

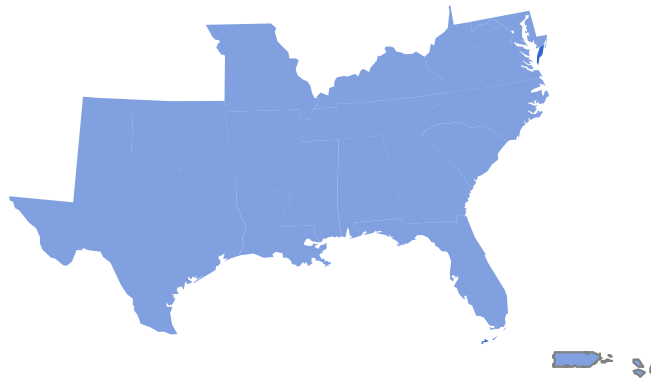


CCUS Commercialization

Kenneth J. Nemeth, SSEB & Chuck McConnell, UH CCME

Zoom | December 1 and 3, 2020

“Through innovations in energy and environmental policies, programs and technologies, the Southern States Energy Board enhances economic development and the quality of life in the South.” ~ SSEB Mission Statement



- Interstate Compact Organization, created by state law and consented to by Congress (PL 87-563, PL 92-440)
- 16 U.S. States and Two Territories
- Each jurisdiction represented by the governor, a legislator from the House and Senate, and a governor's alternate
- Federal Representative appointed by U.S. President
- Secretary, who serves as Executive Director

2020-2021 Executive Committee



 Chair Gov. Kevin Stitt Oklahoma	 Vice Chair Rep. Lynn Smith Georgia	 Treasurer Rep. Bill Sandifer South Carolina
 Gov. Asa Hutchinson Arkansas	 Gov. John Bel Edwards Louisiana	 Rep. John Ragan Tennessee
 Rep. Howard Sanderford Alabama	 Sen. Brandon Smith Kentucky	 Sen. Ken Yager Tennessee
 SLC E&E Chair Rep. Jim Gooch, Jr. Kentucky	 Federal Representative Honorable Eddie Joe Williams	 Secretary Kenneth Nemeth

Overall Project Goals & Objectives



“Provide a regional effort that fosters and sustains an innovative environment for the development of coal policies and technologies.”

- Foster and facilitate communication, education and outreach between DOE, governors and legislative leaders within the SSEB region, state agencies, utilities, regulatory bodies, the private sector and non-profit organizations.
- Support global outreach to promote the adoption of U.S. technologies internationally and provide greater opportunities for U.S. companies in a globally challenging environment.
- Brief state policy-makers and regulators on the historical and current technical aspects of clean energy demonstration programs to gain support and regulatory approval for future commercial deployment and on establishing a public-private consortium of experts to promote the rapid and transformative deployment of CCUS technologies.



CCME

Center for Carbon Management in Energy



CENTER FOR CARBON MANAGEMENT IN ENERGY

- Founded in 2018
- Driven by industry members of the Energy Advisory Board at UH
- Science and Technology AND Public Policy, Legal, Business
- CCME addresses CCUS, Methane, Transformative Process Technologies – all targeting EMISSIONS – NOT Fuels
- CCME symposiums on CCUS, 45Q, H₂ transition, Decarbonized grid, Circular plastics economy. Ongoing schedule for 2021.

The logo for the Center for Carbon Management in Energy (CCME) features the letters 'CCME' in a large, bold, red, sans-serif font.

Center for Carbon Management in Energy

SSEB Awarded \$3.5MM Project to Accelerate Clean Coal and Carbon Management Technologies



“We applaud SSEB’s association with the University of Houston to focus on commercial deployment of CCUS projects.... The time has come for CCUS to be deployed by private industry.”

– *The Honorable Steven Winberg,
ASFE U.S. DOE*

Full Press Release: https://www.sseb.org/wp-content/uploads/2020/09/carbon_management_announcement.pdf



SEPT. 17 – FOR IMMEDIATE RELEASE

SSEB Awarded \$3.5 Million Project to Accelerate Clean Coal and Carbon Management Technologies

Collaboration with the University of Houston’s Center for Carbon Management in Energy for CO₂ Capture, Utilization, and Storage Commercialization Effort

Peachtree Corners, GA—Earlier this week, the Southern States Energy Board (SSEB) was awarded a five-year, \$3.5 million grant from the U.S. Department of Energy’s Office of Fossil Energy to support and enhance the agency’s mission of helping the United States meet its need for secure, affordable, and environmentally sound fossil energy supplies.

The grant continues the work of the Board’s Committee on Clean Coal Energy Policies and Technologies by convening the region’s governors and legislative leaders within the SSEB region, state agencies, universities, utilities, regulatory bodies, the private sector, and non-profit organizations to foster and facilitate communication, education, and outreach on fossil energy-related topics. The committee analyzes issues impacting the domestic and international commercial deployment of advanced power generation, power plant efficiency, water management, and carbon dioxide (CO₂) capture, utilization, and storage (CCUS) technologies by expanding the value chain for coal and coal by-products with an emphasis on public policy.

SSEB also announced a new collaborative effort with the University of Houston’s Center for Carbon Management in Energy (CCME) to create a public-private consortium of experts to promote the rapid and transformative deployment of CCUS technologies. The SSEB and CCME effort focuses beyond the research and development phase of technology development and centers on the commercial deployment needs of industry.

“The Office of Fossil Energy is glad to continue our partnership with the Southern States Energy Board,” said Steven Winberg, Assistant Secretary for Fossil Energy at the U.S. Department of Energy (DOE). “We applaud SSEB’s association with the University of Houston to focus on commercial deployment of CCUS projects. The American taxpayer has invested hundreds of millions of dollars in R&D; the time has come for CCUS to be deployed by private industry.”

“The initiative brings together the findings and lessons learned from SSEB’s leadership of the Southeast Regional Carbon Sequestration Partnership program, the Regional Initiatives for CCUS, and a dedicated support team co-located in Houston that is fundamental for commercialization acceleration,” said Kenneth J. Nemeth, SSEB’s Secretary and Executive Director.

“SSEB and CCME will work with industry to address a full range of early technology deployment risks through this public-private partnership,” he said.

“The advancement of CCUS technologies and the structure of projects within DOE’s Carbon Management Program portfolio have provided great foundational work at early and late stages of development in CO₂ capture, utilization systems, and geologic storage,” said Charles McConnell, Executive Director of the University of Houston’s CCME.

“Pilots and demonstrations in several of the key partnerships have led to early-stage commercial deployments, but this is a recognition that greater emphasis and alignment with industry on commercialization challenges and opportunities is required to accelerate the broad deployment of CCUS in the marketplace,” he said.

Through the SSEB and CCME partnership, there will be an increased emphasis in stakeholder engagement and workforce development focused on public, industry, and university education, as well as outreach opportunities directly supporting commercial CCUS deployment.

“Access to reliable clean coal technology supports economic development and job growth,” Winberg said. “There is a bright future for 21st century coal.”

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SSEB & UH CCME Collaboration



- Create a public-private consortium of experts to promote the rapid and transformative deployment of CCUS technologies
- Focus beyond the research and development phase of technology development and center on the commercial deployment needs of industry



Workflow Highlights



- Establish a Leadership Committee and Public-Private CCUS Commercial Deployment Consortium (12/31/20)
- Develop a CCUS Commercial Deployment Consortium Roadmap (FY2021)
- Provide CCUS Facility Design Support to Industry (9/30/21)
 - Seek opportunities to provide CCUS facility design support to industry
- Maintain robust Stakeholder Engagement and Workforce Develop strategic and tactical roadmap (10/1/20 – 9/30/25)
 - Directly support commercial CCUS deployment
 - Convene, Host and Engage the marketplace through events
- Solicit and assemble ongoing feedback from participants on obstacles to CCUS deployment (10/1/20 – 9/30/25)

Upcoming Activities



Immediate Short Term Goal:

Convene identified participants and the experience of industry, academia, and government to accelerate CCUS deployment in the Southern region, and across the US. Leadership Team identified.

(12/2020)

First Year Goal:

Identify and Address key challenges to commercial risk in the broad marketplace in terms of technologies, transportation and distribution infrastructure, legal and policy and to promote regional knowledge transfer and inform marketplace and government stakeholders.

- Analysis and tactical Roadmap (9/30/21)

Step 1: Recruit Leadership Team



- Recruit Leadership Team to Guide Development of Roadmap
- Coordinate effort with Regional Initiatives – ensures complementary effort to regional R&D activities
- *Deliverable Due 12/31/20: Planning Committee Roster & Verification of Commitment to Participate*

Step 2: Develop & Initiate Roadmap



- CCUS Commercial Deployment Consortium Roadmap Development
 - *Deliverable Due 9/30/21: CCUS Commercial Deployment Consortium Roadmap*
- Phased initiation of Roadmap over 3 phases and 4 years (FY22-25)

Roadmap's Contents (preliminary)

- Near- and long-term management and staffing of the Consortium and the roles and responsibilities of all personnel and participants;
- Funding/membership mechanisms for establishing a self-sustaining Consortium;
- Involvement of the Regional Initiatives to ensure the project is complementary to, and builds upon, existing research and development efforts;
- Services and expertise to be provided through the Consortium's structure, including an assessment of challenges and obstacles to deployment of CCUS technologies;
- Workforce development needs to support the rapid acceleration of CCUS technologies commercialization; and
- Plan to obtain commitments to join a Consortium from a broad spectrum of public-private partners, especially representatives from industry, universities, and the CCUS community.

Ongoing Activities



- CCUS Facility Design Support to Industry (full performance period)
 - Seek opportunities to provide CCUS facility design support to industry
 - Collaborate with Regional Initiatives and other DOE and NETL-funded carbon management projects
- Stakeholder Engagement and Workforce Development (full performance period)
 - Directly support CCUS deployment
 - Host and support events
 - Solicit and assemble feedback from participants on obstacles to CCUS deployment (can feed findings into the Regional Initiatives)

POCs



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