Why Are We Talking About the "Utility of the Future?"

...and how does it differ from the utility of today?

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Introduction

- The Regulatory Assistance Project (RAP) is a global, non-profit team of energy experts, mostly veteran regulators, advising current regulators on the long-term economic and environmental sustainability of the power and natural gas sectors. ([www.raponline.org](http://www.raponline.org))
  - Non-advocacy; no interventions

- John Shenot is a Senior Associate at RAP. He previously served 3 years as policy advisor to the Public Service Commission of Wisconsin and 15 years with the Wisconsin Department of Natural Resources as an air pollution regulator and electric utility specialist.
The Utility of the Past: Vertically Integrated Utilities

- Utility owned & operated virtually all generation, transmission, and distribution infrastructure
- Monopoly franchise within a defined service territory – and an obligation to serve
- Government-owned, customer-owned, or economically regulated to protect the public interest
The Utility of Today: Smaller Role in a Restructured Industry

- Changes in public policy have driven changes in ownership and operation of generation & transmission:
  - Independent power producers can sell bulk power to utilities
  - Customers can generate electricity (e.g. solar) and sell excess power to their utility
  - Two-thirds of bulk power supply in US is dispatched by independent “regional transmission organizations”
More Change is Coming and the Trend Lines Are Colliding
Customers Have More Control Over their Consumption and Increasingly Realistic Alternatives to Utility Service
Distributed Generation (especially Solar) is Growing Rapidly
Aging Infrastructure

Huge Level of Investment Needed


$2.1 trillion in the U.S.
Utilities Used to Make Investments with an Assurance of Strong Growth in Electricity Use, but No Longer Can

U.S. electricity use and GDP percent growth (rolling average of 3-year periods)

History

Structural Change in Economy - Higher prices - Standards - Improved efficiency

Projections

<table>
<thead>
<tr>
<th>Period</th>
<th>Average Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950s</td>
<td>9.8</td>
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<td>1960s</td>
<td>7.3</td>
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<tr>
<td>1970s</td>
<td>4.7</td>
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<td>1980s</td>
<td>2.9</td>
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<tr>
<td>1990s</td>
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<td>2000-2015</td>
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<tr>
<td>2015-2040</td>
<td>0.9</td>
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</tbody>
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Source: EIA, Annual Energy Outlook 2016
What Will the Utility of the Future Look Like?

• What essential public services are needed?
• Which services can be provided by competitive markets, and which are best served by a monopoly franchise?
• How do we define the public interest?
• How can economic regulators protect the public interest?
Potential Utility Business Models

- Status Quo – but is it viable?
- Energy Service Provider – not focused on commodity sales
- Distribution System Operator (dispatcher of resources)
- Platform Service Provider (a la Google)

Rate design may need to change under any of these options
Examples of Where This Discussion Is Happening

- NY - Reforming the Energy Vision
- MN - e21 Initiative
- RI - Systems Integration Rhode Island
- CA – Distribution Resource Planning and Integrated Distributed Energy Resource dockets
About RAP

The Regulatory Assistance Project (RAP) is a global, non-profit team of experts that focuses on the long-term economic and environmental sustainability of the power sector. RAP has deep expertise in regulatory and market policies that:

- Promote economic efficiency
- Protect the environment
- Ensure system reliability
- Allocate system benefits fairly among all consumers

Learn more about RAP at www.raponline.org

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