Regional System Planning

OMS Cost Allocation and Regional Planning

February 26, 2009

Richard Sedano

The Regulatory Assistance Project

Vermont ♦ Maine ♦ New Mexico ♦ California

About the Regulatory Assistance Project

RAP is a non-profit organization providing technical and educational assistance to government officials on energy and environmental issues. RAP Principals all have extensive utility regulatory experience.

> Richard Sedano was commissioner of the Vermont Department of Public Service from 1991-2001 and is an engineer.

Funded by US Department Of Energy & Environmental Protection Agency, foundations, and international agencies. We have worked in nearly every state and 16 nations.

Also provides educational assistance to stakeholders, utilities, advocates and others.

Regional System Planning

What is Regional System Planning?

- “Resource Planning,”
- “Integrated-Resource Planning,”
- “Transmission Planning”

It is all these

Motivation for regional system planning

A tool for strategy to support, provide perspective for independent actors

- Not to justify pre-ordained choices
- Envision distinct scenarios, perhaps driven by distinct policies
- Guide investment choices with perspective
- Objectivity, reality, comprehensiveness, competence

How many times have you heard:

"This (power generator, transmission line) was needed for load growth, and

Demand resources in sufficient quantity and specification to avoid the load growth could have been an alternative, but

At the time of the generation/transmission proposal, there was no longer sufficient time to deploy the demand resources that would be needed to equally solve the problem"

Planning is improving

ISO-NE

- Explicitly engages stakeholders to name and define specific scenarios
- Recognizing new contingencies from relying on natural gas for nearly 40% of annual energy
- Explicitly considering environmental limits as system constraints
- Renames its process “regional system plan”

ISO-NE Scenarios (August 2007)

- “Queue Mix”
- “Demand Side Resources”
- “New Nuclear Plants”
- “New IGCC”
- “New Natural Gas CC”
- “New Renewable plants”
- “Increased Imports of Low Emission Resources”

ISO-NE is putting out more layered objective information and letting market participants and government react to it

Echoing NEDRI (2003) Recommendations

New England Demand Response Initiative

31 recommendations

PD3: Conduct a continuing, regional power system planning process, involving the ISO, appropriate state agencies, and other stakeholders to identify system needs and consider alternative strategies to meet them

Echoing NEDRI (2003) Recommendations

New England Demand Response Initiative

31 recommendations

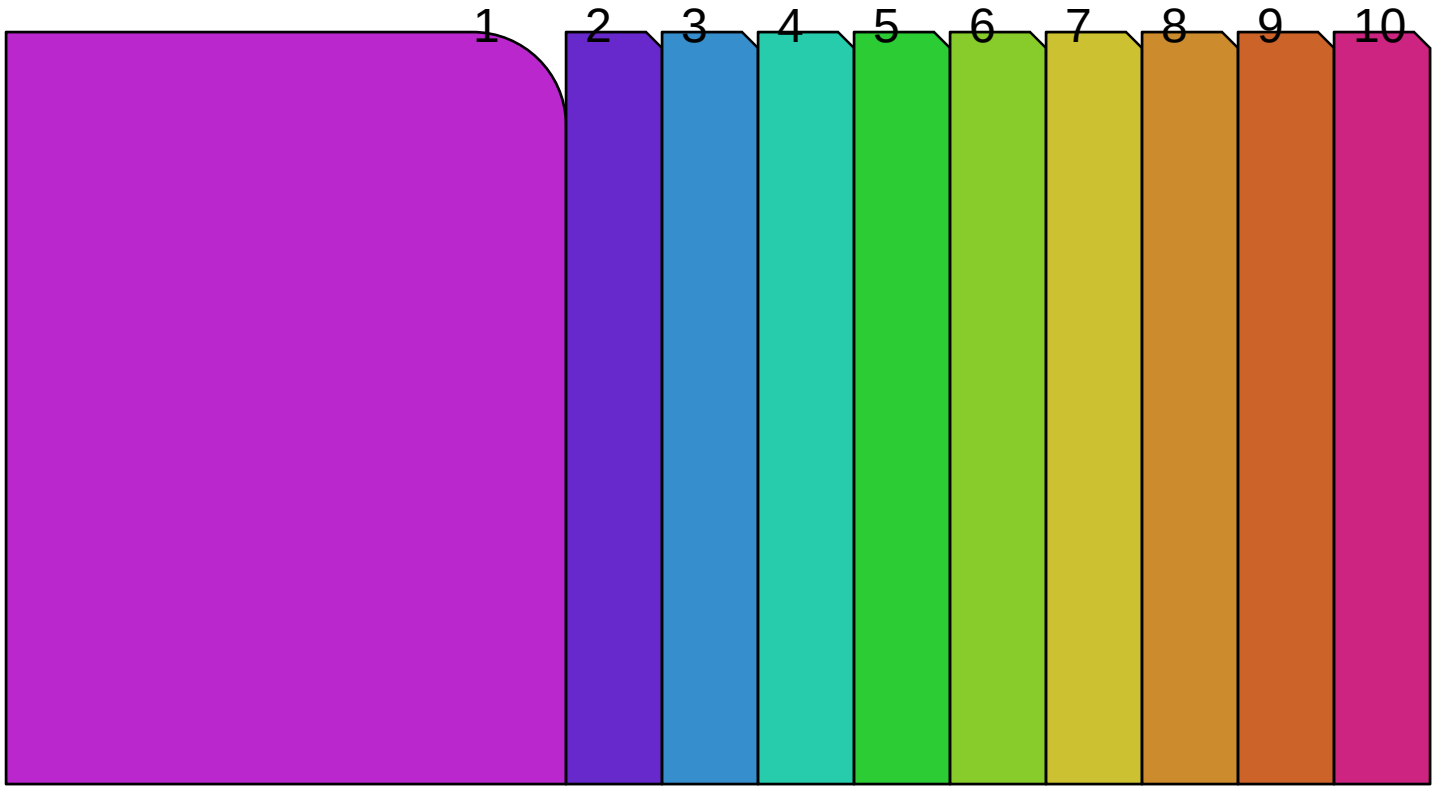
PD4: The regional power system planning process should evaluate on an even-handed basis all feasible, comparable solutions to emerging problems including generation, transmission and demand-response resources.

Contrast with PJM

- Regional Transmission Expansion Plan
- Roll up information from distribution utilities
  - No effort at optimization
  - Risky for RTO to impose policy judgment
- Scenarios do not consider load as dynamic
  - I hear from PJM they are changing/improving

Imagine a layer of system snapshots showing 10 years

System OK … hint of a problem … turning into a serious issue



Imagine further:

That as the planner can foresee that reliability standards or other criteria are threatened or violated,

The planner today can posit solutions, any of which would mitigate the problem

- Supply – transmission oriented
- Demand resource oriented

Stakeholders can act on this information

Possible solutions

A generator some distance from the load center plus added transmission if needed

Some lesser amount of MW of demand resources in the load center

More demand resources would be needed if the target area is more diffuse

Where regional planning tends to fall short

- Load is static
- Resource choices are limited
  - Emphasis on building large assets (expansion)
- Environment is effectively ignored
- Projections don’t hang together
  - Not enough of a “what if”
  - Trans. planning isolated from other resources
- Stakeholders insufficiently involved
  - Policy overlay lacking or incomplete

Regional System Planning

Who should be responsible?

Multiple Utilities in RTO

- RTO plans today are generally roll ups of utility plans
- RTO could be tasked with optimizing resource additions regionally
  - Who decides priorities?
  - Cost allocation may be quick sand

Where Does Policy Perspective Come From?

- RTO/utility often reluctant to apply policy judgment
- Thinking that government would speak if it has something to say
- In RTO concept development, many thought the Regional State Committee (OMS) would play this role

Wind integration: Challenge for the next decade

- Eastern Wind Integration Transmission Study
  - Effort at interconnection-wide assessment since wind integration has implications that cross all RTO and control area boundaries
    - Limiting to US may not be enough
  - Heavy dose of policy driving EWITS
  - Reminder: NERC plays a quality control role, but they are not the system planners

Early Concept of ISO/RTO Frustrated

- ISO/RTO would be extension of government
  - Voluntary nature of RTO taking control of private transmission rendered this concept purely theoretical
- Instead ISO/RTO is a stakeholder driven quasi-legislative process
  - Transmission owners must remain content
  - ISO/RTO can step out to FERC at some risk

How to bring public interest awareness to ISO/RTO

- Regional State Committee or Multi-State Entity was concept developed in parallel by FERC and NGA
- Differences on capabilities of RSC/MSE
  - Some thought it would be a very capable organization with analytic and modeling capability in addition to legal overseer
  - Funding has limited RSC horizon

Other approaches

- Advisory committee to RTO board
  - ISO-NE had this and disbanded in favor of RSC
- Environmental advisory committee
  - NY-ISO EAC meets with Bd of Directors
  - ISO-NE EAC meets with staff
- Old fashioned way states get utility attention: make noise, use leverage with FERC

FERC has a role in all this

- RTO planning is under FERC jurisdiction
- FERC can direct RTO to plan in particular ways
  - FERC has generally expressed a laissez faire attitude, though it has pushed RTOs toward demand response and, more recently, all demand resources
- FERC would probably need a specific proposal to ratify or adjudicate

What do you need for regional system planning?

- Tools (models, data)
- Understanding of customer load and trends
  - Base case load forecast is just a start
- Complete array of resource in place and future options and constraints
- Absolute priorities and Clear Standing
  - Reliability standards, market rules
- Planners with objectivity and public advice
  - Advice guides priorities beyond absolutes
- Horizon

Future Challenges

- Wind integration an emergent priority
  - Could dominate if load growth diminishes
  - Then there are plug in hybrids…

Thanks for your attention

rapsedano@aol.com

http://www.raponline.org