Standard Market Design: Maybe?  
Good Market Design: Yes!

by

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http://www.state.vt.us/psb/site/mhd.stm

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HARVARD ELECTRICITY POLICY GROUP
Standard Market Design Needs
PUC Support

- **SMD #1:** INTRODUCE A DEMAND CURVE
  > Only PUCs can set retail rates

- **SMD #2:** REAL LOCATIONAL MARGINAL PRICING
  > Requires FERC/PUC collaboration

- **SMD #3:** INDEPENDENT TRANSMISSION CONTROL
  > Asset transfers require PUC approvals

- **SMD #4:** EFFICIENT INTRODUCTION OF RESOURCES
  > Siting requires PUC approval or support
Role of RTO/ISO

- RTO/ISO performs two functions:
  - Operational management of transmission grid and supply dispatch
  - Management of wholesale market, as substitute for ‘just and reasonable’ rates

- This is a regulatory role, thus, fiduciary duty MUST be to the public good
Fiduciary Duty of an RTO

- General Public Good (as substitute for ‘just and reasonable’ rates) particularly
  1. Responsibility to the long-term good not just short-term
  2. System reliability and operational efficiency
  3. Efficiently functioning markets (balance bargaining power of buyers and sellers, not just low transaction costs)
Vital Premise for SMD

- The Governance Structure of an RTO or ISO must not be determined by market participants
  - Market participants provide advisory input only
  - Funding not beholden to participants
  - Participants must not have any decisional authority over the market rules
  - Market monitoring must be arm’s length
Promote Infrastructure Investment

- What do investors want?
  - Theory #1 -
    - High probability of moderate returns
    - Barriers to competition
    - Strict enforcement of uniform system of accounts
  - Theory #2
    - Moderate probability of high returns for demonstrated above-average performance
    - Easy entry
    - Whatever accounting safeguards the SEC and FERC tolerate in practice

- Which cluster is more likely to encourage capital investment in vital infrastructure?
Core Issue

- Is transmission an extrinsic “highway” or an alternative to generation and load management resource options?

- “Highway” Treatment
  - May result in future stranded costs
  - Will distort future resource allocation
  - Will hamper development of alternative energy resources
  - Will distort accurate price signals
Transmission Pricing: Cowart’s Efficient Reliability Test

- Cost Causation is the starting principle
  - Otherwise LMP signal is thwarted, siting will be distorted, and resource choice will be unbalanced
- Socialization (uplift) should be disfavored
- Before socializing through tariff uplift
  - Market must be open to demand side as well as supply side resources
  - Proposed investment or standard must be lowest cost (including environmental costs) reasonably available means to correct remaining market failures
  - Benefits from the investment or standard will be widespread and thus appropriate for support through broad-based mandatory payments
Transmission Pricing: Investor Incentives

- Provide long-term incentives for ALL solutions to congestion problems
  - Provide revenue stream for problem-solvers
    - Transmission upgrades eligible for tradable property rights (financial congestion rights) so that investors can capture the value of transmission investments
    - Generation incentive captured in LMP
    - Load response incentive must be comparable
  - Build in incentives for performance
    - Standardization of rates
    - Elimination of congestion
New Resource Planning

- What Regional Functions are Needed
  - Expert evidence for state siting decisions
  - Verify eligibility for regional uplift charges
  - ?? Provider of last resort for essential regional infrastructure needs

- Structural questions:
  - In or out of RTO
  - Participant involvement? State involvement?
New Resource Planning

- Must be free of influence from all market participants including Transmission Owners
  - Otherwise solutions will have no “legitimacy”

- Significant problem with multiple planning horizons
  - Generation faster, transmission slower
  - Needs weighting for unpriced environmental costs
  - Load response is an emerging arena and must be promoted and bolstered until market is fully transformed

- Can we distinguish market-viable “economic upgrades” from “reliability upgrades” seeking uplift support?

- Are capital markets deterred by competition and uncertainty?
Market monitoring is *vital* but insufficient

Good structural incentives are even more important than case-by-case cures:
- Markets need Rules, but
- Rules need Enforcers
New York, et. al. v. FERC

- **FERC Jurisdiction**
  - FERC jurisdiction over *transmission* not limited to wholesale market
  - FERC jurisdiction over *sales* is limited to the wholesale market

- **State Jurisdiction**
  - FERC does not have jurisdiction over local distribution facilities
  - States control where FERC does not assert jurisdiction
    - Because federal authority was asserted only over unbundled transmission, states retain jurisdiction of the ultimate sale of the energy
    - Because FERC chose not to assert jurisdiction over bundled retail transmission, states are left with control over the transmission component of bundled retail sales
State Retail Responses

- New England Demand Response Initiative
- Load response without retail competition: Vermont’s Load Response Programs
  - All Vermont utilities: fast-track
  - IOUs, Munis, & Coops
  - Board has approved them
  - Some based on ISO program; others utility-designed (OMYA – flag)
- For small loads, aggregation is key
## VT PSB: Rate Design Basics
### Seasonal Rates vs. Year-Round Rates

<table>
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<tr>
<th>OLD (1978-98)</th>
<th>Energy Cost</th>
<th>+ T&amp;D Cost</th>
<th>= Retail Rate</th>
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<tbody>
<tr>
<td>Higher at VT Peak (Winter)</td>
<td>Driven By VT Peak (Winter)</td>
<td>Higher In Winter</td>
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<table>
<thead>
<tr>
<th>NEW (Since '99)</th>
<th>Energy Cost</th>
<th>+ T&amp;D Cost</th>
<th>= Retail Rate</th>
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<td>Higher at NE Peak (Summer)</td>
<td>Driven By VT Peak (Winter)</td>
<td>Near Level Year-Round</td>
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</tbody>
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Rate Design Challenge

- Can we design retail rates that are:
  - easy to understand
  - predictable with low customer attention
  - stable

- Yet accurately and 'adequately' reflect wholesale markets that are:
  - complex
  - volatile
Unified Field Theory

- Link between consumer preference and the wholesale market is vital
- Consumer response must be timely –
  - So that the market effect from consumer preference is perceived before generation and investment decisions are made
- Will end users get a price signal?
  - More importantly – will end-users’ price preferences be fed back to resource providers (directly or through Load Serving Entities)?