U.S. Department of Energy Solar Energy Technologies Office (SETO)
2024 Workshop: Solar and DERs for Community Energy Resilience
November 14, 2024, James V. Forrestal Building in Washington, D.C. Room 1E-245

Overview

The U.S. Department of Energy (DOE) Solar Energy Technologies Office (SETO) is hosting the 2024 Solar and Distributed Energy Resources (DERs) for Community Energy Resilience Workshop. The workshop will be held virtually and in-person. The event will convene multiple stakeholders, including community-based organizations, utilities, industry, academia, national laboratories, government and others. During the workshop, these stakeholders will share their perspectives on energy resilience for power systems and communities enabled by solar and DERs. The insights from this workshop will help the DOE to develop future research and technical assistance programs on resilience topics and support the wide adoption of solar and DER technologies to address community energy resilience needs.

Resilient Solar for Power Grids and Communities

Solar, storage and other DER technologies are being rapidly adopted across the U.S. According to the Solar Future Studies,[1] solar can contribute up to 40% of the Nation's electricity generation to achieve decarbonization goals by 2035. In addition, solar and DER technologies provide resilience benefits for power grids and communities to mitigate threats related to extreme weather and cyberattack events. A decarbonized grid with high integration of solar and DERs should be able to prepare, adapt and recover quickly from disruptions minimizing the interruption of electricity services. [2] Distributed solar, storage, microgrids, and DERs are changing traditional understanding regarding energy resilience for power systems and communities. These localized energy resources offer unique resilience benefits to communities by enabling continuity of electricity services during grid outages.

SETO Resilience Programs

SETO's resilience programs are focused on understanding and quantifying energy resilience benefits provided by solar combined with storage and DERs. These research efforts target key topics such as equitable access, power systems and community energy resilience planning and metrics, operational challenges and opportunities, technical innovation, and system management during resilience events. Visit the links provided below to learn more about these efforts.

- **Renewables Advancing Community Energy Resilience (RACER)**
- **Energysheds**
- **Equitable Solar Community of Practice**
- **Resilient Distribution Systems Powered by Solar Energy | Department of Energy**
- **Workshop: Building a Resilient Community Using Distributed Energy Resources | Department of Energy**

[1] Solar Futures Study | Department of Energy
[2] Presidential Policy Directive (PPD)-21: Critical Infrastructure Security and Resilience defines resilience as "the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from disruptions. Resilience includes the ability to withstand and recover from deliberate attacks, accidents, or naturally occurring threats of incidents."

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FINAL AGENDA

Time (ET)	Topic and Speakers	Duration (mins)
8:00 am - 8:15 am	**Welcome and Logistics** • **Dexter Newton**, Technology Advisor, Systems Integration (SI) • **Garrett Nilsen**, Deputy Director, SETO	15
8:15 am - 8:30 am	**Introduction to SETO's Resilience Portfolio** • **Marissa Morales-Rodriguez, PhD** Technology Manager, Systems Integration • **Allie Robins**, Technology Advisor, Workforce and Equitable Access (WEA)	15
8:30 am - 9:00 am	**Keynote Speaker** • **Elli Ntakou**, Manager, System Resilience and Reliability Planning, Eversource Energy **Grid and community resilience: The role of the utilities now vs the future** *The talk will discuss the recent updates in utilities' approach to resilience, focused on novel methodologies, implemented resilience projects and open-ended questions for the utility of the future that needs to respond to climate change and ensure resilience against major storms for all customers and communities.*	30
9:00 am - 9:30 am	**DOE Innovations: Resilience and Energy Systems** **(Moderated by Dexter Newton, SI)** This panel will discuss energy resilience efforts and innovations across DOE. • **Dan Ton**, Microgrid R&D Program Manager Office of Electricity • **David Parsons**, Senior Advisor, Grid Deployment Office • **Elaine Ulrich**, Senior Advisor, Office of Cybersecurity, Energy Security and Emergency Response (CESER)	30
9:30 am - 10:15 am	**Resilience Metrics for Power Systems and Community Planning** **(Moderated by Bob Reedy, SI)** Extreme weather events are increasing in frequency. Across the US, utilities and communities are adopting solar photovoltaics (PV) and storage systems to increase resilience. This panel will discuss the	45

	state of the art in resilience metrics for power systems and communities. • **Mohamed Ben-Idris**, Associate Professor Michigan State University • **Igor Linkov**, Senior Scientific Technical Manager U.S. Army Corps of Engineers • **Andrew Jin**, Research Environmental Engineer US Army Engineer Research and Development Center • **Ryan Dorland**, Economic Development & Energy Analyst, Virginia Department of Energy	
10:15 am – 10:30 am	**BREAK**	15
10:30 am – 11:15 am	**Solar and DERs[3] Enhancing Community Energy Resilience** **(Moderated by Emily Stiever, WEA)** Following the resilience metrics conversation, this panel will share lessons learned from projects and programs focused on increasing resilience levels in communities enhanced by solar and other DERs. The conversation will discuss challenges and opportunities in equitable access, planning, operation, construction, installations, and technical assistance among other topics. • **Marriele Mango**, Project Director, Clean Energy Group • **David Wright**, VP of Energy Programs, Groundswell • **Andrea Mammoli**, Principal Member of Technical Staff, Sandia National Lab	45
11: 15 am – 12: 00 pm	**Technology Innovation** **Session 1: Energy Restoration Enabled by Solar and DERs** **(Moderated by John Seuss, SI)** Addressing the operational challenges in response to and recovery from power outages is an active area of research. This panel will discuss perspectives from different stakeholders regarding energy restoration strategies utilizing solar and DERs as we adapt to extreme weather events while working towards decarbonization goals. • **Fei Ding**, Researcher in Electrical Engineering, National Renewable Energy Laboratory • **Jairo Giraldo**, Research Assistant Professor, University of Utah • **Sachiko Graber**, National Partnerships Lead, Cooperative Energy Futures	45
12:00 pm – 1: 00 pm	**LUNCH DOE Cafeteria (will not be provided)**	60
1:00 pm – 1:15 pm	**Latest updates from hurricanes Helene and Milton** **(Moderated by Marissa Morales-Rodriguez)** • **Isaac Panzarella**, Director, U.S. DOE Southeast Onsite Energy Technical Assistance Partnership Associate Director, North	15

[3] DERs: Distributed Energy Resources

	Carolina, Clean Energy Technology Center, North Carolina State University • **Kris Davis**, Associate Professor, University of Central Florida • **Mengjie Li,** Assistant Professor, University of Central Florida	
1:15 pm – 2:15 pm	**Breakout Sessions (Moderated by Marissa Morales-Rodriguez, SI)** Energy resilience involves multiple stakeholders and complex interdependent efforts. This breakout sessions will guide discussion on challenges and opportunities for solar technologies and DERs to increase grid and community energy resilience.	60
2:15 pm – 3:00 pm	**Technology Innovation** **Session 2: Solar and DERs Management: Interdependencies with User Behavior (Moderated by Allie Robins, WEA)** Recent efforts have demonstrated the ability of solar, DERs and storage systems to provide critical services to communities. This panel will discuss technology, processes and user behavior to efficiently manage solar plus storage during and after extreme weather events. • **David Pinney**, Principal, Analytical Tools and Software Products, National Rural Electric Cooperative Association • **Max Ferrari**, R&D Associate, Oak Ridge National Laboratory • **Austin Counts**, Solar & Electrification Projects Manager, Appalachian Voices	45
3:00 pm – 3:15 pm	**BREAK**	15
3:15 pm – 4:00 pm	**Resilient Systems: Critical Infrastructure Interdependencies (Moderated by Yi Yang, SI)** Power systems including solar and DERs rely on communication infrastructure for operations. This panel will explore this topic considering cyber- physical interdependencies, risks and mitigation strategies. • **Xiaohui Zhou**, Director of Research and Innovation, Slipstream Group • **Birk Jones**, Principal Member of Technical Staff, Sandia National Laboratory • **Dan Alen Ricci**, Power Systems Engineer/Researcher, Idaho National Laboratory	45
4:00 pm – 4:45 pm	**Climate Change: Risks, Adaptability and the Role of Solar and DER Technologies (moderated by Kendra Wiley, WEA)** The impacts of climate change to the power systems are studied by different tools. In a decentralized and decarbonized grid, solar PV and DERs must be part of the study. This panel will share innovations in climate change studies, risks and tools to inform stakeholders' decisions when it comes to climate adaptation. • **Jordan Burns**, Researcher, National Renewable Energy Laboratory • **Jonathon Monken**, Principal, Converge Strategies • **Broderick Bagert**, Lead Organizer, Together Louisiana	45

4:45 pm – 5:00 pm	**Open Discussion/Closing remarks and adjourn** • **Guohui Yuan, Ph.D.** Program Manager, Systems Integration • **Dexter Newton,** Technology Advisor, SI	15
5:30 pm	**Networking Activity (Optional)** Cantina Bambina 960 Wharf St SW, Washington, DC 20024	

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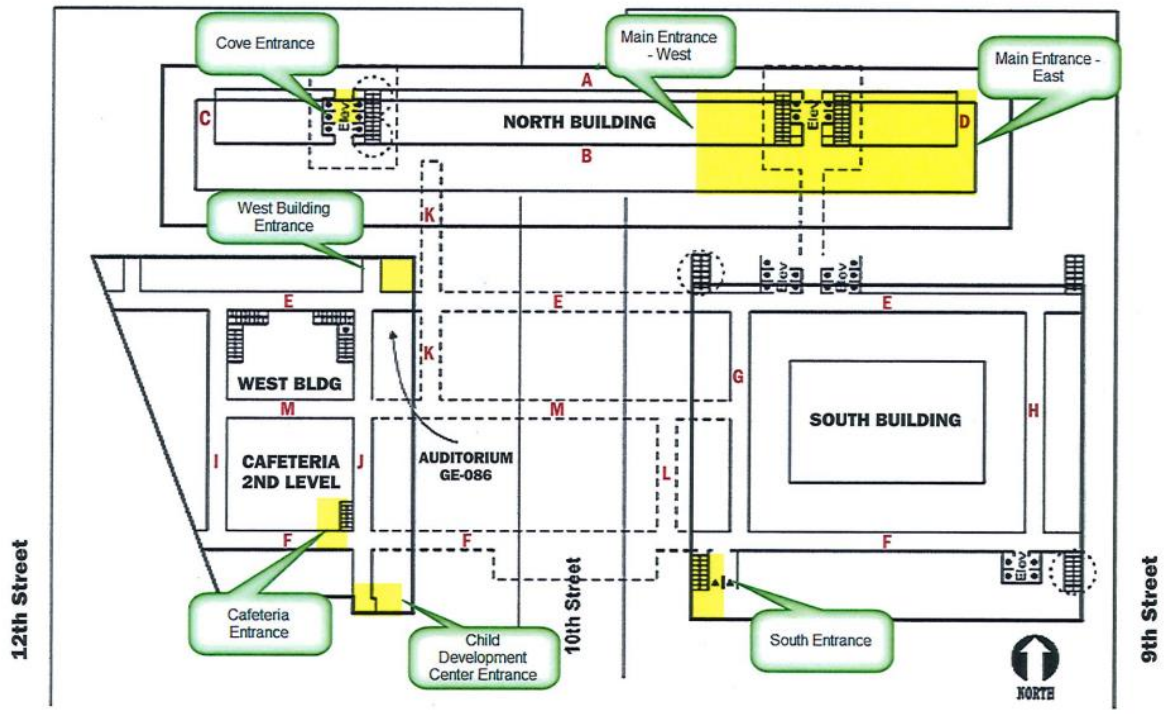

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