



*The National
Academies of* SCIENCES
ENGINEERING
MEDICINE

Deployment of Deep Decarbonization Technologies

July 22-23, 2019 in Washington, D.C.



ABOUT THE WORKSHOP

How can we reduce U.S. carbon emissions by 80% or more in 2050? This workshop will explore the challenges and opportunities for deploying and scaling up technologies involved in U.S. deep decarbonization. Speakers will focus on several key sectors such as electricity, transportation, food production, and heavy industry. The discussions will include technology development, deployment, and scale-up; policy drivers, financing, and economics; and societal and political implications. We invite those who are unable to attend in person to watch the event webcast at [livestream.com/NASEM](https://www.livestream.com/NASEM). Webcast recordings will be posted online 2-3 weeks after the event. Join the discussion on twitter with #DeepDecarbonization! We are @theNASEM.

DAY 1 - JULY 22, 2019

- 1:00 pm **Welcome and Workshop Objectives**
K. John Holmes, *National Academies' Board on Energy and Environmental Systems*
- Session 1 - Emissions Reduction Targets and Timing***
- 1:05 pm **Modeling Results to Meet Climate Goals**
Moderator: Kelly Sims Gallagher, *Tufts University*
Leon Clarke, *University of Maryland*
James Williams, *University of San Francisco*
Varun Rai, *University of Texas*
- 2:20 pm Break
- Session 2 - Sector Studies of Deploying Decarbonization Technologies at Scale***
- 2:45 pm **Low Carbon Electricity Generation**
Moderator: Eric Larson, *Princeton University*
Mark Ahlstrom, *NextEra Energy Resources & NextEra Analytics*
Adam Goff, *8 Rivers*
Abe Silverman, *New Jersey State Board of Public Utilities*
- 4:00 pm **Corporate Value Chain**
Moderator: Sara Law, *CDP North America*
Ashley McKeon, *Cargill*
Ashley Allen, *Mars Corporation*
Christina Owens, *Danone*
- 5:15 pm Adjourn
- 5:30 pm Reception - West Court

DAY 2 - JULY 23, 2019

- 8:30 am **Heavy Industry Decarbonization**
Moderator: José Santiesteban, *ExxonMobil*
Tahmid Mizan, *ExxonMobil*
Adam Rauwerdink, *Boston Metal*
Cathy Tway, *Johnson Matthey*
- 9:45 am **Low Carbon Vehicles**
Moderator: Carla Bailo, *Center for Automotive Research*
Reinhard Fischer, *Volkswagen*
Max Parness, *Toyota Motor North America*
Denise Gray, *LG Chem*
- 11:00 am Break
- Session 3 – Imagine a Future**
- 11:15 am **The Role of Carbon Dioxide Removal in Deep Decarbonization**
Moderator: Giana Amador, *Carbon180*
Jennifer Wilcox, *Worcester Polytechnic Institute*
Steve Hamburg, *Environmental Defense Fund*
- 12:15 pm Lunch
- 1:15 pm Discussion of a Carbon Dioxide Removal Future
- Session 4 – Looking Across Sectors at Societal and Policy Issues**
- 1:45 pm **Societal Transformation Pathways**
Moderator: Clark Miller, *Arizona State University*
Nancy Sutley, *LA Department of Water and Power*
Emily Schapira, *Philadelphia Energy Authority*
Julia Haggerty, *Montana State University*
- 3:00 pm Break
- 3:15 pm **Policy Drivers**
Moderator: K. John Holmes, *National Academies’ Board on Energy & Environmental Systems*
Ryan Costello, *Americans for Carbon Dividends*
Michael Gerrard, *Columbia University*
Kelly Sims Gallagher, *Tufts University*
- 4:30 pm Adjourn



ABOUT THE BOARD ON ENERGY AND ENVIRONMENTAL SYSTEMS

The Board on Energy and Environmental Systems (BEES) of the National Academies of Sciences, Engineering, and Medicine provides independent advice to the U.S. government and the private sector on science and technology policy issues related to energy and the environment. Learn more about our work and sign up for our mailing list at nas.edu/bees.

WORKSHOP PLANNING COMMITTEE

Chair: Kelly Sims Gallagher, *Tufts University*
Ashley Allen, *Mars Corporation*
Leon Clarke, *University of Maryland*
Eric D. Larson, *Princeton University*
Clark A. Miller, *Arizona State University*
José G. Santiesteban, *ExxonMobil*



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