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Bringing Resource Planning to Utility Side Efficiency

Utility Infrastructure Efficiency Stakeholder Meeting #2

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Bringing Resource Planning to Utility Side Efficiency...

• ... Means considering the motivation provided by regulation
  • Does motivation align with policy intent?
Infrastructure Investment – Why?

• Replace in kind
• Provision for load growth
• Build out for new service connections
• Deploy new technology
  • Which may be more efficient
• Promote, adapt to renewable integration
• Critical infrastructure
Measuring System Efficiency

- Cost – delivery service within a budget
- Sales – delivery service consuming less energy (at peak?)
- Benchmarking – identify key performance indices
- Avoid confounding metrics
  - System Load Factor
California

- Starting place: long history of decoupling
- Distribution Resource Plan (DRP)
  - **Transparency** into the black box
  - Motivated by *renewable integration*
- Utility Procurement Reform (IDER)
- IRP Reform – all resources *including wires*
  - Can take DSP info and motivate efficiency-driven investment – we’ll see
California: Focusing on Renewable Energy

• Supply side efficiency not a featured purpose
• All steps will tend to promote more supply side efficiency
  • More visibility on all steps of distribution and resource planning and resource procurement
  • Decoupling likely supports attention to supply side efficiency already
New York: Reforming the Energy Vision

• Distribution System Implementation Plan (DSIP)
• Part of a large package
  • Including rebooted cost-effectiveness guidelines
    • Takes a societal perspective
  • Applies to all utility investment (not just EE)
• Including Performance Regulation
  • Including “System Efficiency” metrics
New York focusing on improving market performance

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Sidebar on Performance Regulation

- **System Efficiency Metric** will tend to promote system wide supply side efficiency
  - Peak load reduction
  - Sub-station loading reduction
  - Energy intensity
- Among anticipated utility efforts:
  - volt-var optimization
- NY Energy Efficiency metric focuses on customers
Rhode Island

- Power Sector Transformation Initiative
  - Distribution planning track
  - Infrastructure Safety and Reliability Plan (ISR)
    - An annual process to set capital budget plan and revenue recovery for it
    - Yes, this is selective updating
    - Provides a forum for innovation
  - Decoupling in place
Massachusetts

- Also authorizes a capital updating process between rate cases
- Decoupling in place
Ohio Energy Efficiency Resource Standard

• Intent to motivate supply side energy efficiency with a comprehensive EERS
  • Utility system efficiency programs to count
  • Has not made an apparent impact on supply side efficiency
Outside US

• Denmark
  • Motivate distribution system operator efficiency to achieve performance of top 10% within 4 years
  • Able to benchmark distribution companies
Denmark has used PBR to improve system reliability by imposing metrics on the Danish distribution system operators (DSOs). The DSOs are subject to an "outage" or quality of supply benchmarking model, which is applied annually. The goal of the quality of supply benchmarking model is to disincentivize utility outages and to improve network reliability, as measured by the System Average Interruption Frequency Index (SAIFI) and the System Average Interruption Duration Index (SAIDI). SAIFI and SAIDI are internationally recognized metrics commonly defined (even as precise definitions vary) and easily measured.

Illustrative Example of Danish Quality of Supply Benchmark

The example includes five DSOs: A, B, C, D and E. Company A has the lowest weighted SAIFI while Company B has the second lowest and so forth. Together, Company A, Company B, Company C and Company D have precisely 80% of the aggregate transmission network.

Source: DERA (2009)

Company D has a weighted SAIFI of 0.09. Thus, companies which have a weighted SAIFI higher than 0.09 are penalised with an up to 1% reduction in their allowed operational costs. In this example, Company E is penalised.
All Resource Procurement

- California and New York are directing their utilities to consider all resources without bias for the needs of the system
- Rhode Island PST process is heading that way, no decisions yet
- Most other places retain historic silos
Experimentation

- Use A Pilot or Demonstration
  - Drive efficiency in one or more ways
    - See how they work
    - Will regulatory climate tolerate experiments that might fail?
Issues

• Apply to all utilities?
  • Smaller utilities may go about system efficiency in different ways
  • Performance standards: benchmark or utility-specific
• How do “alternatives” apply to supply-side efficiency?
About RAP

The Regulatory Assistance Project (RAP)® is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

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