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

<table>
<thead>
<tr>
<th>Historic / Traditional</th>
<th>Mid / Transition</th>
<th>Possible Longer-Term</th>
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<tr>
<td>- ROE / Invest-based</td>
<td>Combination of</td>
<td>- Higher % revs from</td>
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<td>- Performance adder</td>
<td>- Utility rev require</td>
<td>platform services</td>
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<td></td>
<td>- Perf incentives to move closer to</td>
<td>- Additional revs from value added services</td>
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<td>“end-state”</td>
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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