

Reconciling Market-Based Transmission and Planning

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Summary

- Merchant transmission works
 - Proven ability of market to develop transmission
 - Basic conditions are locational prices & defined property rights that can be realized and/or sold
- Merchant & regulated transmission compete and co-exist in the same market
 - The details are key = vague ‘guidelines’ for regulated projects lead to uncertainty and less investment of either type
- What is needed
 - Clear and stable criteria + neutral assessments for regulated projects

What allowed merchant transmission?

- **Competition in electricity markets**
 - Allow incentives in competitive electricity markets (prices) to be applied to production and consumption
 - Merchant: Owners bear risks, rewards of investments => No stranded cost risk
- **Efficient spot pricing of electricity**
 - Value energy based on time & location of production & use
 - Value transmission based on spreads in spot prices
 - Defined transmission property rights allow investments
- **New technology (DC and AC)**
 - More modular, less “lumpy” = no free-riders, economies of scale
 - Far less environmental/community impact => easier siting

Framework for Merchant Transmission

- Bid-based security-constrained economic dispatch resulting in spot prices for energy
- Locational wholesale prices
 - Preferably nodal (anything else is more complicated)
- Defined transmission property rights
 - Financial transmission rights valued via spot market
 - Supporters of transmission expansions receive rights
 - Should also recognize reliability value of new transmission
- PJM, NYISO, Australian NEM mostly there
 - ISO-NE, Ontario IMO somewhat behind (but moving)
 - CA ISO, Midwest ISO moving in the right direction

Tangible Results – Our Projects

- Over US \$600 million in merchant projects
- Australia
 - Directlink 180 MW, 65 km u/g DC Operation
 - Murraylink 200 MW, 180 km u/g DC Construction
 - Southernlink 150 MW upgrade (existing line) Development
- United States
 - Cross Sound 330 MW, 40 km subsea DC Construction
 - Operational by summer 2002
 - Lake Erie Link 325-975 MW, 120 km DC Permitting
 - Harbor Cable 325-650 MW, u/g & subsea Permitting
- Other projects and competitors:
 - NU (CLIC), Neptune, GenPower, Basslink

Can merchant & regulated transmission co-exist?

- Is any new regulated transmission needed?
 - In theory, if spot prices reflect planning reliability value, then no
 - Political reality dictates otherwise = what constitutes market failure?
- If new regulated transmission is needed, how planned?
 - Who plans (incumbents vs. ISO/RTO)? How to insure neutrality?
 - Evaluation process, approval criteria, stakeholder input
 - Plan for reliability only (our view) vs. plan for economics
 - **The details matter tremendously**
- Competition to develop approved regulated projects
 - No *de jure* or *de facto* monopoly for owning new transmission

Can the market 'do it all'?

- Prices that promote 'sufficient' reliability investments by the market vs. Prices that are politically tolerable
 - May depend on degree of participation by load in market
- If reliability-ensuring spot prices are not politically tolerable (or load doesn't react as hoped): some level of central planning is appropriate
- Our view: central planning only for reliability
 - Has market failed (or will it fail) to deliver enough reliability?
 - If so, identify needs and conduct competitive solicitation to identify lowest-cost solution to meet reliability shortfall
- What constitutes market failure?
 - 'Clear and present' need, no market solutions

What about planning for economics?

- An alternate view: new regulated transmission projects for economics (incl. market power remedies)
 - An expensive solution to a transient problem?
- If new regulated transmission for economics, then:
 - Details matter (criteria for ‘yes’ must be clear and durable)
 - Transparency & fairness (in fact **and** appearance) matters
 - New regulated transmission projects undermine market investments
 - Neutrality matters (remember Averch-Johnson?)
- What about new regulated transmission to mitigate concerns regarding generation market power?
 - Structural solutions may be cheaper and less problematic

Planning Process Requirements

- Well-defined criteria for need assessment
 - **Not** ‘projects that benefit consumers’ (too vague)
 - **Yes:** ‘projects with a cost/benefit ratio of 0.85 under the following assumptions”
- Independence in planning
 - Performed by independent entity
 - Based on pre-determined criteria
 - Identify problem areas for investment
- Solicitation process for solutions
 - Allow anyone to compete for solutions

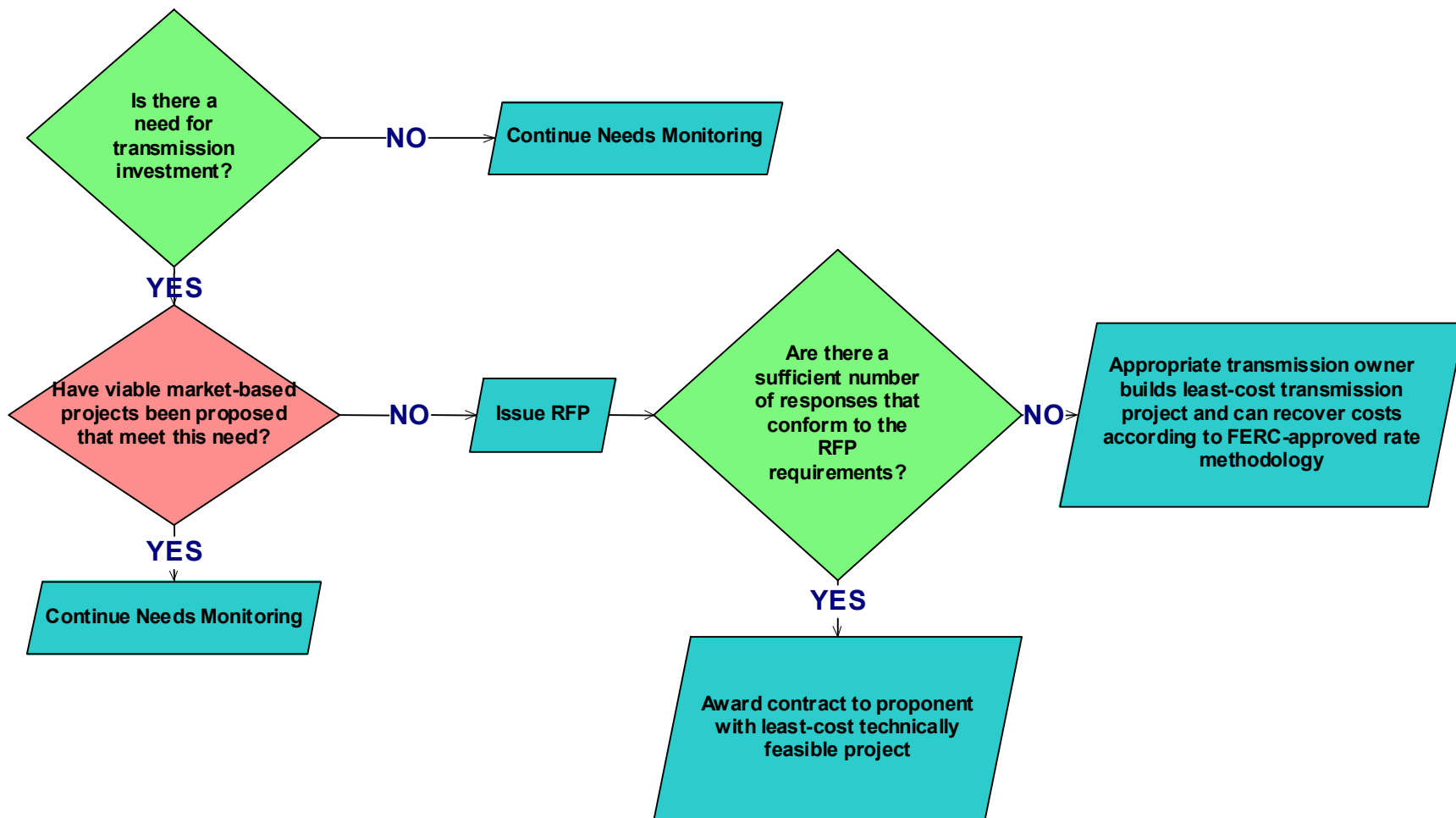
Why Competitive Solicitation?

- Potential for better terms for consumers
 - Developer might bear some of cost risk
 - Developer might bear some of schedule risk
 - Developer might bear some of availability risk
- Consumers can get lower prices
 - Competition from multiple sources
 - Generation (distributed or central), Demand side response, high-tech transmission
 - Competition to finance (more leveraging)
 - Competition to innovate

Effective Solicitation Process

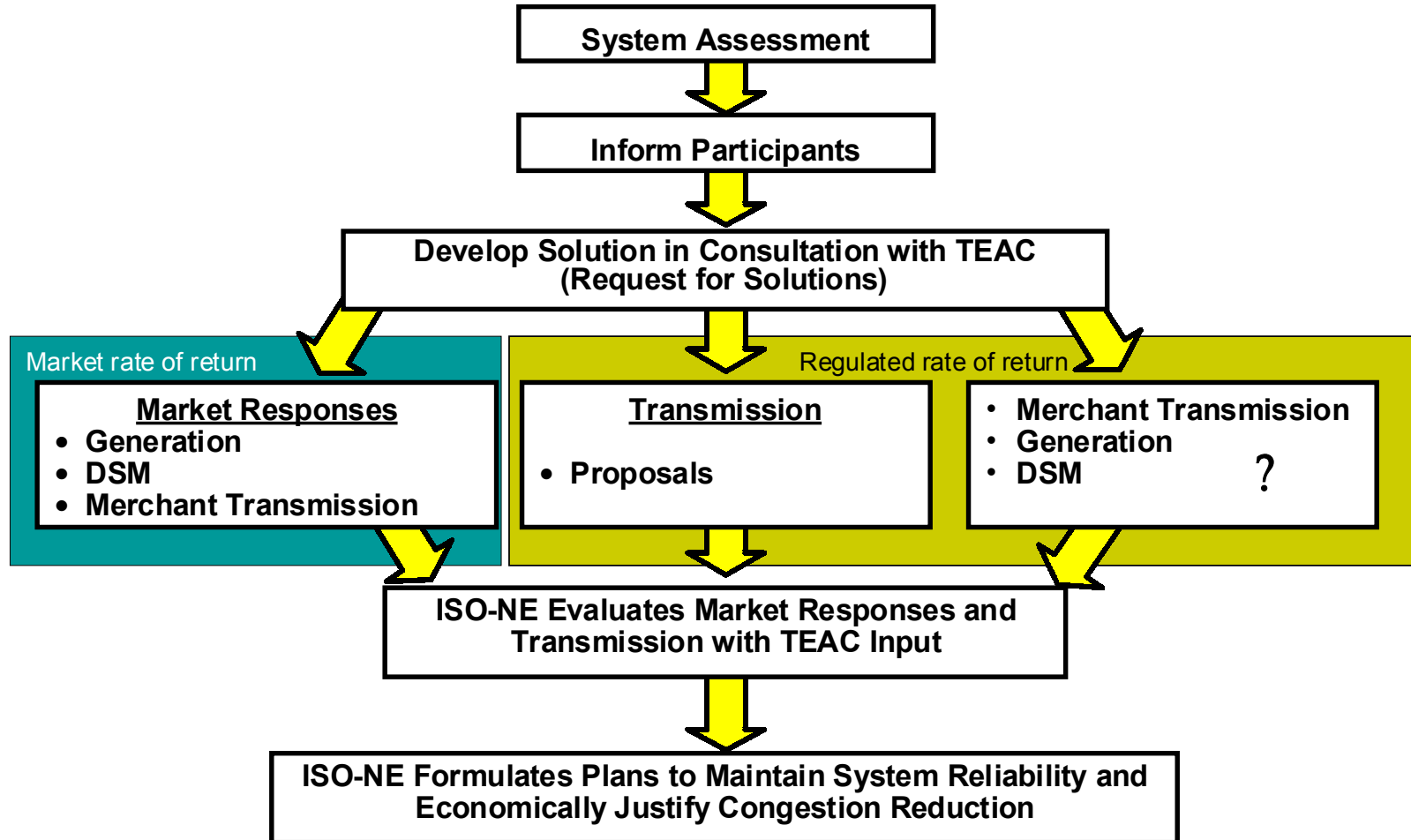
- Structure to allow as many bidders as possible
 - All types of solutions should be considered (generation, transmission, demand side, etc.)
 - Incumbent transmission owners allowed to respond
- Permit innovative cost-recovery mechanisms
 - Cost-of-service OR other (FERC-approved)
 - Seek lowest annual cost, not just total cost
 - Allow bidders to design, finance, build, own and maintain projects

Solicitation Process



Solicitation Process – New England example

RTEP Process Flow



FERC Support

ISO New England et al., Docket No. EL00-62-000 et al., 6/28/2000 (91 FERC ¶ 61,311):

“We share the concern that the role of transmission owners in the planning process may give them the incentive and ability to bias the Plan in favor of their competitive interests. ... We direct the ISO to revise its proposal to eliminate any decisional role of transmission owners may have in the Plan. ... We also agree with Transenergie that all projects in the plan should be built following a competitive solicitation.”

GridSouth LLC et al., Docket No. RT01-74-000 et al., 3/14/01 (94 FERC ¶ 61,273):

“We agree that GridSouth should undertake competitive solicitation for transmission expansion and upgrades and consider the cost, quality and timing aspects of proposals submitted by all interested parties.”

PJM Interconnection LLC, Docket No. RT01-2-000, 7/12/01 (96 FERC ¶ 61,061):

“PJM must revise Schedule 6 to include in its process that third parties may participate in constructing and owning new transmission facilities identified by the plan.”

Midwest ISO, Docket No. RT01-87-000 et al., 12/20/01 (97 FERC ¶ 61,326):

“Midwest ISO must revise its Planning Framework to make it possible for third parties to participate in constructing and owning new transmission facilities identified by the plan.”

Best model to date: PJM + VENCORP

- PJM for market rules, planning process
 - Nodal energy prices, well-defined FTRs, mature market design
 - **Transmission planning done by PJM, not incumbent TOs**
 - But, need to refine market rules and property rights for reliability value of new transmission investments (ICAP-related rights)
- VENCORP process for development of regulated projects
 - VENCORP manages Victoria (AU) electric (& gas) networks
 - Leases all electric assets from asset owners
 - Sells transmission services to electricity market participants
 - Identifies residual needs unmet by market, conducts RFP for solutions
 - Suggested improvement:
 - Conduct RFP for performance improvements, not specific assets

The Alternatives

- Status quo in the US: Gridlock in grid investment
 - Endless debate about “net benefits” of project, who will pay, whether project is best for the market
 - Limited mechanism to address links between markets
- Monopoly transmission club
 - One transmission company (or consortium thereof)
 - Responsible for **all** congestion, losses, & reliability
 - Operates under ‘incentive’ rates (e.g, National Grid in UK)
 - Makes unilateral investment & operating decisions
 - Closed to new entrants seeking to own transmission assets
 - **Chief drawback:** regulator must guess at correct incentives
 - Otherwise, excess charges to customers
 - Why not use competition to set cost of new regulated transmission services?

Value of the 'PJM+VENCORP' model

- Benefits of merchant transmission (PJM):
 - Allow market forces to develop new transmission assets
 - Better aligns costs and benefits (supporters receive rights)
 - No 'stranded cost' risk to captive consumers
 - Reduced environmental/community impacts
 - 'Speed to market' => e.g., underground cables for faster permitting
- Benefits of competition in regulated T (VENCORP):
 - Allows market to determine return for regulated transmission
- **Promotes maximum competition in electric markets**

Final Thoughts

- Market-based transmission is a reality
- Technology is changing the industry
- Markets can and do work!
 - But, ensure that the right structures are in place to allow full and fair competition
 - Transmission planning and markets can coexist
 - Allow competition for centrally planned units
 - Ensure that planning does not unduly interfere with market outcomes

For more information

- Our web sites:
 - US www.transenergieus.com
 - Australia www.transenergie.com.au
- Other interesting sites:
 - PJM www.pjm.com
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