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# **Evolution of the Grid – Distribution Resource Plan and Distribution System Operator**

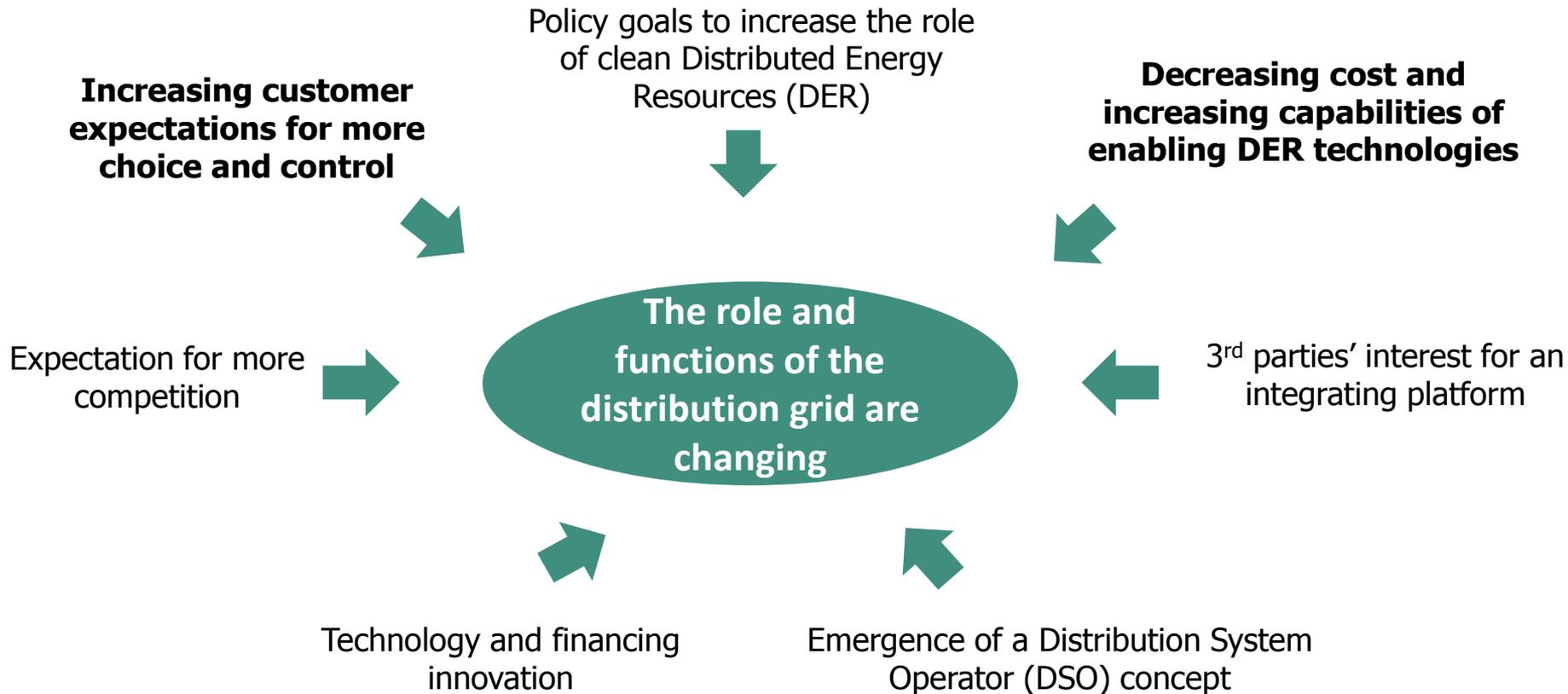
**WEIL Meeting**

March 6, 2015

# Today's Objectives

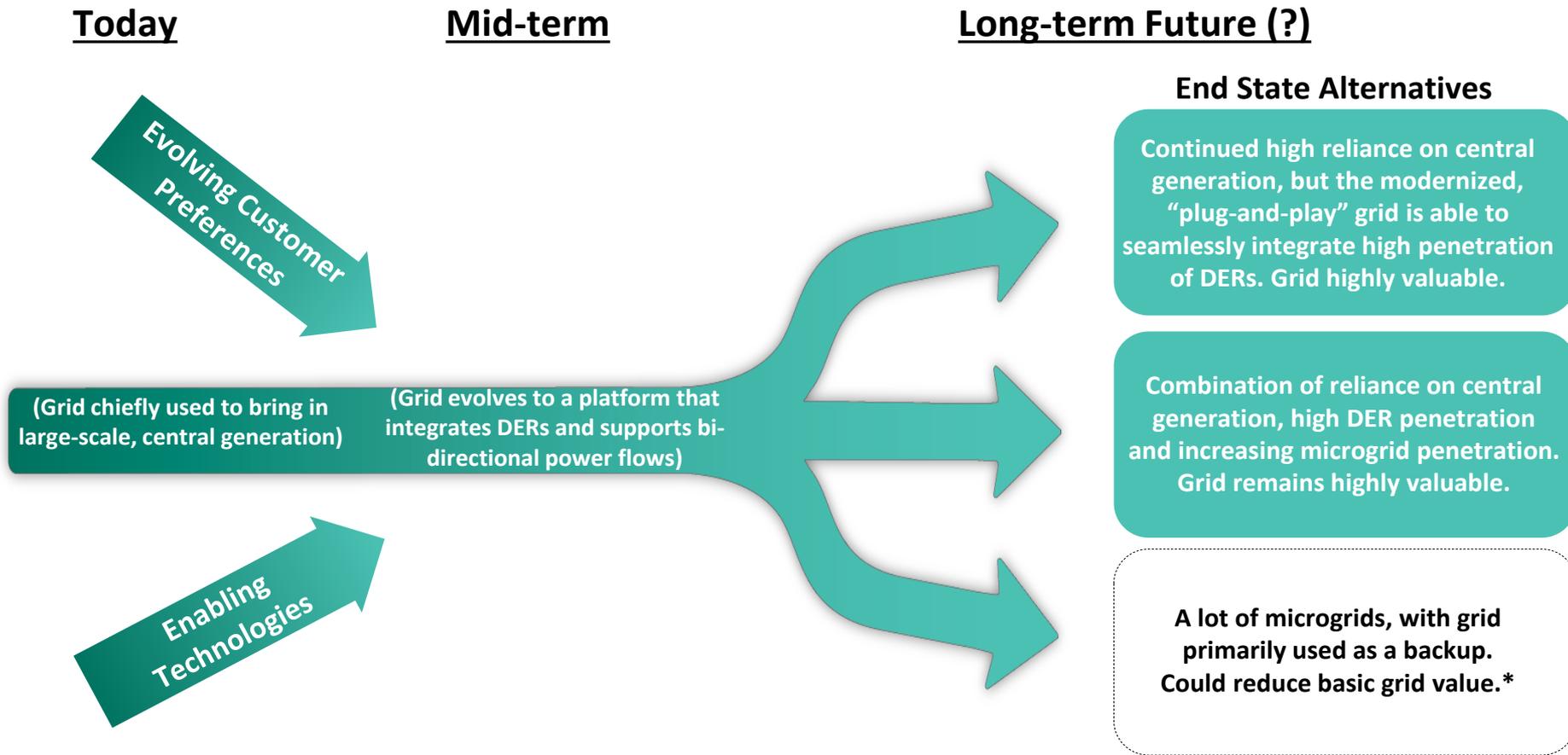
- Identify implications of grid evolution and industry changes on distribution business models
- Provide an overview of the Distribution Resources Plan (DRP) proceeding in California
- Discuss some issues related to Distribution System Operator (DSO) in New York and possible future California direction

# Drivers for Grid Evolution



# Potential Grid Evolution End-States

*The role and functions of the distribution grid are changing. The speed of the change and the end-state are uncertain.*



\* Unlikely scenario

# Distribution Resources Plan (DRP)

- California Assembly Bill (AB) 327 was introduced in October 2013 and requires the California investor owned utilities (IOUs) to submit DRPs by July 2015
- The goal is to move IOUs towards integrating Distributed Energy Resources (DERs) into their distribution systems planning, operations, and investment and create a distribution grid that is “plug-and-play” for DERs
  - Identify optimal locations for the deployment of DERs by developing a common methodology to calculate net benefits
  - Introduce tariffs, services, and incentives to create market opportunities that maximize locational benefits and minimize incremental costs of DERs
  - Identify any additional utility spending necessary to integrate cost-effective DERs
  - Determine the data needs and propose a data sharing method to enable customers and 3<sup>rd</sup> parties to assess where they can best deploy devices
  - Maintain system reliability and security

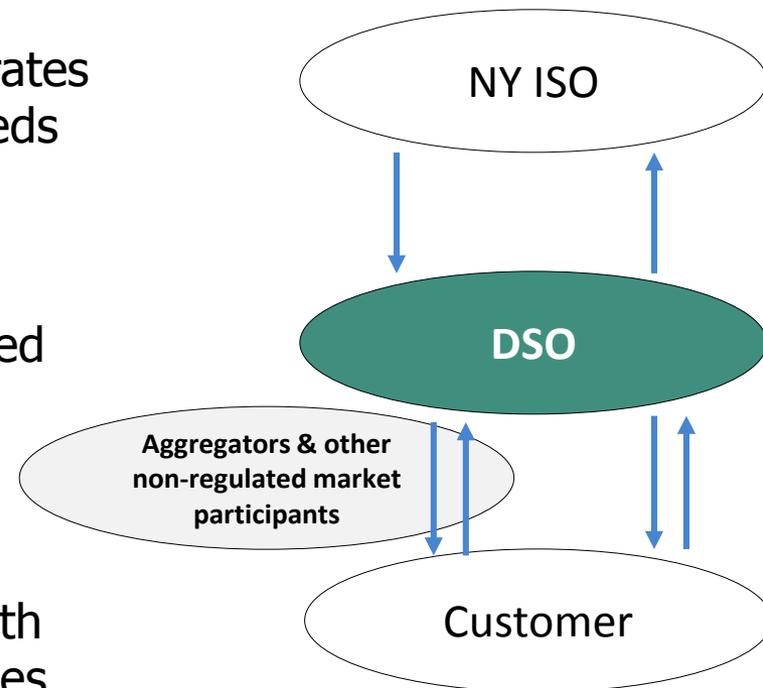
Note: AB 327 also initiated comprehensive rate reform and revisit of the future of Net Energy Metering rules

# “Reforming the Energy Vision” (REV) proceeding in New York

***Vision: Create market-based, sustainable products and services that drive an increasingly efficient, clean, reliable, and customer-oriented industry***

## Key DSO Functions

- Design and plan distribution system that integrates DERs as primary means of meeting system needs
- Plan for and accommodate new distributed generation and demand response
- Create a nodal distribution level market operated by newly created entity to “animate” market players
- Monetize system & social values
- Coordinate interactions between customers, with the distribution system, and with energy services markets (DSO markets and NYISO)



Note: DSO is called “Distribution System Platform Provider” (DSPP) in the REV proceeding

# Main Issues

- What do customers want in the way of new and more DERs?
- How do utilities plan and operate a grid that is increasingly reliant on local resources?
- What level of distribution system investment is needed to transform the grid into a plug-and-play platform that accommodates an uncertain level of added DERs?
- Given the uncertainties of future business models, what are the no regrets investments?
- What customer and grid data can and should be made public?
- What type of price signals or markets make sense at the distribution level? Do we need to a DSO to animate the market?
- If a DSO model emerges, what would be the role of the DSO?
- Should the role of the DSO be filled by incumbent utilities or independent entities?