DERs & Utility Financial Sustainability

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Outline

- Present State of DERs (and Utilities)
- Challenges
- Traditional & Non-Traditional Solutions
- Areas of Transition
- Final Thoughts

DERs on the Rise



Demand Response

10%

Peak load reduction potential in PJM market and 9% in MISO^(FERC)

Distributed Generation



21

States (& DC) have an RPS with solar or DG carve-outs^(DSIRE)



Energy Efficiency

300

100-MW power plant equivalent saved energy since early 90's (EIA)

Utilities Under Pressure



Environmental Regulation



Aging Infrastructure



Changing Fuel and Generation Economics



Slow or Flat Load Growth

Utilities may need to accelerate investment at a time of uncertain and deprived earnings.

Million Dollar Question



- Decrease Sales

- Reduce Revenue



- Reduce Costs
- Increase Value

How can can Utilities mitigate or prevent potential revenue erosion due to DERs?

Goals & Regulatory Outcome

- Build Infrastructure
- Meet growing demand
- Economies of scale and scope
- Natural Monopolies

Vertically Integrated Restructured

- Increase competition
- Lower prices
- Improve efficiency
- T&D monopolies

- <u>Reduce emissions</u>
- Improve reliability
- Enhance resilience
- Increase efficiency
- Increased DERs

21st Century Utility

Revenue Requirement = OpEx + CapEx*r



Solutions: Revenue Stabilizing Mechanisms

Traditional Utility Model: (Cost-Based)

- Decoupling
- Rate Restructuring
- Utility Ownership/Investment
- Policy Re-examined

Reinforce utility's role as monopoly

21st Century Utility Model: (Value-Based)

- New utility business models around DERs
- New utility regulatory models
- Value-based rate and tariff design

Redefine utility's role as ...

Options for a Value-Based Model

Business Models



- Financing
- Energy services
- Non-energy services
- Integration & platform

Regulatory Models



- Performance based regulation
- Enhanced competition

Rates and Tariffs



- Time, location and attribute dependent
- Co-optimized retail rates & "value of D"

In Transition



Final Thoughts

• As DERs increase, utilities may need to stretch outside their comfort zones

 Varied regulatory, economic and resource conditions all but eliminates a one-size-fits-all solution

Ripe environment for innovation!