Executive Briefing: Transmission in the New Era of Energy

March 4, 2020

7:30-8:20  Registration & Networking Breakfast

8:20-8:30  Welcome by the Briefing Chair

Tanya Bodell, Executive Director, ENERGYZT

8:30-9:30  Panel Discussion: The Coming 2030 Energy Landscape, and the Role of Transmission

We are at the dawn of a new era of how energy is created, delivered and consumed. Renewable energy, DER and IoT technological innovation, but the legacy technology that is high voltage transmission makes all this work. This panel will address future energy scenarios, and how the grid might need to be modernized to keep up with the demands of:

- Changing energy generation mix
- Distributed generation and microgrids
- Energy storage tech
- Electrification of transportation

Moderator:
Margaret M. Neves, J.D., Business Development Director, POWER ENGINEERS, INC.

Panelists:
Bruce Burcat, Executive Director, MID-ATLANTIC RENEWABLE ENERGY COALITION (MAREC)
Rob Gramlich, President, GRID STRATEGIES LLC
John Hensley, Vice President of Research & Analytics, AWEA
Swaraj Jammalamadaka, Vice President, Transmission & Market Fundamentals, APEX CLEAN ENERGY, INC.
Stephen Wemple, General Manager, Utility of the Future, CONSOLIDATED EDISON

9:30-10:30  Panel Discussion: Interface between Transmission and Storage Systems

FERC Order 841 is driving ISOs and RTOs to consider how best to incorporate energy storage systems in their planning and operations. Progress has been made, particularly regarding market structures and the use of storage in pseudo-generation and grid services assets, but to some degree its role as transmission is still being defined. This panel will explore:
What market structures have emerged to ensure energy storage can participate and be compensated in wholesale markets?
What role will storage play in managing intermittent load?

What transmission issues can storage address that can’t be handled by wires solutions?
How will storage on the distribution level be addressed?
Who will control the storage assets, and under what constraints?

Moderator: Jennifer Chen, Senior Counsel, Federal Energy Policy, NICHOLAS INSTITUTE | DUKE UNIVERSITY

Panelists:
Commissioner Tim Echols, GEORGIA PUBLIC SERVICE COMMISSION
Suzanne Glatz, Director, Infrastructure Planning, PJM INTERCONNECTION
Kiran Kumaraswamy, Vice President, Market Applications, FLUENCE
James Pigeon, Manager, Distributed Resources Integration, NYISO

10:30-11:00 Networking Break
11:00-Noon Panel Discussion: Coordinating Transmission Planning and Operations with DER Deployment

Perhaps the biggest disruption coming in the new era of energy is the rapid expansion of DG, which in turn is driving the need for better coordination between transmission and distribution. The need is reflected in needed changes to planning, markets and operations. This panel will explore:

- What impacts are DERs having on the transmission system?
- What tools are emerging to help incorporate DERs in transmission planning?
- How can distributed assets be best integrated with transmission operations?
- Issues of dual participation where DER provide both distribution and participate in the RTO wholesale markets

Moderator: Jason Burwen, Vice President, Policy, U.S. ENERGY STORAGE ASSOCIATION

Panelists:
Charles Bayless, Vice President and Senior Regulatory Counsel, NORTH CAROLINA ELECTRIC MEMBERSHIP CORPORATION
Charlie McClelland, Director, Transmission, LONGROAD ENERGY
James Pigeon, Manager, Distributed Resources Integration, NYISO
Stephen Wemple, General Manager, Utility of the Future, CONSOLIDATED EDISON

Noon-1:30 Group Luncheon
1:30-2:30 Panel Discussion: Planning for Extreme Weather Events
Extreme weather events, from wildfires to floods to mega storms, are becoming an all-too-common occurrence. Transmission owners and operators are both increasingly exposed to financial liability as well as the need to invest in resiliency. This panel will explore:

- How should the risk of high-impact, low-frequency events be addressed?
- Could the underlying issues behind western wildfires also come into play in the eastern interconnect?
- What grid hardening measures should be considered: options to consider including undergrounding lines, reconductoring, sensors?
- What is being done in the west to fire harden lines, and can the lessons being learned be transferred to the east?
- What should be done to counter flooding?
- How can the costs of resiliency be determined? And how can systems be effectively hardened without drastically increasing the costs to consumers?

Moderator:
Commissioner Tim Echols, GEORGIA PUBLIC SERVICE COMMISSION

Panelists:
Kamran Ali, Managing Director, Transmission Planning, AMERICAN ELECTRIC POWER (AEP)
Jeff Floyd, Planning and Policy Manager, GEORGIA POWER COMPANY
Jonathon Monken, Senior Director, Electricity Infrastructure Policy, PJM INTERCONNECTION, LLC
Mak Nagle, Senior Director, Transmission& Commercial Strategy, SPOWER

2:30-3:00 Networking Break
3:00-4:00 Panel Discussion: Grid Security/Cybersecurity

The grid has increasingly come under attack from cyber threats, and concerns about intelligence being gained through cyber intrusions are raising the possibilities of needing to strengthen physical security as well. This panel will explore the potential means to increase the resiliency of the grid in response to these threats.

- How do greater levels of automation and network communications increase the potential vulnerability to cyberattack?
- What industry and government initiatives are being launched to address vulnerabilities?
- What technologies could be deployed to close those gaps?
- What roles should the government, utilities and the supply chain play?
- What new steps is the Electricity Information Sharing and Analysis Center (E-ISAC) taking to further assist the industry to prepare for and respond to cyber and physical threats, vulnerabilities, and incidents?
- Are there additional actions that could further encourage participation in E-ISAC’s information sharing activities?

Moderator:
Andrew A. Bochman, Senior Grid Strategist, National & Homeland Security, IDAHO NATIONAL LAB – MILWAUKEE

Panelists:
Presentation: **Cloud Computing for Grid Applications**

Most organizations worldwide have deployed cloud computing as a way to provide agile, reliable and secure services. However, in the utility world, many regulatory constructs have limited its use, but more operators consider it to be a matter of when, not if, it will be employed. This panel will explore the current status of cloud computing in the transmission world, including:

- What cloud-based transmission planning and operations applications are currently available to utilities?
- What are the advantages of cloud-based vs internal software-based deployments?
- How can cloud services be used effectively and securely for utility planning and operations? In what areas and what type(s) of applications?
- What, if any, use cases should not be considered for cloud services and why?
- What real-time operations can leverage the flexibility of cloud-based computing? What would that service look like from a usage and security perspective?
- Will there be an implementation timeline imposed on the industry?

Co-Presenters:

**Richard Beeson, Chief Technology Officer, OSISOFT**

**Chris Hickman, CEO, COLLABORATIVE UTILITY SOLUTIONS**