GLOBAL CCS INSTITUTE UPDATE

CSLF Technical Group Meeting – 28 April 2021

DOMINIC RASSOOL
Senior Consultant – Policy & Finance
• 66 commercial CCS facilities: 26 operating, 4 under construction, 34 under development, 2 with operations suspended.

• Almost 40 million tonnes of CO₂ captured annually from 26 commercial CCS facilities currently in operation.
## 17 New Facilities Added in 2020

<table>
<thead>
<tr>
<th>Facility Title</th>
<th>Capture Capacity (Mtpa)</th>
<th>Operation Date</th>
<th>Status</th>
<th>Country Name</th>
<th>Industry</th>
<th>Storage Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qatar LNG CCS</td>
<td>2.1</td>
<td>2019</td>
<td>Operational</td>
<td>Qatar</td>
<td>Natural Gas Processing</td>
<td>Dedicated Geological Storage</td>
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<td>Santos Cooper Basin CCS Project</td>
<td>1.7</td>
<td>2023</td>
<td>Advanced Development</td>
<td>Australia</td>
<td>Natural Gas Processing</td>
<td>Dedicated Geological Storage</td>
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<td>San Juan Generating Station Carbon Capture</td>
<td>6</td>
<td>2023</td>
<td>Advanced Development</td>
<td>USA</td>
<td>Power Generation</td>
<td>Under Evaluation</td>
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<td>Velocys’ Bayou Fuels Negative Emission Project</td>
<td>0.5</td>
<td>2024</td>
<td>Early Development</td>
<td>USA</td>
<td>Chemical Production</td>
<td>Dedicated Geological Storage</td>
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<tr>
<td>Project Pouakai Hydrogen Production with CCS</td>
<td>1</td>
<td>2024</td>
<td>Early Development</td>
<td>New Zealand</td>
<td>Hydrogen Production and Power Generation</td>
<td>Under Evaluation</td>
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<td>Cal Capture</td>
<td>1.4</td>
<td>2024</td>
<td>Advanced Development</td>
<td>USA</td>
<td>Power Generation</td>
<td>Enhanced Oil Recovery</td>
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<td>Red Trail Energy BECCS Project</td>
<td>0.18</td>
<td>2025</td>
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<td>USA</td>
<td>Ethanol Production</td>
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<td>Clean Energy Systems Carbon Negative Energy Plant - Central Valley</td>
<td>0.32</td>
<td>2025</td>
<td>Early Development</td>
<td>USA</td>
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<td>Under Evaluation</td>
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<td>The Illinois Clean Fuels Project</td>
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<td>2025</td>
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<td>USA</td>
<td>Chemical Production</td>
<td>Dedicated Geological Storage</td>
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<td>Orax BECCS Project</td>
<td>4</td>
<td>2027</td>
<td>Early Development</td>
<td>United Kingdom</td>
<td>Power Generation</td>
<td>Dedicated Geological Storage</td>
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<td>Hydrogen to Humber Saltend</td>
<td>1.4</td>
<td>2026 - 2027</td>
<td>Early Development</td>
<td>United Kingdom</td>
<td>Hydrogen Production</td>
<td>Dedicated Geological Storage</td>
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<tr>
<td>The ZEROS Project</td>
<td>1.5</td>
<td>Late 2020s</td>
<td>In Construction</td>
<td>USA</td>
<td>Power Generation</td>
<td>Enhanced Oil Recovery</td>
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<tr>
<td>LafargeHolcim Cement Carbon capture</td>
<td>0.72</td>
<td>Mid 2020s</td>
<td>Early Development</td>
<td>USA</td>
<td>Cement Production</td>
<td>Enhanced Oil Recovery</td>
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<td>Mustang Station of Golden Spread Electric Cooperative Carbon Capture</td>
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<td>Mid 2020s</td>
<td>Advanced Development</td>
<td>USA</td>
<td>Power Generation</td>
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<tr>
<td>Plant Daniel Carbon Capture</td>
<td>1.8</td>
<td>Mid 2020s</td>
<td>Advanced Development</td>
<td>USA</td>
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<td>Gerald Gentleman Station Carbon Capture</td>
<td>3.8</td>
<td>Mid 2020s</td>
<td>Advanced Development</td>
<td>USA</td>
<td>Power Generation</td>
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<td>Prairie State Generating Station Carbon Capture</td>
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<td>Advanced Development</td>
<td>USA</td>
<td>Power Generation</td>
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</tbody>
</table>
CCS PROJECT PIPELINE – CONTINUED MOMENTUM

THE CAPACITY OF FACILITIES WHERE OPERATION IS CURRENTLY SUSPENDED IS NOT INCLUDED IN THE 2020 DATA.
POLITICAL, POLICY AND COMMERCIAL DRIVERS

• Net Zero commitments – higher ambition
  • China by 2060!!
• Biden Administration puts US back in leadership role on climate
• Expectation of more stringent future climate policy everywhere
• ESG investment reallocating capital away from emissions intense assets
• Rising shareholder and stakeholder expectations impacting board rooms
• Voters leading governments
• Clean hydrogen emerging as a major contributor
• Government responding with policies to drive investment into CCS
GCCSI ACTIVITIES – RECENT REPORTS PUBLISHED

Webinar held 20/21 April

Webinar scheduled 5/6 May
REPORTS IN DEVELOPMENT (PUBLISH BY END JULY)

- Preliminary Global CCS Hub Opportunity Identification & Hub Optimisation Case Study
- CCS Policy & Regulation Recommendations
- Funding CCS at scale
ADVOCACY ACTIVITY

Recent virtual events held (https://www.globalccsinstitute.com/resources/multimedia-library/)

- Developing CCUS Projects in the US
- EU Industry Week: CCS and Reaching Net Zero
- Building Momentum for CCS in the GCC and around the World
- Opportunities for CCS: Finding Government Funding and Business Partners
- ESG Assessments and CCS (in collaboration with CEM CCUS)

Looking forward

- CCS 101 series: 3-part event targeting US policymakers on CCS projects, infrastructure and policy
- UK CCUS hub and clusters: 3-to-5-part series
- Circular carbon economy series (all reports to have an accompanying webinar)
- On the road to COP 26 series
MEMBER SERVICES

- Welcomed 12 new Members since January 1 – reflects diversity of CCS ecosystem
- Announced the impending opening of an office in Abu Dhabi
- CO2RE Database Enhancement
  - Addition of a “CCS Hubs Tab” – stage 1 before July
  - Update of all data in CO2RE
- Quarterly Global CCS Update – covering projects, policy, technology
  - Expanding with the significant increase in activity
- “Carbon dating” event (US/Europe) attracted numerous emitters and service providers
- Key roles in CCS symposiums sponsored by our government members in Japan and China
- SE Asia Roundtable and Australia CCS Working Group
THANK YOU
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