Government Must Lead: How States Are Guiding Power Sector Modernization in the U.S.

National Governors Association Policy Academy on Power Sector Modernization

Presented by Richard Sedano

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Introducing RAP and Rich

• RAP is a non-profit organization providing technical and educational assistance to government officials on energy and environmental issues. RAP staff have extensive utility regulatory experience. RAP technical assistance to states is supported by US DOE, US EPA and foundations.
  – Richard Sedano directs RAP’s US Program. He was commissioner of the Vermont Department of Public Service from 1991-2001 and is an engineer.
We will cover:

• Overview of state initiatives and motivations
  – REV, doockets, e21

• What are some new trends in PUCs that governors should be aware of ---
  – Utility business model
  – Grid modernization
  – DER deployment

• What can governors do to help advance the modernization of the grid in their states, given that this is mainly a regulatory issue.
Reform Motivations

no implied priority

• Customer Resources
  – Community energy
  – Energy Security

• Deploy and Use Technology and Capital
  – Make regulation and utilities work better

• Environmental Improvement

• Risk Management
  – Avoid higher costs

• Project Forward Thinking
State Reforms of Note

- New York
- California
- Hawaii
- Minnesota

- Rhode Island
- Maryland
- District of Columbia
- Illinois
- Michigan
New York

• Reforming the Energy Vision
  – Comprehensive
  – Puts the customer at the center
NY REV

• Customer at the center
• Fearless raising of full set of challenges
  – Reality indicates some easier to tackle
  – Innovative use of process
• Culture change on role of utility
• Culture change on role of regulator
  – Outputs, performance, markets, regulation
NY PSC has set out six policy objectives for the future of NY’s electricity system

- Enhanced customer knowledge and tools to support bill management
- Market animation and leverage of customer contributions
- System wide efficiency
- Fuel and resource diversity
- System reliability and resiliency
- Reduction of carbon emissions

*All REV orders are meant to support these*
California

• Inexorable policy progress
  – Centered around climate and customers
• A series of dockets, may appear chaotic
  – One by one creating a picture like a jig saw puzzle
  – The picture is about climate
    • About value of DER
    • New regulated activities
    • Redefined regulated activities
Hawaii

• A post card from the future
  – Economics are driving PV and Storage, wind and transmission faster than anywhere else
  – But everywhere else is on it path
  – Elsewhere: Time to observe, learn, improve

• Strong admonishments by PUC to utility to change its behavior (PUC’s “inclinations”)
  – Calls out need to change utility incentives
PV Customers vs. Non-PV Customers Average Daily Load Profile Comparison
May 2014 to June 2015

Data from homes in Diamond Head, Kahala, Pearl City, and Moanalua

531 PV Homes
2,727 Non-PV Homes

PV Energy from Home
20.6 kWh

<table>
<thead>
<tr>
<th>Direction of Energy</th>
<th>PV</th>
<th>Non-PV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly Energy into home</td>
<td>626</td>
<td>534</td>
</tr>
<tr>
<td>Monthly Energy from home</td>
<td>-498</td>
<td>0</td>
</tr>
<tr>
<td>Net Energy</td>
<td>127</td>
<td>534 kWh/month</td>
</tr>
</tbody>
</table>

Energy from PV Home
Net Load Curve of PV Home
Load Curve of Non-PV Home
Dramatic Impact on Utility

Tracking Change – 46kV Level

Average Transformer Load (MW) - December

Backfeed occurring 10am-2pm

8/8/2013 Backfeed Condition

Load [MW]

Time

2010
2011
2012
2013

Hawaiian Electric
Maui Electric
Hawai‘i Electric Light
Minnesota

• e21 process – an electric system for the 21st century
  – Stakeholders raise alarm
  – Thoughtful process to confront real issues
  – Distill recommendations for the PUC
    • See Great Plains Institute website for reports

• PUC indicating plans for significant activity in 2017-18
Several Other States

- Most places can manage much slower rate
  - Choose your adventure
    - Focus on distribution planning/valuation (RI, CA)
    - Introduce performance regulation
    - Introduce regulated rate changes
      - Value-based changes improve outcomes (MA)
      - Defense only protecting utility indicates lack of vision
    - Improve DER access, customer acquisition
    - Reform utility resource procurement (CA)
    - Friction in the face of good intentions (IL)
    - Respond to crisis (NV)
Trends

• Grid Modernization — both sides of the meter
• Distribution System Planning
  – To better guide DER deployment
• Reforming the Utility Business Model
• Reforming customer rates/prices
  – Accommodate EVs
  – Reconsider compensation for customer generation (net metering)
What Can Governors Do?

• **Stand for progress**
  – And securing benefits from new technology for **everyone**

• **Get key people talking** (avoid rope-a-dope)

• **Support** the agencies
  – Do they have the resources and leadership they need to succeed?
  – Are they leveraging the national labs, NGA, RAP and other “free” resources?
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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The Regulatory Assistance Project (RAP)

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