

Staff Subcommittees on Electricity and Electric Reliability

Believers and Skeptics: A Debate About Distributed Energy Integration on the Distribution Grid

Moderator: Kim Jones, NC

Speakers:

John Farber

Mike Hyland

Bob Schulte

Chris Villarreal

QUESTION: ARE DISTRIBUTED ENERGY RESOURCES (DERs) A THREAT OR AN OPPORTUNITY? ANSWER: YES.

- DERs are a threat because they – create voltage/frequency issues; produce unplanned reverse power flows; impose excessive operation of voltage control devices; interfere with the operations of the host utilities; and reduce the time available to make critical operating decisions due to rapid changes in supply and/or demand from minutes to sub-seconds.
- Therefore, those costs required to interconnect DERs must be assigned and recovered from those customers creating the need for those costs. A response strategy that is roughly a combination of a Maginot Line Defense, i.e., establish as many costs, requirements and other barriers/hurdles to the development of DERs that will result in decreased deployment, and a Dutch Boy response plugging leaks to achieve reduced revenue losses through rate design and cost recovery.



QUESTION: ARE DISTRIBUTED ENERGY RESOURCES (DERS) A THREAT OR AN OPPORTUNITY? ANSWER: YES.

- DERs are an opportunity because they – provide economic benefits to customers; increase the resilience in the delivery of energy to customers; reduce the environmental and other impacts (air, water, land, etc.) of fuel-fired resources, create grid benefits (reduction in system losses/requirement for ancillary services, and potential deferral/avoidance of future investment in grid facilities), and result in societal benefits (e.g., providing customers with options in the characteristics of their energy consumption). Most importantly, however, integration of DERs into the grid enable a more cost effective and efficient evolution of the modern grid to the benefit of all customers.
 - Therefore, the treatment of costs required for interconnection of DERs is balanced against the benefits provided to all customers as a result of the DER customers' investment in these resources.



QUESTION: ARE DISTRIBUTED ENERGY RESOURCES (DERS) A THREAT OR AN OPPORTUNITY? ANSWER: YES.

■ **SOLUTION(?)**

- Acquisition and implementation of a DER Management (DERM) system that is consistent with the public policy recognition of the DERs as a threat or an opportunity. Depending on the public policy, the DERM will implement the appropriate level of management and control of these resources to either mitigate or facilitate their development.



BACKGROUND AND CONTACT INFO

JOHN FARBER

FORMER DELAWARE PSC STAFF

- I have been involved with electric utilities since 1972. From 1972 through 2007, I was employed by Florida Power & Light Company (“FPL”), a large investor owned utility in Florida. During this employment I held assignments in the accounting, rates and tariffs, and regulatory affairs departments. In September 2008 I began my employment as a Public Utility Analyst for the DE PSC. My retirement from the DE PSC was effective November 1, 2017.
- Responsibilities during my career have included utility and energy-related matters including cost of service, revenue requirements, and rate design. Additionally, I have addressed energy-related legislative as well as regulatory issues. I have a Bachelor’s of Business Administration Degree.
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Distributed Energy Resources (DER)

Robert H. Schulte

NARUC Panel, Baltimore

November 12, 2017

The Four Horsemen of the Skepticism



1. Over-Hype
2. Economics
3. Hyper-Complexity
4. Intrinsic Indifference

QUESTIONS?

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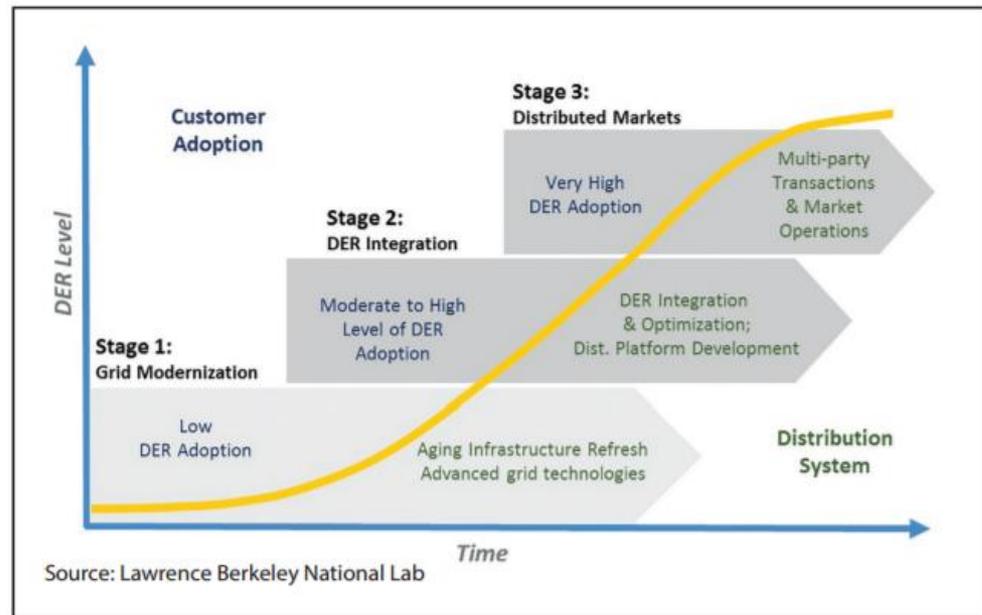
www.schulteassociates.com

Distributed Energy Resources

NARUC Annual Meeting
Baltimore, MD
Chris Villarreal
Plugged In Strategies
November 12, 2017

Opportunities

- ▶ Distribution System Planning facilitates better organization and utilization
- ▶ Utility needs to know its own system
- ▶ Customers will adopt what is valuable to them, not the utility
- ▶ Costs vs barriers to entry
- ▶ Risks borne by market vs ratebase
- ▶ Aging infrastructure
- ▶ Break down silos
- ▶ Networked grid



Questions?

Chris Villarreal

Plugged In Strategies

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