U.S. DEPARTMENT OF ENERGY | OFFICE OF FOSSIL ENERGY AND CARBON MANAGEMENT





# CARBON TRANSPORT and STORAGE VEWSLETTE

VOL. 24, NO. 10

#### CARBON TRANSPORT and STORAGE PROGRAM **DOCUMENTS and REFERENCE MATERIALS**

- Carbon Transport and Storage Program Homepage
- Project Portfolio
- Publications
- Infographics
- ▶ Worldwide CCS Database

- Best Practice Manuals
- Conference Proceedings
- Fossil Energy and Carbon Management Techlines
- Frequently Asked Questions

This newsletter was compiled by the National Energy Technology Laboratory to provide information on recent activities and publications related to carbon transport and storage. It covers domestic, international, and public and private sector news in the following areas:

DOE/FECM/NETL HIGHLIGHTS

**ANNOUNCEMENTS** 

PROJECT and BUSINESS **DEVELOPMENTS** 

LEGISLATION and POLICY

**EMISSIONS TRADING** 

SCIENCE

**ABOUT CTSN** 

## DOE/FECM/NETL HIGHLIGHTS-



#### **OCED** announces project awards

The U.S. Department of Energy's (DOE) Office of Clean Energy Demonstrations (OCED) announced the successful completion of award negotiations for projects that include carbon storage. Under the Regional Direct Air Capture (DAC) Hubs Program. OCED awarded the South Texas DAC Hub, led by 1PointFive, with funding to begin Phase 2 activities. 1PointFive plans to



build the South Texas DAC Hub at King Ranch in Kleberg County. Texas, with the goal of capturing up to 1 million metric tons of carbon dioxide (CO<sub>2</sub>) from the atmosphere each year at full capacity and permanently storing it in a saline aguifer deep underground. Under the Carbon Capture Demonstration Projects Program, OCED awarded the Four Corners Power Plant Integrated CCS project, led by Navajo Transitional Energy Company LLC (NTEC), with federal funding to conduct a front-end engineering design (FEED) study. OCED is working with NTEC to complete an integrated FEED study to determine the specifications for CO<sub>2</sub> capture, transport and storage at the Four Corners Power Plant, a coal-fired power plant located on the Navajo Nation near Fruitland, New Mexico.

From OCED. September 2024..

## DOE/FECM/NETL HIGHLIGHTS (cont.)

#### FINANCIAL ASSISTANCE FUNDING OPPORTUNITY ANNOUNCEMENT

#### DOE extends deadline for funding to help expand CO<sub>2</sub> transport infrastructure



Earlier this year, DOE's Office of Fossil Energy and Carbon Management (FECM) **announced** available funding for projects that will help expand  $CO_2$  transportation infrastructure to support the reduction of  $CO_2$  emissions across the United States. The submission deadline has been extended to **October 30, 2024**. The Carbon Dioxide Transportation Infrastructure Finance and Innovation Future Growth Grants FOA will provide future growth grants under DOE's Carbon Dioxide Transportation Infrastructure Finance and Innovation Program, made available through the Bipartisan Infrastructure Law (BIL).

Department of Energy (DOE)
Office of Fossil Energy and Carbon Management (FECM)

Bipartisan Infrastructure Law - Carbon Dioxide Transportation Infrastructure Finance and Innovation (CIFIA) Program: Future Growth Grants (Section 40304)

Funding Opportunity Announcement (FOA) Number: DE-FOA-0002966



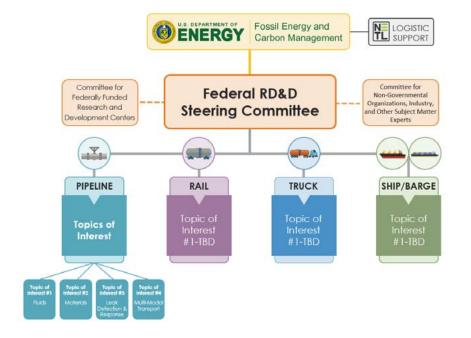
From energy.gov. May 2024. (Amended August 2024)

### **ANNOUNCEMENTS**

#### **DOE/FECM releases RFI**

DOE/FECM released a request for information (RFI) that seeks input to assist in the planning of a consortium that will coordinate CO<sub>2</sub> transport research, development and demonstration efforts (e.g., pipeline, rail, truck, ship and barge transportation); facilitate communication among stakeholders; and compile and curate information in an open-access platform. Responses to the RFI are due by October 9, 2024. The *Carbon Transport Research, Development & Demonstration Consortium website* has more information for organizations and institutions interested in becoming a consortium member.

From energy.gov. September 2024.



## NETL chairing carbon transport and storage sessions at the 2024 AIChE Annual Meeting

NETL is chairing three sessions on carbon transport and storage at the 2024 American Institute of Chemical Engineers (AIChE) Annual Meeting (October 27–31, 2024, in San Diego, California). The sessions, titled "Engineering Geologic Carbon Dioxide Storage Systems I, II and III," will focus on CCS research and development (R&D) for permanent, efficient, and cost-effective storage of CO<sub>2</sub>.

2024 AIChE Annual Meeting

October 27, 2024 to October 31, 2024

San Diego Convention Center, Hilton San Diego Bayfront

#### **Deploy24 Updates: First Speakers Announced!**



The first distinguished speakers were announced for DOE's **Demonstrate Deploy Decarbonize 2024** (Deploy24) that will take place in Washington, DC, December 4–5, 2024. Hosted by DOE, Deploy24 is the second annual gathering of decision-makers from across the private and public sectors — including senior industry executives, capital allocators, community leaders and others across the clean energy supply chain — all focused on accelerating the deployment of critical energy and decarbonization technologies and supply chains in the United States.

## DOE expands portfolio of carbon management technologies to reduce CO<sub>2</sub> emissions

DOE/FECM announced the availability of additional funding to advance diverse carbon management approaches that reduce  $CO_2$  emissions. The funding will support the development of technologies that capture  $CO_2$  from industrial and power generation sources or directly from the atmosphere and transport it either for geologic storage or conversion into valuable products such as fuels and chemicals. *The application deadline is October 14, 2024*.

\* PINOUNCEMENT

From energy.gov. August 2024.

## **ANNOUNCEMENTS** (cont.)



#### OCED announces NOI to fund investments in CCUS

DOE's OCED issued a Notice of Intent (NOI) of funding to catalyze investments in transformative carbon capture, utilization and storage (CCUS) technologies. This funding — made possible by the BIL under the Carbon Capture Demonstration Projects Program and the Carbon Capture Large-Scale Pilot Projects Program — seeks to enhance the confidence of commercial entities in adopting CCUS technologies, broaden the market for electricity generation and industrial emitters, and reduce costs to expand the feasibility of CCUS implementation across facilities. OCED anticipates that the funding solicitation will be released in late 2024. Information on engagement opportunities related to this NOI are available on the OCED website.

From energy.gov. September 2024.

#### DOE funding to support CO<sub>2</sub> capture, removal, conversion test centers

DOE/FECM announced funding to support the development of  $CO_2$  capture, removal and conversion test centers for a representative cement manufacturing facility and a fossil fueled power plant, as well as enhanced capabilities at existing flue gas testing centers. Projects selected under this funding opportunity announcement (FOA) will support testing facilities that will further advance technologies to capture  $CO_2$  from utility and industrial sources and either convert it into products or remove it from the atmosphere. This research will enable economical and environmentally sustainable carbon management.

From energy.gov. August 2024.

#### DOE/FECM hosts virtual briefing on CarbonSAFE Phase III

DOE/FECM hosted a virtual briefing on the Carbon Storage Assurance Facility Enterprise (CarbonSAFE) Program, during which presenters shared details about the Four Corners Carbon Storage Hub: CarbonSAFE Phase III Project, as well as provided an overview of the CarbonSAFE Program. View the *briefing slides*.

From energy.gov. September 2024.

#### Carbon storage tool available on NETL's EDX



A tool to support and accelerate carbon storage feasibility assessments and planning efforts has been made available on the National Energy Technology Laboratory's (NETL) Energy Data eXchange (EDX). The *Carbon Storage Planning Inquiry Tool (PlanIT)* serves as a one-stop shop for visualizing, interrogating and analyzing relevant data assets, providing researchers, policy makers, operators and other stakeholders with efficient access to and insights into data that support carbon storage planning, feasibility and resource assessment efforts. Developed in support of NETL's Science-Based Artificial Intelligence and Machine Learning Institute, the tool

is one of several carbon capture and storage (CCS) products on EDX and is part of the **EDX Carbon Capture and Sequestration (EDX4CCS) portfolio** — a BIL-funded project that provides an advanced, strategic CCS-specific data infrastructure system to drive efficient and rapid deployment of CCS efforts.

From energy.gov. August 2024.

#### **DOE releases NOI for potential DOE/FECM funding**

DOE/FECM released an *NOI* to issue an FOA that is expected to focus on, among other research and development (R&D) activities, soil carbon storage. The NOI is in support of DOE/FECM's University Training and Research (which encompasses the University Carbon Research and Historically Black Colleges and Universities and other Minority-Serving Institutions [HBCU-MSI] programs). If released, the FOA is expected to focus on addressing the low number of institutions, especially among MSIs, with an educational focus on carbon management; addressing key gaps in the talent pipeline for the critical mineral supply chain sector; addressing key gaps in the terrestrial carbon storage space; and using artificial intelligence (AI) and machine learning (ML) to advance point-source capture and train the next generation of engineers (HBCU-MSI only).

From energy.gov. August 2024.

#### **Companies launch insurance solution for CCS projects**

Marsh — an insurance broking and risk management firm — announced the launch of an insurance solution for the transportation and storage of  $CO_2$ , aiming to address insurance limitations in the CCS industry. According to the company, the solution has been designed to provide comprehensive coverage that enables upstream energy operators to meet their financial security obligations when captured  $CO_2$  is being transported and injected into suitable geological structures.

From Insurance Business Magazine. August 2024.

#### SLB launches carbon storage well integrity assessment solution

Global technology company SLB launched a well integrity assessment solution that helps carbon storage developers quantify the risks associated with wells at prospective storage sites with previous drilling activity. The *well integrity assessment solution* incorporates advanced failure mode effect and criticality analysis to assess potential leakage pathways, failure mechanisms and resulting consequences. Using advanced multiphysics 3D modeling, the solution can assess the volume and flow rates of brine and carbon leakage over time to better estimate risk.



From Offshore Magazine. August 2024.

## **ANNOUNCEMENTS** (cont.)



#### **Report explores business cases for CCUS**

IDTechEx published a report that provides a comprehensive outlook of the CCUS industry and carbon markets, with an in-depth analysis of the technological, economic, regulatory and environmental aspects that are set



to shape the CCUS industry over the next 20 years. "Carbon Capture, Utilization, and Storage (CCUS) Markets 2025-2045" evaluates carbon storage technologies, discussing the latest advancements, key players and opportunities and barriers within each area.

From IDTechEx. August 2024.

#### Data company releases GoM carbon storage study

Viridien — an advanced technology, digital and Earth data company — released phase 2 of its GeoVerse" Carbon Storage Screening Study of the Gulf of Mexico (GoM), which provides comprehensive subsurface data coverage over the U.S. GoM shallow waters and coastal areas. Its aim is to accelerate the screening process to identify the high-potential areas on offer in upcoming requests for proposals for several carbon storage leases in Texas.

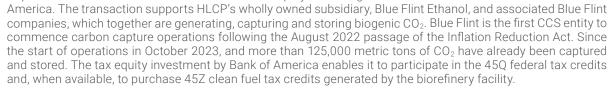


From Viridien Group. August 2024.

## PROJECT AND BUSINESS DEVELOPMENTS



Harvestone Low Carbon Partners LP (HLCP) and a portfolio company of Energy Capital Partners closed a first-of-its-kind tax equity financing with Bank of



From Harvestone Low Carbon Partners. September 2024.

#### BP progresses CCS project, amends MOU

BP and Japan's Chubu Electric Power Company expanded their collaboration to explore a potential international CCS value chain from Port of Nagoya, Japan, to the operator's Tangguh field in Teluk Bintuni, Papua Barat, Indonesia. The expanded collaboration follows the successful completion of the Nagoya CCS feasibility study this year and is captured in a memorandum of understanding (MOU) amendment, which now includes identification of legal requirements for a large-scale hub and cluster, as well as possible business models, including potential incentives and funding models required to implement a commercial CCS project.

From Upstream Online. August 2024.

#### Wood finalizes assessment of three CCS projects in Norway

Global engineering company Wood finalized the evaluation of the technical feasibility of three CCS projects in the continental shelf of Norway. The company completed a thorough evaluation of the technical viability of the Trudvang, Luna and Havstjerne CCS projects. Together, these initiatives have the potential to store up to 21 million tonnes of CO<sub>2</sub> each year. With this phase completed, work on building the CO<sub>2</sub> transportation infrastructure is cleared to begin.

From Carbon Herald. August 2024.

#### **Energy company leasing land for three tri-state CCS hubs**





underground storage for its three tri-state area CCS hubs. Class VI wells will used to inject captured CO<sub>2</sub> into the pore space with plans for the Tri-State CCS Buckeye hub in Ohio to include 12 wells; the Tri-State CCS Oak Grove hub in Pennsylvania to have three wells; and the Tri-State CCS Redbud hub in West Virginia to have seven wells. According to Tenaska, the locations were identified based on their geologic suitability for CCS, with help from local experts, geologists and universities.

From Farm and Dairy. August 2024.

#### **Dutch start-up announces onshore DACS project**

■ RepAir



Dutch carbon storage start-up C-Questra and U.S. carbon removal company RepAir Carbon are partnering on an onshore direct air capture and storage (DACS) project in France. The goal of the project — which is to be located in north-central France, where C-Questra has applied for a permit to develop an onshore  $\mathrm{CO}_2$  storage site — is to remove 100,000 tons of  $\mathrm{CO}_2$  per year by 2030, with the potential to scale up to megatons by 2035.

From Euronews. August 2024.

#### Partnership to build offshore CO<sub>2</sub> carrier for CCUS





Knutsen NYK Carbon Carriers AS (KNCC) and COSCO Shipping
Heavy Industry are partnering to explore the feasibility of building liquefied carbon dioxide (LCO<sub>2</sub>) carriers.
This collaboration aims to address the growing demand for CCS solutions worldwide. By conducting a joint study, KNCC and COSCO Shipping Heavy Industry will assess market conditions and refine the design of LCO<sub>2</sub> carriers to meet the specific needs of the CCS industry. The study will explore the vessel concept as a direct injection offshore (DIO) unit, particularly relevant for CCUS projects in the North Sea region. The DIO approach is anticipated to streamline the establishment and operation of a CCUS value chain, reducing both time and costs compared to traditional onshore or floating terminal infrastructures.

From ChemAnalyst. August 2024.





## PROJECT AND BUSINESS DEVELOPMENTS (cont.)

#### Japanese companies to develop LCO<sub>2</sub> carriers

"K" Line, MOL and NYK Line have teamed up with Mitsubishi Shipbuilding, Imabari Shipbuilding, Japan Marine United and Nihon Shipyard to launch a joint study aimed at developing standard specifications and designs for  $LCO_2$  carriers. The collaboration aims to address the growing demand for  $LCO_2$  carriers that is driven by various CCS projects. The objective of the study is to create a stable and efficient supply chain for these carriers within Japan, thereby enhancing the CCS value chain and improving economic efficiency. This initiative also aims to enable the construction of  $LCO_2$  carriers at various shipyards across Japan, not just the ones involved in the study.

From ChemAnalyst. August 2024.

#### Companies to evaluate CCS potential in Malaysia

ADNOC, PETRONAS and Storegga signed a Joint Study and Development Agreement (JSDA) to evaluate the feasibility of storing  $CO_2$  emissions in saline aquifers located in the Penyu basin, offshore Peninsular Malaysia. The project aims to establish a CCS hub capable of capturing and storing at least 5 million tons of  $CO_2$  annually by 2030. Additionally, the JSDA encompasses a comprehensive range of activities, including analyzing the efficient transport of captured  $CO_2$  to the storage site, mapping the subsurface geology and understanding the behavior of the saline aquifers, simulating  $CO_2$  injection and ensuring its long-term safe storage, and investigating the use of artificial intelligence to optimize storage capacity.

From Economy Middle East. August 2024.

#### Strategic collaboration to offer CCS services

Petricore and GeoMark Research announced a strategic collaboration to offer an integrated suite of CCS services. The partnership brings together GeoMark Research's geochemical and PVT expertise with Petricore's advanced rock and fluid analysis capabilities, offering a complete CCS solution that includes routine and special core analysis, digital rock analysis, and innovative monitoring techniques to ensure the safety and effectiveness of CCS projects.

From Newswire. August 2024.

#### Texas company seeks approval to store CO<sub>2</sub> in Wyoming

Texas-based Frontier Carbon Solutions is seeking approval for a permanent carbon storage injection well in Sweetwater County, Wyoming. The project would inject millions of tons of  $\mathrm{CO}_2$  into an underground cavity known as the "Nugget" formation, which lies almost 14,000 feet underground. The well would be a piece of the bigger Sweetwater Carbon Storage Hub — a public-private partnership designed to position Wyoming at the forefront of a nascent market for decarbonization services.



From Wyoming Business Report. August 2024.

## MOU focuses on zero-emissions power station with advanced CO<sub>2</sub>-management technology

Aker Solutions, in collaboration with PETRONAS Carigali Sdn. Bhd., MISC Bhd. and Clean Energy System Inc., signed a strategic MOU marking the commencement of a pilot project featuring the Zero-Emission Power Station (ZEUS) — an energy solution that utilizes advanced oxyfuel combustion with immediate CCS. The ZEUS technology employs advanced oxyfuel combustion to convert high  $CO_2$  natural gas into dispatchable power while capturing 100% of the  $CO_2$  emissions. The  $CO_2$  is immediately injected into a reservoir for permanent storage or can be used to increase production of both oil and gas before being permanently stored.

From Aker Solutions. August 2024.

#### **CCS project to be implemented in Adriatic Sea**

Eni and Snam are initiating a CCS project in the Adriatic Sea, near Ravenna, Italy. The project focuses on reducing  $CO_2$  emissions from industrial facilities. The first phase concerns Eni's Casalborsetti natural gas processing plant; its  $CO_2$  emissions will be transported (via existing natural gas pipelines converted to carry  $CO_2$ ) and stored in the depleted Porto Corsini Mare Ovest field, 3,000 meters beneath the sea. The project will reduce emissions from the Casalborsetti plant by more than 90%, or around 25,000 metric tons of  $CO_2$  per year. Eni and Snam plan to extend the capture and storage capacity to 4 million metric tons of  $CO_2$  per year by 2030. This extension, which constitutes phase 2 of the project, involves the development of a broader infrastructure to integrate other  $CO_2$  emitters.

From Energy News. September 2024.

#### **Commercial CO<sub>2</sub> carrier completes sea trials**

Dalian Shipbuilding announced the successful completion of sea trials for a commercial  $\mathrm{CO}_2$  transport vessel. Known as Northern Pioneer, the vessel will be operated by Japan's "K" Line for Norway's Northern Lights CCS project. The ship, approximately 426 feet long, is capable of transporting 7,500 cubic meters of liquid  $\mathrm{CO}_2$  in its two full-pressure C-type liquid cargo tanks that can withstand temperatures as low as -35°C. After the ship is officially delivered, it will transport the  $\mathrm{CO}_2$  from the capture locations in Northern Europe to a  $\mathrm{CO}_2$  receiving terminal in the municipality of Øygarden in western Norway. It will then be transferred by pipeline to storage below the seabed in the North Sea.

From Maritime-Executive. September 2024.



#### **LEGISLATION AND POLICY**

#### Germany to invest in industry transition and carbon storage

The Economy Ministry of Germany announced plans to launch a funding initiative facilitating the decarbonization of its industry sector, focusing on solutions such as storing  $\mathrm{CO}_2$  in offshore underground sites. According to government officials, under this funding initiative financial support for carbon storage will be restricted to situations where  $\mathrm{CO}_2$  emissions are "difficult to avoid" (e.g., sectors such as cement, glass and ceramics).



From Carbon Herald. August 2024.

#### EPA issues draft permits for CO<sub>2</sub> storage wells

The U.S. Environmental Protection Agency (EPA) issued *draft Class VI permits* to Oxy Low Carbon Ventures LLC for three proposed wells for geologic storage of CO<sub>2</sub> in Ector County, Texas. These are the first draft permits that EPA has issued in Texas for Class VI wells under the Safe Drinking Water Act Underground Injection Control Program, which establishes requirements to protect underground sources of drinking water from contamination. Class VI injection wells store CO<sub>2</sub>, which has been captured from an emissions source or the atmosphere, deep underground. The proposed project includes three wells that will store approximately 722,000 metric tons of CO<sub>2</sub> per year at a depth of about 4,400 feet.

From EPA News Release. September 2024.

### **EMISSIONS TRADING**

## (co.)

#### RGGI releases results of CO<sub>2</sub> auction

The states participating in the Regional Greenhouse Gas Initiative (RGGI) announced the results of their 65th auction of  $CO_2$  allowances. A total of 15,943,608  $CO_2$  allowances were sold at the auction at a clearing price of \$25.75, with bids ranging from \$2.56 to \$50.00 per allowance. The auction generated \$410.5 million for states to reinvest in strategic programs, including energy efficiency, renewable energy, direct bill assistance, beneficial electrification and greenhouse gas abatement programs. Additional details are available in the *Market Monitor Report for Auction 65*.

From RGGI. September 2024.

### RGGI Inc.

#### RGGI secondary market report available

The RGGI-participating states released the *Report on the Secondary Market for RGGI CO₂ Allowances: Second Quarter 2024*. Prepared by Potomac Economics, the report — which addresses the period from April through June 2024 — contains information on the secondary market for RGGI CO₂ allowances, including futures prices, market activity and allowance holdings.

From RGGI. August 2024.

#### Partnership aims for carbon market transparency in UAE

Global carbon ratings agency BeZero Carbon has partnered with Emirates NBD, a banking group in the MENAT (Middle East, North Africa and Türkiye) region, to support its carbon due diligence efforts and scale the nascent United Arab Emirates (UAE) carbon market. The BeZero carbon rating provides customers with a risk-based assessment of a carbon project's likelihood of avoiding or removing 1 tonne of carbon dioxide equivalent (CO<sub>2</sub>e). Carbon ratings help market participants better understand the quality of their carbon credit investments.

From Yahoo Finance. August 2024.

#### **SCIENCE**



#### **Study details OCCS systems**

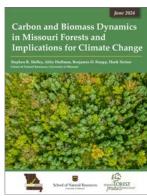
According to a recent study conducted by DNV and TMS Tankers, onboard carbon capture and storage (OCCS) systems demonstrate significant potential for reducing  $CO_2$  emissions. The study explored the economic feasibility of retrofitting OCCS onto a Suezmax tanker in a virtual environment. The research assessed the impact of OCCS on other onboard machinery and its overall potential for lowering emissions, considering multiple scenarios.

From Riviera Maritime Media. August 2024

#### Report: Missouri forests play role in long-term carbon storage

A report from the University of Missouri School of Natural Resources outlines the important role of forests in removing  $CO_2$  from the atmosphere and storing it in plant material. "Carbon and Biomass Dynamics in Missouri Forests and Implications for Climate Change," prepared for the Missouri Forest Products Association with funding from the Missouri Department of Economic Development, looks at the role forests play in removing atmospheric  $CO_2$  and at how carbon is cycled through Missouri forests.

From Muddy River News. August 2024.



#### Global study shows demersal fishing affects ocean floor carbon storage

According to a study, newly deposited organic matter on the seabed was significantly reduced due to seafloor fishing activities. The findings from the study, *published in the journal Fish and Fisheries*, suggest that, in the short term, trawling may accelerate the process that turns organic carbon to CO<sub>2</sub>. The scientists analyzed the findings of 71 independent studies to create a global database that harmonizes existing knowledge to explore the complex relationship between demersal fishing and seabed carbon.

From Phys.org. September 2024.



# About DOE'S CARBON TRANSPORT and STORAGE **PROGRAM**

The Carbon Transport and Storage Program at the National Energy Technology Laboratory (NETL) is focused on developing and advancing technologies to enable safe, cost-effective, permanent geologic storage of  $CO_2$ , both onshore and offshore, in different geologic settings. The technologies being developed will benefit both industrial and power sector facilities that will need to mitigate future  $CO_2$  emissions. The program also serves to increase the understanding of the effectiveness of advanced technologies in different geologic reservoirs appropriate for  $CO_2$  storage—including saline formations, oil reservoirs, natural gas reservoirs, unmineable coal seams, basalt formations, and organic-rich shale formations—and to improve the understanding of how  $CO_2$  behaves in the subsurface. These objectives are necessary to increasing public confidence in safe, effective, and permanent geologic  $CO_2$  storage.

The *Carbon Transport and Storage Program Overview* webpage provides detailed information of the program's structure, as well as links to the webpages that summarize the program's key elements.

#### **Carbon Transport and Storage Program Resources**

Newsletters, program fact sheets, best practices manuals, roadmaps, educational resources, presentations, and more information related to the Carbon Transport and Storage Program is available on **DOE's Energy Data eXchange (EDX) website**.

#### **Get Social with Us**

There are several ways to join the conversation and connect with NETL's Carbon Transport and Storage Program:

#### **Disclaimer**

This Newsletter was prepared under contract for the United States Department of Energy's National Energy Technology Laboratory. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily reflect those of the United States Government or any agency thereof.

## About NETL'S CARBON TRANSPORT and STORAGE **NEWSLETTER**

Compiled by the National Energy Technology Laboratory, this newsletter is a monthly summary of public and private sector carbon transport and storage news from around the world. The article titles are links to the full text for those who would like to read more (note that all links were active at the time of publication).

The **National Energy Technology Laboratory (NETL)**, part of DOE's national laboratory system, is owned and operated by the U.S. Department of Energy (DOE). NETL supports DOE's mission to advance the national, economic, and energy security of the United States.

1450 Queen Avenue SW **Albany, OR** 97321-2198 541-967-5892

3610 Collins Ferry Road **Morgantown, WV** 26507-0880 304-285-4764

626 Cochran Mill Road **Pittsburgh, PA** 15236-0940 412-386-4687 Program staff are also located in **Houston, Texas** and **Anchorage, Alaska**.

**CUSTOMER SERVICE:** 1-800-553-7681

www.netl.doe.gov

#### CONTACTS

If you have questions, feedback, or suggestions for NETL's Carbon Transport and Storage Newsletter, please contact:

Carbon Transport and Storage Newsletter Support at CTSNFeedback@netl.doe.gov

#### Mark McKoy

Technology Manager Advanced Carbon Storage R&D 304-285-4426

Mark.McKoy@netl.doe.gov

#### William Aljoe

Technology Manager Carbon Storage Infrastructure

412-386-6569

William.Aljoe@netl.doe.gov