



JOINT UTILITIES OF NEW YORK

JU Stakeholder Engagement Conference

November 30, 2017

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Agenda

	Stakeholder Conference Agenda Topics	Presenters
9:15 – 10:00	Registration	--
10:00 – 10:10	Welcome	Matt Ketschke, Con Edison
10:10 – 11:00	DSP Implementation as of June 2018 DER Integration DPS Staff: Tammy Mitchell	- NYSEG/RG&E: Dave Conroy - Con Edison: Tom Mimmagh - AEE: Ryan Katofsky - Opus One Solutions: Dave MacRae
11:00 – 11:10	Break	
11:10 – 12:00	DSP Implementation as of June 2018 Market Services & Information Sharing DPS Staff: Andy Owens	- National Grid: Rob Sheridan - O&R: Kristen Barone - Central Hudson: John Borchert - Demand Energy: Jeff Cook-Coyle - NRG: Kelli Joseph
12:00 – 1:00	Lunch (provided)	--
1:00 – 2:00	Value of DER Proceeding DPS Staff: Marco Padula & Warren Myers	- Con Edison: Steve Wemple - O&R: Kristen Barone - EDF: Elizabeth Stein - NY-BEST: Bill Acker
2:00 – 2:55	REV Resources	- REV Connect – Vanessa Ulmer, NYSERDA - Value Stack Calculator – Luke Forster, NYSERDA
2:55 – 3:00	Conference Wrap-up & Adjourn	Damian Sciano, Con Edison



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Welcome

Matt Ketschke, Con Edison



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Thank You for Participating in 2017 Stakeholder Sessions!



For more information and summary material of 2017 stakeholder efforts, please visit www.jointutilitiesofny.org

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Distributed System Implementation Plans

Purpose of the DSIPs

- Roadmap
- Major Areas of Focus
 - Planning
 - Operations
 - Markets



Key DSIP Principles

- Information Sharing



- Stakeholder Engagement



- Develop Tools



Information



- Level the Playing Field
- Encourage Innovation/Improve System Efficiency
- Beneficial Locations for DER
 - Hosting capacity/Streamlined Interconnection

Stakeholder Engagement



- Promote Utility/Stakeholder Relations
- Vet DSIP Topics
- Ongoing implementation

Tools



- Forecasting and Modelling
- Monitoring, Communication, and Control
- Advanced Metering/Customer Data
- Demonstration Projects

DSIP Filing Process



- Initial DSIPs - Base Level of Data
- Supplemental DSIP – Common Approaches and Tools
- Biennial updates

Conclusion



DSP Implementation as of June 2018

Overview



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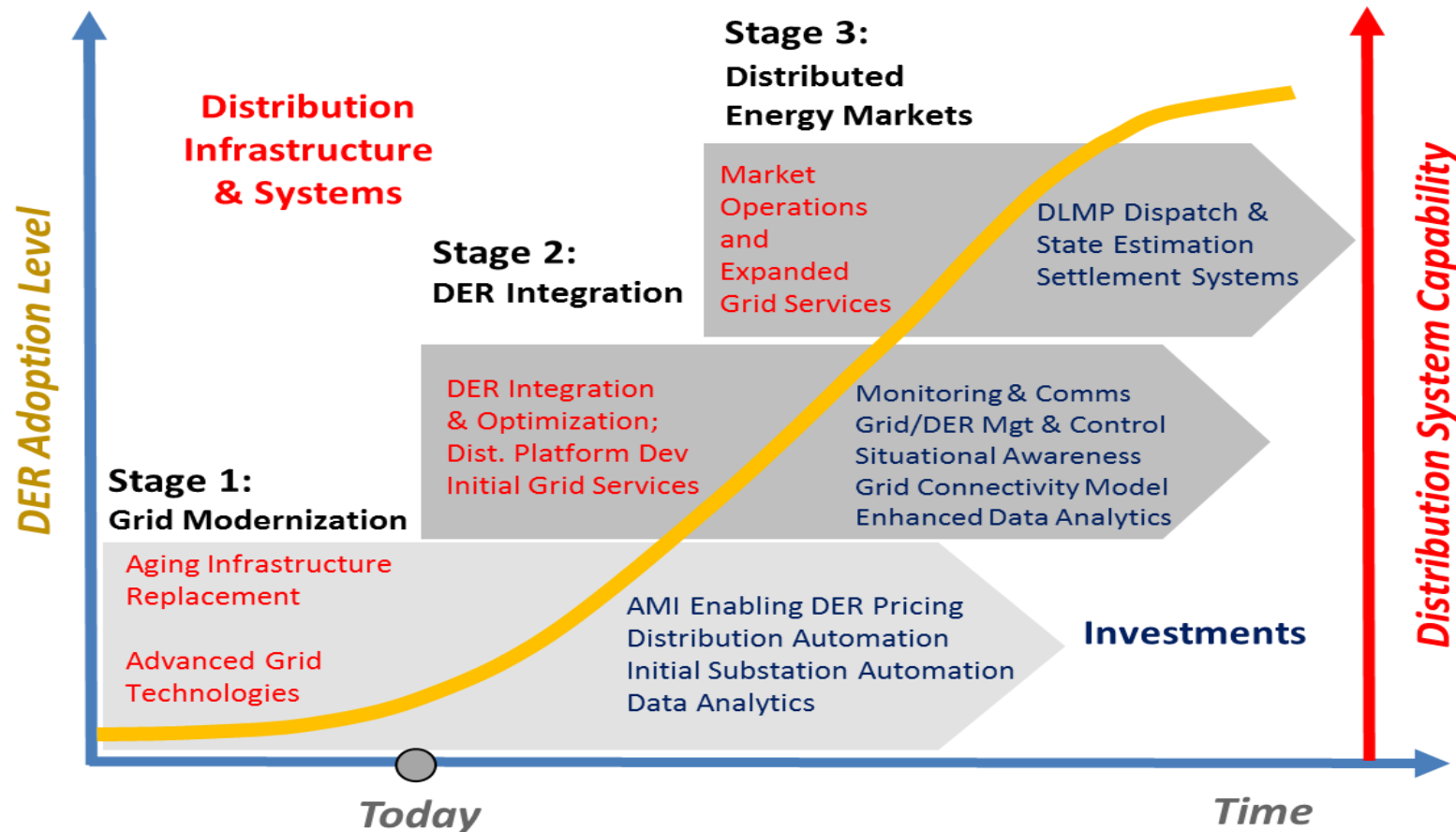
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SDSIP Plan — Moving from Stage 1 to Stage 3



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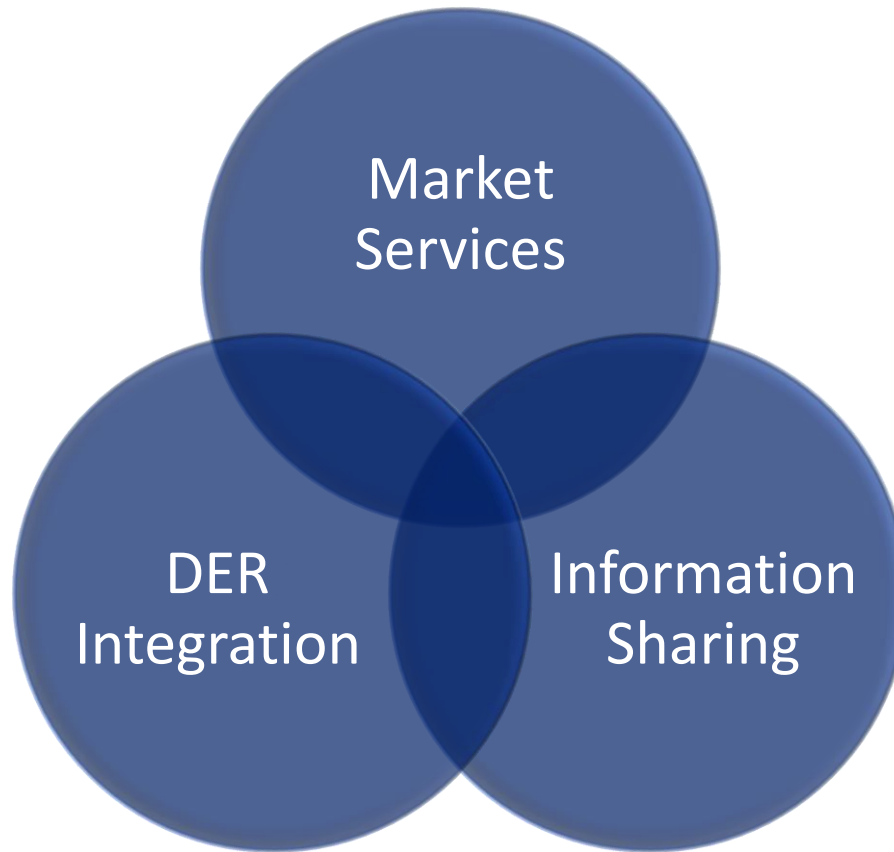
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Three Aspects of the Distributed System Platform



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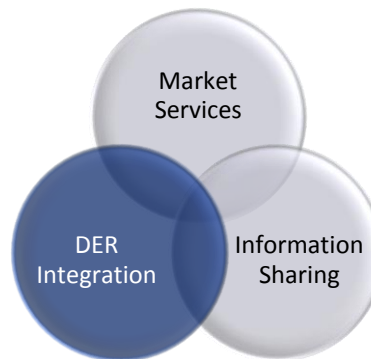
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DSP Implementation as of June 2018

DER Integration



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Actions & Results in DER Integration, June 2018



ACTIONS

Created **online application portal**

Provided access to **circuit-level hosting capacity** data

Enhanced forecasts to incorporate DER in a more robust and granular fashion

Established common interim **monitoring and control standards** for PV

Identified potential **low-cost M&C solutions** while implementing **interconnection advancements** (e.g., DTT, SIR screens)

Began deployment or demonstration of **foundational investments** (e.g., AMI, ADMS, DERMS)

Proposed **Earnings Adjustment Mechanisms** (EAMs)

Operated **REV demonstration projects** (e.g., flexible interconnection, storage, marketplace, smart home rates)

Publish **EV Readiness Framework**

Began integration of **energy storage** through procurement and formation of safety agreements with local authorities

RESULTS

Greater **automation and ease of interconnection process** for DER (e.g., PV, storage, CHP)

Greater developer insight into areas of the distribution system where interconnecting DER may be less costly

DER forecasting as a standard part of the planning process; opens up NWA opportunities, VDER LSRV zones

Maintains electric system **reliability and safety under current DER penetration** and enables advanced market functions

Reduced barriers to entry for DER and greater predictability of costs for interconnecting developers

Developing DSP **operational foundational investments** to facilitate DER integration and market participation

Alignment of incentives with performance to deliver greater levels of EE, system efficiency, and ease of interconnection

Greater understanding of how to deploy these solutions across a service territory to **address system needs**

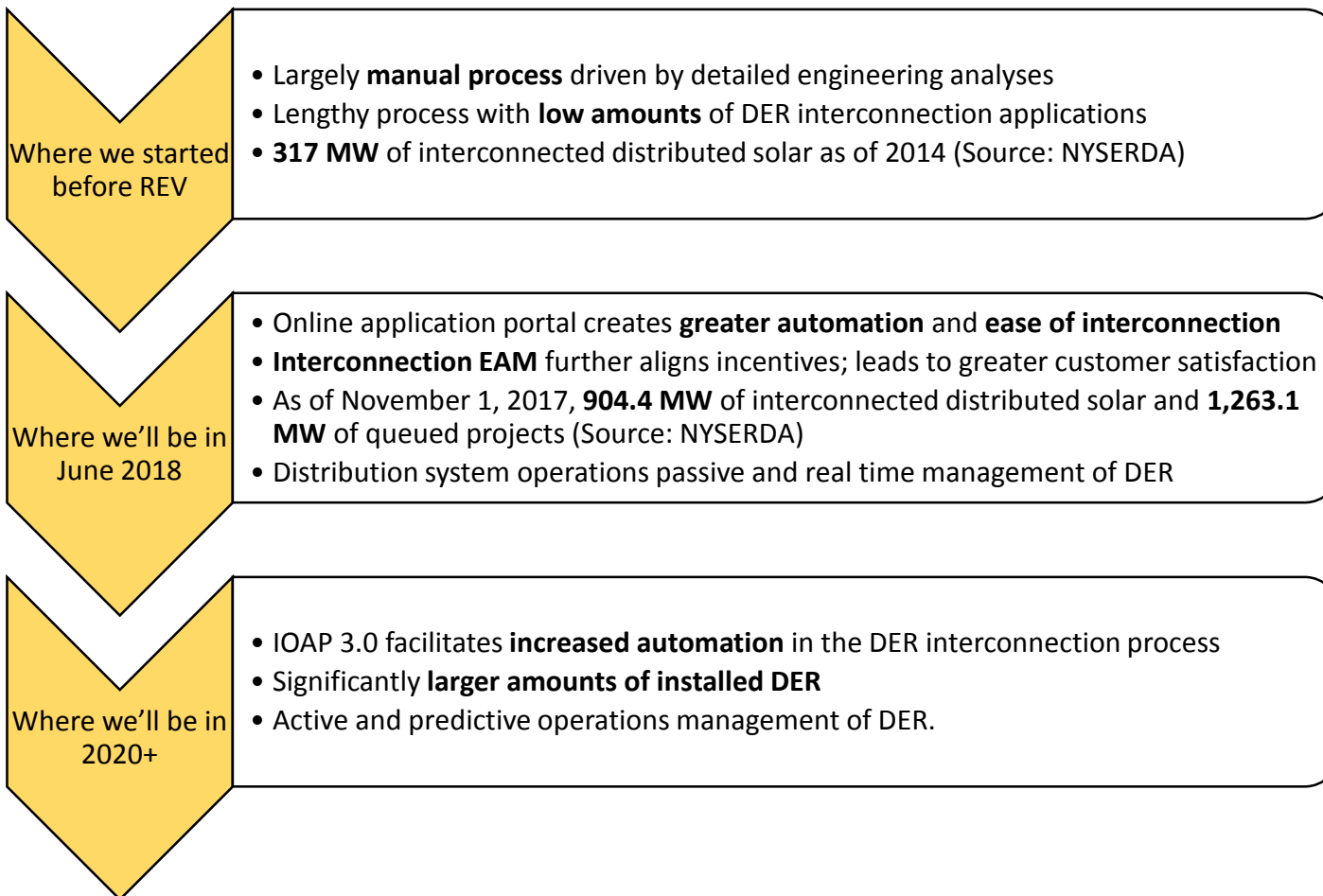
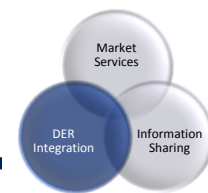
Support for **expansion of the EV market and charging infrastructure**

Greater opportunities for **energy storage deployment**



Discussion Purpose

Evolution of the Interconnection Process



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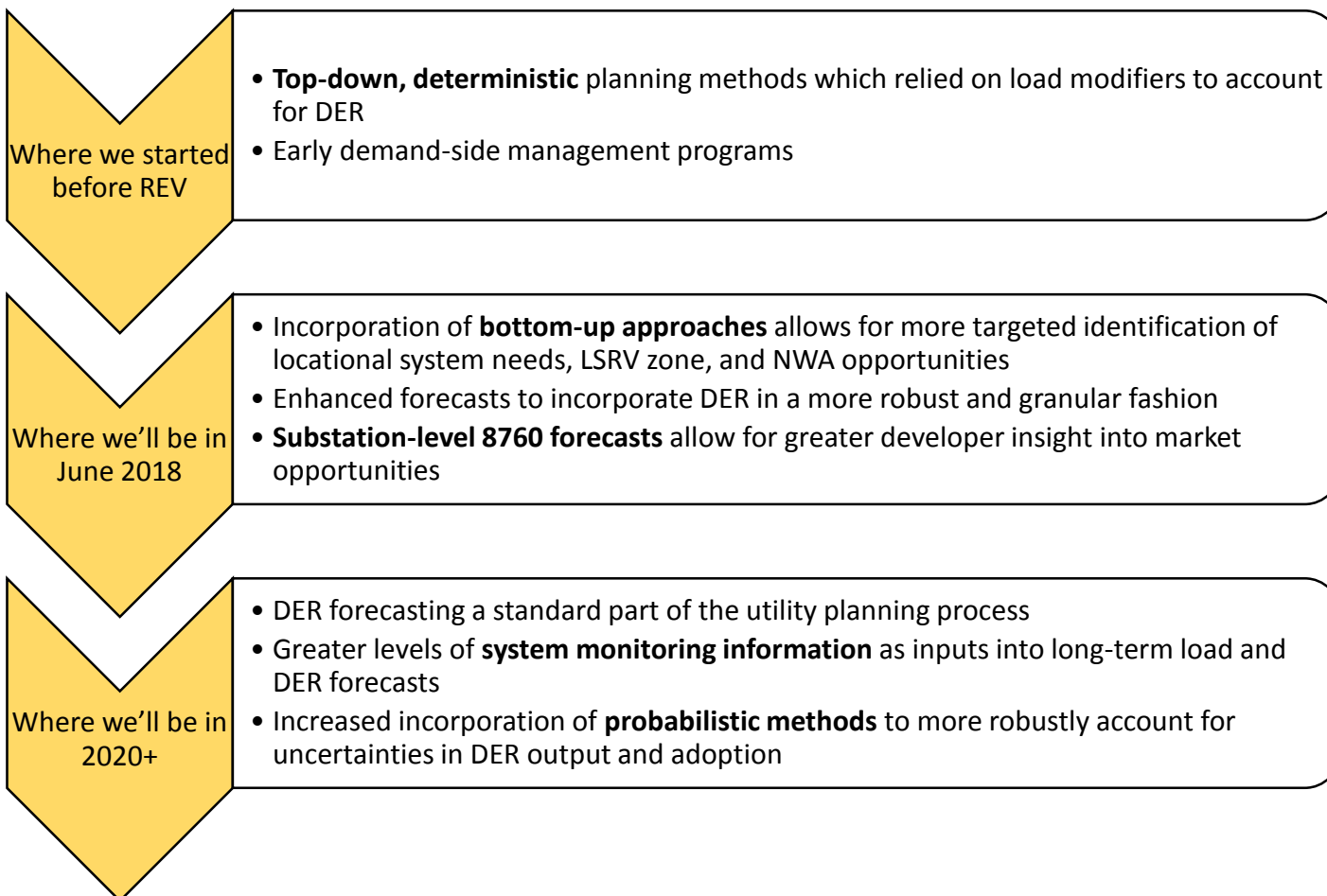
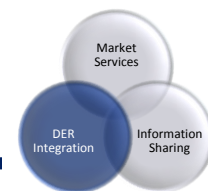
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Evolution of Long-Term Load and DER Forecasting



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Anticipated Results in DER Integration, 2020+



Interconnection Online Application Portal (IOAP) 3.0 facilitates increased automation in the **DER interconnection process**

EAMs reshape the traditional utility business model to **align REV goals with outputs, innovation, and performance** in EE achievement, system efficiency, ease of interconnection, and customer engagement

Monitoring and control of a broader set of asset types to preserve distribution system safety and reliability and facilitate economic and efficient markets

Ongoing implementation and deployment of monitoring and control and **foundational technologies** enables active network management to facilitate system analysis and DER coordination, optimization, and control

DER forecasting a standard part of the utility planning process to assist with the identification of system needs

Higher levels of **EV adoption** facilitated by increased penetration of charging infrastructure

Expanded **smart inverter** integration, including advanced functions, to allow for greater levels of DER adoption and for providing ancillary services



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Q&A



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Break [10 minutes]



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DSP Implementation as of June 2018

Information Sharing



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Actions & Results in Information Sharing, June 2018



ACTIONS

Developed individual **utility data portals** (e.g., system data, LSRV)

Created central location on JU website where utilities publish links to individual **NWA and RFP opportunities**

Proposed **whole building aggregated data** filing

Began implementation of **Green Button Connect** (or similar)

Produced **statewide anonymity standard**

Agreed to protocol for **value-added data services**

Supported launch of **REV Connect** to communicate DER opportunities for all utilities

Provided various forecast data, including **8760 forecasts**

Completed **stakeholder engagement** sessions for nine DSP implementation teams



RESULTS

Increased **access and usability** of useful stakeholder-requested information

Enhanced transparency and efficiency for developers to partake in NWA solicitations and other market opportunities

Identify issues with privacy standards and **opportunities for potential automation** when volume dictates

Availability of **more granular data** for customer or authorized 3rd party

Provides consistent, aligned approach to **protecting customer privacy**

Begins **market for information services** and development of platform service revenues (PSRs)

Greater transparency for the developer community on **NWA and other REV-related opportunities**

Enhanced transparency for developers to inform business development; greater insight into system needs

Stakeholder opportunities to provide input on the implementation of various DSP-related efforts



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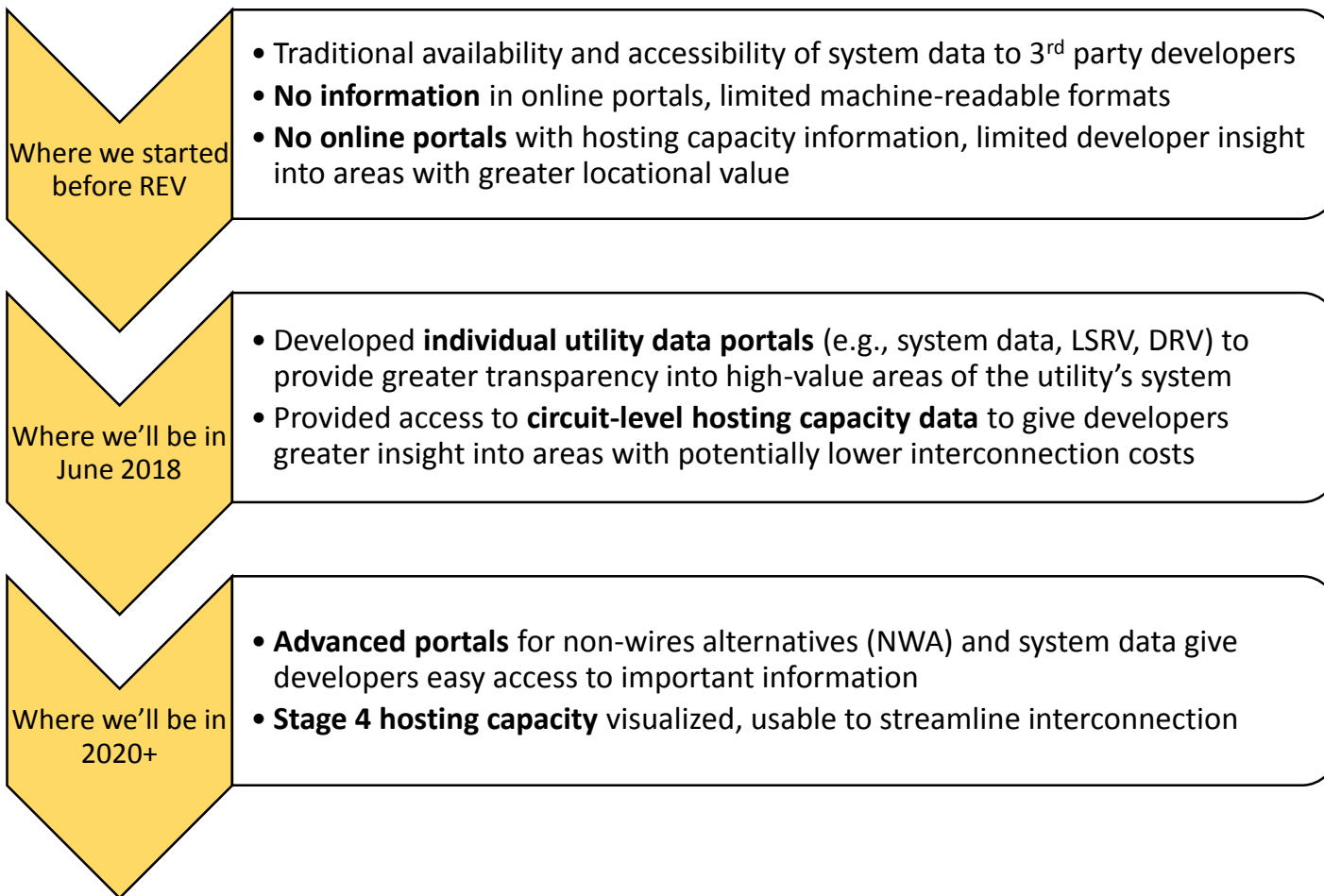
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Evolution of System Data



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Anticipated Results in Information Sharing, 2020+



Value-added data services and other **platform service revenues (PSRs)** established to align REV goals with enhanced utility performance

Advanced portals for NWA and system data give developers easy access to important information

Stage 4 hosting capacity visualized, usable to streamline interconnection

Green Button Connect (or similar) utilized for easy access to customer data, with privacy protections in place

Updated data privacy standards to protect customer information

Greater developer insight into locational system conditions and needs to inform business development



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DSP Implementation as of June 2018

Market Services



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Actions & Results in Market Services, June 2018



ACTIONS

Identified, developed, and implemented **non-wires solutions**; common datasets and bidder pre-qualification implemented

Implemented **advanced utility programs** (e.g., energy efficiency, demand response, demand-side management)

Applied **Phase One VDER** value stack

Aligned dispatch and communication protocols, and formalized roles and functions **between DSP, NYISO, DER aggregator, and DER owner**

Enabled **dual participation** for DER

Developed load and DER forecasts that leverage **probabilistic methods** and have greater temporal and locational granularity

Developed improved **marginal cost studies**

Implemented **new utility business model concepts** (e.g., rate reforms, platform service revenues, cost recovery mechanisms, EAMs, etc.)



RESULTS

Greater volume of opportunities; greater transparency, consistency, and efficiency for the entire NWA solicitation process

Key step of **market development** allows for greater DER participation

Clearer market signal to developers where DER can capture enhanced locational value

Increased levels of **DER participation in wholesale markets** so DER can access more value, while ensuring distribution and bulk power system safety and reliability is maintained

Opportunity for **DER to stack value**

Enhanced forecasting capabilities while accounting for greater levels of uncertainty; more targeted identification of NWA opportunities and LSRV zones

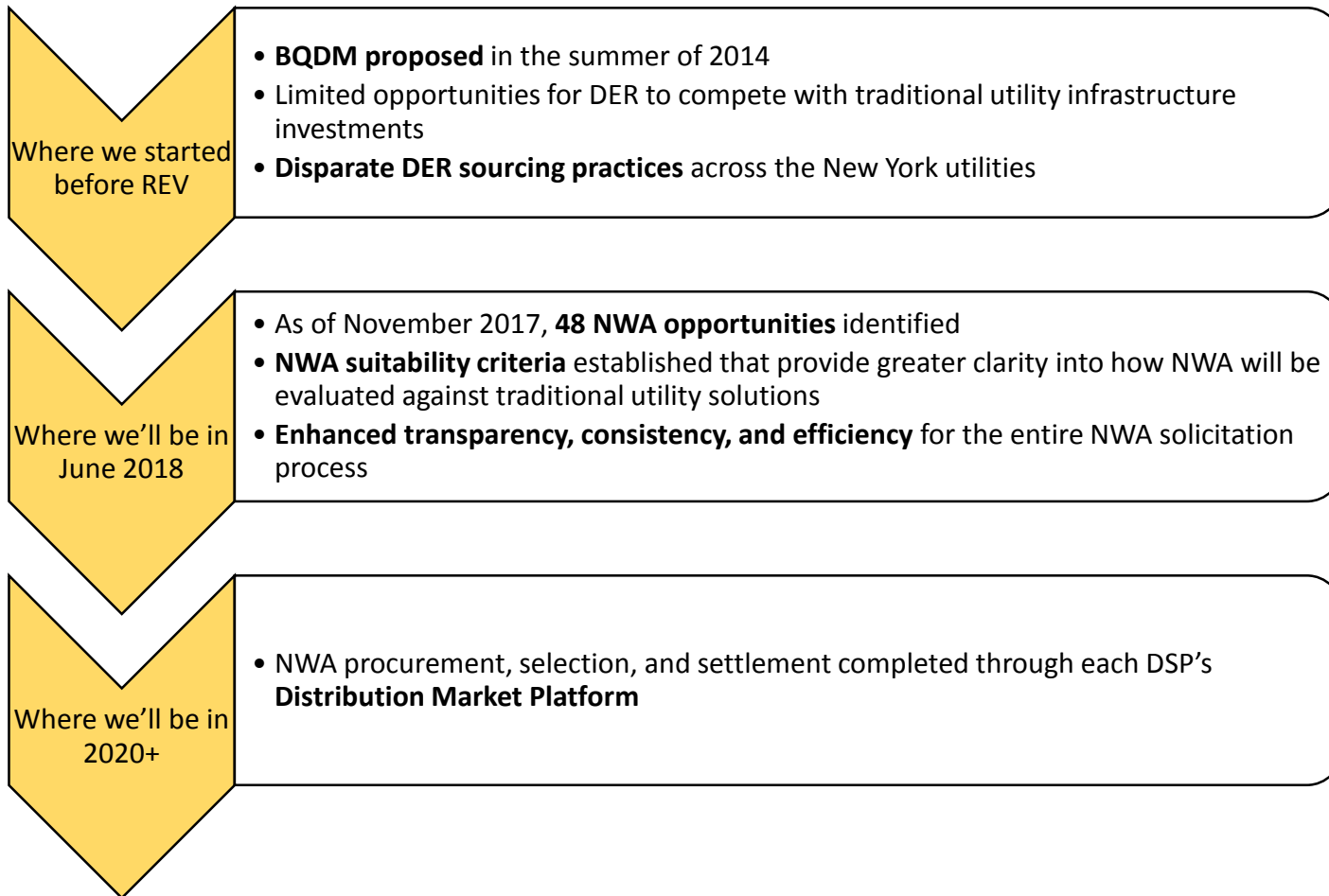
Increased transparency into and ability to estimate high-cost/high-value areas of the distribution system

Further **alignment of incentives** to foster greater customer engagement, expanded DER deployment, and a more resilient electrical grid to further REV objectives

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Evolution of Non-Wires Alternatives (NWA)



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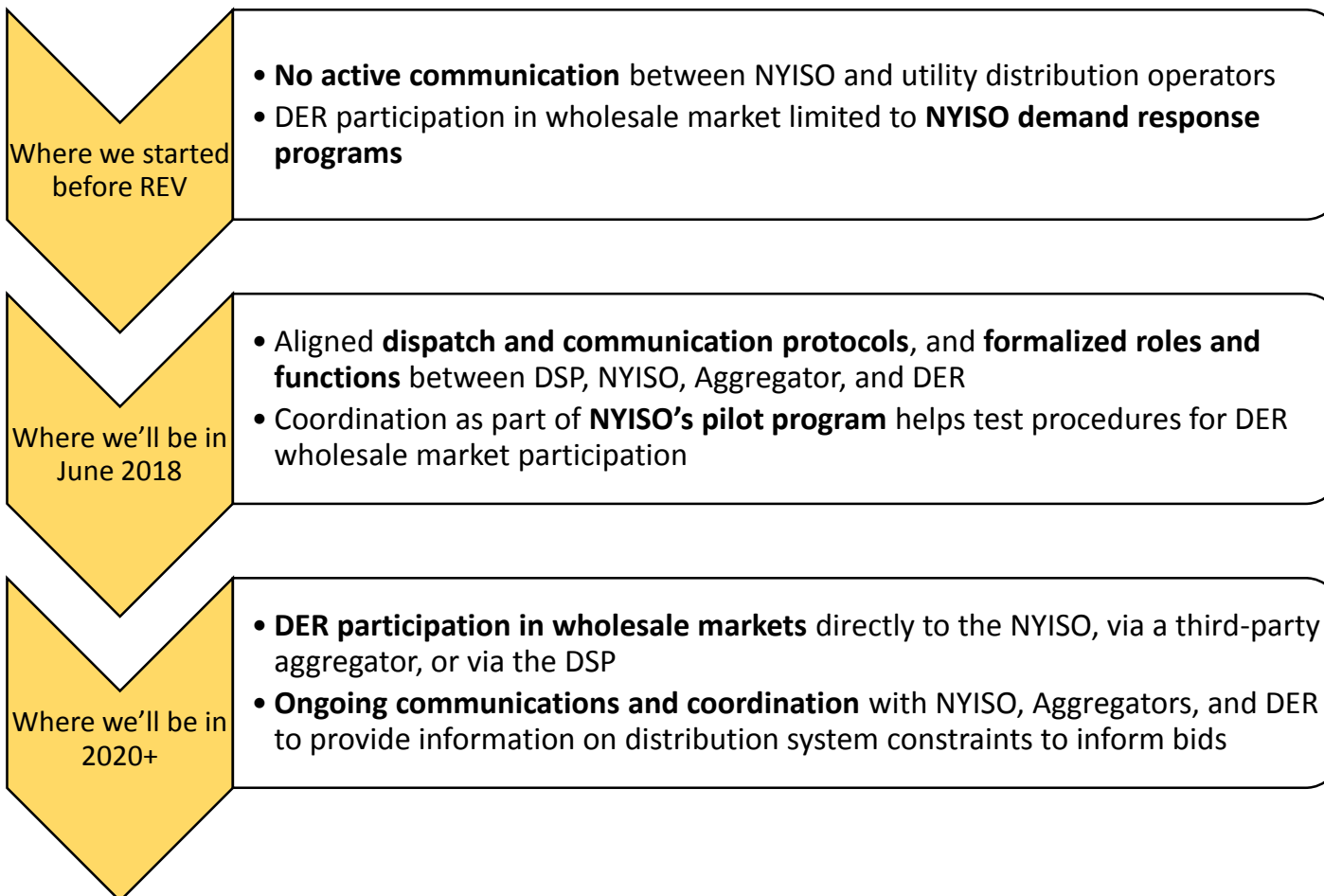
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Evolution of ISO-DSP Coordination



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Anticipated Results in Market Services, 2020+



DER participation in **VDER Phase Two**, where distribution components become more performance/market/value aligned

Distribution Market Platform facilitates more DER value through a long-term transition toward **active transaction-based markets**

NWA procurement, selection, and settlement completed through each DSP's **Distribution Market Platform**

Further enhancements to **probabilistic load and DER forecasting** methods and greater temporal and locational granularity

DSP sources its **distribution-level services** close to real-time, such as constraint management, reactive power, and enhanced provision of DR services

VDER registration and settlement completed through Distribution Market Platform

DER participation in wholesale markets directly to the NYISO, via a third-party aggregator, or via the DSP

Implementation of **flexible interconnection** enables greater levels of interconnected DER



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Q&A



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Lunch [1 hour]



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Value of DER Proceeding

JU Phase One VDER Implementation Progress



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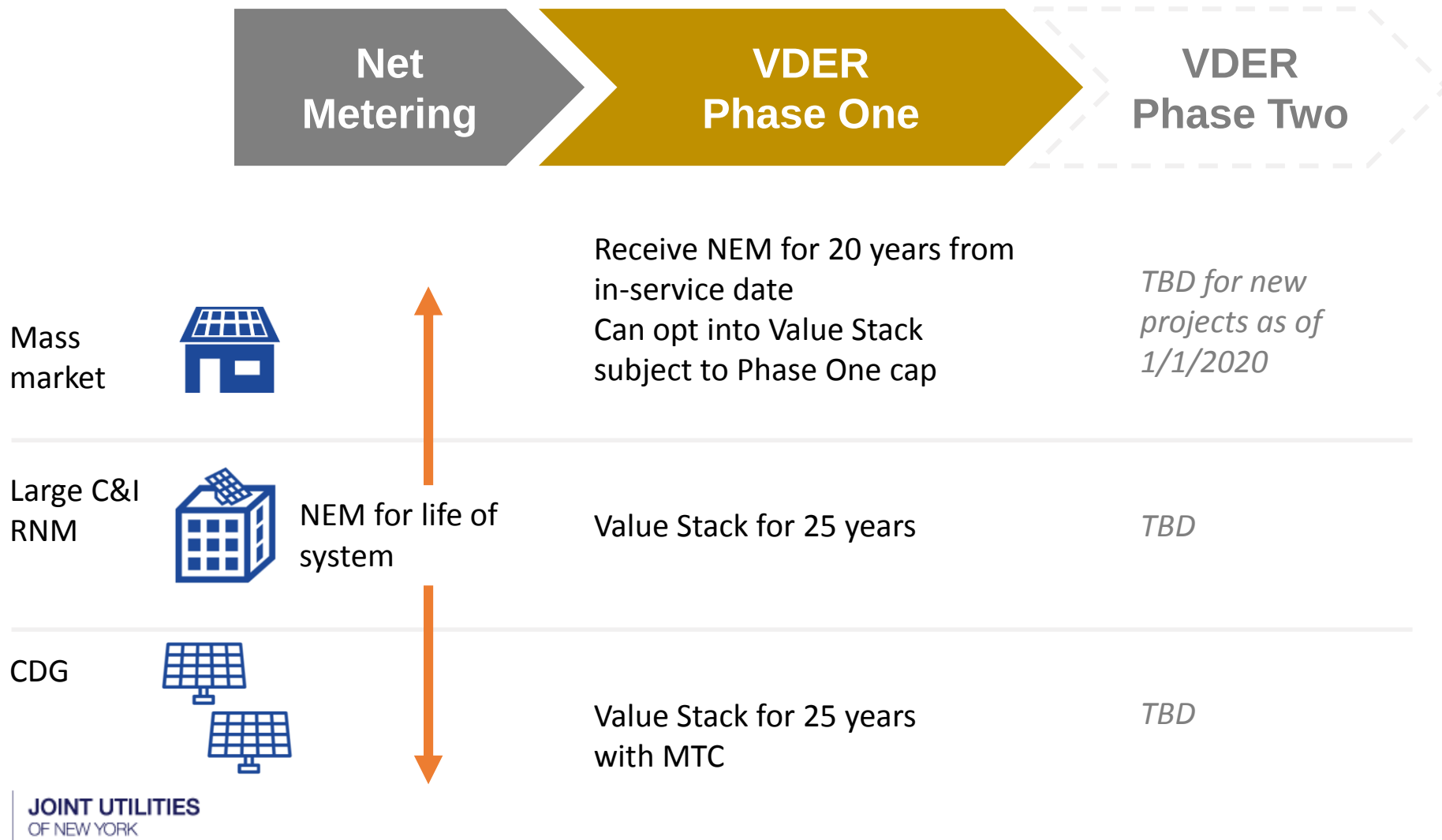
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VDER Framework



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Unpacking the Value Stack

The retail value of NEM will be replaced by six individual components designed to better value exported energy to the distribution system

	Component	Description
Supply	Energy	Day Ahead Hourly Locational Based Marginal Price (LBMP)
	Installed Capacity	Volumetric credit applied to exports in all hours with option for higher credit in summer on-peak periods (Alt 2) and single coincident peak (Alt 3)
	Environmental	Represents the value of clean energy
Distribution	Market Transition Credit (MTC)	- Credit for mass market to bring compensation close to NEM - Declines for new projects as tranches fill
	Distribution Relief Value (DRV)	- Applicable to customers not eligible for MTC - Based on performance during 10 peak distribution hours of previous year valued at MCOS
	Locational System Relief Value (LSRV)	Additional incentive for DER developed in high value areas



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Tying VDER Phase One into DSP Implementation

- In the initial stages of the DSP, DER can be compensated for distribution benefits contractually through Non-Wires solicitations and through the VDER tariff
 - VDER Tariff facilitates the integration of DER by providing for a more accurate distribution value compensation than traditional NEM.
 - Non-Wires solutions provide mechanisms for utilities to contract with DER to help solve specific distribution need
- VDER LSRV zones involve two aspects of the DSP: market services and information sharing by providing greater compensation to DER that provides additional distribution value
- There is a continuing need to create proper market signals to encourage developers and customers to deploy DER in ways that maximize net benefits for all customers



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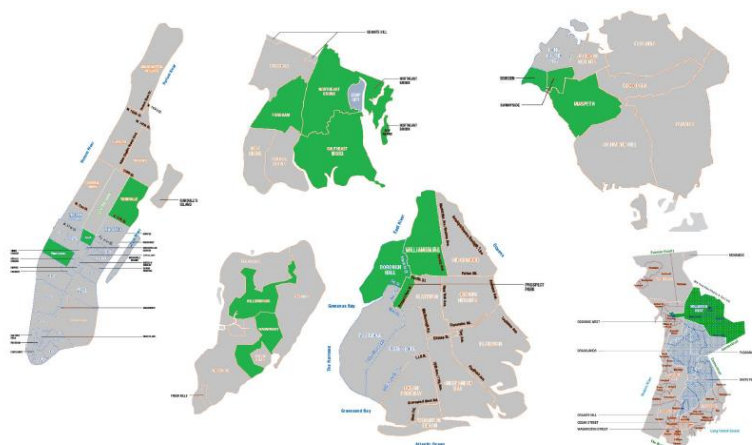
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LSRV and NWA: Different Mechanisms, Same Needs

- Both Locational System Relief Value (LSRV) and Non-Wires Alternatives (NWA) are tools to encourage DER deployment in areas where there is more distribution value
 - Geographical overlap between LSRV zones and identified NWA opportunities
 - Solicitations for NWA will therefore reflect reductions in coincident requirements already obtained through LSRV commitments
 - Similarly, a successful NWA can eliminate (prospectively) an LSRV areas.
- MW caps for LSRV zones serve as an estimate of the amount of DER (on a coincident basis) needed to address a constraint/defer traditional infrastructure



20% of Con Edison load is in an LSRV zone



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Value of DER Phase Two Proceeding and Links to DSP Enablement

Presented by Warren Myers and Marco Padula

**Joint Utilities Stakeholder Engagement Conference
November 30, 2017**

- *Expand Eligibility* - Application of VDER Value Stack to projects and technologies not eligible in Phase One (e.g., Clean Generation beyond those cited in Net Metering Statutes; CHP larger than 10 kW; stand-alone energy storage technologies)
- *Locational Distribution Value* – coordination of VDER Value Stack long run value and long run procurements of NWAs; More Granular Avoided Cost Estimation
- *Other Improvements and Modifications to the Value stack* - components related to the bulk system (bulk ancillary), distribution system (local ancillary); and societal values other than CO2/renewable value
- Utility DSIPs will serve as the venue for pursuing increased DSP functionality
- Increased DSP functionality and capabilities help granular, transactional pricing of DER

- Develop rate design proposal by December 2018 for transitioning of mass-market projects from NEM to new rate design beginning January 2020
- Working group will also consider network access charges, standby rates and buy-back rates
- Drafting process for the development of VDER Value Stack and Rate Design issues over the next 12 months
 - ❑ Stakeholder Engagement / Studies / Proposals
 - ❑ Staff Issue Papers / SAPAs / Commission Orders

Q&A



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REV Resources

REV Connect

Presenter: Vanessa Ulmer (NYSYERDA)



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REV Resources Value Stack Calculator

Presenter: Luke Forster (NYSYERDA)



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Thank you!

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