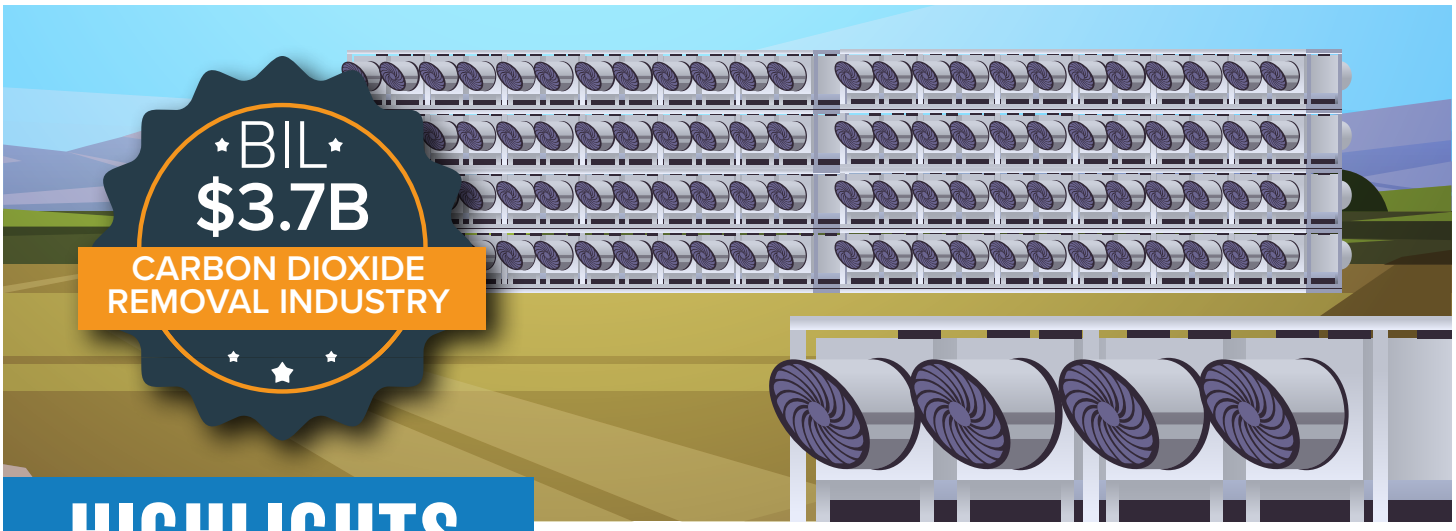
NATIONAL ENERGY TECHNOLOGY LABORATORY

FEBRUARY 2023

CARBON CAPTURE NEWSLETTER

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



HIGHLIGHTS

The newsletter is compiled by the National Energy Technology Laboratory to provide information on recent activities and publications related to carbon capture.

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Biden-Harris Administration Announces $3.7 Billion To Kick-Start America's CDR Industry

The Biden-Harris administration, through the U.S. Department of Energy (DOE) and the National Energy Technology Laboratory (NETL), announced the launch of four programs that will help build a commercially viable, just, and responsible carbon dioxide removal (CDR) industry in the United States. The programs, funded with $3.7 billion from President Biden's Bipartisan (BIL), will help accelerate private-sector investment, spur advancements in monitoring and reporting practices for carbon management technologies, and provide grants to state and local governments to procure and use products developed from captured carbon emissions. The new efforts will include DOE's Office of Fossil Energy and Carbon Management (FECM) Direct Air Capture (DAC) prizes, DOE's Office of Clean Energy Demonstrations (OCED)/FECM Regional DAC Hubs, FECM's Carbon Utilization Procurement Grants Program, and DOE's Office of Technology Transitions (OTT)/FECM BIL Technology Commercialization Fund.

Interagency News and Updates

NETL Carbon Capture Team Visits Renowned National Facility Where Technologies Are Put to the Test

The DOE/NETL Point Source Carbon Capture Team recently visited the National Carbon Capture Center (NCCC) in Alabama—a world-class, neutral test facility focused on accelerating the development and commercialization of next-generation carbon reduction technologies for fossil-based power plants. Since its creation by DOE in 2009, the center has been a cornerstone of U.S. innovation in the research and development (R&D) of cost-effective, technically viable carbon management technologies. NCCC, co-sponsored by NETL, tests post-combustion carbon capture, carbon utilization and conversion, and negative-emission technologies such as direct air capture. The NETL team observed capabilities that support DOE and FECM project objectives, including support for design, procurement, construction, installation, operation, and data analysis.

DOE Announces Funding for Regional Projects to Accelerate U.S. Carbon Capture, Transport, Conversion, and Storage Technology Deployment

FECM and NETL released a Funding Opportunity Announcement (FOA) of $20 million for projects that will improve stakeholder access to region-specific information and technical assistance regarding the commercial deployment of carbon capture, transport, conversion, and storage technologies across the United States. These technologies work together to capture carbon dioxide (CO_2) emissions from power and industrial facilities, then transport the CO_2 for geologic storage or conversion to valuable, long-lived products like concrete to reduce negative climate impacts. Read more details of the FOA here.

Senior NETL Researcher Preps Tomorrow's Engineers, Scientists to Make Impact

Tom Sarkus, Senior Managerial and Technical Advisor, Science & Technology Strategic Plans & Programs, NETL

At a seminar held at the Southern Illinois University Carbondale's College of Engineering, Computing, Technology & Mathematics, NETL's Thomas Sarkus summarized lessons learned from technology demonstration projects, as well as future directions in fossil energy and carbon management technologies, including those that have been funded by the BIL. Sarkus, a member of the university's Advanced Energy Institute External Advisory Board, told the students that the nation's research universities are important partners in energy-related technology development and provided tips students can take to conduct impactful research as they enter the workforce.

Interagency News and Updates (continued)

DOE to Support University Training and Research for Decarbonization and Net-Zero GHG Emissions Technologies

FECM and NETL announced $2.5 million in funding for four training and research projects to be conducted at U.S colleges and universities. The projects will support the development of technologies capable of converting natural gas to high-value products, such as fertilizer, antifreeze, pharmaceuticals, and a wide range of chemicals like ammonia, methanol, and propane, and will also promote collaborative work in humanities-driven science, technology, engineering, and mathematics (STEM) fields. Projects were selected under FECM's University Coal Research Program and the Historically Black Colleges and Universities and Other Minority Institutions Program.

2022 REVIEW

NETL Ends 2022 With Long List of Clean Energy Successes

In 2022, NETL supported the BIL and made many advances in energy research that are helping the nation meet aggressive decarbonization goals and realize a sustainable energy future. In addition to these advances, NETL also earned accolades and external recognition, including an R&D 100 Award bestowed to an NETL-Pitt research team for their optical fiber sensor technology that provides unprecedented measurement capabilities in environments previously thought impossible to probe. The NETL team also earned DOE Secretary's Honor Awards for advancing technology to recover rare earth elements, incorporating big data capabilities into a platform to accelerate discoveries, and developing a suite of sorbents to remove contaminants.

FECM's 2022 Year in Review

FECM made significant strides in helping to accelerate the development and deployment of critical technologies and infrastructure needed to achieve U.S. climate goals, ensure domestic and global energy security, and provide economic and environmental benefits to workers and communities. Highlights from FECM's 2022 work include the Strategic Vision; two new interactive tools to assist with advancing carbon management technologies and infrastructure in the United States—the Carbon Management Interactive Diagram and Carbon Matchmaker Tool; research opportunities for underrepresented students in STEM; community and stakeholder engagement and benefits; and two major events—the Carbon Negative Shot Summit and Carbon Management Day.

2022 Clean Energy Retrospective

FECM's Clean Energy Retrospective includes highlights from each month in 2022 with accompanying social media videos.

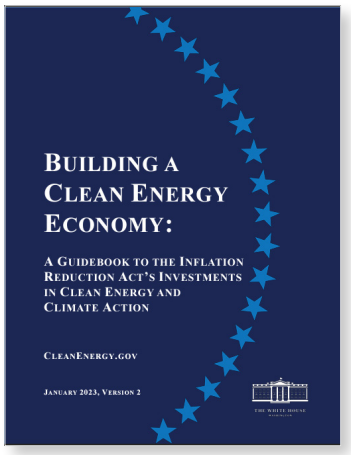
Interagency News and Updates (continued)

NOI to Issue the Industrial Demonstrations Program FOA

OCED released a Notice of Intent (NOI) to provide up to $6.3 billion to support the advancement of transformational technologies necessary to decarbonize the industrial sector and provide the United States with a competitive edge in the race to lead the world in low- and net-zero carbon manufacturing. Funded by the BIL and the Inflation Reduction Act (IRA), the Industrial Demonstrations Program will fund projects that focus on the highest-emitting industries where decarbonization technologies can have the greatest impact: iron and steel, cement and concrete, chemicals and refining, food and beverage, paper and forest products, aluminum, other energy-intensive manufacturing industries, and cross-cutting technologies.

Biden-Harris Administration Releases IRA Guidebook for Clean Energy and Climate Programs

The White House released the first edition of a new resource titled Building a Clean Energy Economy: A Guidebook to the Inflation Reduction Act's Investments in Clean Energy and Climate Action, which provides clear descriptions of the IRA's tax incentives and funding programs to build a clean energy economy, lower energy costs, tackle climate change, and reduce harmful pollution. The Guidebook will help state, local, territorial, and Tribal leaders, the private sector, non-profit organizations, homeowners, and communities better understand how they can benefit from these investments and unlock the full potential of the law. The Guidebook walks through the law program-by-program and provides background on each program's purpose, eligibility requirements, period of availability, and other key details.



2022 Standard Scenarios Now Available

The National Renewable Energy Laboratory (NREL) released the 2022 Standard Scenarios, a suite of forward-looking scenarios of the U.S. electricity sector. The suite offers a scenario framework to explore the rapidly evolving electricity sector, based in part on timely and transparent projections of technology cost and performance. The scenarios illuminate potential individual technology roles in the larger energy system while highlighting the impact of market and policy issues on electricity sector evolution. NREL updates the Standard Scenarios annually to consider a wide range of possible futures. The annual release includes an NREL technical report with key results and scenario outcomes that can be viewed and downloaded through the NREL Scenario Viewer.

Interagency News and Updates (continued)

Career Opportunities at NETL

At the core of NETL's success is its commitment to hiring the right people for the right positions. DOE's only government-owned and government-operated national laboratory offers exciting federal careers in research and engineering, technical project management, procurement, finance and budget, legal, and administrative support. Learn more at NETL Careers.

Bipartisan Infrastructure Law Hub

The BIL represents the most dramatic changes to DOE since its founding in 1977. In the next few years, the BIL will stand up 60 new DOE programs, including 16 demonstration and 32 deployment programs, and expand funding for 12 existing research, development, demonstration, and deployment programs. NETL's BIL Hub provides information on the BIL, including links to the Guidebook, DOE's Clean Energy Corps, DOE's Applicant Portal, and DOE's Grid Resilience Program, as well as information on solicitations and funding opportunities.

U.S. and International Events

ICR23

The Innovations in Climate Resilience 2023 conference (ICR23), to be held March 28–30, 2023, in Columbus, Ohio, continues the mission of leading innovations in climate resilience with the theme "Bold Leaps and Action." The focus areas of the conference include restoring ecosystems, enabling adaptation of built infrastructure and societies, improving human health, boosting national security, securing the food supply, and dramatically reducing the trajectory of causative factors.

CCUS 2023

Carbon, Capture, Utilization, and Storage (CCUS) 2023, to be held April 2023 at the University of Houston in Houston, Texas, will highlight current CCUS work and address related challenges, including subsurface geologic storage and site selection; carbon dioxide (CO_2) enhanced hydrocarbon recovery and utilization; reservoir modeling monitoring and risk assessment; case studies; industry applications; economics, incentives, and policy; infrastructure; and non-technical considerations.

U.S. and International Events (continued)

GRC on Carbon Capture, Utilization, and Storage

The fifth edition of the Gordon Research Conference (GRC) on Carbon Capture, Utilization, and Storage will be held May 28–June 2, 2023, in Les Diablerets, Switzerland. The conference will examine scientific advances covering all dimensions of the anthropogenic carbon cycle: from capturing hard-to-abate CO_2 emissions to using CO_2 as feedstock and generating negative emissions by removing CO_2 from the atmosphere and oceans.

2023 IEW

The 41st edition of the International Energy Workshop (IEW), to be held in Golden, Colorado, June 13–15, 2023, will be co-hosted by the Colorado School of Mines and NREL. Researchers and practitioners from countries around the world are invited to submit original papers with new and innovative results on scientific, technical, and practical experience on the economics of energy and climate systems.

Carbon Capture Technology Expo

The Carbon Capture Technology Expo, to be held June 28–29, 2023, in Houston, Texas, will bring together leading engineering firms, technology manufacturers and suppliers, energy firms, the oil and gas sector, heavy industry, chemical companies, various manufacturing organizations, research groups and non-government organizations (NGOs), consultants, and government bodies to explore how to rapidly accelerate the deployment and commercialization of CDR technologies as a key solution on the pathway to net-zero carbon emissions.

Hydrogen Technology Conference & Expo

The Hydrogen Technology Conference & Expo, to be held June 28–29, 2023, in Houston, Texas, is dedicated to discussing advanced technologies for the hydrogen and fuel cell industry. The event brings together the entire hydrogen value chain to focus on developing solutions and innovations for low-carbon hydrogen production, efficient storage, and distribution, as well as applications, in a variety of stationary and mobile applications.

Clearwater Clean Energy Conference

The 47th Clearwater Clean Energy Conference, to be held July 23–28, 2023, in Clearwater, Florida, provides essential information to power generators who must meet the pressures of energy utilization in the 21st century. The conference will include more than 200 technical presentations in four days, all offered both in person and virtually.

Carbon Capture Summit 2023

The key focus for the Carbon Capture Summit 2023, to be held July 26–27, 2023, in Amsterdam, The Netherlands, will be “working in collaboration with industry” by sharing expertise, building capacity, and providing advice and support so CCUS can play an integral role in reducing carbon emissions. Government agencies, global corporations, research bodies, and NGOs committed to learning and adopting CCUS technologies will participate in the event.

U.S. and International Events (continued)

PCCC-7

The next Post-Combustion Capture Conference (PCCC-7) will be in person, Sept. 25–27, 2023, in Pittsburgh, Pennsylvania. The call for abstracts will open early-March 2023. The conference format will consist of a two-stream program for oral presentations, a poster session, and a small exhibition area.

Business and Industry News

DOE, NETL Launch Four New Initiatives to CDR

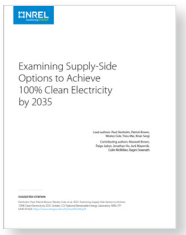
DOE and NETL launched four new programs that seek to establish a CDR industry in the United States. The programs will help accelerate private-sector investment, spur advancements in monitoring and reporting practices for carbon management technologies, and provide grants to state and local governments to procure and use products developed from captured carbon emissions. The programs will be funded with $3.7 billion from the BIL and include the DAC Commercial and Pre-Commercial Prize, Regional DAC Hubs, Carbon Utilization Procurement Grants, and the BIL Technology Commercialization Fund.

Chevron Leads Latest Fundraising for Svante to Advance Carbon Capture Technology

Chevron U.S.A. Inc. was lead investor in a recent $318 million fundraising round for Svante. Most of the financing was provided by Chevron New Energies—formed in 2021 to accelerate opportunities in CCUS, renewable fuels and products, offsets, and emerging technologies. In 2020, Chevron launched a project to pilot Svante technology to capture CO_2 from natural gas, post-combustion. The project, which received funding from DOE, is collaborating with Svante and NETL to test the technology at Chevron's Kern River facility in California's San Joaquin Valley.

Publications

Examining Supply-Side Options to Achieve 100% Clean Electricity by 2035



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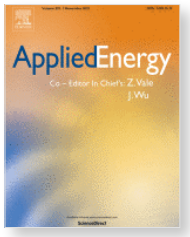

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About DOE Carbon Capture:

DOE/NETL is developing the next generation of advanced CO_2 capture technologies through NETL's Point Source Carbon Capture Program and the Carbon Dioxide Removal Program.

The Compendium of Carbon Capture Technology provides a technical summary of the DOE/NETL's Carbon Capture Program, assembling carbon dioxide capture technology research and development (R&D) descriptions in a single document.

Carbon Capture Reference Materials

- Carbon Capture Program Factsheet
- Carbon Dioxide Removal Program Fact Sheet
- Carbon Capture Infographics
- Compendium of Carbon Capture Technology
- Carbon Dioxide Capture Handbook
- CCSI^2
- Systems Analysis
- Conference Proceedings
- Accomplishments Posters
- Fossil Energy Techlines

Contact Us

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Program staff are also located in **Houston, Texas** and **Anchorage, Alaska**

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