

Modernizing the Energy Delivery System for Increased Sustainability

Beginning the Process of Valuation of DER

Review of Existing Regulatory Framework

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Understanding the Role of Distributed Energy Resources on Grid Operations

- Major Trend:
 - Recognition of inevitable “march to the edge of the grid” with DER deployment initiating action from States and Utility Commissions to encourage integration and utilization of DER to more efficiently operate the electricity grid
 - Drivers are from
 - Renewable initiatives
 - Simple organic growth
 - Desire for greater resiliency on the grid
- Activities to Date:
 - Lessons can be learned from activities in States such as California (More than Smart) and New York (REV)
 - Stage of Analysis
 - Still early in the process with methodologies and valuation really just beginning to occur
 - Most of the “core analysis” is just beginning, but not in infancy
 - Studies of Benefits, Penetration, Impacts are just now being released
 - Dr. Sue Tierney White Paper “Value of DER to D: The role of distributed energy resource in local electrical system reliability”

Core Issues that DER is Raising

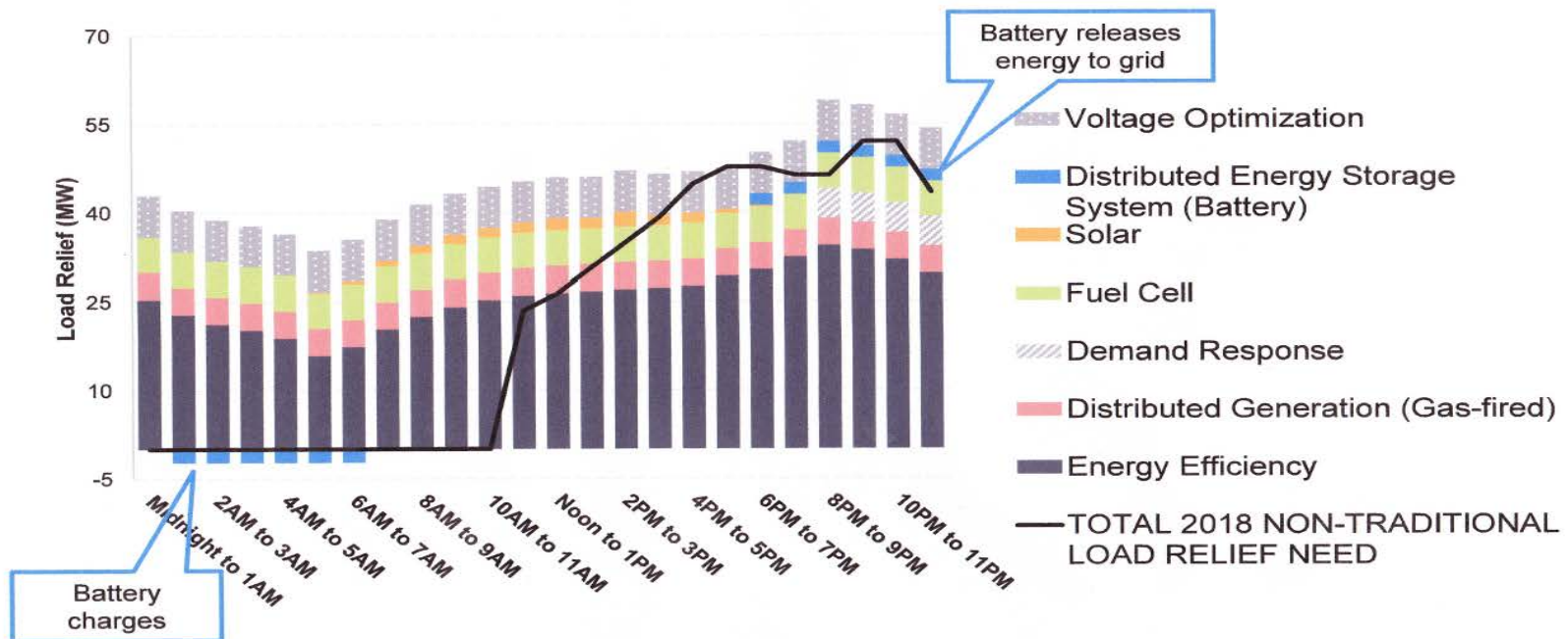
Issues on DER Deployment and Utilization is moving from two angles

- From a formal planning perspective
 - How do we value DER in a fair and efficient manner?
 - There are potential issues revolving around DER being available to only a certain segment of customers and thus further burdening others
 - Benefits from DER are direct and indirect...how to we compensate or monetize particular benefits?
 - There is a tremendous amount of activity taking place on Benefits to Cost methodologies and Studies to ferret this out
 - How do we incorporate into Distribution Planning Processes?
 - Activities in New York, California and providing a path for other to help navigate
- As an alternative to traditional investments – utilizing market opportunities
 - Separating this because “markets” can simply be tapped into in order to utilize DER devices that will be deployed on the customer side

Example Project: Non-wires Alternative Approach

- Snapshot of the ConED BQDM (Brooklyn-Queens Demand Management) Program provides insight into how DER can be combined and built up as an alternatives asset

ANTICIPATED BQDM 2018 PORTFOLIO During a design peak summer day



Source: Diagram from ConEdison BQDM

Recommended Activities and Next Steps

- Understand the impact on the local distribution system
 - Utility grids are not all the same
 - Benefits of DER tend to be highly locational
 - Know the potential for deployment in the area. Economics? Market Potential?
- Transparency and Fairness
 - Integrating DER involves merging two groups that typically have not worked towards similar goals
 - Deploy in a fair and efficient manner...customers need to want to deploy, share, but economics still need to be there and benefits can't be slanted to certain customer segments
- Next steps
 - Leverage work that is being done in other States with other Utilities
 - Understand how local utilities can integrate DER and the impact of this
 - Hosting capacity analysis
 - Impact evaluations
 - Understanding the highest benefits and best location to deploy DER
 - Customize to studies to Washington, DC...begin the Benefit to Cost methodologies being developed and customize to Washington, DC local grid.