

Regional System Planning

OMS Cost Allocation and Regional Planning

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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.



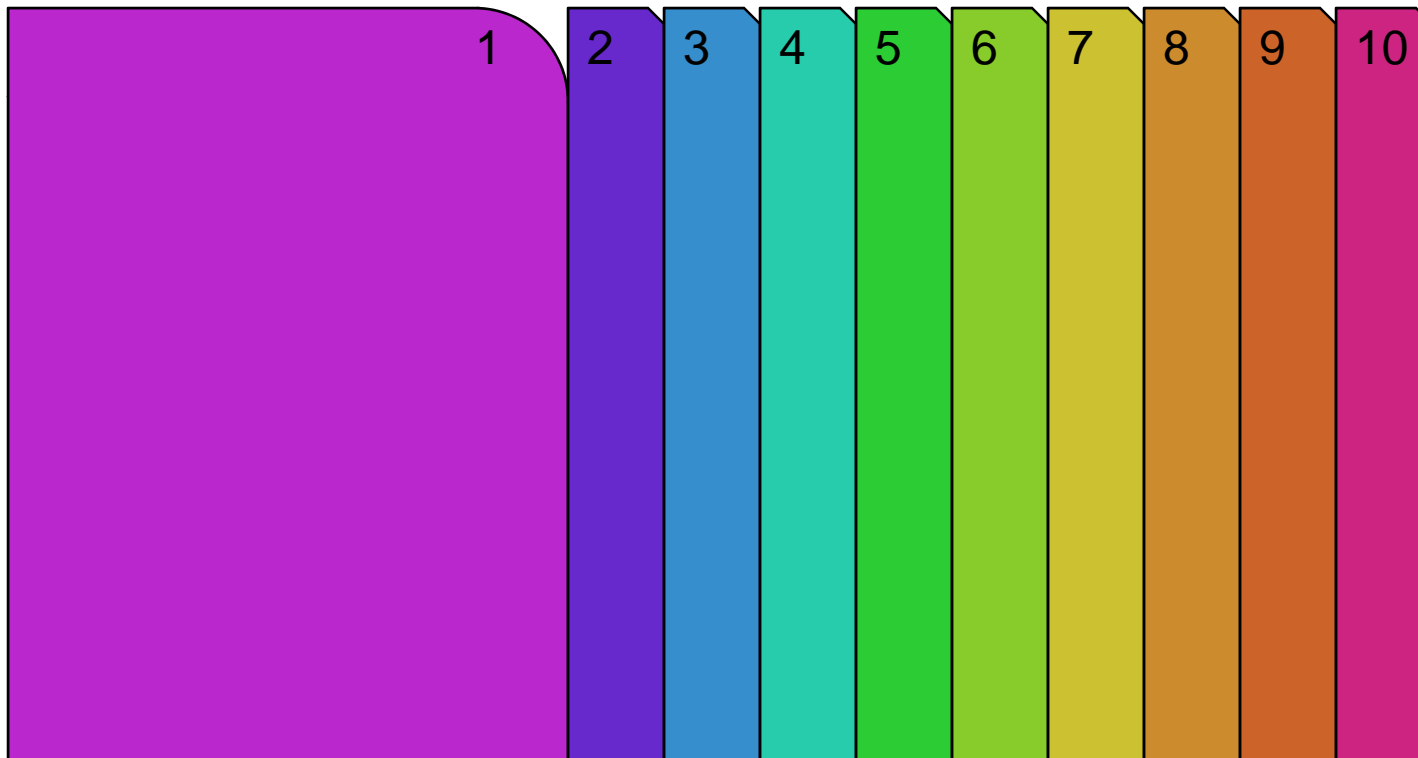
Contrast with PJM

- 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



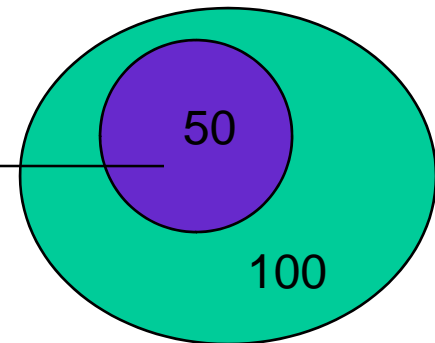


Imagine further:

- 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

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