

Energy Bar Association

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Do We Need a New Way to Regulate Electric Utilities?

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Context

Retail Electricity Market

- Declining kWh growth rates
- Increasing penetration of DG (PV)
- Higher levels of other DER (EE, DR, storage)



Increase in partial requirements customers

Grid Infrastructure

- NBV IOU D assets ~\$300B; upgrades ~\$600B
- Additional \$ for SG invest
- D resilience invest can be \$1+B per utility



Continued grid investment requirements

Policy Initiatives / Goals

- Higher reliability and resilience
- Lower carbon emissions
- Utility as Platform to integrate DER



Evolving and potentially high cost goals

Retail Electricity Future

- Inter-modal competition; facilities-based (> resale)
- Value to grid connectivity
 - DG mainly involves partial bypass
 - Differs from telecom analogy
- Utility scope:
 - Full requirements customers, including POLR-like obligation
 - Provides platform functionality

Total Cost vs. Rates

Composition of End-User Electricity Costs (Illustrative)

Power

Sales from Centralized Resources
Sales from Distributed Resources
Self Gen (Amortized Cost of Installation)

Delivery

Connectivity Costs
kWh Costs



Cost of delivery may be recovered from a combination of customer, demand and volumetric charges, which may applied differently to full and partial requirements customers.

Intermodal Competition

- Represents a game changer to electric utilities, but does not result in complete bypass of grid – unlike the case for telecoms
- Requires that utilities provide 1) full electric and 2) interconnection (platform) services



- Intermodal competition requires grid connectivity
- Utility needs to be made financially viable to continue to provide grid services

Regulating Electric Utilities

Historic / Traditional

- ROE / Invest-based
- Performance adder (Incentive reg + PIMs)

Mid / Transition

- Combination of
- Utility rev require
 - Perf incentives to move closer to “end-state”

Possible Longer-Term

- Higher % revs from platform services
- Additional revs from value added services

During transition stage:

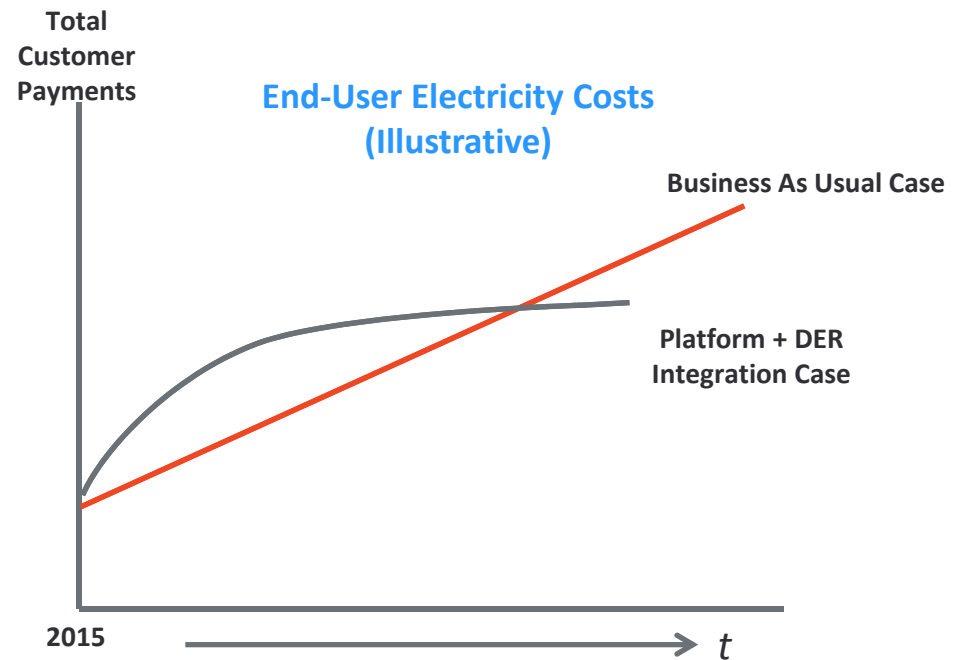
- Utilities will be required to upgrade distribution systems for SG, resilience and DER integration
- Rev requirements will balance platform services and end-use kWh sales
- Rates for platform services will be a regulatory priority
- Value added services remain to be defined and realized

Distribution Platform

- Roughly: access, interconnection and information services + potential new value-added services
- Long-term “win-win” scenario: revenues from value-added services offsets shortfall in kWh sales revenues – similar to ILEC success stories
- Telecom Case Study:
 - Interconnection and access services were not money-makers for ILECs
 - New network services were in design and at the ready
 - Customers were willing to extend “wallet share” for new services
- Electricity Case:
 - Customers view electricity of commodity
 - Collateral value-added services need to pay for themselves by offsetting kWh costs
 - New services enabled over the platform do not appear specified yet

Cost Future

- Still to be worked out, but total cost to customers will likely increase in the short run under a Platform/DER integration scenario
- Delivery costs will increase to cover platform investments
- Cost of power will be reduced by EE and DR
- But DG costs may remain higher than centralized resources, depending on extent of D expansion offset
- Cost composition will change over time, with the aspired to end-state having lower overall cost of electricity, even though delivery costs may remain the same or increase



New Way of Regulating

- Revenue requirement will need to remain a regulatory focus for the immediate future
- Composition of revenue recovery can change:
 - Incentives: to promote interconnection and policy goals (carbon reduction)
 - Rates: differentiated among partial and full requirements customers
- Range of associated regulatory / policy issues
 - Transparency of subsidies and externality payments
 - Participant / non-participant tests