Microgrids Move From Pilot Projects To Mission-Critical Infrastructure At The 2026 Microgrids & Energy Resilience Summit

As military installations face increasing demands for resilient, secure, and independent power, microgrids are rapidly transitioning from demonstration projects to essential mission infrastructure. That shift will be the central focus of Defense Strategies Institute's 3rd Annual Microgrids & Energy Resilience Summit, taking place November 4–5, 2026, at the AIA Global Campus for Architecture & Design in Washington, D.C.

The summit brings together leaders from the Department of War, federal agencies, national laboratories, industry, and academia to discuss the deployment, integration, and scaling of resilient, mission-ready microgrids across military installations and other critical infrastructures. Rather than focusing solely on policy, the event is designed as a collaborative "town hall" forum where government decision-makers, system developers, utilities, and technology providers can exchange practical lessons learned and discuss emerging technical solutions.

A Shift From Demonstration To Deployment

This year's summit reflects a notable evolution in both scope and technical emphasis. While the 2025 program concentrated on integrating microgrids and distributed energy resources into the defense energy ecosystem to improve security, resilience, reliability, and efficiency, the 2026 agenda move decisively toward large-scale deployment.

Much of that change is driven by growing emphasis on American energy dominance and the Department of War's objective of enabling installations to sustain operations for up to *14 days of energy self-sufficiency* during grid disruptions. Rather than asking whether microgrids work, this year's discussions focus on how they can be deployed faster, integrated more effectively, and scaled across military facilities.

The summit also expands into several emerging technical areas that have become increasingly important for next-generation power systems, including:

- 5G-enabled wireless control of microgrids
- Nuclear energy as a firm power anchor
- Digital twins for system design and validation
- Virtual black-start planning
- Long-duration energy storage
- AI-enabled diagnostics for advanced battery systems
- Operational technology (OT) cybersecurity for resilient energy networks

These additions illustrate how modern military microgrids are evolving into highly integrated electrical systems that combine advanced power electronics, communications, automation, cybersecurity, and intelligent control.

Strong Technical Content For Engineers

For electronics and power engineers, the summit offers considerably more than discussions of energy policy. Many sessions focus directly on the engineering challenges associated with designing, controlling, protecting, and operating installation-scale microgrids.

Topics such as digital twin-based design and validation, wireless control architectures using 5G communications, AI-driven battery health monitoring, and integration of long-duration storage and nuclear generation address current design problems facing electronics, protection, controls, and grid modernization engineers.

Equally valuable are presentations from military installation operators, utilities, national laboratories, and shipyard personnel who will discuss real-world deployment experiences. These case studies examine how different system architectures, protection schemes, and control strategies have been performed during grid outages, severe weather events, and other operational disruptions.

© 2026 How2Power. All rights reserved.

Together, these sessions provide engineers with practical insight into where advanced microgrid design is heading and how individual technologies contribute to long-duration island operation and mission assurance.

Featured Technical Sessions

Among the planned topics for the 2026 summit are:

- Driving Energy Dominance and Resilience Through Advanced Microgrids
- Enabling Wireless Control for Resilient Power with 5G-Enabled Microgrids
- Accelerating Deployment of Resilient Microgrids at Defense Installations
- Utility and Developer Strategies for Mission-Critical Microgrids
- Powering Army Installations Through Advanced Microgrid Architectures
- Navy Installation Microgrids and Waterfront Energy Resilience
- Nuclear Power as a Firm Power Anchor for Defense Microgrids
- Lessons Learned from Leading Military Microgrid Deployments

The program also explores financing approaches such as Utility Energy Service Contracts (UESCs) and Power Purchase Agreements (PPAs), reflecting the growing importance of public-private partnerships in delivering resilient energy infrastructure.

Distinguished Speakers

The current speaker lineup includes experts representing government, national laboratories, academia, utilities, and industry, including:

- Ravi Chaudhary, former assistant secretary of the Air Force for Energy, Installations and Environment
- Jack Surash, former deputy assistant secretary of the Army for Energy & Sustainability
- Murali Baggu, National Renewable Energy Laboratory (NREL)
- Michael Starke, Oak Ridge National Laboratory
- Nathan Johnson, Arizona State University
- Dominic Bonaduce, Verizon
- Jason M. Hollern, Electric Power Research Institute (EPRI)
- Susan Babinec, Argonne National Laboratory

Additional speakers from the Army, Navy, Air Force, Marine Corps, national laboratories, utilities, and industry partners are expected as the agenda is finalized.

Looking Ahead

As power demand grows from AI-enabled operations, electrified logistics, advanced training systems, and increasingly sophisticated military infrastructure, resilient energy systems are becoming fundamental to mission readiness. The 2026 Microgrids & Energy Resilience Summit reflects that reality by shifting the conversation from experimental projects toward engineering, deployment, and operational performance.

For electronics engineers, power systems designers, controls specialists, and energy technology developers, the summit offers a valuable opportunity to learn how advanced communications, power electronics, intelligent controls, energy storage, and firm generation technologies are being combined to build the next generation of resilient military power systems. For more information, see the summit website.

© 2026 How2Power. All rights reserved.