

Educating on the Electric Grid of Tomorrow

Putting Podcasts to Work

BY DUQUESNE LIGHT'S ELIZABETH COOK

The electric power grid of tomorrow is here today and is the keystone infrastructure for all our public utilities and the backbone to our way of life. We have an immediate opportunity and a responsibility to prepare our next generation workforce for a future that will require them to maintain and prepare the grid for major changes including new loads and new technologies. We also must educate our customers and regulatory agencies to become partners in building this future.

As the Chairperson of AEIC's Distributed Energy Resources (DER) committee, as well as the General Manager of Advanced Grid Solutions for Duquesne Light Company, I have a unique opportunity to engage with all stakeholders within our industry to learn, discuss, and share our experiences.

In doing so, I hope to fulfill the expectations of AEIC's motto: "To make the knowledge of one, the knowledge of all." To amplify this opportunity, I started the "All Things DER" podcast last year to highlight ways we can work cooperatively to find synergistic solutions to the most pressing power industry issues of this generation.

On the podcast, we ask the guests to share their thoughts and ideas on how DER can modernize and improve our ever-evolving power grid. Our guests include my peers in electric utility

power companies and technology companies that are helping us transition into the digital utility that will be required to enable our new reality.

My guests and I discuss changing energy supply and demand trends which drive the need to develop full situational awareness to the edge of the grid. We dig into a variety of ways to plan for the next wave of energy resources and demands that come with creating a cleaner energy future and discuss why data and analysis is the key to successful adoption of DER.

A common theme across episodes is the importance of the people, processes, and technologies needed for creating the grid of tomorrow. In Season One of "All Things DER," David Nestler, with EW Energies and Wisconsin Public Service, discusses the role of planning, development, and operations support

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teams in successful implementation of a modernized power grid.

Similarly, Chris Van Lokeren, the CIO at North Carolina Electric Membership Corporation, outlines how IT and Engineering teams can effectively collaborate to improve demand response energy efficiency programs.

The podcast also covers how to effectively communicate to different stakeholders in the utility space. Allison Bates, with Voltus Inc., provides insight on how to bridge communication gaps that arise among the transmission, distribution, and aggregator sectors within the power industry.

Alan MacAnespie, with Baltimore Gas & Electric, provides useful guidance on how to foster innovative thinking and create cultural change

Elizabeth Cook is General Manager of Advanced Grid Solutions for Duquesne Light Company, where she manages and leads efforts within the transmission and distribution power grid's operations and planning groups. To transform DLC into a digital utility of the future, Cook works with internal and external partnerships to collaborate with local, state, and federal planning entities, and universities and industry, to drive advanced grid solutions and plan for the future power grid. She is a mother of six, business owner, published author, and holds a doctorate in electrical and computer engineering from the University of Pittsburgh.

within a company, which is an essential component in a grid modernization journey.

We also learn that asking the right questions is key to effectively navigating the advancing technologies of the ever-evolving power grid with Matt Lundeen, from Jacksonville's municipal utility, JEA.

The grid of tomorrow will be an interactive network of DERs, electrified buildings (such as solar and battery energy storage on-site), building management systems (BMS), and other electrified infrastructure (such as electric vehicles). Electrification of infrastructure can reduce overall energy consumption, energy burden, and greenhouse gas emissions.

Enabling onsite generation at the edge of the grid and advanced energy management systems further enhances our ability to be environmentally sustainable and create resilience hubs (such as microgrids) that are beneficial to utilities and the communities they serve.

Through the All Things DER podcast, we aim to provide a deeper dive on some of these electrification technologies. For example, Bobby Hawthorne, with Alabama Power, discusses the emergence of microgrids and Jacob Tetlow, with Arizona Public Service Company, covers smart thermostats; in both episodes, we explore how these technologies can be deployed to optimize DER utilization and grid performance.

Preparing for electrification and increased DER penetration is another

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common theme of our discussions. Easing the transition to electric vehicles through strategic planning and demand-side management systems is discussed by Dr. Nick Jewell and Christina Alston, respectively.

Mark Vallo, from FirstEnergy, explains why advanced distribution management systems are the first step toward environmental justice and social equity. Similarly, Delvin Stephens, from Con Edison discusses how to ensure continued reliability as we move toward a greener energy future.

Our intention for this podcast is to educate our communities and customers regarding the actions and work being done within the electric utility to drive the change we need. The first two seasons of the podcast covered an array of topics centered around the importance of collecting and utilizing data as the power grid shifts and changes while integrating consumers as part of the solution.

We believe there is an opportunity for a listener to walk away with at

least one ah-ha moment that they can share with their network that provides inspiration to think differently and encourages others to pursue and enable solutions to these real-world challenges. Each episode is usually fifteen to twenty minutes long and is published on AEIC's YouTube channel and Spotify. <https://youtube.com/@aeicnews>

There is a need for fresh perspectives and unique backgrounds to embrace data-driven demands, and we all must seek to bridge the gap between reliability and cleaner energy. My hope is that each conversation sparks our collective creativity to continuously improve and evolve the way we think about the power grid as we learn alongside each other.

Our legacy will impact generations far beyond our own and we are in a unique position to create change and inspire innovation in the next generation. We can educate, engage, and empower those around us. We can think big and inspire others to do the same.

While our processes, our teams, our timelines, our partners, and our daily tasks may vary dramatically for each of us, our shared goal should always remain the same: full situational awareness at the edge of the grid to give complete manageability to ensure a safe, reliable, and secure grid for all.

I invite you to listen with an open mind, set new stretch goals, and create a stronger vision for the future embracing the change, being the change as we become the leaders of this next generation. [PDF](#)



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Hiram Maxim was born February 5, 1840. Maxim was the leading competitor to Thomas Edison in the race to invent the electric light bulb. Maxim's only advantage? He had the African American polymath Lewis Latimer in charge of his company's R&D.

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