New Paradigms for Siting Transmission in Competitive Electric Markets

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New England Electric Resources, Inc.
PRESENTATION OVERVIEW

- Transmission Planning in Monopoly Markets
- Consequences of Competition
- Transmission Planning under Competition
- Implementing New Transmission Projects
- New Siting Paradigms
  - Network Upgrades
    - Traditional reliability criteria \textbf{or}
    - New competition criteria
  - Point-to-Point Projects
    - "Merchant generation" siting process
- Proposed Transmission Siting Framework
TRANSMISSION PLANNING IN MONOPOLY MARKETS

- Utility = monopoly provider of bundled product
  - Integrated planning for G, T and D
  - Monopoly => satisfy regulators, not markets

- Drivers for new investment
  - Forecasted need for bundled product
  - Least-cost planning (focus on generation)

- Engineering-oriented need assessments
  - Reliability criteria determined need
  - Minimal review of energy markets

- Competition changes all of this
TRANSMISSION PLANNING UNDER COMPETITION

- New transmission still required/desired
  - Major changes in generating fleet
  - Expanded trading opportunities
- Death of integrated planning
  - Market prices drive electrical topography
  - Hardest issue for RTGs is voting/expansion
- Proposed "Golden Rules" for RTG expansions
  - Need for new transmission based on either reliability criteria or market criteria
  - Benefits <=> $$$ support <=> Voting rights
CONSEQUENCES OF COMPETITION

- Market prices drive generation investments
- Significant changes in transmission criteria:

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<th>Obligation of local utility</th>
<th>OLD</th>
<th>NEW</th>
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<td>Provide energy on demand</td>
<td>Connect consumers to a competitive energy market</td>
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<th>Measuring adequacy of transmission system</th>
<th>OLD</th>
<th>NEW</th>
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<td></td>
<td>Is the system reliable?</td>
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<td>Is the market competitive?</td>
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<td>Does the market want more?</td>
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<th>Criteria for siting new transmission projects</th>
<th>OLD</th>
<th>NEW</th>
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<td>Is it needed for reliability?</td>
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<td>Is it the cheapest option?</td>
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<td>Will the market pay for it?</td>
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<td>Does it use public siting?</td>
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IMPLEMENTING NEW TRANSMISSION PROJECTS

- Two categories
  - Network upgrades for a single electric market
  - Point-to-point (PtP) projects that link markets
- Defining an electric market (art, not science):
  - Only occasional intra-market congestion
  - Significant congestion between markets
  - Concept: Market = RTG = Control Area
- Supporting new transmission projects:
  - Network upgrades: Part of RTG pricing
  - PtP Projects: Contracted capacity
NEW SITING PARADIGMS
Network Upgrades

- Need: either reliability or competition driven
  - Continue applying reliability criteria
  - Add competition criteria
  - Competition criteria may dominate
- Use RTG to plan & approve Network Upgrades
  - Reconsider traditional state supremacy (?)
- Competition to build, finance approved projects
  - "Transmission Support Agreement" with RTG
  - Financial tools of IPPs (e.g., project finance) now available for transmission
  - Lower cost of transmission service
NEW SITING PARADIGMS
Point-to-Point Projects

- PtP projects between markets compete with local generation within each market
  - Suitable for fully commercial development
  - Opportunity for market-based pricing
- Use "merchant generation" approval criteria:
  - Financial credibility of sponsors
  - Environmental impacts
- Results
  - Right to use public land/existing ROWs
  - No powers of eminent domain
PROPOSED TRANSMISSION SITING FRAMEWORK

• Intramarket Network Upgrades:
  ▪ May be required by either:
    ▪ Traditional reliability criteria or
    ▪ New competition criteria
  ▪ Identified, approved, supported by RTGs
  ▪ Competition to construct, finance and own
• Intermarket Point-to-Point Interconnections
  ▪ Driven solely by commercial opportunities
  ▪ Developed by private entrepreneurs
  ▪ Sited using "merchant generation" standards