

April 22, 2022

## EPA Releases White Paper on Technologies for Reducing Greenhouse Gas Emissions from Combustion Turbine Electric Generating Units

The Environmental Protection Agency [released](#) a white paper, [Available and Emerging Technologies for Reducing Greenhouse Gas Emissions from Combustion Turbine Electric Generating Units](#), yesterday. The paper focuses on a review of technologies and measures that can reduce the greenhouse gas (GHG) emissions associated with electricity generation from stationary combustion turbines.

The paper's discussion on existing and emerging technologies includes a focus on carbon capture, noting that carbon management technologies (capture, transport, storage, and use) have been demonstrated multiple times within the electric generating and industrial sectors. Although amine-based solvent systems are commercially used, additional carbon capture technologies are being developed to reduce cost and additional energy requirements.

The paper also reviews the ability of combustion turbine technologies to use hydrogen as a fuel. It compares various ways to produce hydrogen, detailing the associated GHG emissions, and highlights programs addressing current challenges with the availability of low-GHG hydrogen.

The white paper is [open for comments](#) through June 6, 2022. The docket number is EPA-HQ-OAR-2022-0289.

## Midwest Energy Policy Series Event Showcases Importance of Decarbonization in Missouri

The Missouri Energy Initiative hosted its yearly Energy Policy Series event in Kansas City, Missouri, on April 19, broadly covering decarbonization in the Midwest, with a focus on Missouri. Patrice Lahlum, program consultant for the Great Plains Institute's carbon management team, spoke alongside representatives from the Illinois Sustainable Technology Center and a representative from Continental Cement about carbon capture studies and projects from the perspective of the cement industry.

Carbon capture will be critical to decarbonizing the cement industry and is currently the only feasible technology for decarbonizing the sector. According to the Regional Carbon Capture

Deployment Initiative analysis, Missouri has 24 facilities that qualify for the [Federal 45Q tax credit](#), which provides companies with a performance-based tax credit for carbon capture projects. Seven of these facilities are cement plants and all are identified as near-term economically feasible candidates for carbon capture retrofits.

Two Missouri-based carbon management projects [received funding](#) from the Department of Energy (DOE) in October of 2021:

- The Sustainable Energy Solutions, Inc. project team aims to design, build, commission and operate an engineering-scale Cryogenic Carbon Capture™ process at the Eagle Materials/Central Plains Cement Sugar Creek Cement Plant in Sugar Creek, Missouri.
- A project team led by the University of Illinois at Urbana-Champaign aims to advance the technology of carbon capture with a front-end engineering design (FEED) study to retrofit the Holcim's Ste. Genevieve cement manufacturing facility in Bloomsdale, Missouri,

## DOE Awards 2.5 million for Illinois DAC Study

The U.S. Department of Energy (DOE) has [awarded a \\$2.5 million grant to Constellation and its project partners](#) to explore the benefits of constructing direct air capture (DAC) technology at the company's Byron nuclear energy plant in Northern Illinois.

The direct air capture project would remove up to 250,000 tons of carbon dioxide directly from the atmosphere each year. The study will also focus on the potential for a nuclear plant to become the center of a direct air carbon capture hub, partnering the DAC technology with storage of carbon dioxide.

## CATF Summarizes Carbon Capture's role in Global Decarbonization in the latest IPCC Report

Clean Air Task Force (CATF) released an [informative summary](#) on Wednesday about carbon capture's decarbonization role, as described in the latest Intergovernmental Panel on Climate Change (IPCC) report. The IPCC released the third installment of its [Sixth Assessment Report, Climate Change 2022: Mitigation of Climate Change Report from Working Group III](#) this April and lists carbon capture as a tool for decarbonization in six out of seven of its described energy pathways.

Key takeaways from CATF's summary are listed below:


- Carbon capture and storage remain central to climate mitigation strategies
- BECCS and DACCS play a central role in the IPCC mitigation pathways
- Carbon capture and storage can decarbonize many industrial processes
- Carbon capture can effectively abate fossil fuel use
- There is sufficient storage capacity for all forms of carbon capture and storage
- The co-benefits of carbon capture are important to help achieve sustainable development goals (SDGs)
- Challenges for a robust carbon capture scale-up exist primarily in the power sector

- Growing policy and public support for carbon capture and storage is critical for speeding up its deployment

For a more detailed summary of the report, read the IPCC's [Summary for Policymakers](#).

## **New Speakers Confirmed for the Upcoming RDI Carbon Management Conference**

We're excited to announce that **Ryan Edwards, Senior Carbon Management Policy Advisor at Oxy Low Carbon Ventures** and **William Bates, Branch Chief: Prevention Branch at Environmental Protection Agency** have joined our terrific lineup of speakers at the Regional Carbon Capture Deployment Initiative's upcoming event in Louisville, Kentucky on May 25 and 26.

Join us for a national leadership event focused on accelerating carbon management deployment: *Turning Federal Investment into Action: Scaling Carbon Management Technologies and Infrastructure*. 

Our full list of confirmed speakers is below, with more to be announced soon:

- **William Bates**, Branch Chief: Prevention Branch, Environmental Protection Agency
- **Cindy Crane**, CEO, Enchant Energy
- **Linda Daugherty**, Deputy Associate Administrator for Field Operations, Pipeline and Hazardous Materials Safety Administration
- **Tom Dower**, Vice President Public Policy, LanzaTech
- **Ryan Edwards**, Senior Carbon Management Policy Advisor at Oxy Low Carbon Ventures
- **Tracy Evans**, CEO and Founder, CapturePoint
- **Matt Fry**, Senior Policy Manager, Great Plains Institute
- **Jon Kehmeier**, Vice President of Scientific and Technical Services, Steven W. Carothers & Associates
- **Secretary Becky Keogh**, Cabinet Secretary, Arkansas Department of Energy and Environment
- **Kris Koski**, Professional Land Management Director and Associate Lecturer, University of Wyoming School of Energy Resources
- **Patrice Lahlum**, Program Consultant, Great Plains Institute
- **Jason Lanclos**, Director, State Energy Office, Louisiana Department of Natural Resources
- **Karen Matusic**, Senior Director of External Affairs: Appalachia/Tri-state Region, Equinor
- **Glen Murrell**, Director, Wyoming Energy Authority
- **Dr. Simone H. Stewart**, Industrial Policy Specialist, National Wildlife Federation

Register [here](#)

## **Join GPI's Carbon Management Team!**

The Great Plains Institute is currently seeking applications for an Action Network Manager, Public Relations and Communications Strategist, Research Manager, and Labor Engagement

Manager for its Carbon Management Program. For additional information, please see the job postings below.

- [Carbon Management Action Network Manager](#)
- [Carbon Management Public Relations and Communications Strategist](#)
- [Carbon Management Research Manager](#)
- [Carbon Management Labor Engagement Manager](#)

## State Carbon Management Legislative Highlights

### *Introduced*

- **California:** [SB 1399](#), *Carbon capture and storage pilot program: industrial facilities,*
- **Maryland:** [HB 1366](#), *Zero-Emission Energy Resources and Carbon Capture, Use, and Sequestration – Renewable Energy Portfolio Standard and Study,*
- **Pennsylvania:** [HR 183](#), *A Resolution urging the Biden Administration and the Congress of the United States to designate this Commonwealth as a hydrogen hub*

### *First Committee*

- **California:** [SB 905](#), *Decarbonized Cement and Geologic Carbon Sequestration Demonstration Act. Geological Carbon Sequestration Amendments,*
- **Minnesota:** [SF 3661](#), *State policy supporting the deployment of carbon capture and sequestration technologies establishment*

### *First Chamber*

- **Colorado:** [SB 22-193](#), *Air Quality Improvement Investments,*
- **Iowa:** [HF 2565](#), *A bill for an act relating to and making appropriations involving certain state departments, agencies, funds, and certain other entities, providing for regulatory authority, and providing for other properly related matters, and including effective date provisions*

### *Second Chamber*

- **Arizona:** [SB 1396](#), *hydrogen study committee,*
- **Ohio:** [HB 175](#), *Deregulate certain ephemeral water features (this bill includes class VI injection well process recommendations)*

### *Enacted*

- **Alabama:** [SB 36](#), *Oil and Gas Board, underground gas storage facilities, regulation, gas further defined to include abandonment of underground storage facilities, performance bonds, fees by board, Secs. 9-17-150, 9-17-151 am'd.*
- **Indiana:** [HB 1209](#), *Carbon sequestration projects,*
- **Mississippi:** [HB 1218](#), *Carbon dioxide geologic sequestration; revise laws regarding,*
- **Nebraska:** [LB 1099](#), *Create the Nebraska Hydrogen Hub Industry Work Group,*
- **South Dakota:** [HB 1120](#), *Include carbon dioxide and carbon dioxide capture companies in certain provisions regarding pipeline taxation,*
- **Utah:** [HB 244](#), *Geological Carbon Sequestration Amendments,*
- **West Virginia:** [HB 4491](#), *To establish requirements for carbon dioxide sequestration,*
- **Wyoming:** [SF 47](#), *Carbon storage and sequestration-liability.*

Read RDI's [weekly legislative update](#) to see all tracked bills related to carbon management.

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## News Roundup

- [Exxon sees carbon capture market at \\$4 trillion by 2050 | Reuters](#)
  - [Carbon Capture Coalition comments on CEQ's CCUS guidance document | Biomassmagazine.com](#)
  - [Hydrogen hub proponents say outreach key to getting it built in Appalachia - Pittsburgh Business Times \(bizjournals.com\)](#)
  - [White House focuses in on measuring Federal Sustainability Plan efforts to drive progress | Federal News Network](#)
  - [51 Compressors For US Carbon Capture And Storage Project | Gas Compression Magazine](#)
  - [CCS and the Role of Project Finance - Lexology](#)
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## Global News

- [Energy transition will be challenging in era of public protests, regulatory hurdles - OGV Energy](#)
  - [Australia's Santos aims for 'world's largest' carbon capture plant - Nikkei Asia](#)
  - [Plans revealed for huge CO2 network at Ellesmere Port plant | Chester and District Standard \(chesterstandard.co.uk\)](#)
  - [The Worldwide Carbon Capture and Storage Industry is Expected to Reach \\$15.2 Billion by 2029 - ResearchAndMarkets.com | Business Wire](#)
  - [How Australia could help Europe solve its green energy gap | Reuters](#)
  - [CCB Energy, Northern Lights to Develop CO2 Value \(oedigital.com\)](#)
  - [Eni to develop LNG project in Congo next year - Offshore Energy \(offshore-energy.biz\)](#)
  - [BP gets government funding for Kwinana hydrogen hub | Upstream Online](#)
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## New podcasts, reports, statements & blogs

- [Boeing Announces Multi-Year Commitment to Yale Center for Natural Carbon Capture \(spaceref.com\)](#)
- [Energy Sector Could Lead the Way on Carbon Capture | Morgan Stanley](#)
- [Eventgroove becomes the first event platform to offer carbon removal with Stripe Climate. \(prnewswire.com\)](#)
- [Is Large-Scale Direct Air Capture Realistic? | Energy Intelligence](#)
- [LANL: Input Sought For Shift To Carbon-Neutral Economy – Los Alamos Reporter](#)
- [Midstream operators and carbon capture | WorkBoat](#)
- [BKV Corporation Announces Path to Net-Zero Emissions Across Scope 1 and 2 by 2025 in Inaugural Sustainability Report \(prnewswire.com\)](#)
- [April 2022 has been a great month for carbon capture — Quartz \(qz.com\)](#)
- [PROJECTS INTERVIEW: "Carbon Capture and Storage is key to reducing emissions without disrupting the global energy market" \(zawya.com\)](#)

- [Q&A: Removing carbon dioxide from the atmosphere \(phys.org\)](#)
  - [Emerging space: hydrogen energy | PitchBook](#)
  - [The cement sector can't sit back on reducing CO2 emissions \(cemnet.com\)](#)
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## News in the States

### Alabama

- [USA funds nuclear-coupled carbon capture studies : Energy & Environment - World Nuclear News \(world-nuclear-news.org\)](#)

### Arizona

- [World's First 'MechanicalTree' Stands Tall at Arizona State University | Phoenix New Times](#)

### California

- [State faces heavy lifting to become carbon neutral, but it can be done - CalMatters](#)
- [The Path to Net Zero A Decarbonization Roadmap for California \(sdge.com\)](#)
- [Capturing Carbon With Inspiration From Battery Chemistry \(lbl.gov\)](#)

### Illinois

- [Illinois Institute of Technology researcher scores \\$1.9M ARPA-E funding for carbon capture and conversion : Biofuels Digest](#)
- [Illinois nuclear plant to host direct air capture study \(power-eng.com\)](#)
- [DOE Awards \\$2.5 Million for Direct Air Capture Study at Constellation Nuclear Plant In Illinois | News | bakersfield.com](#)

### Indiana

- [2022 Indiana Legislative Wrap Up - Government, Public Sector - United States \(mondaq.com\)](#)

### Iowa

- [Mills County says no to pipeline eminent domain | State | swiowanewssource.com](#)
- [Eminent domain carbon pipeline bill moves on to Iowa Senate | who13.com](#)
- [EY study shows economic impact of proposed Summit Carbon Solutions project : Biofuels Digest](#)
- [Summit says carbon pipeline project has secured 20% of Iowa route | Reuters](#)

### Kentucky

- [Nucor and the University of Kentucky Receive Federal Grant for Carbon Capture R&D at Gallatin Mill \(prnewswire.com\)](#)

### Louisiana

- [How Louisiana became the carbon capture capital of the South \(theadvertiser.com\)](#)

- As climate report warns of fossil fuel industry growth, Louisiana has several projects on the way | WWNO

### **Massachusetts**

- Kerry: Capitalism, not government, likely to lead 'Green Economy' shift | News | salemnews.com Viewpoint: Mass. can lead the way from commonwealth to 'ClimateWealth' - Boston Business Journal (bizjournals.com)

### **Michigan**

- Michigan climate plan calls for 60 percent renewable power by 2030 - mlive.com

### **Minnesota**

- Bushmills Ethanol of Atwater partners with Summit Carbon Solutions to reduce carbon emissions - West Central Tribune | News, weather, sports from Willmar Minnesota (wctrib.com)
- Summit Carbon Solutions adds ethanol plant to pipeline; new map filed with South Dakota PUC - Agweek | #1 source for agriculture news, farming, markets

### **Nebraska**

- Carbon pipeline economic impact includes \$541 million in Nebraska construction | Agriculture | norfolkdailynews.com

### **New Mexico**

- Governor doubles down on hydrogen in speech before U.S. Hispano Chamber of Commerce | Local News | santafenewmexican.com

### **North Dakota**

- Counties taking action against eminent domain for carbon capture pipeline - Agweek | #1 source for agriculture news, farming, markets (inforum.com)
- World's Largest Carbon Project Proposed for North Dakota | Red River Farm Network (rrfn.com)
- Officials Mark Start of CO2 Pipeline Used for Oil Recovery | North Dakota News | US News

### **Ohio**

- JobsOhio, SARTA study says Ohio is poised to lead hydrogen economy, is a prime location for Clean Hydrogen Hub (prnewswire.com)

### **Pennsylvania**

- Carbon capture bill set for introduction in state senate | News | northcentralpa.com
- Despite its setbacks, carbon capture may come to Pennsylvania | State | tiogapublishing.com
- Legislation creates carbon dioxide capture framework - Pennsylvania Business Report (pennbizreport.com)

- [Why hydrogen is an 'extraordinary opportunity' for Pennsylvania - Pittsburgh Business Times \(bizjournals.com\)](#)
- [KeyState Plans Second NatGas-to-Hydrogen Plant in OH or WV | Marcellus Drilling News](#)
- [API to Discuss Hydrogen and CCS Initiatives at Appalachian Hydrogen & Carbon Capture Conference - MyChesCo](#)

#### **South Dakota**

- [Study: Summit to invest \\$795 million in South Dakota for CO2 pipeline \(argusleader.com\)](#)
- [Summit Carbon Solutions adds ethanol plant to pipeline; new map filed with South Dakota PUC - Agweek | #1 source for agriculture news, farming, markets](#)

#### **Texas**

- [Carbon removal: Tech money could give Houston businesses a boost \(houstonchronicle.com\)](#)

#### **Utah**

- [Could a 'hydrogen hub' energize Utah and the West to a cleaner future? \(sltrib.com\)](#)

#### **Washington**

- [Washington Looks to Boost Prospects for Winning Hydrogen Hub | RTO Insider](#)

#### **Wyoming**

- [Utilities: Wyo CCUS mandate could spike monthly bills by \\$100 - WyoFile](#)
  - [UW Scientist's Carbon Capture Research Cited in Latest International Climate Report | News | University of Wyoming \(uwyo.edu\)](#)
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## **Upcoming events**

#### **April 26**

- [Salt Lake City, Utah Regional Carbon Management Applicant Education Workshop | USEA | United States Energy Association](#)
- [Energy Workforce & Community Participation in the New Energy Economy Registration, Tue, Apr 26, 2022 at 2:00 PM | Bipartisan Policy Center](#)

#### **April 29**

- [Carbon Sequestration Symposium | California State University, Bakersfield \(csub.edu\)](#)

#### **May 3**

- [Active Carbon Management: Critical Tools in the Climate Toolbox | ITIF](#)

#### **May 10**



- [Hydrogen Hubs: Decarbonizing Industry, Transport and Power Generation](#)

**May 11 - 12**

- [Next Frontier Energy Summit – Wyoming Energy Authority \(wyoenergy.org\)](#)

**May 16**

- [Charting an Energy Transition Path Towards Economic Growth: ACCD and Team PA Event](#)

**May 25 – 26**

- [Turning Federal Investment into Action: Scaling Carbon Management Technologies and Infrastructure](#)

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*To subscribe or request to add an event, news story, report, blog, or job posting to the update please reach out to Emma Thomley at [ETHomley@gpisd.net](mailto:ETHomley@gpisd.net) Want to read more carbon management updates, studies, and fact sheets? Visit us at [Carbon Capture Ready](#).*

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