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Carbon Utilization Infrastructure, Markets, Research and Development

Meeting #1 (January 11-12 & 28, 2022)

DAY 1b, January 11, 2022, 1:00 PM ET:
PUBLIC SESSION

PUBLIC PARTICIPANTS CAN REGISTER FOR THE EVENT HERE:
http://www.carbon-utilization.eventbrite.com

PUBLIC LIVESTREAM LINK:
https://livestream.com/nasem/events/10065990

1:00 PM ET. **Welcome and opening remarks**
Emily Carter, Committee Chair, and *Beth Zeitler*, Study Director

1:05 PM ET. **Opening remarks on behalf of the Department of Energy's Office of Fossil Energy and Carbon Management about this Congressionally mandated study**
Emily Grubert, Deputy Assistant Secretary for Carbon Management, Office of Fossil Energy and Carbon Management, U.S. Department of Energy (*pending confirmation*)

1:15 PM ET. **Perspective on the study from DOE's Office of Fossil Energy and Carbon Management**
Darin Damiani, Senior Program Manager Carbon Transport and Storage, Office of Carbon Management Technologies, U.S. Department of Energy and
Amishi Kumar, Carbon Utilization Program Manager, Office of Fossil Energy and Carbon Management, U.S. Department of Energy

1:35 PM ET. **Q&A for Academies committee and staff**

2:00 PM ET. **Perspective on the study from DOE-EERE's Bioenergy Technologies Office**
Christy Sterner, Technology Manager for Advanced Algal Systems Program, Bioenergy Technologies Office, U.S. Department of Energy

2:20 PM ET. **Q&A for Academies committee and staff**

2:30 PM ET. **Break**

3:00 PM ET. **Perspectives on the Congressional mandate**
Adam Rosenberg, Subcommittee Staff Director, U.S. House Science, Space, and Technology Committee, Energy Subcommittee
Luke Bassett, Senior Professional Staff Member, U.S. Senate Energy and Natural Resources Committee

Armando Avila, Senior Professional Staff Member, U.S. Senate Energy and Natural Resources Committee

3:10 PM ET. **Q&A for Academies committee and staff**

3:30 PM ET. **Perspective on the study from DOE's Office of Science**
Bruce Garrett, Director of Chemical Sciences, Geosciences, and Biosciences Division, Office of Basic Energy Sciences, U.S. Department of Energy and
Todd Anderson, Director of Biological Systems Science Division, Office of Biological and Environmental Research, U.S. Department of Energy

3:50 PM ET. **Q&A for Academies committee and staff**

4:00 PM ET. **Public Comment Period**
Livestream viewers can fill out the Q&A form from the link on the livestream page (http://nationalacademies.org/deps-webinar). Comments will be read in the order they are received. All comments will be considered by the committee and filed in the public record for this study.

4:10 PM ET. **Adjourn**

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Presenter Biographies

Dr. Emily Grubert is the Deputy Assistant Secretary for Carbon Management in the Office of Fossil Energy and Carbon Management (FECM). In this role, she oversees FECM's Carbon Management program, which focuses on minimizing the climate and environmental impacts of fossil energy through technology pathways, including carbon capture, carbon dioxide (CO_2) removal, CO_2 conversion into products, reliable CO_2 storage; hydrogen production; and critical mineral production from industrial and mining waste. Dr. Grubert is a civil engineer and environmental sociologist who studies and informs decision making regarding infrastructure systems, particularly related to justice-centering decarbonization of the U.S. energy system. Her expertise includes studying the life cycle and socioenvironmental impacts associated with future policy and infrastructure. Dr. Grubert is an Assistant Professor of Civil and Environmental Engineering and, by courtesy, of Public Policy at the Georgia Institute of Technology. She holds a Ph.D. in Environment and Resources from Stanford, an M.S. in Environmental and Water Resources Engineering and an M.A. in Energy and Earth Resources from UT Austin and a B.S. in Mathematics and Atmosphere/Energy Engineering from Stanford.

Amishi Kumar is the Carbon Utilization Program Manager in the Office of Carbon Management at the U.S. Department of Energy – Fossil Energy and Carbon Management. The Carbon Utilization program works to develop commercially viable technologies to transform waste CO_2 emissions into value-added products ranging from cementitious building materials to synthetic fuels using various conversion pathways such as catalytic systems. Previously, Amishi was a Science and Technology Policy (STP) Fellow in the clean coal office where she gained experience in the carbon capture, utilization, and storage industry as well as a broader understanding of technical, economic and policy-based changes occurring within in the energy grid. Prior to joining the DOE, Amishi was a Program Coordinator at the United States Energy Association (USEA). She earned a M.S. in Geological Sciences and a M.S. in Environmental Sciences at Indiana University; she received her B.A. in Earth and Environmental Sciences at Vanderbilt University.

Dr. John Litynski is the Director of Carbon Transport and Storage in the Office of Carbon Management Technologies at the U.S. Department of Energy. He has over 20 years of experience working on environmental compliance and technology development for the energy industry and Department of Defense. He received his B.S. in Civil Engineering from Virginia Polytechnic Institute and State University and M.S. from Johns Hopkins University in Environmental Engineering and Science.

Christy Sterner is a Technology Manager for the Advanced Algal Systems Program in the U.S. Department of Energy's (DOE's) Office of Energy Efficiency and Renewable Energy's Bioenergy Technologies Office (BETO). While she has served in many different capacities and programs within BETO over the years, Ms. Sterner has been with the Advanced Algal Systems Program since 2009. She has many projects in her portfolio ranging from core research at DOE's national laboratories to larger-scale pilot and demo projects. Ms. Sterner has a B.S. in chemical engineering from the Colorado School of Mines and a research and development and project management background.

Dr. Adam Rosenberg is the Subcommittee Staff Director of the Energy Subcommittee of the U.S. House Science, Space, and Technology Committee.

Luke Bassett is a Senior Professional Staff Member with the Senate Energy and Natural Resources Committee. He was previously the associate director of Domestic Energy and Environment Policy at American Progress, and previously served as an appointee at the U.S. Department of Energy, or DOE, in the Office of Energy Policy and Systems Analysis and the Office of Energy Efficiency and Renewable Energy. While at DOE, Bassett wrote the North America chapter of the first Quadrennial Energy Review and led development and implementation of several mitigation policies under President Barack Obama's Climate Action Plan. Bassett has master's degrees in environmental management and ethics from the Yale School of Forestry and Environmental Studies and Yale Divinity School, where he focused on climate change and environmental ethics.

Armando Avila is a Senior Professional Staff Member with the Senate Energy and Natural Resources Committee.

Dr. Bruce Garrett joined the Office of Basic Energy Sciences (BES) in November 2016 as Director of the Chemical Sciences, Geosciences, and Biosciences Division. He leads an excellent team responsible for managing a broad portfolio of experimental, theoretical, and computational research to provide fundamental understanding of chemical transformations and energy flow in systems relevant to DOE missions. Dr. Garrett brings to BES almost four decades of experience in a national laboratory and private research organizations. Before joining BES he was Chief Scientist for Chemical Sciences at Pacific Northwest National Laboratory (PNNL). During his 27 years at PNNL he managed organizations ranging from small research groups to the Physical Sciences Division, where he had responsibilities for an organization of over 150 staff members as well as serving as the point of contact for the PNNL's BES Chemical Sciences, Geosciences, and Biosciences programs. Dr. Garrett received a B.S. in Chemistry from the University of California, Irvine and a Ph.D. in Chemistry from the University of California, Berkeley. He was a postdoctoral specialist at the University of Minnesota. His expertise is in theoretical and computational chemistry with a focus on reaction rate theory and its application to gas and condensed phase chemical reactions, gas-to-particle nucleation kinetics, and mass transfer across interfaces. His research produced more than 220 publications that resulted in more than 18,000 citations. Recognition of his scientific contributions includes being named Fellow of the American Physical Society, the American Association for the Advancement of Science, and the Royal Society of Chemistry.

Dr. Todd Anderson is the Director of Biological Systems Science Division in the Office of Biological and Environmental Research at the U.S. Department of Energy.