

# GLPL's Presentation on Issues for Cost Responsibility for Generation Connections

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# Key Issue

- The question of how to economically expand transmission systems to increase renewable power has been addressed in a number of jurisdictions:
  - California
  - Texas
  - MidWest ISO
  - New Zealand
- All of these jurisdictions have asked the same question: “What is the most cost effective way to fund transmission in a manner that meets renewable energy objectives?”

# Traditional Methodology

- Not developed to address issue of renewable power. Developed on the assumption that there is no need to coordinate individual generation units to meet supply targets.
- California ISO Market Surveillance Committee recognized that following traditional methodology would be uneconomic in developing renewable power (Opinion on “Alternative Treatment of New Transmission Interconnection of Renewable Generation”, Cal. ISO MSC October 6, 2006).

# Enabler Transmission Investment

- The key distinction between enabler lines and conventional connection lines is that enablers are sized to achieve the economically efficient level of renewable resources in a given area while conventional connection lines are sized to serve a specific project.
- Applying the conventional approach in the context of renewable resources is uneconomic.

# California ISO MSC, October 6, 2006

The California ISO MSC identified two transmission related “features of renewable generation technologies that, in the absence of regulatory intervention, could create a market failure that would increase the cost to California of meeting its RPS goals. First, electricity from renewable generation sources must be produced where the wind, solar or geothermal resource is located, which is typically far from the major California load centres. Second, the total amount of potential renewable resources at a given location can significantly exceed the typical scale of a single renewable generation project.”  
(p.1)

# Consequences of “mis-match” between generation and tx scale: market failure

“Under ISO’s current interconnection policy, a market failure could occur if the total cost of constructing all of the interconnection facilities necessary to serve each renewable electricity supplier at the remote location when it begins producing is larger than the cost of constructing a single large interconnection facility to serve all of the expected entrants at that location when the first generation facility comes on line. Economies of scale in constructing and operating interconnection facilities make the cost of the large interconnection facility to each renewable supplier smaller than if the necessary interconnection facilities were constructed sequentially, at the time each renewable supplier began producing. However, if the total costs of such a large interconnection facility were charged to the first entrant, it may be so high as to prevent development at all.”  
(p. 3)

# Risk of Uneconomic Subsidy

- The Cal ISO MSC recognized that funding transmission development in advance of generation carried the risk of “large stranded costs and subsidies to remote renewable generation projects.” It there recommended mitigation measures aimed at “Avoiding unnecessary subsidies to renewable generation development.” (pp. 4-5).

Solution: construct tx facilities to renewable sources while mitigating risks of uneconomic transmission

- Consideration of Three Factors:
  - Determination of Resource Area
  - Commitments by Generators
  - Rational Tx development: Cost Recovery/Oversight of Designated Transmitter



# Determination of Resource Area

| <b>California</b>  | <b>Texas</b>  | <b>Ontario Considerations</b>  |
|--|---|--|
| <p>“Energy Resource Area” to be determined by California Energy Commission or other state agency – “holds the potential for the development of a significant quantity of location-constrained resources and that is not readily accessible to the CAISO transmission grid.” (P.3, fn. 3)</p> | <p>“Competitive Energy Resource Zone” established by PUC, “to facilitate delivering to electric customers, in a manner that is most beneficial and cost-effective to the customers, the electric output from renewable energy technologies in Texas.” (p.1)</p> | <p>How to integrated with IPSP’s evidence that there are “A number of renewable resources included in the Plan are located in remote areas far from the transmission grid. In order to develop these resources, dedicated radial transmission lines will need to be constructed to connect these resources to the grid.”</p> |

# Generator Commitment

| <b>California</b>   | <b>Texas</b>  | <b>Ontario Considerations</b>   |
|---|---|---|
| <p>Minimum percentage of capacity for new facilities (25-30 per cent) must be subscribed through connection agreements and a tangible demonstration of interest for an additional 25-30%.</p> | <p>PUC reviews connection agreement queues; if not enough information, PUC holds open season during which developers provide LC of \$25K per MW; when tx utility proposes franchise, deposit changes to pro rata share of capacity; and Commission will determine transmission upgrade requirements for zone, including max capacity – tx utility may suggest improvements.</p> | <p>How to integrate with OPA's mandate to procure generation resources?</p> |

# Cost Recovery/Oversight of Designated Transmitter

| <b>California</b>  | <b>Texas</b>   | <b>Ontario Considerations</b>   |
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| <p>Project would have to be approved in context of CAISO transmission planning process to ensure that it will result in cost effective and efficient interconnection.</p> <p>Aggregate cap on total dollars associated with multi-user connection facilities that could be included in rates at one time. Cannot exceed 15% of total</p> | <p>Commission to impose reporting requirements but not timelines for tx construction</p> | <p>How to integrate with Procurement?</p> <p>How/when to designate a transmitter?</p> |