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EEI Strategic Issues Forum

Integration of DER: California and New York

September 30, 2015

Introduction

- California and New York are leading the country in integrating Distributed Energy Resources (DER); however, their approaches are different
- It's worth understanding some of the nuances of their respective proceedings and to clarify what they are (and are not) trying to accomplish
- Each will provide unique lessons to both utilities and regulators that are attempting to integrate ever-increasing amounts of DER

California Section 769 vs. NY REV – Background and Stated Objectives



- To promote the increased deployment of DER in support of **achieving California's 2020 and 2050 GHG reduction targets**
- To **modernize the electric distribution system** to accommodate two-way flows of energy and energy services
- To enable **customer choice** of new technologies
- To animate opportunities for DER to realize benefits through the **provision of grid services**



- To enhance **customer knowledge** and tools and support effective management of their total energy bill
- To **animate markets and leverage ratepayer contributions**
- To enhance **system wide efficiency**
- To promote **fuel and resource diversity**
- To **enhance system reliability** and resiliency
- To **reduce carbon emissions**

**Though the stated goals are similar, the implementations differ;
California is not establishing a distribution-level market in this proceeding.**

What Specifically Is California Asking For? Distribution Resource Plans

The California Public Utilities Commission (CPUC) has asked the utilities to provide the following information as part of their Distribution Resource Plans (DRPs):

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- Three different analyses:
 - Geospatial readout of Integrated Capacity Analysis (ICA)
 - Locational Net Benefits Methodology (LNBM)
 - Implications of DER growth scenarios
 - Plans for **demonstration and deployment projects** to validate and refine the required analyses as defined by CPUC
 - Utility third-party **bi-directional data-sharing policies**
 - Relevant **tariffs and contracts** for modification
 - Readout of **relevant safety considerations** for greater DER penetration
 - **Barriers** to greater DER deployment and realization of benefits
 - **Required utility investments** and links to general rate cases
 - Coordination of the analyzed and forecasted distribution planning and the California Energy Commission's Integrated Energy Policy Report (IEPR), CPUC's Long-Term Procurement Plan (LTPP), and CAISO's Transmission Planning Process (TPP)
 - Proposed **phased rollout** projects and DRP updating process

Of significance is what the Commission is not asking for, "Some Parties would like this proceeding, and the DRPs, to serve as platforms for reinventing the existing utility distribution services model... That is not the focus of this proceeding."¹

What Else Is California Asking For? Other Related Proceedings

California utilities have noted a number of tariffs potentially affected to their respective DRP proceedings, and DERs, specifically. The affected contracts and tariffs fall into the following categories:

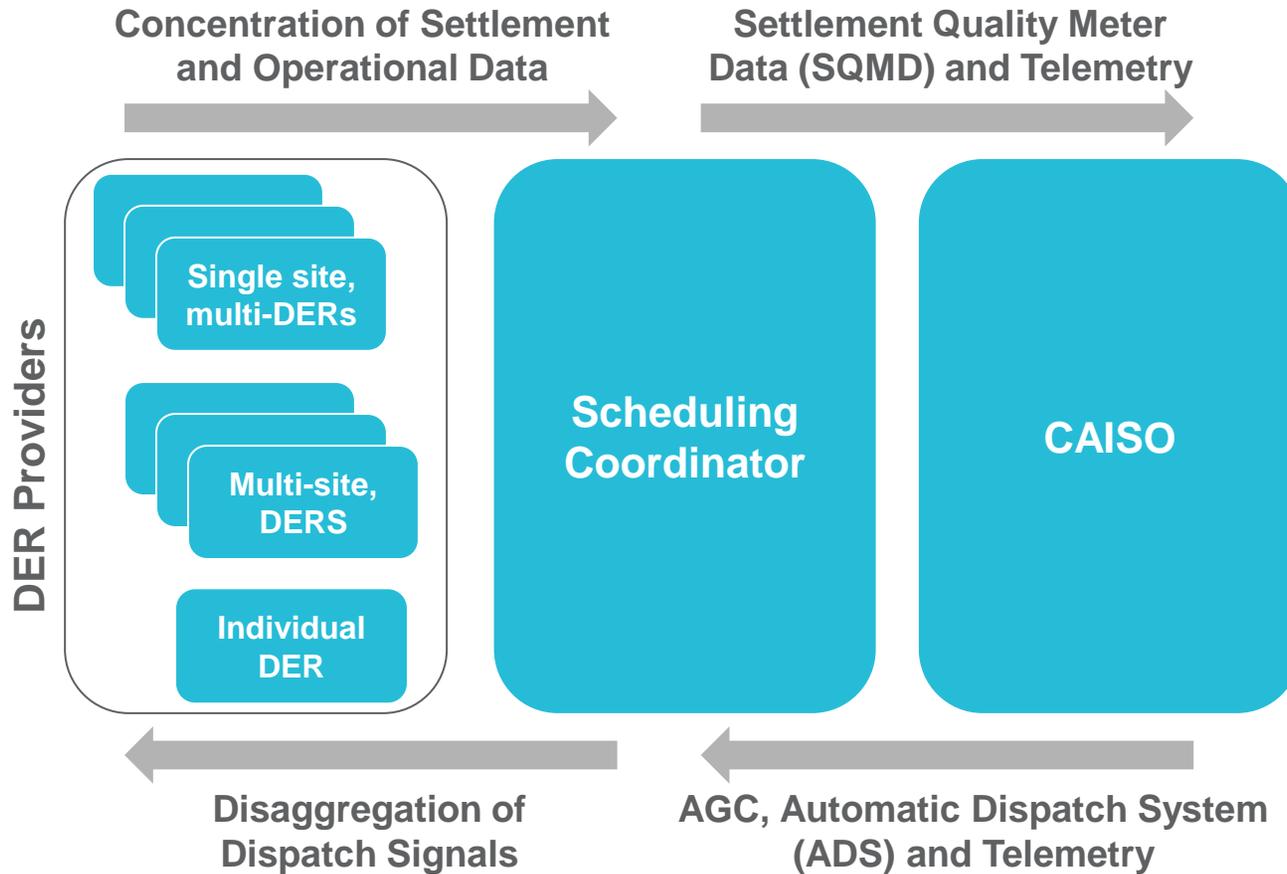
Electric and Gas Rules	Non-Export	Net Energy Metering and Other Retail	Wholesale	Other
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- California utilities have indicated that the following types of investments may be reflected in their next General Rate Case proceedings:
 - Distribution automation
 - Substation automation
 - Communication systems
 - Technology platforms and applications
 - Grid reinforcement
 - DER integration capacity
 - Volt/VAr optimization
- One further complication: residential rate redesign approved July 3 by CPUC
 - Customers default to TOU rates in 2019
 - Rate tiers move from four to two with 25% differential in 2019
 - Super User Electric surcharge beginning in 2017
 - Proposed fixed charges rejected, but minimum bill approved
- And don't forget about the IDSR rulemaking...

CAISO Approves Market Bidding of Aggregated DER

The California Independent Systems Operator (CAISO) has approved a proposal to allow the aggregation of DER by a third party for bidding into the wholesale market.

Interaction Between Aggregated DER and CAISO



This proposal enables a third party to aggregate DER and bid them into the ISO; it does not require a distribution-level market.

California Building Blocks

Distribution Resources Plans
(R.14-08-013)

Integrated Demand-
Side Management
(R.14-10-003)*

Storage
Procurement
(R.15-03-011)**

Net Energy
Metering
(R.14-07-002)

Alternative
Fueled Vehicles
(R.13-11-007)

Energy
Efficiency
(R.13-11-005)

Renewable
Portfolio
Standard
(R.15-02-020)

Residential Rate Reform (R.12-06-013)

General Rate Cases

*Now including distributed energy resources

**1,325 MWs through 2020

What Specifically Is New York Asking For? Track 1

Track 1 Order*

Demonstration Projects
Distributed Systems Implementation
Plan (DSIP)
Benefits Cost Analysis (BCA) Framework
Energy Efficiency Transition
Implementation Plan (ETIP)
Non-Wires Alternatives (NWA)
Interconnection Processes
Microgrid Configurations
Consumer Protections
Consolidated ESCO Billing

- Established utilities as **Distribution System Platform** providers
- Requires utilities to file **demonstration projects** to test hypotheses regarding the changing utility business model or platform functionality with formalized pilot projects
 - Potential market-based earnings
 - Rate design alternatives
 - Value of DER and animation of markets
- Requires utilities to file **DSIPs** to plan for addressing changes to the utility, adapting to an environment of increasing DER penetration
 - Includes but is not limited to: forecasting, integrated planning, technology platforms, operating standards, market design
- Establishes a **BCA framework** to provide a common and transparent methodology for evaluating the locational value of DER (included in the DSIP)
- Provides for enhancement of **Interconnection** processes

*Though not part of the REV proceeding, Community Net Metering is closely aligned with REV initiatives and is proceeding under a separate docket.

What Specifically is New York Asking For? Track 2

Track 2 proposes new earnings opportunities, new incentives, ratemaking reform, and proposals on changes to rate design:

Market Based Earnings (MBE)

Opportunities for utilities to increase revenue by acting as the platform to supplement rate-based revenue

Examples:

- Eng for microgrids
- Data analysis
- Co-branding
- Platform access fees
- Optimization/scheduling
- Advertising

Earnings Impact Mechanisms (EIMs)

New performance incentives that are tied to desired outcomes; initially positive only or symmetric only

- Peak reduction
- Energy efficiency
- Affordability
- Customer engagement and information access
- Interconnection

Scorecard Mechanisms

Metrics that are to be tracked but not monetized at this time; to be considered as future EIMs

Proposed:

- System utilization
- DG, EE, dynamic load management
- Opt in TOU efficacy
- Market development
- MBEs use
- Carbon reduction
- Customer satisfaction
- Customer enhancement
- Conversion of fossil fuel end uses

Rate Design and DER Compensation

Determining the value of D (LMP + D), continuing net energy metering, and modifying existing rate designs

- Demand charge
- TOU
- Smart Home Rate
- C&I
- Standby Service Tariff
- Value of D

What Specifically is New York Asking For? Track 3

Track 3 is focused on the development and procurement of Large Scale Renewables (LSR)

Some background:

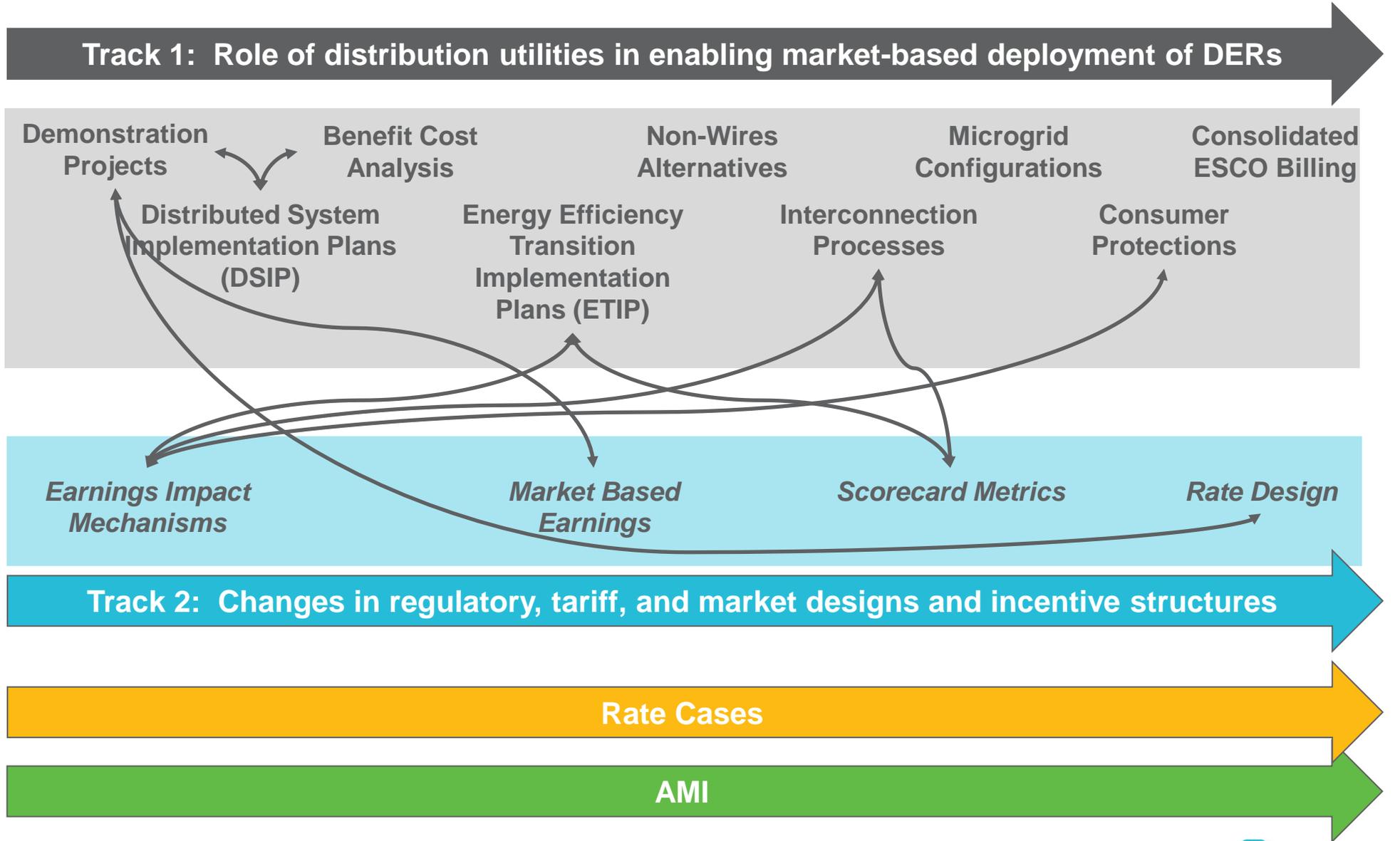
- Historically, LSR Renewable Energy Credits (REC)s have been centrally procured through NYSEERDA to meet RPS goals
 - NYSEERDA has solicited 2,035 MW through 65 large-scale projects to date
 - Solicitations are scheduled to conclude in 2016
- Initially addressed in the Track 1 straw proposal; based on early feedback was moved to a separate track
- NYSEERDA filed the Options and Assessment report on 6/1/15 in a new docket ([15-E-0302](#)) and [stakeholders filed reply comments 9/14/15](#)
- Staff will incorporate comments and the PSC will issue an order

Key Issues Under Consideration

- Identifying PPA counterparties to enter into bundled PPAs with developers
- Permitting utility ownership of LSR projects
- Identifying a third party for centralized solicitation and evaluation
- Determining goals for procurement to increase penetration at the least cost (budget, target, or integrated)
- Determining a reasonable balance of risk between generators, utilities, and ratepayers

Key issue to watch will be whether the PSC permits utility ownership of large scale renewables.

NY REV: Many Interlocking Pieces



In Summary, Some Critical Differences

Attribute	California Section 769	New York REV
Market Development and Design	<ul style="list-style-type: none"> ■ Leverage the CAISO market ■ Allow aggregation of DER by third parties for bidding into the wholesale market 	<ul style="list-style-type: none"> ■ Use the market to defer or replace traditional utility infrastructure investments (e.g., BQDM) ■ Create a distribution-level market for DER and energy services
Cost/Benefit Analyses	<ul style="list-style-type: none"> ■ Use a LNBM based on E3 Cost Effectiveness Calculator <ul style="list-style-type: none"> • Covers costs (avoided or incurred) related to energy, capacity, ancillary services, interconnection, and externalities 	<ul style="list-style-type: none"> ■ Use a BCA to evaluate non-traditional solutions against traditional infrastructure <ul style="list-style-type: none"> • Consists of three tests covering similar attributes to CA LNBM
Rate Reform	<ul style="list-style-type: none"> ■ Consider proposed changes to rate design and tariffs in separate proceedings ■ Acknowledges links to general rate cases 	<ul style="list-style-type: none"> ■ Propose to revamp incentives and rate design to transition utilities from rate-based revenue to market-based revenue <ul style="list-style-type: none"> • Significant rate design changes ■ Create a location-based price signal for Locational Marginal Price plus the Value of Distribution (LMP + VoD)
Data Sharing	<ul style="list-style-type: none"> ■ Develop a procedure for sharing grid conditions ■ Focus on bi-directional data sharing 	<ul style="list-style-type: none"> ■ Develop a procedure for sharing grid conditions and serve as data intermediary between market participants

And Some Similarities...

Attribute	California Section 769	New York REV
Demonstration Projects	<ul style="list-style-type: none">■ Develop demonstration projects to test prescribed hypotheses	<ul style="list-style-type: none">■ Develop demonstration projects to test utility-defined hypotheses, based on PSC goals<ul style="list-style-type: none">• Focus on markets, rate design
Planning and Operation	<ul style="list-style-type: none">■ Ensure coordination with transmission planning■ Optimize grid planning and operation at the distribution level	<ul style="list-style-type: none">■ Optimize grid planning and operation at the distribution level
DER Interconnection	<ul style="list-style-type: none">■ Reduce barriers to DER interconnection	<ul style="list-style-type: none">■ Reduce barriers to DER interconnection

Contact Us

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