Carbon Capture & Storage (CCS) Information

What is CCS?

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 (CO_2) emissions from man-made or anthropogenic sources (e.g., power generation to iron, steel, fertilizer, cement, and chemical manufacturing, etc.). CO_2 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 CO_2 from entering the atmosphere and safely stores CO_2 permanently underground.

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

We invite you to:

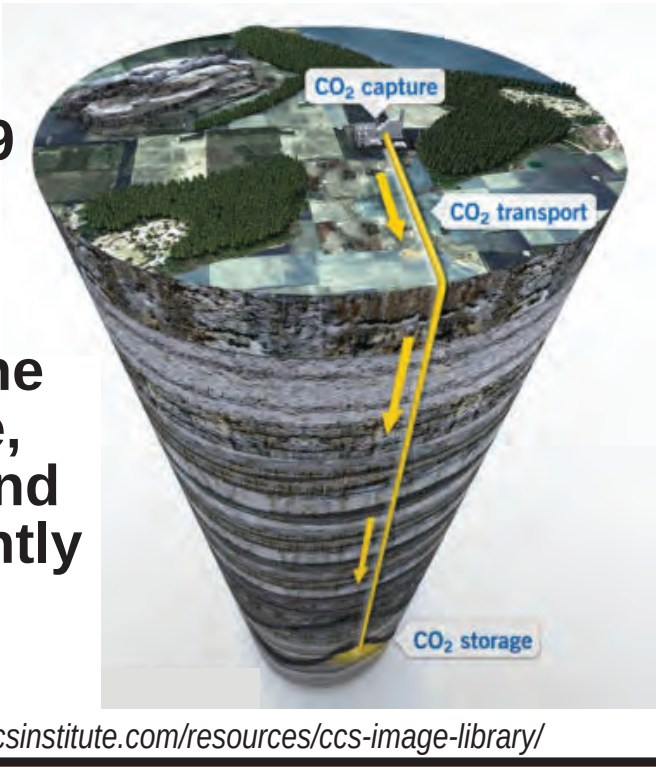
- Use your electronic device to scan for a link, watch a video, download a helpful CCS document, or take a photograph to learn more about CCS.
- Contact us if you are interested in learning more.

We are here for you!

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

SCAN ME

CO_2 is stored 0.5 to 1.9 miles, (0.8 to 3 km) below the surface, safely, and permanently



https://www.globalccsinstitute.com/resources/ccs-image-library/

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

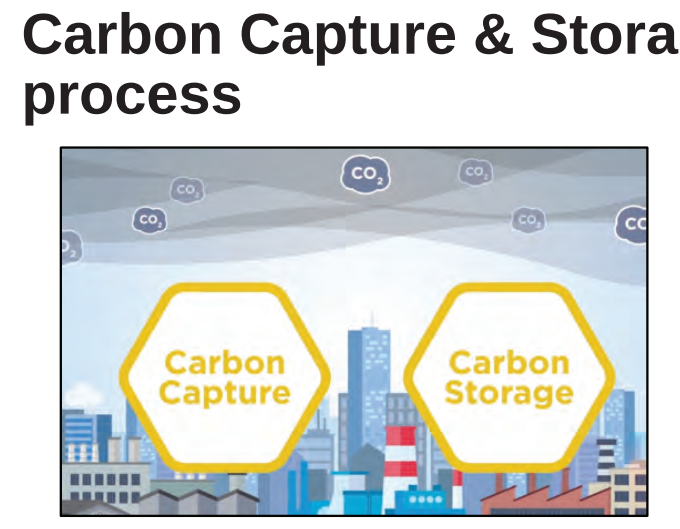
Watch and listen here

SUCCESS IS MEASURED IN METRIC TONS STORED

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=2ks1qCVtiiA

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

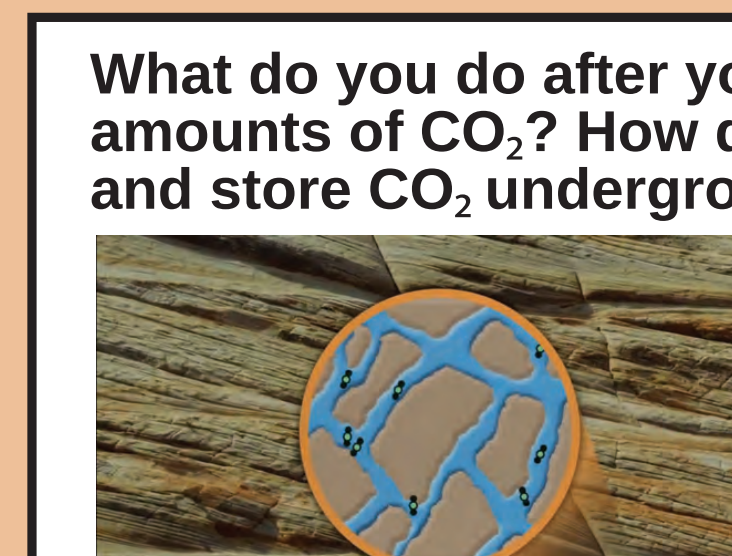


Learn more here

CCS is a way of mitigating the contribution of fossil fuel emissions by capturing and subsequently storing CO_2.

~ 3-minute video: www.youtube.com/watch?v=A-LodmuWJ3c

What do you do after you capture large amounts of CO_2? How do you transport and store CO_2 underground?



Watch and listen here

Listen and watch as U.S. researchers explain how we transport, store, and isolate CO_2 underground between the sand grains. For resources, access to this report, fact sheets, or videos, check out: www.roads2removal.org.

~ 6-minute video: https://youtu.be/0f54ijOCxvw?si=hJYVpB-LruomTrYs&t=1

International Workshop on Offshore Geologic CO_2 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.

Get access to presentations

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

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

IEAGHG
Greenhouse News
• the official newsletter of IEAGHG and its members •
March 2022 • Issue 141

Get a copy here

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

How does CCS happen?

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

CCUS
Enabling a clean and sustainable future for all

Watch and listen here

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

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

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.

Get a copy of the report here

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

How to conduct a National CO_2 Storage Assessment

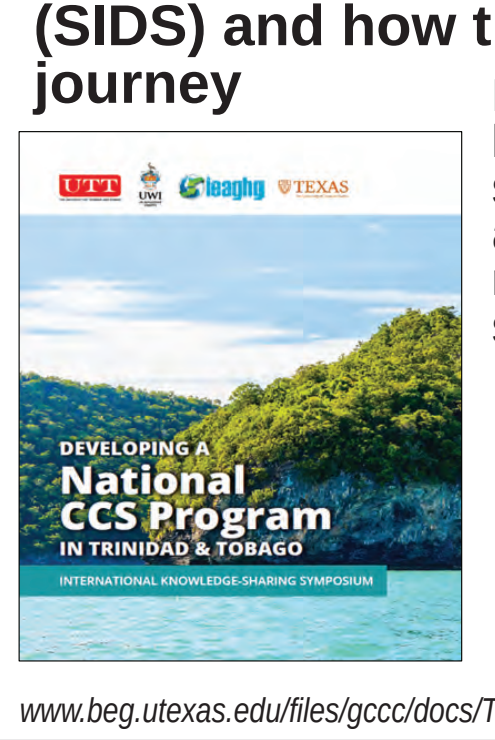
Designed to help government bodies and policy makers with limited prior CCS experience find information, this guide outlines the materials required and methodology to undertake initial national-scale storage assessments.

Get a copy here

ieaghg
NATIONAL CO_2 STORAGE ASSESSMENT GUIDANCE
Report: 2016/TR6
October 2016

http://documents.ieaghg.org/index.php/s/YKm6B7zikUpPgGA/download?path=%2F2016%2FTechnical%20Reviews&files=2016-TR6%20National%20Storage%20CO2%20Assessment%20Guidance.pdf

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



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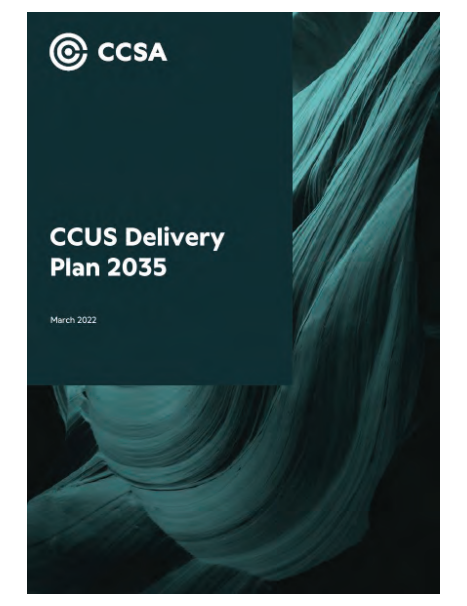
TEXAS
DEVELOPING A National CCS Program IN TRINIDAD & TOBAGO
INTERNATIONAL KNOWLEDGE-SHARING SYMPOSIUM

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.

Get a copy of the report here

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

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



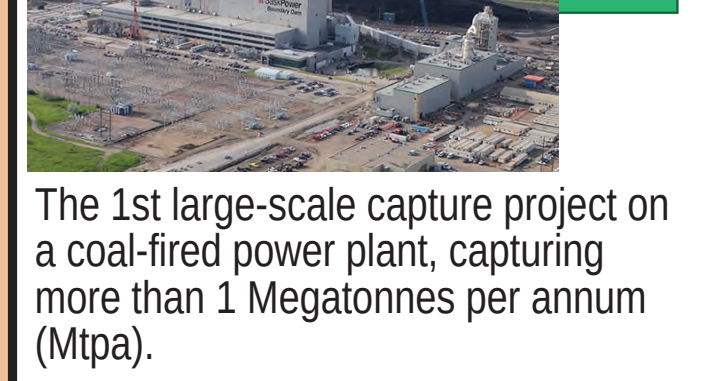
Get a copy of the report here

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

Watch and listen here



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

~ 9-minute video: https://www.youtube.com/watch?v=zIGY9GfAMUY&t=4s

Read a review of the CCS activities undertaken by the IEAGHG

This Annual Review outlines the work undertaken and produced by the IEAGHG including key achievements, networks, technical reports, information papers and presentations made by members of staff at external meetings.

Get a copy of the report here

annualreview 2022
IEA GREENHOUSE GAS R&D PROGRAMME

https://ieaghg.org/about-us/ieaghg-annual-reviews

Contact

TEXAS Geosciences
Bureau of Economic Geology
Jackson School of Geosciences
The University of Texas at Austin

GCCC
GULF COAST CARBON CENTER

Since 1998, the Gulf Coast Carbon Center (GCCC) has been a global leader in research that facilitates reduction of atmospheric release of CO_2. The GCCC has led several major field research projects onshore and offshore to develop effective technologies to monitor retention of CO_2 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.

SCAN ME

www.gulfcoastcarbon.org

IEAGHG

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.

www.ieaghg.org

Carbon Capture & Storage Association

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.

www.ccsassociation.org

INTERNATIONAL
CCS KNOWLEDGE
CENTRE

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.

ccsknowledge.com

TEXAS Geosciences
Bureau of Economic Geology
Jackson School of Geosciences
The University of Texas at Austin

BUREAU OF ECONOMIC GEOLOGY

GCCC
GULF COAST CARBON CENTER

Poster created by Dr. Dolores van der Kolk
Communications Coordinator & Geologist
Gulf Coast Carbon Center, Bureau of Economic Geology
Austin, Texas, U.S.A Email: dvdk@beg.utexas.edu

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Talk to Us

TEXAS Geosciences
Bureau of Economic Geology
Jackson School of Geosciences
The University of Texas at Austin

GCCC
GULF COAST CARBON CENTER

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 CO_2 storage projects dating back to 2009; an academic that works alongside countries to develop, innovate, and apply CO_2 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)

IEAGHG

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)

Carbon Capture & Storage Association

CCSA Markets & Mandates

Olivia Powis, U.K. Director, Carbon Capture and Storage Association, U.K.

Expertise: Olivia Powis is currently the UK Director at the Carbon Capture and Storage Association (CCSA), where she works in partnership with the Chief Executive, and CCSA Board on developing the UK strategy and work programme of the association, representing its 120+ members to UK decision-makers.

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: https://www.ccsassociation.org/

INTERNATIONAL
CCS KNOWLEDGE
CENTRE

James Fann, President & CEO, International CCS Knowledge Centre, Canada

Expertise: James is responsible for the overall leadership and strategic guidance of the Knowledge Centre, with a focus on enhancing business growth, developing partnerships, and seeking new business opportunities to support the development of CCS projects, globally. Prior to joining the Knowledge Centre, James spent ~2 decades working in Canada's energy sector. His career has spanned technical and leadership roles in upstream, midstream, downstream and technology development, as well as strategic and corporate functions that include acquisition and divestitures, investor relations, corporate planning, and human resources. James holds a Bachelor of Applied Science in Chemical Engineering from the University of Waterloo and a Global Energy Executive MBA from the Haskayne School of Business at the University of Calgary.

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/

Where is CCS?

GLOBAL CCS INSTITUTE

Summary of CCS Projects Around the World

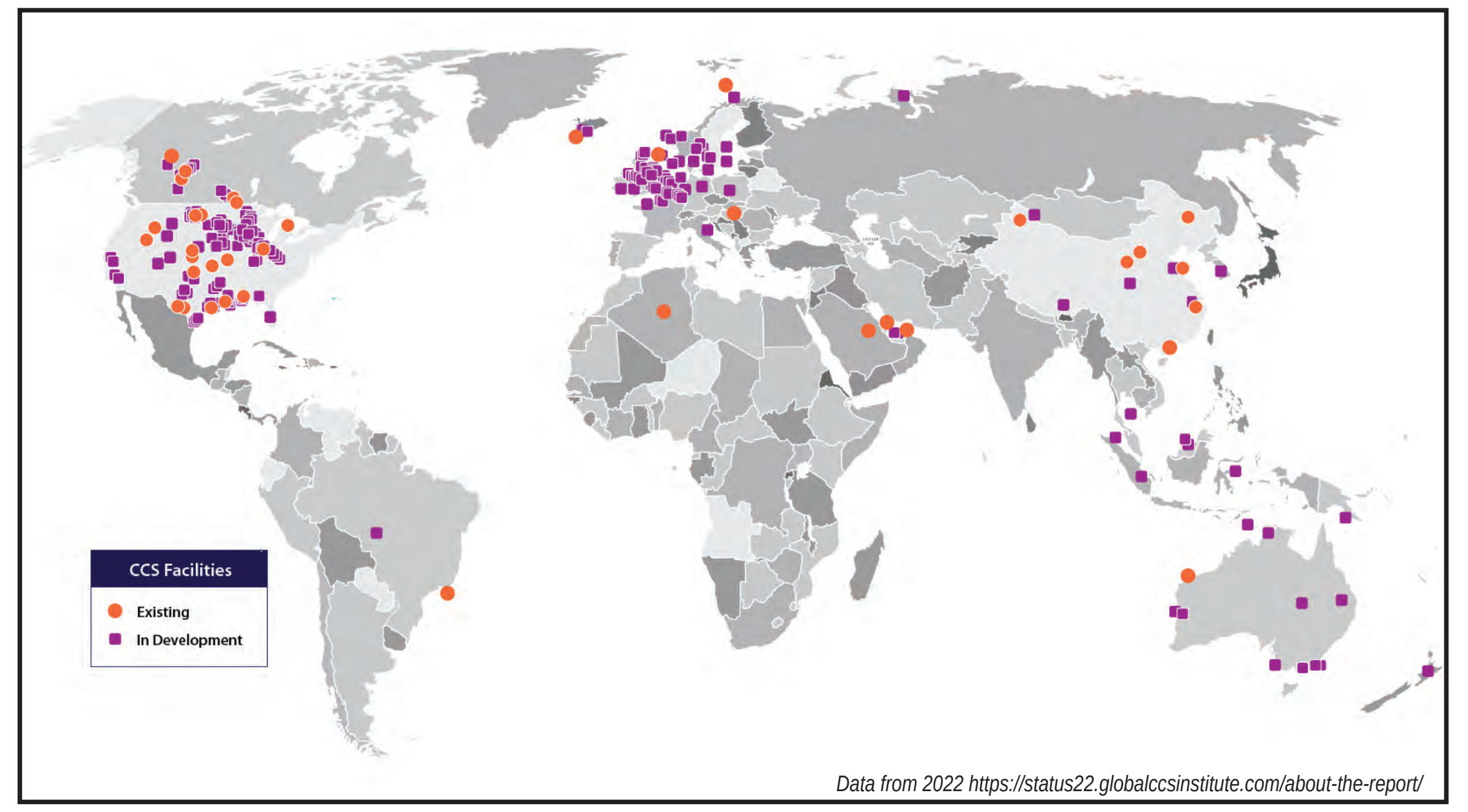
Massive Expansion of CCS Underway Worldwide

According the **Global CCS Institute**, as of July 2024, 50 operating projects are currently capturing 51 Megatones per anum (Mtpa).

An additional 578 projects with the potential to capture 365 Mtpa are currently in development.

- 2024 Global Status Report

Get Global Status Report Here



Data from 2022 https://status22.globalccsinstitute.com/about-the-report/

https://www.globalccsinstitute.com/wp-content/uploads/2024/10/Global-Status-Report-2024-Interactive.pdf

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

Educational Resources

Gulf Coast Carbon Center's (GCCCs) 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.

Get info here

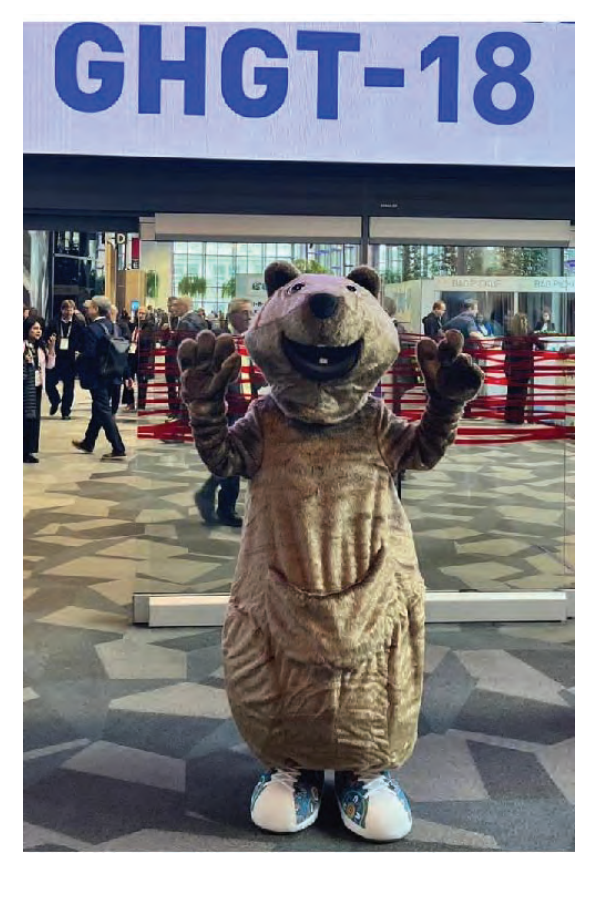
Sponsors of the GCCC Consoritum benefit from two biannual meetings a year to provide updates on our latest CCS research and developing trends. Sponsors gain access to an Industrial Affiliates Portal, where we provide .pdfs of all of our research group's presentations from various meetings and events 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 insititution 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 (dvdk@beg.utexas.edu) for more information.

www.gulfcoastcarbon.org

Greenhouse Gas Control Technologies Conference October 2026 in Perth, Australia



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.

Get info here

Call to action: https://ghgt.info

We are your CCS Information Providers

Texas-Louisiana Carbon Managment Community's (TXLA CMC's) CCS Comic Book for Education

Hot off the press!

The Gulf Coast Carbon Center's TXLA CMC just created a CCS comic book geared for middle school education. These comic books were created for 12-to-14 year-old children in Texas to introduce them to greenhouse gas, carbon capture and storage (CCS). These comic books are free, available online to download, and print.

Carbon-nots to the Rescue!
www.put-it-back.org

Get a copy here

www.put-it-back.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 CO_2:

Get info here

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

put it back
www.put-it-back.org

www.put-it-back.org

IEAGHG's Summer School

Get more information here

This Summer School covers every aspect of CCS and presents the most recent information available. IEAGHG's Summer Schools are the only CCS education program that truly has an international focus. With the location moving around the world, our program has now taken place in over 7 countries covering Europe, Australia, Asia and North America. Our summer school now has over 708 alumni representing over 60 countries with many moving on to successful careers within CCS industry and academia.

www.gulfcoastcarbon.org

Are you with us?