GRID MODERNIZATION AROUND THE COUNTRY & A CLOSE UP ON NY REV

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Technology innovation is changing power delivery and customer engagement

Greater customer engagement

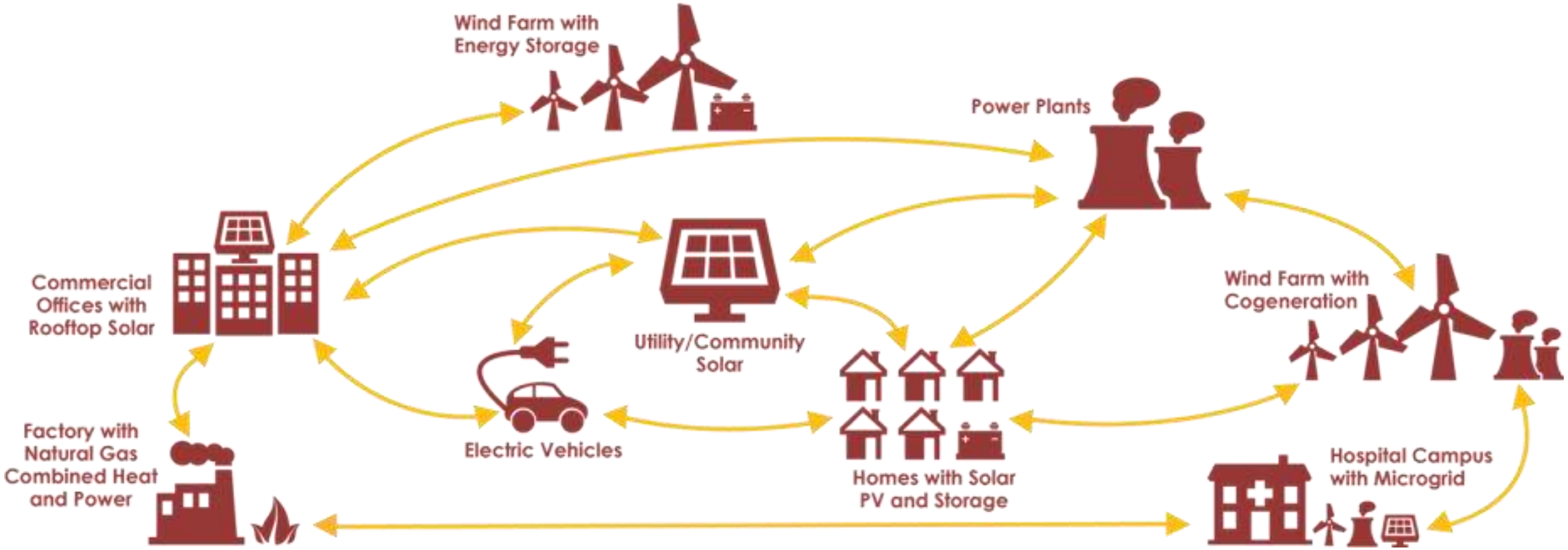
New products and services

Greater focus on value vs. cost

High DER penetration

Two-Way Energy Flows

Digitalization of the Grid



Source: Navigant, 2015

Expectations of what the grid should deliver are evolving

Core Attributes

- Universal access
- Safety
- Reliability
- Affordability

Emerging Attributes

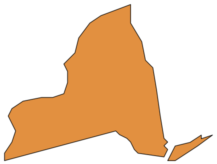
- Environmental sustainability
- Resiliency
- Adaptability/flexibility
- Greater customer control & service options

Additional Pressures

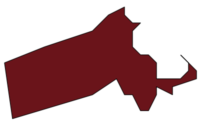
- Aging infrastructure (rising costs)
- Flat/declining load growth (falling revenues)
- Variable RE integration
- Cyber and data security

States are approaching grid modernization in different ways

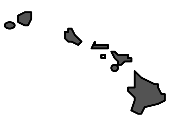
DRPs, IDER, retail rate redesign, energy storage requirement, EVs, DR, AMI, etc.



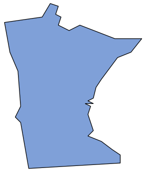
Reforming the Energy Vision ("REV") Proceeding



Grid Modernization proceedings ("Grid Mod") and Time Varying Rates



Addressing high PV penetration with multiple orders/proceedings

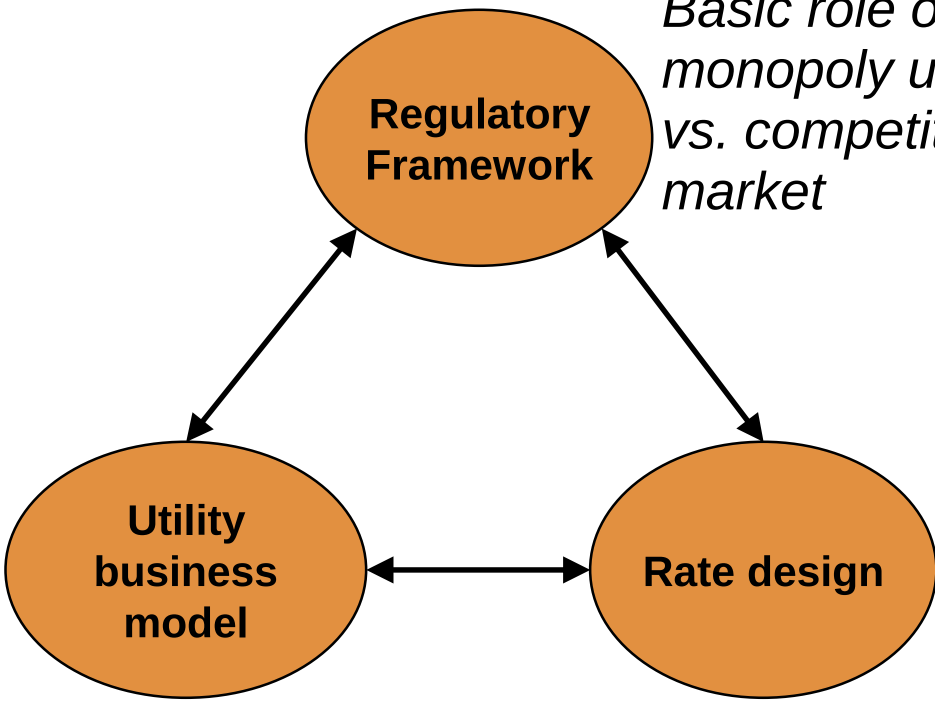


e21 stakeholder process; Grid mod process started this fall

Other states exploring utility reform/grid mod: DC, NH, RI, CT, PA, IL

States approach the key elements of regulation in different ways

Basic role of monopoly utility vs. competitive market



How the utility "makes money"

The "interface" between customers and the utility

Different Approaches Include:

- Most states are focusing on only one or two of these elements
- New York is addressing all of them and is the only state that is considering substantial utility business model reforms.

NY REV in context

Proposed changes in REV seek to:

- Offset utility Capex by harnessing private investment in Distributed Energy Resources (EE, DR, DG, and storage)
- Unlock economic efficiency by leveraging investments in DER that consumers have made for their own benefit to also benefit the grid and save on system costs

This results in investments that are contrary to general utility profit drivers.

Simplified utility profit formula

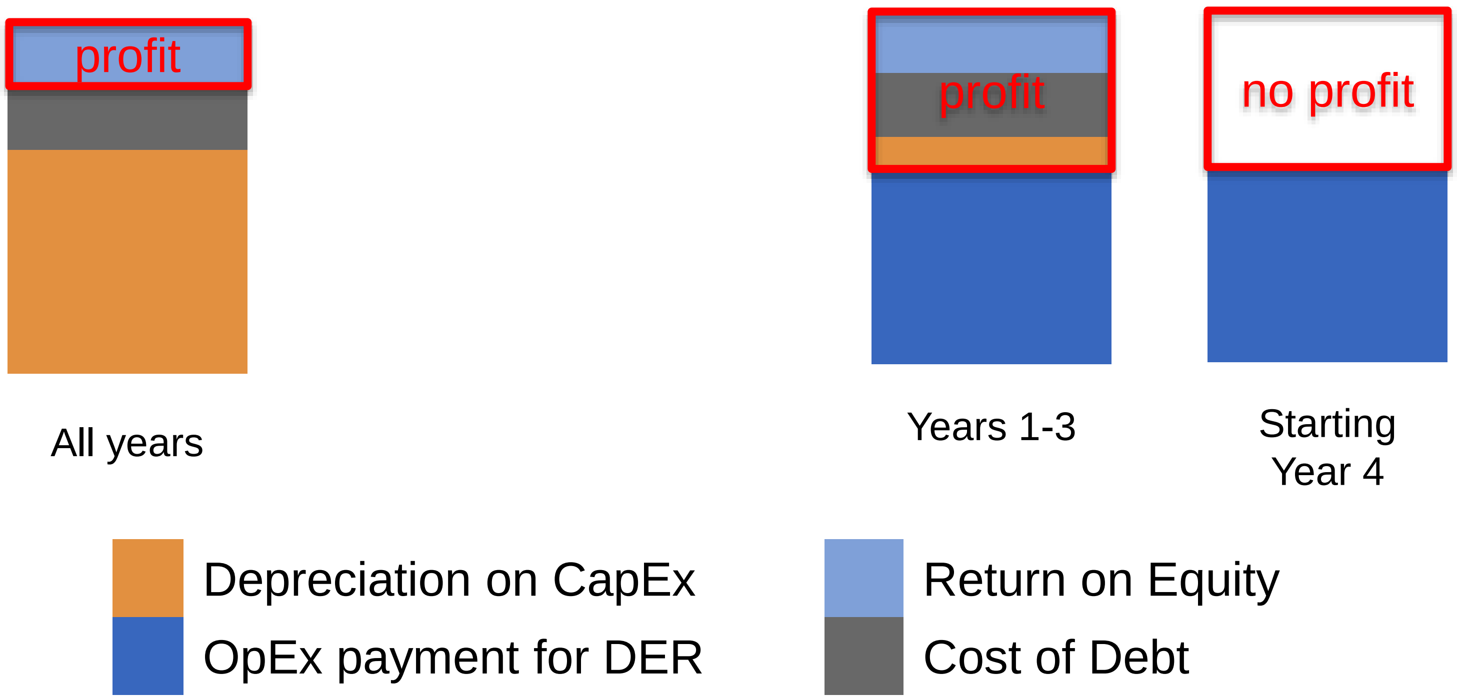
Impact of REV

REV requires a new approach

A modified “clawback” mechanism allows utilities to earn short-term profits (until the next rate plan) on avoided Capex, if the utility can more efficiently replace Capex with DER/Opex. (solution proposed by staff)

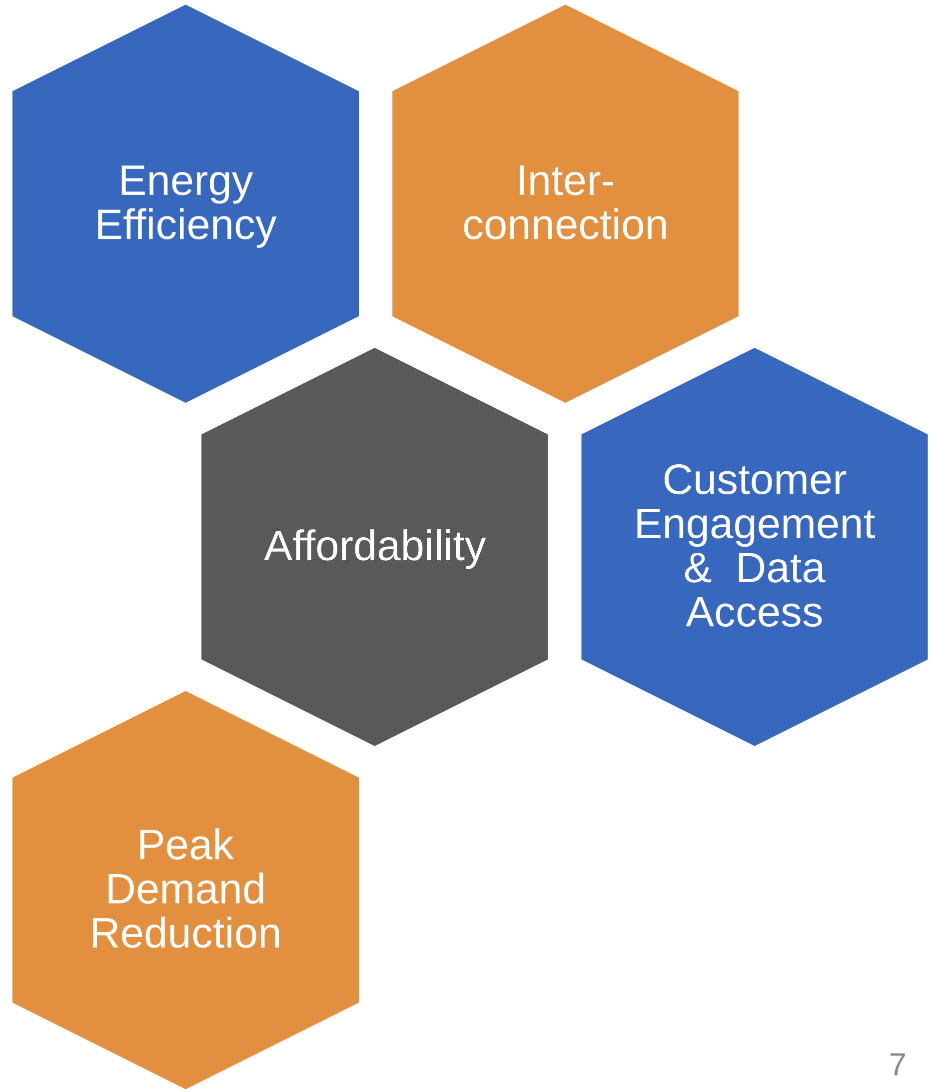
Yearly profit from a traditional CapEx solution

Yearly profit from an OpEx/DER solution under modified clawack



Earnings Impact Mechanisms - EIMs

- EIMs are metrics for utility performance that are tied to adjustments to utility profits.
- In most cases, these are positive only incentives, but may be tied to bi-directional adjustments to profits.



Market Based Earnings - MBEs

- Earnings from services based on the Distributed System Platform (DSP)
- Mostly focused on providing services to support DER. DER providers would pay for these services
- Some proposed services could be provided by the competitive market. We have concerns about ensuring a level playing field.

Basic Platform Service Revenues	• Scheduling, Dispatch, Transaction Clearing, Planning, Optimization
Value-Added Platform Service Revenues	• Advertising, Customer Referrals and Originations, Co-Branding
Competitive Services	• Microgrid Engineering, Data Analysis, Enhanced Power Quality

Fitting it all together

Change in share of profits for utilities over time

RoE on Capex (Clawback) EIMs MBEs

- A gradual shift over time from rewarding utilities based on counting inputs (Capex) to delivering outcomes.
- These changes are intended to orient utilities toward pursuing resources like energy efficiency over traditional capital investments if they are more cost-effective.

For questions and follow-ups:

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