

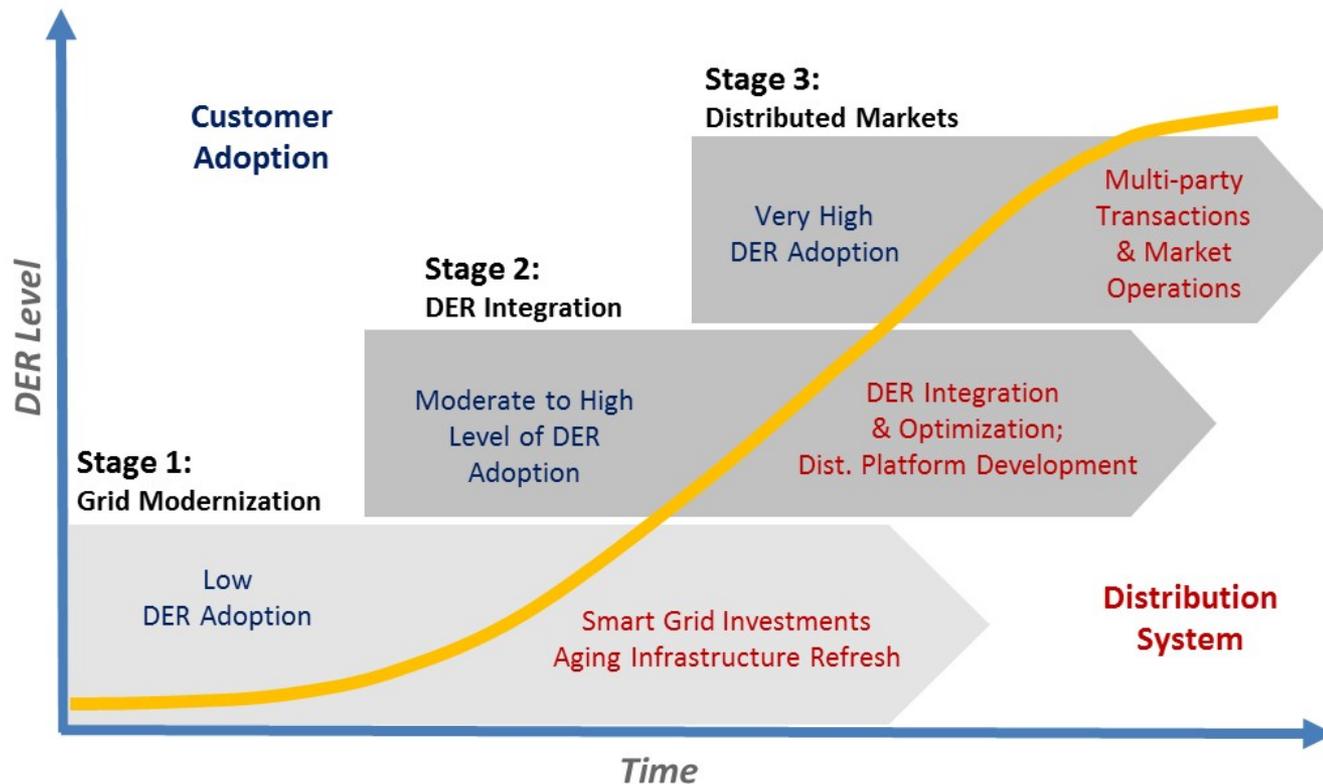
Rethinking Restructured Electricity

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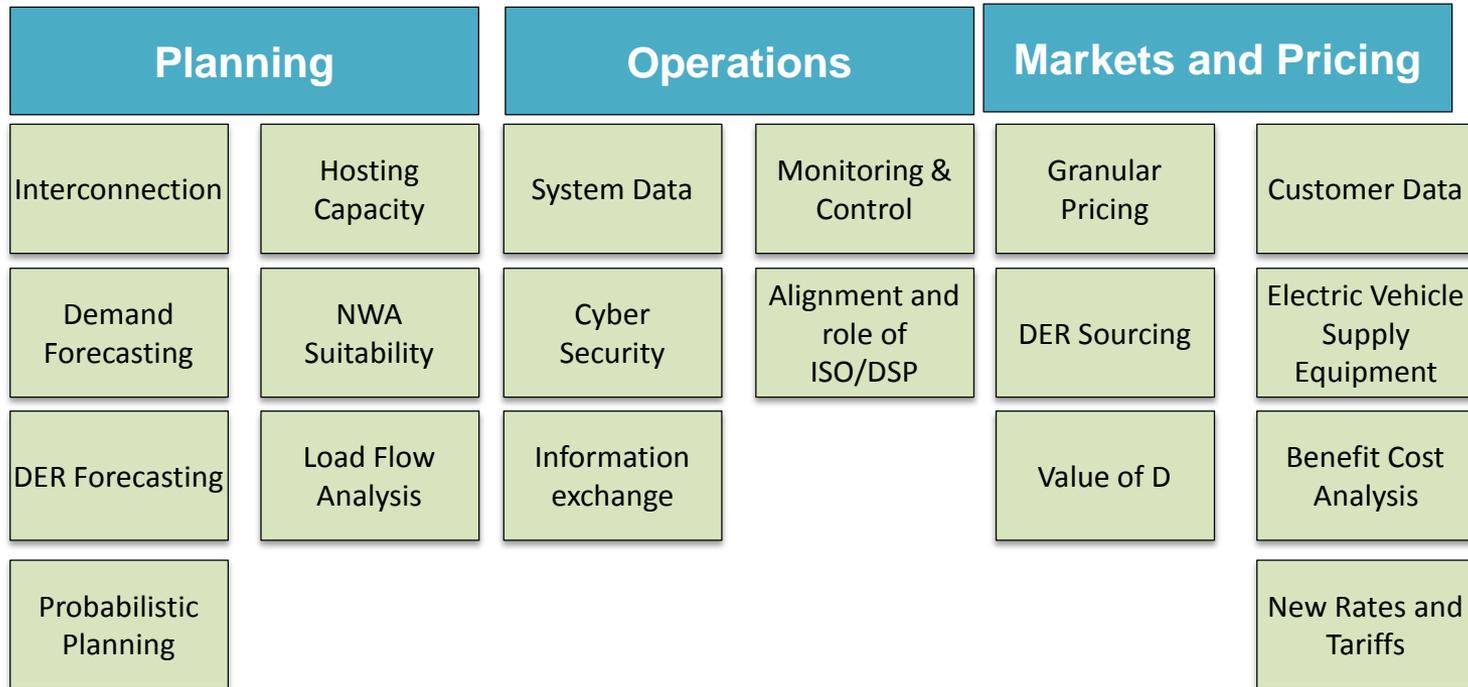
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Distributed Energy Evolution

Distribution system functions and processes will evolve in stages over time in relation to customer use of the grid driven in large part through adoption of distributed energy resources



Distributed Energy Resource Tracks



Changing of the DSO

- The Role of the Distribution Operator is changing
- Moving toward
 - Information provider
 - Technology platform to be leveraged
 - Independent evaluator
- Takes on qualities similar to, and must coordinate with, ISO
- Compensation mechanisms need to align

Developing Suitability Criteria for NWAs



- Identify system needs (load relief, reliability enhancement, asset aging, damage failure etc.) suitable for NWA solutions
- Assess timing of need
- Assess cost and size of project
- Evolving criteria

Non-Wires Suitability

Budget Category	Type of Work	Applicability for NWA
<p>Load Relief</p>	<p>System enhancements to address capacity concerns (thermal load, voltage constraints, power quality) at the branch, feeder, substation, and transmission levels. Projects may include feeder reconductoring/circuit rebuilding, transformer upgrades, new substations and station expansions, new regulators and capacitor installations.</p>	<p>DER impacts on network or circuit load curves can be verifiable, quantified, and benchmarked. Utilities are making progress through current and planned projects to create frameworks for the evaluation of NWAs with respect to their ability to meet this type of system need. This is likely the category of greatest applicability for NWA.</p>
<p>Reliability</p>	<p>System enhancements that could prevent the interruption of service and/or respond to an interruption in service in order to achieve targeted system average interruption frequency index (“SAIFI”) and customer average interruption duration index (“CAIDI”) objectives.</p>	<p>The ability of projects to reduce the likelihood of outages could create the opportunity for NWA to provide reliability benefits, making this an applicable project type. These projects are designed to “prevent the event.”</p>
<p>Resiliency</p>	<p>System enhancements to respond to an interruption in service in order to achieve targeted CAIDI. Examples include adding circuits and or switching points or station expansion projects to “firm” a substation.</p>	<p>Measures to reduce outage times, such as storm hardening and similar efforts, are difficult to displace through NWA. These impacts are more challenging to quantify, making it less applicable for NWA.</p>

Pilot Programs and Initiatives

- Brooklyn Queens Demand Management
 - Shares benefits between traditional upgrades and solution providers

<https://www.coned.com/energyefficiency/pdf/BQDM-program-update-briefing-08-27-2015-final.pdf>
- Partnerships but still utility driven
 - ICA – Installed Capacity Analysis / Hosting Capacity
 - Locational Net Benefits Analysis
 - Smart technology adoption

Thank You

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References at www.jointutilitiesofny.org and
www.morethansmart.org