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Enhancing Federal Clean Energy Innovation: Workshop Series
July 27 – August 7, 2020

Register here

Monday, July 27
Session 1: The Imperative to Accelerate Energy Innovation

Innovation should be a central pillar of U.S. climate and clean energy policy. Innovation is necessary to lower costs and improve performance of existing clean technologies, and to develop new clean energy options that address innovation challenges in harder-to-decarbonize sectors. As today's technologies are deployed to bend the carbon emissions curve, new and improved technologies will be required unlock additional pathways to a net-zero emissions economy by 2050. To achieve this goal, we must accelerate the current pace of innovation. In order to do that, we need innovation in the innovation process itself. The focus of this panel—and the workshop more broadly—will be how U.S. policy can rise to this unprecedented challenge.

1:00 PM ET	**Framing Remarks:** Paul Dabbar, *U.S. Department of Energy*
1:20 PM ET	**Framing Remarks:** Dave Turk, *International Energy Agency*
1:40 PM ET	**Panel Discussion**: Arati Prabhakar, *Actuate* Dave Turk, *International Energy Agency* Ellen Williams, *University of Maryland* **Moderator:** David Hart, *George Mason University*
3:00 PM ET	ADJOURN

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Tuesday, July 28

Session 2: Strategies for Acceleration: Strengthening User Pull

The United States has difficulty moving energy technologies from lab to market, and a key reason is DOE's energy innovation system, which is strong on "technology push" but weak on "user pull." To enhance the federal clean energy innovation system, we must strengthen the role of commercial users in the DOE innovation process. This session will look at various ways to do this, including technology demonstrations, state-level incentives and policy, use of alternative financing mechanisms, and creation of new partnerships such that commercial users are engaged earlier in the development of clean energy technologies.

1:00 PM ET	**Framing Remarks:** Walter Copan, *NIST*
1:20 PM ET	**Panel Discussion:** Chris Gould, *Exelon* Paula Gant, *GTI* Richard Kauffman, *NYSERDA* **Moderator:** Jetta Wong, *JLW Advising*
2:30 PM ET	ADJOURN

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Wednesday, July 29

Session 3: Strategies for Acceleration: Leveraging and Learning from the Department of Defense

Although DoD's $1.6 billion-a-year investment in energy RDT&E is driven by military requirements, there is considerable alignment with civilian clean energy innovation needs, including thin-film solar, batteries and long-term stationary storage, microgrids, wide bandgap semiconductors, and small nuclear reactors. Moreover, DoD's approach to innovation—including its heavy reliance on technology demonstrations and its willingness to be a cost-insensitive early adopter—is well-suited to energy technology. This session will look at how DOE can better leverage DoD as a source of demand pull and take advantage of DoD's strengths as an innovator in those areas where military and civilian energy technology requirements are aligned.

1:00 PM ET	**Framing Remarks:** John Deutch, *Massachusetts Institute of Technology*
1:20 PM ET	**Panel Discussion:** Jeffrey Marqusee, *National Renewable Energy Laboratory* Richard Carlin, *Office of Naval Research* Thomas Bostick, *U.S. Army (Retired)* Norman Augustine, *Lockheed Martin (Retired)* **Moderator:** Dorothy Robyn, *Boston University Institute for Sustainable Energy*
2:30 PM ET	ADJOURN

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Friday, July 31

Session 4: Managing DOE's RD&D Portfolio

To meet our 21st century energy needs, DOE must have the right balance of investments in its RD&D portfolio and a strategic approach that integrates its component offices and capabilities. This panel will look at how DOE can better manage its RD&D portfolio, with sufficient attention both to early-stage R&D and to later-stage technology demonstrations. Topics for discussion to include: the status of the Quadrennial Energy Review; the role of technology roadmaps; strategies to foster a culture of innovation and nurture top talent; the relationship between the DOE office of Basic Energy Sciences, technology R&D and Demonstration; the efficacy of new constructs such as ARPA-E and Energy Innovation Hubs; and the role of the National Laboratories in the innovation process, including partnerships with academia and industry.

1:00 PM ET	**Framing Remarks:** Dan Arvizu, *New Mexico State University*
1:20 PM ET	**Panel Discussion:** Arun Majumdar, *Stanford University* Cherry Murray, *University of Arizona* George Crabtree, *Argonne National Laboratory* **Moderator:** Venkatesh Narayanamurti, *Harvard University*
2:30 PM ET	ADJOURN

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Monday, August 3
Session 5: Expert Roundtable

This session will bring together experts from industry, government, academia, and nongovernmental organizations to continue the conversation occurring throughout this workshop series on how to best align federal clean energy innovation efforts. The participants will explore policies and other activities that the federal government could undertake to accelerate the clean energy innovation process, and where barriers to innovation exist. The objective of this roundtable is to create a space for developing and sharing a broad range of ideas, and allow a wide range of participants to discuss their experiences with the clean energy innovation process.

1:00-3:00 PM ET

Participants:
Carla Bailo, *Center for Automotive Research*
Yet-Ming Chiang, *Massachusetts Institute of Technology*
Tanya Das, *House Committee on Science, Space, and Technology*
Deepak Divan, *Georgia Institute of Technology*
Marcius Extavour, *XPRIZE Foundation*
Denise Gray, *LG Chem Michigan Inc.*
Kara Hurst, *Amazon*
Scott McKee, *House Committee on Appropriations*
Robin Millican, *Gates Ventures*
Adele Morris, *Brookings Institution*
Jacquelyn Pless, *Massachusetts Institute of Technology*
Lou Schick, *Clean Energy Ventures*
Chris Tomassi, *ClearPath*
David Victor, *UC San Diego*
Jay Whitacre, *Carnegie Mellon University*

Moderator: K. John Holmes, *National Academies' Board on Energy and Environmental Systems*

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Tuesday, August 4

Session 6: Advanced Manufacturing and the Climate Crisis: Changes and Opportunities

The climate crisis and efforts to combat it will have profound implications for U.S. advanced manufacturing. Climate policy will fundamentally reshape markets, from agriculture to transportation. Moreover, the technological innovation required to meet climate goals could make U.S. manufacturing firms more, not less, competitive. This session will explore these changes and opportunities across a range of sectors.

1:00 PM ET	**Framing Remarks:** Peter Green, *National Renewable Energy Laboratory*
1:20 PM ET	**Panel Discussion:** Mary Maxon, *Lawrence Berkeley National Laboratory* John Wall, *Cummins (Retired)* Catherine Wotecki, *Iowa State University* **Moderators:** Anna Goldstein, *University of Massachusetts Amherst*, Henry Kelly, *Boston University*
2:30 PM ET	ADJOURN

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Thursday, August 6
Session 7: Thinking Globally

Clean energy innovation entails both competition and cooperation with other countries. U.S. policy must balance these twin imperatives across diverse technologies and sectors as well as in basic research and discovery science. Topics for discussion in this session include how to: coordinate RD&D and demand-pull policies, especially for hard-to-decarbonize sectors; foster resilient and secure supply chains; protect intellectual property without stifling innovation; balance domestic job creation with global efficiencies; and avoid "lock-in" of inferior technologies. Overarching all of these difficult issues is the future of the international institutional architecture for clean energy innovation.

1:00 PM ET	**Framing Remarks:** Laura Diaz Anadon, *University of Cambridge*
1:20 PM ET	**Panel Discussion:** Willy Shih, *Harvard Business School* John Melo, *Amyris* Varun Sivaram, *Columbia University* **Moderator:** David Hart, *George Mason University*
2:30 PM ET	ADJOURN

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Friday, August 7
Session 8: Next Steps

Remarks from Former Secretary of Energy Ernest Moniz, followed by a dialogue with Arati Prabhakar and Norman Augustine.

1:00 PM ET	**Remarks:** Ernest Moniz, *Energy Futures Initiative*
1:30 PM ET	**Dialogue:** Norman Augustine *Lockheed Martin, Retired* Ernest Moniz *Energy Futures Initiative* Arati Prabhakar *Actuate* **Moderator:** Cheryl Martin, *Harwich Partners*
2:30 PM ET	ADJOURN