

Carbon Capture & Storage (CCS) Information

Talk to Us

What is CCS?

How does CCS happen?

Contact



Dr. Katherine Romanak, Senior Research Scientist, Gulf Coast Carbon Center at the Bureau of Economic Geology, The University of Texas at Austin, U.S.A.

Expertise: Environmental geochemist who developed monitoring plans for multiple large-scale CO₂ storage projects dating back to 2009; an academic that works alongside countries to develop, innovate, and apply CO₂ storage technology in real-world applications. She pioneered a process-based soil gas approach which avoids costly and complex baseline data collection and has created a paradigm shift in near-surface monitoring worldwide.

Contact me when: You are looking for geologic advice regarding CCS, monitoring, permitting, how to get CCS projects started in your country.

Contact Information: katherine.romanak@beg.utexas.edu at the Gulf Coast Carbon Center (www.gulfcoastcarbon.org)



Tim Dixon, Director and General Manager, IEAGHG, U.K.

Expertise: Tim is responsible for ensuring IEAGHG activities provide the technical evidence-base to support CCS development and deployment. Evidence-base is provided through Technical Studies, Expert Networks, GHGT Conferences, and Summer Schools, and by contributing to regulatory and policy developments. Tim was the EU's Lead Negotiator for CCS in the Clean Development Mechanism (CDM) at UNFCCC, and for CCS in the London Convention, OSPAR, and EU Emission Trading Scheme.

Contact me when: You are looking for technical information on any aspect of CCS as well as policy, legal and regulatory advice on CCS, the state of CCS globally, and how to get CCS projects started in your country.

Contact Information: tim.dixon@ieaghg.org at the IEA Greenhouse Gas R&D Programme (www.ieaghg.org)



Ruth Herbert, Chief Executive Officer, Carbon Capture and Storage Association (CCSA), U.K.

Expertise: Ruth has a background in domestic and international policy-making and leading public-private sector collaborations, focused in the energy and financial services sectors. She leads the CCSA, an industry association working with its members to accelerate the commercial deployment of CCS in Europe. During her time working for UK government, Ruth led the implementation of the UK's electricity market reform programme and prior to that, negotiations on the EU Directive on CO₂ storage. In 2008-2009 Ruth was a vice-chair of both the EU Zero Emissions Platform Government Group and the Carbon Sequestration Leadership Forum, and a member of the IEA's expert panel on CCS.

Contact me when: You want to explore the development and deployment of commercial scale CCS to deliver sustainable growth across regions and nations.

Contact Information: ruth.herbert@ccsassociation.org at the Carbon Capture and Storage Association (CCSA) https://www.ccsassociation.org/



Beth Hardy-Valiaho, Vice-President, Strategy & Stakeholder Relations, International CCS Knowledge Centre, Canada

Expertise: Beth is dedicated to helping bring CCS technological knowledge to other countries to reduce locked-in investments and collaboratively support the goals of the Paris Agreement. Her understanding of complex climate change matters, capacity building requirements, and international financing concerns act as a solid basis for assisting both national and international implementation strategies for technologies that support environmental targets.

Contact me when: You want to explore technical options for capturing emissions from industry or full chain development of CCS in your country.

Contact Information: https://ccsknowledge.com/



Since 1998, the Gulf Coast Carbon Center (GCCC) has been a global leader in research that facilitates reduction of atmospheric release of CO₂. The GCCC has led several major field research projects onshore and offshore to develop effective technologies to monitor retention of CO₂ in the subsurface.

The GCCC has led a number of diverse projects including estimation of storage capacity, storage site screening and economic assessments, risk and monitoring of leakage to water and surface resources, assessment of pressure, and whole-system integration.

We have a team of ~30 Research Scientists (Geologists, Geochemists, and Engineers), Energy Economists, Postdoctoral Fellows, and Graduate Students.



Blazing the way to net zero with leading CCS research. Our authoritative, peer-reviewed research is at the forefront of the carbon, capture and storage (CCS) sector. We advance technology that reduces carbon emissions and accelerates the deployment of CCS projects by improving processes, reducing costs, and overcoming barriers.



The CCSA is the trade association promoting the commercial deployment of Carbon Capture and Storage (CCS), an essential solution to deliver net zero emissions across industry, heat, power and transport.



The International CCS Knowledge Centre provides independent, expert advisory services for CCS projects across heavy-emitting industries based on our team's unique experience developing the world's first fully integrated post-combustion CCS facility on a coal-fired power plant. We have a proven track record of helping our clients lower costs, reduce risk and improve the performance of CCS projects across industries and technology platforms using the latest knowledge and lessons learned from major projects across the globe. We also provide input to policy development and promote broad collaboration between stakeholders to enhance understanding of the critical role CCS plays in global decarbonization efforts and accelerate the deployment of new CCS projects around the world.



Poster created by Dr. Dolores van der Kolk
Communications Coordinator & Geologist
Gulf Coast Carbon Center,
Bureau of Economic Geology
Austin, Texas, United States of America
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What is CCS?

Carbon capture and storage (CCS), also known as Carbon Capture, Utilization and Storage (CCUS), is a low carbon technology that captures carbon dioxide (CO₂) emissions from man-made or anthropogenic sources (e.g., power generation to iron, steel, fertilizer, cement, and chemical manufacturing, etc.). CO₂ is then compressed, transported via pipeline or ship, and subsequently injected deep (0.8 to 3 kilometers) below the surface for permanent underground storage. This process prevents anthropogenic CO₂ from entering the atmosphere and safely stores CO₂ permanently underground.

For local industries, CCS supports jobs and business investments by providing infrastructure to allow effective large-carbon emission reductions while also helping develop local infrastructure and resources.

We invite you to:

- Use your electronic device to scan for a link, watch a video, download a helpful CCS document, or take a photograph to learn more about CCS.
- Contact us if you are interested in learning more.

We are here for you!

Use the QR code to the right to access a copy of this poster and all resources included on this poster.

CO₂ is stored 0.5 to 1.9 miles, (0.8 to 3 km) below the surface, safely, and permanently



We need CCS to remove carbon dioxide from our day-to-day lives: How do we reach net zero by 2050?



This animation explains how CCS works and the value of reducing emissions and achieving net zero carbon dioxide by 2050 across all industries within the U.K.

~ 3-minute video: www.youtube.com/watch?v=hs4qK0ZK

Learn about CCS and what needs to happen to make drastic reductions in emissions long term



Researchers at the Bureau of Economic Geology, at the University of Texas at Austin, study an emissions mitigation technology called carbon capture and storage (CCS). By capturing carbon dioxide emissions at the source and storing them permanently deep in the Earth, we can achieve drastic reductions in our emissions. We must act now.

~ 1.5-minute video: www.youtube.com/watch?v=2ks1qCv0VIA

Watch a short video describing the Carbon Capture & Storage (CCS) process



CCS is a way of mitigating the contribution of fossil fuel emissions by capturing and subsequently storing CO₂.

~ 3-minute video: www.youtube.com/watch?v=A-LodmUWJ3c

Subscribe to the IEAGHG Newsletter to get the latest information on CCS



Greenhouse News is a free e-newsletter providing information on new developments in the field of greenhouse gas abatement and mitigation.

<https://ieaghg.org/ccs-resources/greenhouse-news-newsletter>

We need CCS to remove carbon dioxide from our day-to-day lives: How do we reach net zero by 2050?



This animation explains how CCS works and the value of reducing emissions across all industries

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See how UN Funding mechanisms can help you start CCS in your country

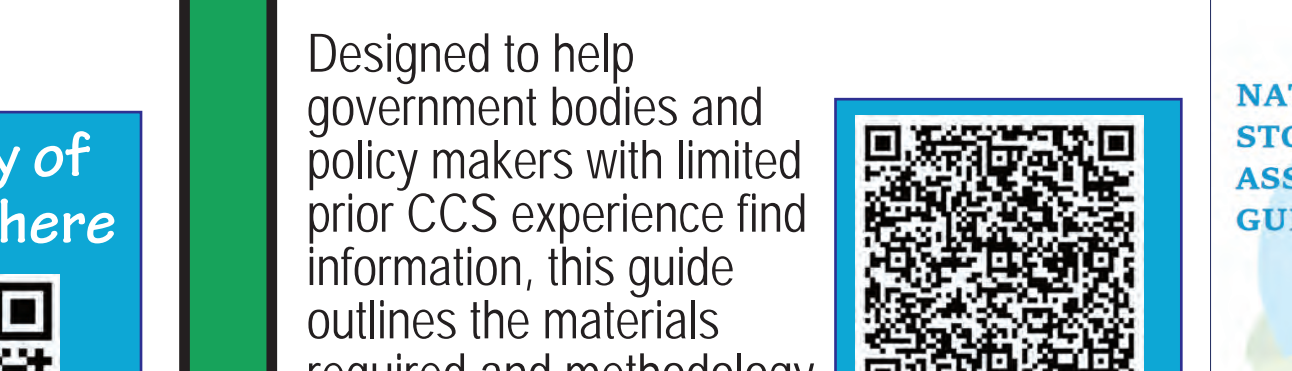


United Nations Framework Convention on Climate Change (UNFCCC) Climate Technology Centre and Network (CTCN), a mechanism that facilitates training and support, builds the capacity for developing countries in climate change mitigation and adaptation technologies.

This paper describes the processes for application to the CTCN, how CTCN support stimulated CCS developments in Nigeria and Ghana, and the potential benefits for other developing countries.

www.ccsassociation.org/all-news/ccsa-news/ccus-delivery-plan-update-2023/

How to conduct a National CO₂ Storage Assessment



Designed to help government bodies and policy makers with limited prior CCS experience find information, this guide outlines the materials required and methodology to undertake initial national-scale storage assessments.

<http://documents.ieaghg.org/index.php/SYKm6B7zklUpPgA/download?path=%2F2016%2FTechnical%20Reviews&file=2016-TR6%20National%20Storage%20CC202%20Assessment%20Guidance.pdf>

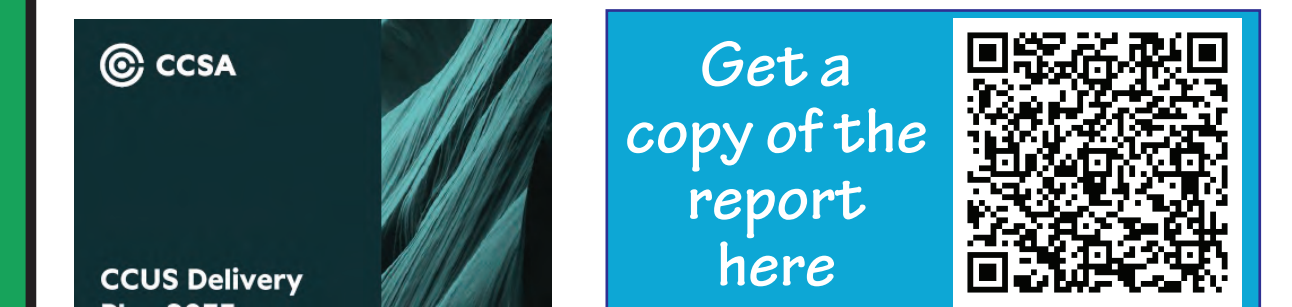
An example of a stakeholder workshop, used by a small island developing state (SIDS) and how they began their CCS journey



Local universities in Trinidad and Tobago held an international knowledge-sharing symposium on CCS for state, academic and private stakeholders to discuss national CCS development with technical support from international partners.

www.beg.utexas.edu/files/cccdocs/Trinidad%20Final%20Symposium%20Report.pdf

Report: Recommended pathway for CCS to deliver the UK's net zero target and economic opportunities for successful development



The CCSA's report "CCUS Delivery Plan Update - 2023" includes updated information on CCS in the UK - particularly the potential for CCS to unlock around £40 billion investment for the UK economy by 2030.

<https://www.ccsassociation.org/all-news/ccsa-news/ccus-delivery-plan-update-2023/>

See Virtual Tour of the Boundary Dam Capture Facility in Canada



The 1st large-scale capture project on a coal-fired power plant, capturing more than 1 Megatonnes per annum (Mtpa).

~ 9-minute video: <https://ccsknowledge.com/bd3-ccs-facility/virtual-tour>

Where is CCS?

Educational Resources

We are your CCS Information Providers

Summary of CCS Projects Around the World

Massive Expansion of CCS Underway Worldwide

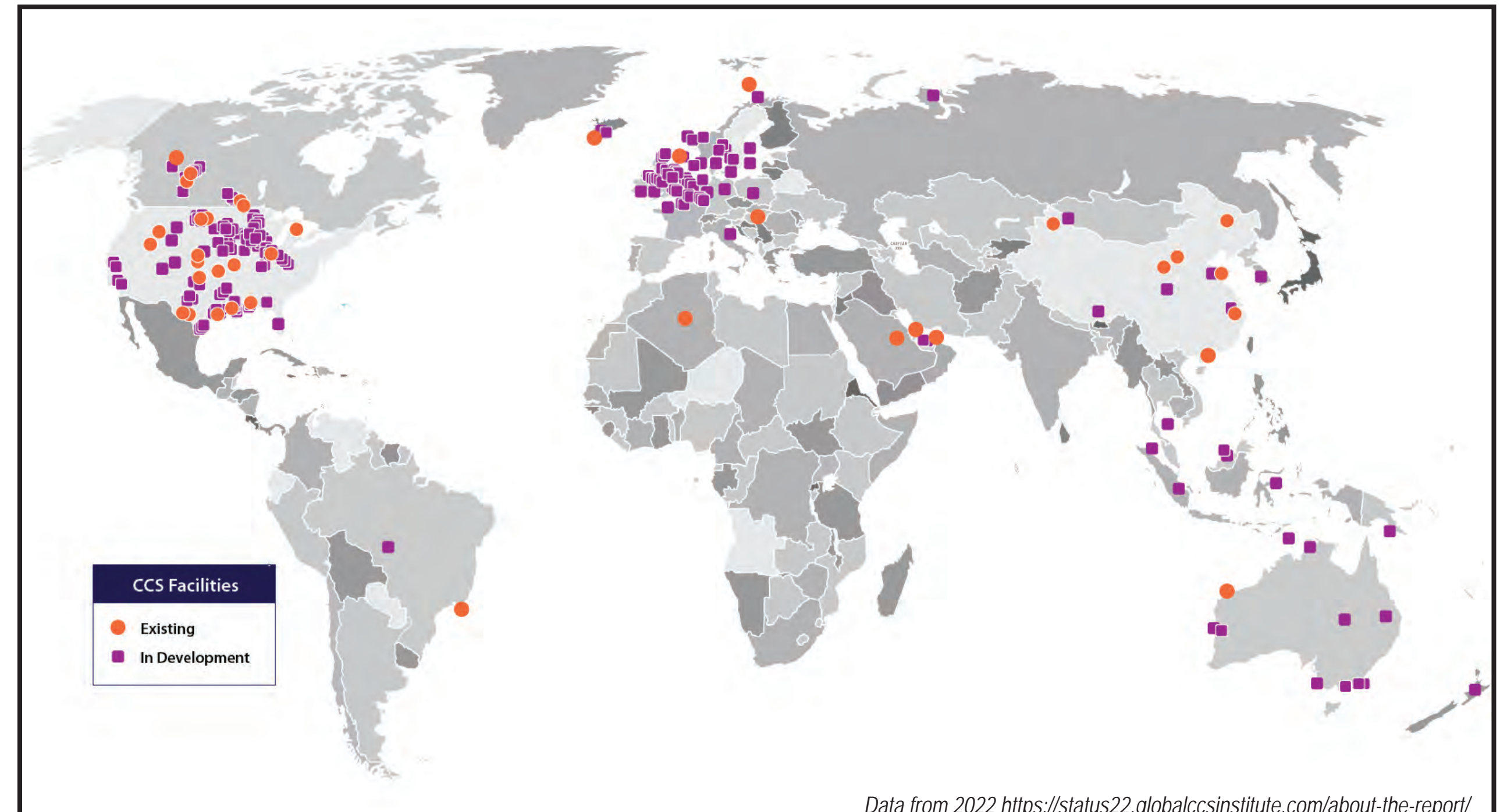
According to the Global CCS Institute, as of July 2023, 41 operational projects are currently capturing nearly 50 megatonnes per annum (Mtpa).

An additional 351 projects with the potential to store 361 Mtpa are currently in development.

- 2023 Global Status Report



www.globalccsinstitute.com/resources/publications-reports-research/global-status-of-ccs-2023-executive-summary/



Gulf Coast Carbon Center's (GCCC) Research Consortium & CCS Training

The GCCC has a scientific consortium, which requires a membership fee, and we offer training courses about CCS inside and outside the consortium.

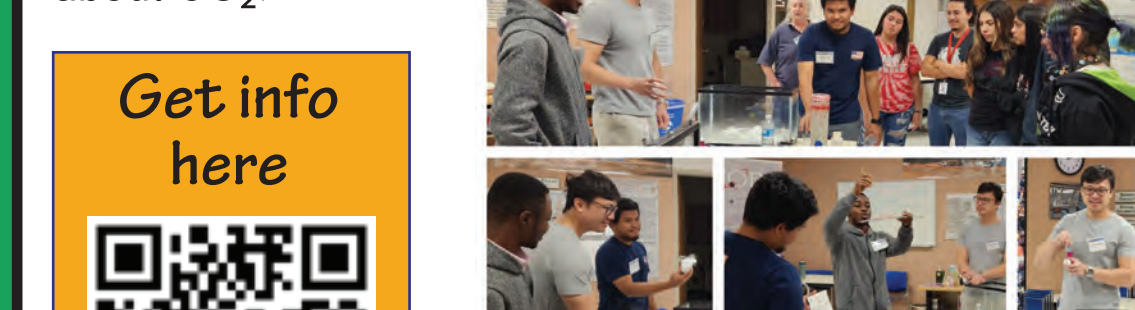
Sponsors of the GCCC Consortium benefit from two biannual meetings a year to provide updates on our latest CCS research and developing trends. Sponsors gain access to an Industrial Affiliates Portal, where we provide pdfs of all of our research group's presentations from various meetings and events throughout the year. Sponsors are given priority attention and support regarding their CCS projects, training, and outreach.

The GCCC educates the next generation of CCS professionals, and a membership allows your institution to develop relationships with GCCC students interested in pursuing careers in CCS. The GCCC works on projects globally, but also focuses on the U.S. Gulf Coast where both need and opportunity for CCS are high.

Please contact: Dr. Susan Hovorka (susan.hovorka@beg.utexas.edu) or Dr. Dolores van der Kolk (dolores.vanderkolk@beg.utexas.edu) for more information. www.gulfcoastcarbon.org

Educational Materials for All Ages

Educational materials suitable for teachers to help their students explore CCS. Here GCCC graduate students use teaching materials about CO₂.



www.beg.utexas.edu/gccc/educational-resources

Greenhouse Gas Control Technologies Conference 20-24 October 2024 Calgary, Canada

The Greenhouse Gas Control Technologies (GHGT) Series is the world's foremost conference in the field of CCS. It provides an opportunity for researchers, industry professionals and policymakers to share their knowledge and experience.

Featuring over a hundred expert speakers from across the globe, GHGT gives you the opportunity to hear from thought leaders on a huge range of areas related to CCS. The conference covers topics such as Carbon Capture, Transportation, Storage, Utilisation, Monitoring and more.



Call to action: <https://ghgt.info>

International Workshop on Offshore Geologic CO₂ Storage

This workshop series was established to bring together those who are doing offshore CCS to share knowledge with those who are interested in doing CCS, and to facilitate countries to identify their specific issues, challenges, and opportunities towards developing their national programs.

www.beg.utexas.edu/gccc/research/gi/



Are you with us?