Successful Market Design: What Should a State Want?

(A report from the feisty West)

Harvard Energy Policy Group
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RTO West – Pacific Northwest and Northern Rockies: the present.
"I have yet to see any problem, however complicated, which, when looked at in the right way, did not become still more complicated."

- Poul Anderson
  Author of Hokas Pokas,
  and other works of science fiction
Overview

- Basics and (western) perspective
- RTO West
- Regional Representatives Group
- Multi-state Entity Development
- MSE goals
Basics and (western) perspective
Why are we discussing this?

- Increasing independent generators
  - No obligation to serve
  - May or may not adequately address system needs such as reactive power
- Increasing number and volume of transactions, even on vertically integrated system
- Fragmentation, uncertainty, competition, decrease cooperation between companies
- Apparent mismatch between generation and transmission system
  - Cap Ex for generation outstrips transmission
  - Possible underinvestment in transmission alternatives as well
  - Need would be driven future supply scenario – gas, central station, renewable, efficiency and demand response
- Because our families and friends find it such fascinating dinner conversation
Possible regional issues

- Transmission
  - Planning
  - Siting
  - Operation
  - Costing
  - Pricing
- Resource adequacy
- Reliability oversight
- Market monitoring
- Congestion monitoring
- Load management/Demand response coordination
- Interconnection
- Regional environmental issues (air, water)
- Tracking emission or energy credits, implementing “green” programs
- *Coordination with natural gas system*
“No control area is an island, entire of itself; every LSE is a piece of the continent, a part of the grid.”

Paraphrasing John Donne, 1623
NARUC’s National Electricity Policy (November 2001)

- Diverse, plentiful, and environmentally responsible energy
- Demand management
- RTOs, reliability, planning, and delivery infrastructure
  - Sufficient authority to conduct long-term planning, working with the states.
  - Reliability
- Energy markets
  - Access to information
  - Retail and wholesale
- Environmental protection
- Consumer protection
“The east is different from you and me.”
Paraphrasing F Scott Fitzgerald (1926)

PJM Interconnection, RTO for mid-Atlantic states, serves twice as many people in an area one-sixth the size. Here it is compared in scale to the proposed RTO-West territory.
“War on the west?” (Why are we so grumpy?)

- Real operational differences.
- Different degree of system integration (PJM evolved over many years)
- Much less movement to unbundling and retail choice
- Economic self-interest?
- Historic western concerns about lack of control and accountability for decisions made in the East?
  - Natural resources, land, and water
    - “Water runs uphill toward money”
  - “Sagebrush rebellion”
  - Bioregionalism and “Ecotopia”
  - Kemmis, *This Sovereign Land*. A liberal/communitarian environmentalist, sympathetic to the “Sagebrush Rebels,” on civic participation grounds, proposes regionally-driven approaches to western public lands issues.
- Civic participation and democratic accountability?
Cooperative federalism

“*All involved governments are regarded as mutually complimentary parts of a single governmental mechanism all of whose powers are intended to realize the current purposes of government according to their applicability to the problem at hand.*” E.S. Corwin (1950)

- No level seeks an advantage over the other, both are united by a common purpose.
- Sharing of power, policy development and implementation between levels of government.
- Characterized by shared costs, federal guidelines, shared administration. (Robert Lineberry, 1989)
- Strengths – flexibility, civic participation, diversity.
- Weaknesses – perceived delay, complexity, inconsistent results, gaps in authority. *It’s messy!*
Reasons for cooperative federalism

- Sharing resources.
- Taking advantage of particular competencies in each partner.
- Tailoring policy to specific circumstances.
- Diversity benefit of experimentation ("States as laboratories").
- Competition among states - promote economic development by creating certain policy mixes. (At least one CLEC has said in deciding whether to enter a state it considers whether that state’s commission is “fully empowered” to enforce wholesale-level terms and conditions.)
- Reducing risk of error, especially in the early stages of policy implementation.
- Civic participation, with decision making as close to citizens (and customers) as possible.
Is there another way?

- Consider bottoms-up approaches, driven from within the region.
  - Basis in RTO work (FERC approved RTO West) and White Paper
  - Regional reliability councils, CREPC.
  - *Wholesale* market focus.
- Start with regional structure.
  - Who participates?
  - What legal form?
  - Decision-making rule?
- Identify regional issues.
- Identify regional strategies.
- Identify where states have sufficient authority, and where Congressional or FERC action is required.
  - State authority to approve utility actions?
  - State authority to participate in regional bodies, express or implied?
- Ways to incorporate non-jurisdictional entities?
- FERC pushes, convenes, supports, and (if needed) approves outcomes.
RTO West

A case study in progress
Regional Transmission Organizations

Source: FERC Staff (using POWERmap)
RTO West and predecessors

- RTO West last of several efforts (8 yrs+)
- Restarted RRG (regional representatives group) in July 2003 after year lapse (SMD)
- Meetings every 1-2 weeks since in Portland
- Sixty plus stakeholders – filing utilities, federal entities, public power, coops, IPPs, states and Canadian provinces
- Significant state involvement by WA, OR, UT, WY, MT, ID, and NV.
RTO West order, par. 273

“Several intervenors comment that attention must be given to how RTO West’s proposal fits [within SMD] . . . We look to the RTO West filing as both informing and being informed by the proposed [SMD] rule. To this end, we order further technical conferences on certain aspects of the filing in order to fully explore a regional approach . . . “
FERC RTO West order

- Move away from strict East/West model, toward RTO-specific approaches.
- Commits to follow up through workshops.
- Defers to RTO proposal on many issues.
  - Supports existing transmission rights.
  - 8 yr. company rates and license plate approach.
  - Cost recovery compromise.
- Some remaining issues:
  - Positive benefit/cost
  - Rate pancaking based on voltage level.
  - One-way jurisdictional ratchet?
  - Others?
RTO West “constructive engagement”

- Boise RTOW workshop May 29, 2003
  - Initiated by state PUCs
  - Focused on basic RTO issues.

- June 10 letter to RTO from state staff and commissioners
  - “The opportunity to improve transmission management, planning, and operations in a way that meets the needs of the region is important.”
  - Will follow up on:
    - Benefit/cost and risk management
    - Timing of events, including transmission operating agreement (TOA), state filings.
    - Contingencies in TOA, including withdrawal, changes in operation, changes in pricing rules.

- June 20 RTOW reply
  - Want to work on issues identified
  - Want to re-engage with other important parties
  - June 25 meeting with Regional Representative Group
Regional Representatives Group
Developed three options

Option 1 – Coordination Based
- Incremental build on existing institutions

Option 2 – Independent Administrator
- Independent board oversight
- Agent of transmission owners

Option 3 - RTO West Stage 2 Proposal Reloaded

Commonalities
- Regional transmission planning
- Flow-based calculation of available capacity
- Market monitoring
- Preservation of existing contract rights
- Enhanced reliability through security coordination
- Voluntary increment/decrement market to clear congestion
RTO West RRG: “Hybrid” option

November 17, 2003 draft

Stages: beginning state → interim state → advanced target state

- Beginning state must be improvement over existing situation and respond to problems identified by RRG

- Each stage should be workable within itself. Stages should not create new problems while trying to solve old ones.

- Each stage should allow further evolution of solutions to remaining problems as well as changes in circumstances.
RRG - “Hybrid” Option (cont.)

- EXPECTS that all existing contracts, settlements and other legal obligations will be honored; cost shifts will be minimized; and transmission owners will still be in charge of their own rates, subject to applicable regulatory authority.

- KEY FEATURES
  - Regional accountability and Governance
  - Independence (from competitive interests, not the region or regulators)
  - Voluntary consolidation of CA’s
RRG - “Hybrid” Option (cont.)

- Independent Entity (IE) with board structure similar to RTO West Stage 2 proposal but with strengthened regional accountability
  - IE must consult with states, provinces and tribes.
  - IE must consult with regional stakeholders.
  - Five “special” issues that must be voted on by IE Board and then by Trustee Selection Committee (5 classes with 6 representatives per class) before implemented by IE.
  - If TSC has negative vote, IE Board can override by 7 out of 9 vote.
  - TSC negative vote: (1) at least 16 of 30 vote to reject AND one or more classes unanimously reject OR (2) at least 2/3 (20) of TSC members vote to reject IE Board decision
RRG - “Hybrid” option (cont.)

- IE responsible for operating any consolidated control areas
- “Special” issues that require special votes:
  - Issue 1 - Chronic Commercial Congestion Backstop Authorization
  - Issue 2 – Departure from using Company Rates to recover fixed costs
  - Issue 3 – Authorization for IE to convert transmission rights of the TO’s to financial rights & issue new financial rights
  - Issue 4 – Authorization for Market Monitor to impose penalties or intervene in markets
  - Issue 5 – whether IE will have authority to adopt and enforce loss methodology which overrides individual company loss methodology
- **Stages:** beginning state ➔ interim state ➔ advanced target state
### Development Staging Table

<table>
<thead>
<tr>
<th>Functions and Features</th>
<th>Independence Needed</th>
<th>Single Entity Important</th>
<th>Stakeholder Identified Problems, Needs and Reasons to Improve</th>
<th>Beginning State</th>
<th>Interim State</th>
<th>Advanced Target State</th>
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</thead>
<tbody>
<tr>
<td><strong>1. Transmission Service</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1.1 Reliability Coordination</td>
<td>X</td>
<td>X</td>
<td>Limited operational data available to reliability coordinator and CAOs. Since there is no day-ahead look, congestion becomes apparent and is managed in real-time. Difficult to coordinate operations between CAOs. Real-time congestion is managed only by ineffective curtailments, and parties are unsure of reasons for and fairness of curtailments.</td>
<td>PNSC continues to handle with revisions to address scope and effectiveness.</td>
<td>➔</td>
<td>Reliability coordination integrated with operations.</td>
</tr>
<tr>
<td>1.2 Physical Interconnection</td>
<td>X</td>
<td></td>
<td>Long queues for interconnection requests and fairness concerns.</td>
<td>TO processes requests with IE providing coordination, oversight and IE ADR for disputes.</td>
<td>IE administered process with TOs working out physical detail and IE ADR for disputes.</td>
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**Acronyms Used:**
- IE = Independent Entity
- TOs = Transmission Owners
- DA = Day-Ahead
- ADR = Alternate Dispute Resolution
- CAO = Control Area Operator
- HA = Hour-Ahead
- A/S = Ancillary Services
- RT = Real-Time
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<td>1.6 DA Scheduling, Congestion Management and Redispach <em>(Balanced Submissions)</em></td>
<td>X</td>
<td>X</td>
<td>The lack of a system wide view of reliability implications of combined schedules requires greater capacity margins and impedes best use of the transmission system. TOs manage congestion internally which produces inadequate price signals and a lack of transparency, so parties cannot make best decisions about deployment of resources.</td>
<td>Step 1 TO reviews pre-existing right schedules, IE takes added schedules, accepts inc/dec bids, tests feasibility and accepts added schedules which can be enabled by redispach (enabling trades between willing buyers and sellers). Step 2 IE begins to check in pre-existing schedule rights in parallel with TOs. Step 3 Inventory of rights by IE and TOs completed Step 4 IE takes over the review of pre-existing rights in scheduling process. <em>(Completed no later than 2 years after start of operation.)</em></td>
<td>See Section 11 on Governance for discussion of transition to financial rights.</td>
<td>Manage congestion using market mechanisms. <em>(Congestion charges with financial right hedges.)</em></td>
</tr>
<tr>
<td>Function(s) and Features</td>
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<tr>
<td>1.3 Transmission Service Requests (Single Access Platform or One-Stop Shopping)</td>
<td>X</td>
<td>X</td>
<td>Difficult to arrange multiple reservations for transmission services, and no integration of multiple service requests. Long request queues with separate processing by each TO create transactional friction.</td>
<td>Requests go to IE, which integrates requests and facilitates processing by TOs.</td>
<td>➔</td>
<td>IE provides service and access to TO facilities.</td>
</tr>
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<td>1.4 Tariff Administration</td>
<td></td>
<td></td>
<td>Differences in practice and application between providers.</td>
<td>Individual TO Tariffs</td>
<td>➔</td>
<td>Single IE Tariff.</td>
</tr>
<tr>
<td>1.5 Nature of Transmission Rights and Management of TTC/ATC</td>
<td>X</td>
<td></td>
<td>The mismatch between contract paths and actual flows creates reliability problems and results in underutilized capacity. (Path MW capacity allocated among owners.)</td>
<td>Physical Injection/Withdrawal Rights (not flowgates) from single system evaluation. (IE arranges service among TOs and allocates $'s to TOs.)</td>
<td>Transition to financial rights needs effective markets, and is subject to the TSC “Special Issues” vote. (See discussion in Section 11 on Governance.)</td>
<td>Financial rights with locational prices</td>
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RRG “Hybrid” Option (cont.)

Other Functions & Features
  2. Planning and Expansion
  4. Ancillary Services – Capacity related
  5. Market Monitoring
  6. Cost Recovery
  7. Regional ADR
  8. Regional Data Repository
  9. Coordination
  10. Governance of IE
RRG “Hybrid” option

- Next meeting – December 10 & 11 in Portland
WGA/WEIB/CREPC: WI Multi-State Entity Development Project

- WGA meeting – December 2002 – direction from governors to develop project.
- Funding - $275k (DOE), state match of $86k+.
- 18 months.
WGA/WIEB/CREPC: WI Multi-State Entity Development Project

- Purpose is to evaluate potential contribution of an MSE to meeting the needs of the Western Interconnection (WI).

- Can existing interstate institutional infrastructure be enhanced to serve appropriate MSE objectives?
  - What are the substantive issues that need to be addressed in the WI?
  - What are the best vehicles to address these issues?

- Also provide for review and input by regional stakeholders, and as appropriate, state legislatures; prepare and present a report and recommendations to Western governors on formation of a WI MSE; and address issues raised by those governmental entities.
Proposed Sequence of Analysis of a Western Regional Decision-Making Mechanism (from April ’03 WGA funding proposal)

Should a Western Interconnection decision-making mechanism be considered? How could it add value to the extensive on-going collaboration in the WI?

If a decision-making mechanism is to be created, should it address:
1. Only issues under state jurisdiction
2. Only issues under FERC jurisdiction?
3. Issues under both FERC and state jurisdiction?
4. Some combination of the above?
What substantive topics would be the highest priority?

1. Grid reliability
2. FERC market rules
3. Implementation of the WGA transmission permitting protocol
4. Market monitoring
5. Resource assessment
6. Transmission expansion
7. Rate design and revenue requirements
8. Other (seams between RTOs and between RTO and non-RTO participants, demand response, interconnection policies, efficient use of the grid, energy efficiency, related environmental policies)

Will the priority of topics and the value of a regional decision-making mechanism change depending on the evolution of the industry (e.g., if RTOs are developed, if SMD is implemented)?
What should be the decision rules of the body? (e.g., unanimity, 2/3rds, majority of states,? A majority of the load,? Some combination of states and load)?

How should the decision-making body be financed and staffed?

What legal structure should be used to establish the body?
1. Interstate compact
2. MOU
3. Supplementary agreement to an existing compact (e.g., WINC)
4. Federal law
5. Other
Is it feasible to implement a decision-making mechanism or body whose responsibilities evolve over time?

Who should appoint members to the decision-making body?
1. Governors
2. PUCs
3. Both
4. Legislative confirmation?

What would be the legal effect of the body’s decisions? (e.g., information to states/ FERC, recommendations, recommendations that require deference)?
Bob Anderson, RAP, 10-29, Electric Decision Making in Other Regions

- Organize around regional functions
  - System operations, transmission planning, market operations
- Achieve outcomes not optimally achieved by state-only or FERC-only actions
- Clearly-defined functions, reflecting regional system
  - No function isolated from others
- Clear decision-making standard
- Planning criteria consider societal values as well as direct costs and benefits
- Allocate costs in a neutral way, aligning incentives for producers, transmitters, distributors, and customers.
“I got my mind right boss”

The future?
Pacific Northwest and Northern Rockies

- Other activities
  - Sub-regional transmission planning
  - SSG-WI
Western Regional Collaboration

Committee on Regional Electric Power Cooperation (CREPC) established in 1983

- Joint committee of the WIEB and WCPSC
- Includes all state/provincial agencies in WI with electric power responsibilities
- Effective forum for interstate discussions and regional interactions with industry and FERC
- Action by unanimous vote
  - Supported formation of the Western Systems Power Pool
  - Supported creation of regional transmission groups (WRTA, SWRTA, NRTA)
  - Supported creation of WECC