

Deep Decarbonization Initiative

Update
February 27, 2020



Initiative Motivation & Structure



Motivation - Deep decarbonization of the U.S. economy will occur via the decisions of millions of actors across all sectors & will happen over generations not years. It is essential that the transition is supported by organizations that provide authoritative, independent and scientifically sound advice, can engage all sectors of the economy, and have the longevity to operate throughout a generational transition. This is a role the Academies are uniquely qualified to fill.

- **Workshop** - Held a workshop July 22-23 considering interdisciplinary issues related to technology scale-up and deployment for U.S. decarbonization pathways. Also had closed meeting on morning of July 24th with thought leaders, potential funders, Academies staff (**Scale, Scale, Scale**)
- **Consensus Study** (Approved @ July GBEC) - what is the status of decarbonization technologies, economics, policy, and human behaviors; what are challenges/opportunities posed by scaling up decarbonization technologies; where will we be in 5-20 years; recommendations on near-term, low risk research investments and policy improvements? (**Focus on near-term to make this study tractable**)
- **Deep Decarbonization Forum** - assess specific topics through workshops/expert meetings, consensus studies or other activities and develop a broad portfolio of advisory products.

Consensus Study “Technology, Policy, and Social Barriers and Opportunities in Decarbonization of the United States”

The committee will summarize the status of technologies, policies, and societal factors needed for decarbonization and recommend research and policy needs. It will focus its findings and recommendations on near and mid-term (5-20 years) high-value policy improvements and research investments and approaches required to put the United States on a path to achieve long-term net zero emissions. This consensus study will also provide the foundation for a larger Academies’ initiative on Deep Decarbonization

- **Sectoral interactions and systems impacts**—How do changes in one sector (e.g., transportation) impact other sectors (e.g., electric power)...?
- **Technology research, development, and deployment at scale**—What are the technological challenges and opportunities for achieving deep decarbonization; what are key metrics for tracking progress in deployment and scale up of technologies and key measurements for tracking emissions...?
- **Social, institutional, and behavioral dimensions**—What are the societal, institutional, behavioral, and equity drivers and implications of deep decarbonization; how do the impacts of deep decarbonization differ geographically....?
- **Policy coordination and sequencing at local, state, and federal levels**—What near-term policy developments at local, state, and federal levels are driving decarbonization...?



Committee Roster



Stephen W. Pacala, Chair, Princeton University



Colin Cunliff, ITIF



Danielle Deane-Ryan, Consultant

Julia H. Haggerty, Montana State University



Chris T. Hendrickson, Carnegie Mellon University

Jesse Jenkins, Princeton University

Roxanne Johnson, BlueGreen Alliance

Timothy C. Lieuwen, Georgia Institute of Technology



Vivian E. Loftness, Carnegie Mellon University

Clark A. Miller, Arizona State University

Varun Rai, University of Texas at Austin

Ed Rightor, American Council for an Energy-Efficient Economy

Kelly Sims Gallagher, Tufts University

Esther S. Takeuchi, Stony Brook University

Susan F. Tierney, Analysis Group

Jennifer Wilcox, Worcester Polytechnic University



Stony Brook University





Consensus Study Work Plan & Outcomes



- Develop a report summarizing the status of technologies, policies, and societal factors needed for decarbonization and assess research and policy needs
- Make recommendations for research and policy in the near to mid-term (5-20 years) that are required to put the United States on a deep decarbonization pathway
- Planned study products will include ~~a workshop in brief summary & interim~~ **and final reports** as well as webcasts of meetings, social media content, and committee webinars
- Interim report to be released in early 2021 to provide “... an assessment of no regrets policies, strategies, and research directions that provide benefits across a spectrum of low carbon futures.”
- Both reports will serve as roadmaps for future long-term Academies efforts in decarbonization

Upcoming Activities & Potential Areas of Collaboration

- First meeting March 10-11 (closed session only)
- Socializing the task statement among federal agencies, hill staff, and other stakeholders
- Collaborations - we will not do all the work the Academies could do related to decarbonization and we will hope to coordinate with, leverage, and help disseminate other activities



- Current study is US and energy sector focused – possible activities for STS include:
 - The interplay and synergies among deep decarbonization, climate mitigation, and community sustainability and resilience;
 - International decarbonization efforts, need to increase energy access in emerging economies and the U.S. role in climate diplomacy

