EVOLVING UTILITY REGULATORY STRUCTURE AND CONCEPTS

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APRIL 24, 2018
America’s Power Plan is a platform for innovative thinking about how to manage the transformation happening in the electric power sector today.

We collect expert information for decision-makers and their staffs, highlighting specific solutions to today’s most pressing policy, regulatory, planning, and market design challenges.
OUTLINE

1. CONTEXT
2. TOOLS FOR REFORM
3. LESSONS & EXAMPLES
CONTEXT: POWER SECTOR EVOLUTION

Old Goals:

• Meet growing demand
• *Build* new infrastructure
• *Build* to deliver universal service
• Affordability, Reliability, Safety

Options:

• Centralized power plants
• Transmission lines
• Distribution system
CONTEXT: POWER SECTOR EVOLUTION

Old Goals:
- Meet growing demand
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Options:
- Centralized power plants
- Transmission lines
- Distribution system

New Goals:
- Build $\rightarrow$ Maintain
- Reliability $\rightarrow$ Resilience
- Clean power
- Customer satisfaction
- Affordability, Safety

New Options:
- Least-cost variable resources
- Innovative distributed energy resources (EE, DR, PV, EVs, etc.)
- Advanced IT & big data
THIS CREATES THREE NEW ISSUES

1. Increasing options for power system optimization leads to greater information asymmetry between utility and regulator

2. New goals for the power system mean regulators must reexamine existing incentives to build more capital and maintain existing investments

3. Rapid technological change requires innovation – regulation must keep pace.
REGULATION CAN EVOLVE TOO

Old Methods:
• Line-by-line investment review
• Capital investment and sales growth drive shareholder value
• Unpredictable rate cases
• Operational expenses provide few opportunities for shareholder returns

New Methods:
• Focus on outcomes to help sort through complexity & manage public policy
• Make utility indifferent to build or buy decisions
• Revenue regulation with efficiency incentives
• Meet customer demands for clean energy
OUTLINE

1. CONTEXT
2. TOOLS FOR REFORM
3. LESSONS & EXAMPLES
<table>
<thead>
<tr>
<th>Revenue Adjustment Mechanisms</th>
<th>Performance Mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue decoupling</td>
<td>Shared savings mechanisms</td>
</tr>
<tr>
<td>Revenue or rate caps</td>
<td>Benchmarking</td>
</tr>
<tr>
<td>Multi-year rate plans</td>
<td>Performance incentive mechanisms</td>
</tr>
<tr>
<td>Investment trackers</td>
<td>Performance standards (e.g. RPS)</td>
</tr>
</tbody>
</table>
FROM **COST-BASED TO VALUE-BASED**

**OPTION 1**

<table>
<thead>
<tr>
<th>Traditional Model</th>
<th>Performance Value Model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ROR(_1)</strong></td>
<td><strong>PIMs</strong></td>
</tr>
<tr>
<td><strong>Capex (rate base)</strong></td>
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</tr>
<tr>
<td><strong>Opex (including depreciation &amp; taxes)</strong></td>
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</tr>
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</table>

Incentives available for value-creating activities

Value derived from all investment activities

Value derived from both investments and performance
but potential returns to shareholders should grow commensurate with the additional risk shifted to utilities.

Overall costs may actually decrease...

FROM **COST-BASED TO VALUE-BASED**

**OPTION 1**

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<tr>
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**Traditional Model**
value derived from all investment activities

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<thead>
<tr>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PIMs</strong></td>
</tr>
<tr>
<td><strong>ROR_2</strong></td>
</tr>
<tr>
<td><strong>Capex (rate base)</strong></td>
</tr>
<tr>
<td><strong>Opex (including depreciation &amp; taxes)</strong></td>
</tr>
</tbody>
</table>

**Performance Value Model**
value derived from both investments and performance
FROM COST-BASED TO VALUE-BASED

OPTION 2

Traditional Model
- Value derived from all investment activities

Performance Value Model
- Value derived from both investments and performance

Consider how changes in the revenue structure may affect utility cost of capital

ILLUSTRATIVE
FROM COST-BASED TO VALUE-BASED OPTION 2

Source: Accenture 51st State Perspectives Submission
OUTLINE

1. CONTEXT

2. TOOLS FOR REFORM

3. LESSONS & EXAMPLES
YOU ARE NOT ALONE –
STATES CONSIDERING REGULATORY REFORM

Elements of PBR

Live Discussion
LAYING THE FOUNDATION TO UPDATE UTILITY REGULATION

3 Keys to Success:

• Inclusively educate stakeholders

• Create a robust record for the commission and stakeholders to draw upon the future

• Catalogue the historical performance and existing incentives of utilities
LAYING THE FOUNDATION TO UPDATE
UTILITY REGULATION

3 Keys to Success:

- Inclusively educate stakeholders (check.)
LAYING THE FOUNDATION TO UPDATE UTILITY REGULATION

Create a robust record for the commission and stakeholders to draw upon the future

- Staff-led report (NYDPS, PA PUC, MI PUC)
- Formal proceeding diving deep on specific aspects of power sector transformation (Ohio PowerForward; Illinois NextGrid)
- Stakeholder-led draft of future vision (Rhode Island Power Sector Transformation; Minnesota e21 Phase II Report)
Laying the Foundation to Update Utility Regulation

Catalogue the historical performance and existing incentives of utilities

• Working now on a scorecard and performance metrics is a no-regrets option (e.g. Hawaii; Ontario)

• Many aspects of utility regulation impact ROE; compare existing incentives with base revenue model in equal terms (e.g. basis points)

<table>
<thead>
<tr>
<th>Program</th>
<th>Program Costs (2017$)</th>
<th>(2017$)</th>
<th>(% of cost)</th>
<th>(basis points)</th>
<th>(% of net income)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE - Electricity</td>
<td>88,511,000</td>
<td>4,425,550</td>
<td>5.00%</td>
<td>24</td>
<td>4.5%</td>
</tr>
<tr>
<td>EE - Gas</td>
<td>27,751,000</td>
<td>1,387,550</td>
<td>5.00%</td>
<td>8</td>
<td>1.4%</td>
</tr>
<tr>
<td>SRP</td>
<td>400,300</td>
<td>20,015</td>
<td>5.00%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Long-Term Contracts</td>
<td>72,275,022</td>
<td>1,987,563</td>
<td>2.75%</td>
<td>11</td>
<td>2.0%</td>
</tr>
<tr>
<td>DG Standard Contracts</td>
<td>7,063,354</td>
<td>194,242</td>
<td>2.75%</td>
<td>1</td>
<td>0.2%</td>
</tr>
<tr>
<td>RE Growth DG Facilities</td>
<td>1,821,337</td>
<td>31,873</td>
<td>1.75%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>197,822,013</strong></td>
<td><strong>8,046,794</strong></td>
<td><strong>4.07%</strong></td>
<td><strong>44</strong></td>
<td><strong>8.1%</strong></td>
</tr>
</tbody>
</table>

Figure 6: Comparison of Existing Incentive Mechanisms for 2017. Source: DPUC, 2017
EXAMPLE 1: ENERGY EFFICIENCY PERFORMANCE INCENTIVES
EXAMPLE 2: FORMULA RATES + PENALTY-ONLY PIM

Massachusetts & Illinois

- Formula rate simplifies ROE calculation and has automatic adjustments like decoupling, market prices, and limited capital trackers.
- Reliability & customer service
  - IL – up to 50 basis points at stake
  - MA – up to 2.5% of T&D revenue “at stake”. Yuge EE incentives.

MA – quadratic w. deadbands (Illustrative)
EXAMPLE 3: PROVIDING SMALL ROE BONUS FOR PERFORMANCE

NY’s ConEd Rate Settlement – Earnings adjustment mechanisms

- Up to 100 basis points for performance in key categories:
  1. Efficiency (MWh, MWh/Customer)
  2. Peak Demand (Load factor, MW)
     - Adjustments for electrification
  3. DER Utilization
- 3-year performance periods complement cost-of-service regulation
- Reassess after 3 year performance period
EXAMPLE 4: A CLEAR PATH TO MODIFYING INCENTIVES

Minnesota’s PBR docket

- Adopted a multi-year rate plan in 2016
- Stakeholders agree change is needed (e21)
- Coalescing around a hierarchy of actions
THANK YOU
HOW THE TOOLS ARE MADE...

RESOURCES

- Utility Earnings in a Service-Oriented World - Optimizing Incentives for Capital and Service-based Solutions, Danny Waggoner and Ryan Katofsky, AEE Institute (Jan. 2018)
- Other resources can be found at: http://americaspowerplan.com/power-transformation-solutions/ratemaking-and-utility-business-models/