



IEEE Smart Grid

November 28, 2023, 12 pm PST

Live Stream Seattle

Join us for a session on Smart Grid. What is it? Why do we need it? Find out how we are selling power back to the Grid using net metering. Using local battery energy storage devices, we are strengthening the grid power. Countries like Singapore are totally off the grid. Find out how your facility can use DERs (Distributed Energy Resources) to build resiliency and reduce carbon emissions. As we see these natural disasters exponentially increasing in number and cost, we need to stop the trend and slow and reverse our destruction of the earth's atmosphere. Let us be proactive in reducing the trend of GHG (green house gases). Find out today how you can help reduce this trend at little or no cost.



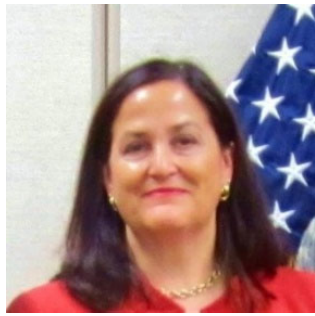
Ding Han

From our ancestor's awareness of electrical energy to more recent history of experiments on how to generate and control such energy, the Electricity has been around with us for several hundred years. But it only became widely accessible as the dominant form of energy, thanks to the modern power systems. At the heart of such power systems is the electric grid, which has served as the backbone for the world's electricity system for more than a century, fueling economic growth and enabling more advanced technology development. Fast forward to today the society is transitioning from reliance on fossil fuel to cleaner and sustainable operation. We've seen signs that the grids are becoming a bottleneck of such energy transition. The observations of range from wide-spread outages to multiple grid cogeneration, to prolonged interconnection queue and renewable curtailment. When integrated and managed well, Distributed Energy Resources (DERs) bring in huge value and provide system level flexibility services that can help address the grids' challenge. In today's session I would like to take the audience together to explore the challenges and opportunities of integrating DERs to the Smart Grid.



Register at: <https://events.vtools.ieee.org/m/386518>

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Katherine Hammack

Energy and Environmental Consultant

Works with organizations such as Green Business Certification Inc (GBCI), an organization that provides third-party credentialing and verification for several rating systems relating to the built environment. She focusses on enhancing resilience, sustainability, and modernization of power infrastructure through the PEER rating system, climate change adaptation and climate change mitigation strategies. Katherine is a graduate of Oregon State University where she received a Bachelor of Science Degree in Mechanical Engineering. Her MBA was awarded from the University of Hartford. She is a founding member of the USGBC and serves on the boards of Slipstream and MK Advisors.

Achieving climate goals set by enterprises, cities, states, and nations will require a combination of building electrification (i.e., the replacement of onsite fossil fuel combustion devices with electric substitutes) and decarbonization of the electric grid. Building decarbonization will also be necessary to meet emerging net zero carbon targets set by jurisdictions globally. Decarbonizing the electric grid will require a shift to a dynamic, two-way relationship between buildings and the grid that allows buildings to respond dynamically to grid conditions, including time-varying carbon emissions rates. This two-way communication has just come into focus in the last few years as renewable energy integration and grid reliability issues, particularly around peak conditions brought on by extreme weather conditions, variability of renewable generation, and increased loads, have spurred utilities, grid operators, and the building community to reconsider the role buildings can play in supporting grid reliability and decarbonization by reshaping their energy consumption patterns. ASHRAE's new Grid-Interactive Buildings for Decarbonization: Design and Operation Resource Guide has some of the solutions and offers a great starting place.



Ding Han

Solution Architect

With over 15 years of experience spanning renewable energy, electrical engineering, Controls, and semiconductors, Ding has been a trusted expert and established advocate in the world's energy transition. Prior to join Alphastruxure, Ding established a special taskforce within the Japanese conglomerate NEC, to crack the then nascent distributed energy storage market in US. He helped the team navigating through all kinds of roadblocks, drove innovation and commercialization of behind the meter (BTM) storage products tailored for commercial/industrial (C&I) application. Ding also led a US-China-Japan Joint Venture team of 10, provided hands-on guidance spanning across deal origination, technical diligence, project review, system design, contract negotiation on high-profile utility-scale energy projects. The team closed \$20+ million deals within the first 12 months of establishment and penetrated what others thought to be the most difficult energy market in the world. Ding's leadership and contribution expands beyond the corporate realm. He was involved in the IEEE technical review committee in region 10 China as BESS industry consultant, drafting and balloting of publication "IEEE P2030.2.1 - Guide for Design, Operation, and Maintenance of Battery Energy Storage Systems, and Applications Integrated with Electric Power Systems". He also joined IEEE PES region 1 Smart Buildings and Customer Systems (SBCS) Committee, focusing on establishing the process of design, operation, and integration of smart buildings and other customer systems. Ding always looks for individuals with passion to become the next generation of thinkers and leaders. He served as Business Plan Contest judge at Massachusetts Institute of Technology – China Innovation and Entrepreneurship Forum (MIT-CHIEF), and Schneider Electric Go Green, an annual student competition event, where Ding evaluates business plans since Innovation, Feasibility, and Sustainable Impact. Ding is a graduate of Louisiana Tech University with a MS in Electrical Engineering, Ph. D program in Microsystem (MEMS). He earned BS in Automation Control from Wuhan University of Technology (WHUT) before coming to US. In the spare time Ding enjoys playing piano and loves outdoor activities (skiing, kayaking, traveling, etc.).