 4 - Legal, Regulatory &amp; Accounting</td>
</tr>
<tr>
<td>14.45</td>
<td>Delivering Carbon Storage on the UK Continental Shelf – The NSTA’s role in regulating and stewarding activity at pace and scale</td>
</tr>
<tr>
<td>15.00</td>
<td>Update from ISO WG3-27914</td>
</tr>
<tr>
<td>15.15</td>
<td>Transport of CO₂ for Offshore Storage under the London Protocol</td>
</tr>
<tr>
<td>15.30</td>
<td>Implications of the Net Zero Industry Act for CO₂ storage development in the EU</td>
</tr>
<tr>
<td>15.45</td>
<td>Recent Advancements in the Carbon Capture and Storage (CCS) Regulatory Framework in Brazil: Progress and Prospects</td>
</tr>
<tr>
<td>16.00</td>
<td>Discussion</td>
</tr>
<tr>
<td>16.15</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>16.30</td>
<td>Session 5 - Interaction with other users of the seabed</td>
</tr>
<tr>
<td>16.30</td>
<td>Windfarms and hybrid uses</td>
</tr>
<tr>
<td>16.45</td>
<td>The role of CCS in an integrated energy system at the North Sea</td>
</tr>
<tr>
<td>17.00</td>
<td>Discussion</td>
</tr>
<tr>
<td>17.30</td>
<td>Close</td>
</tr>
</tbody>
</table>
### THURSDAY 14 SEPTEMBER

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Chair</th>
</tr>
</thead>
<tbody>
<tr>
<td>08.30</td>
<td>Arrival &amp; Tea &amp; Coffee</td>
<td></td>
</tr>
<tr>
<td>09.00</td>
<td>**Session 6 - Transport &amp; Infrastructure</td>
<td>Owain Tucker, Shell</td>
</tr>
<tr>
<td>09.00</td>
<td>Development and operation of CCS pipeline network</td>
<td>Stefan Belfroid, TNO</td>
</tr>
<tr>
<td>09.15</td>
<td>CO2 Shipping Developments</td>
<td>Ajay Edakkara, Shell</td>
</tr>
<tr>
<td>09.30</td>
<td>Qualitative Well Integrity Risk Assessment for Carbon Storage in the Gulf of Mexico Depleted Fields</td>
<td>Brigitte Petras, Battelle</td>
</tr>
<tr>
<td>09.45</td>
<td>Practical Approaches to CO$_2$ Subsurface Storage Risk Assessment</td>
<td>Andy Lidstone, Risktec</td>
</tr>
<tr>
<td>10.00</td>
<td>Discussion</td>
<td></td>
</tr>
<tr>
<td>10.30</td>
<td>Coffee Break</td>
<td></td>
</tr>
<tr>
<td>11.00</td>
<td>**Session 7 - Stakeholder Engagement</td>
<td>Tim Dixon, IEAGHG</td>
</tr>
<tr>
<td>11.15</td>
<td>Stakeholder views on offshore monitoring in the Gulf of Mexico</td>
<td>Katherine Romanak, University of Texas at Austin</td>
</tr>
<tr>
<td>11.30</td>
<td>Key determinants of public reactions to CCS in the UK: What shapes acceptance?</td>
<td>Darrick Evensen, University of Edinburgh</td>
</tr>
<tr>
<td>11.45</td>
<td>Stakeholder Engagement and a Just Transition - What is required of CCS?</td>
<td>Tavis Potts, University of Aberdeen</td>
</tr>
<tr>
<td>12.00</td>
<td>Discussion</td>
<td></td>
</tr>
<tr>
<td>12.30</td>
<td>Lunch</td>
<td></td>
</tr>
<tr>
<td>13.30</td>
<td>**Session 8 – Monitoring</td>
<td>Simon O’Brien, Shell</td>
</tr>
<tr>
<td>13.30</td>
<td>Greensand Monitoring Research</td>
<td>Andreas Szabados, Wintershall DEA</td>
</tr>
<tr>
<td>13.45</td>
<td>DAS at seabed for Passive Seismic Monitoring: Application to CO$_2$ Storage</td>
<td>Estelle Rebel, Total Energies</td>
</tr>
<tr>
<td>14.00</td>
<td>Acorn – Measurement, Monitoring and Verification Planning</td>
<td>Gwilym Lynn, Shell</td>
</tr>
<tr>
<td>14.15</td>
<td>The Northern Lights CO2 transport and storage company: how we built a robust monitoring and response plan</td>
<td>Catalina Acuna, Northern Lights</td>
</tr>
<tr>
<td>14.30</td>
<td>Discussion</td>
<td></td>
</tr>
<tr>
<td>15.00</td>
<td>Coffee Break</td>
<td></td>
</tr>
</tbody>
</table>

7pm – Arrival Drinks at Chester Hotel, Queen’s Road, Aberdeen

7.30pm - Dinner
<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.30</td>
<td>**Session 9 - Environmental Aspects</td>
<td>Chair – Nicola Clarke**</td>
</tr>
<tr>
<td>15.30</td>
<td>DOE’s Stakeholder Engagement Efforts in the Wake of the U.S. Bipartisan Infrastructure Law’s $12 Billion Investment in Carbon Management</td>
<td>Mary-Ellen Kwong, US Department of Energy</td>
</tr>
<tr>
<td>15.45</td>
<td>Environmental monitoring strategies developed through controlled release experiments</td>
<td>Marius Dewar, STEM-CCS</td>
</tr>
<tr>
<td>16.00</td>
<td>Potential environmental impacts from offshore CO₂ storage in the UK</td>
<td>Paul Wood, Shell</td>
</tr>
<tr>
<td>16.15</td>
<td>Considerations for new seismic data acquisition supporting CCS in the Gulf of Mexico</td>
<td>Katherine Romanak, University of Texas at Austin</td>
</tr>
<tr>
<td>16.30</td>
<td>Environmental monitoring of offshore carbon storage – experience from ACT4storage and outlook for Smart AUVs”</td>
<td>Ann Blomberg, NGI</td>
</tr>
<tr>
<td>16.45</td>
<td>Discussion</td>
<td></td>
</tr>
<tr>
<td>17.00</td>
<td><strong>Summary &amp; Recommendations</strong></td>
<td>Tim Dixon, Katherine Romanak, Nikki Clarke</td>
</tr>
<tr>
<td>17.30</td>
<td>Close</td>
<td></td>
</tr>
<tr>
<td>Letter</td>
<td>Location</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>King's College</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>University Office</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Regent Building</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Sir Duncan Rice Library</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>The Student Union Building</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Cruickshank Botanical Gardens</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>St. Mary's Building</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>The Old Town House</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>Fraser Noble Building</td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>Zoology Building</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>MacRobert Building</td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>Meston Building</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>Aberdeen Sports Village/Aquatics Centre</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>Taylor Building</td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>Edward Wright Building</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>William Guild Building</td>
<td></td>
</tr>
<tr>
<td>Q</td>
<td>Old Brewery</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>New King's</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>50/52 College Bounds</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>Science Teaching Hub</td>
<td></td>
</tr>
</tbody>
</table>