

**Regional Representatives Group  
Regional Transmission Problems and Opportunities List  
Organized by General Categories**

The information below represents a compilation of the input from a wide range of participants at the July 21, 2003 RRG meeting in Portland, Oregon (as well as additional items extracted from written comments submitted before the July 21, 2003 RRG meeting and e-mails sent after the meeting).

This document is intended to serve as a tool to facilitate regional discussion about current and future problems and opportunities related to the regional transmission system.

At the July 31, 2003 RRG meeting, we hope this document will:

- Help us track the problems and opportunities that have been identified with respect to the existing regional transmission system (and any more that are added)
- Facilitate discussion about which of the identified problems and opportunities warrant action, focusing on the question of whether the RRG believes that there is broad consensus to act
- Facilitate discussion concerning whether, with respect to those problems and opportunities for which there is broad consensus to act, there is broad consensus that the RRG-based process for developing regional transmission solutions is the right forum for further work

During discussions at the July 21, 2003 RRG meeting, there was some discussion on:

- From what perspective are we evaluating problems? Consumer interests?
- What are we trying to accomplish? Lowest cost of delivered power? More efficient wholesale power markets?

**A. Concerns About Current Market/Economic Factors:**

1. Underutilized capacity (in view of current demand for capacity) – **an “area that merits close attention”? – include among things for which we want to explore “solution sets”?**

**Questions about risks, costs, and consequences of making a change, as well as of continuing with status quo**

**Kristi W. to provide summary**

- a. Phantom congestion – especially due to **disconnect between contract path use and actual system flows**
- b. ATC and TTC calculation
  - (i) Inconsistencies between transmission providers – doesn’t facilitate release of all usable capacity
  - (ii) Before-the-fact and after-the-fact ATCs do not line up
- c. Transmission rights and management of transmission rights in real-time
  - (i) Lack of flexible, intermediate or “semi-firm” products
  - (ii) Lack of liquidity in secondary transmission market; limited ability of rights holders (including end users) to sell or trade their rights
  - (iii) Lack of efficient means to manage congestion – cannot make use of diverse schedules or incs and decs to make more capacity available (including redispatch under current Order 888 tariffs)
  - (iv) [*generators can’t get use of available capacity when it’s not clear 8760; acts as unnecessary barrier to entry - barrier to financing*]

2. Market power issues (transmission system, wholesale electricity markets, ancillary services)
  - Market monitoring
    - Lack of price transparency and transactional visibility
  - Market design/structure/rules; solutions need to be tailored to market structure; goal to design a structure that restrains abuse
    - We now have a market design seam with California; we’re no better equipped now to deal with the problems that occurred in 2001 than we were in 2001
  - Current market power problems – stressed system provides greater opportunity for abuse? Lack of visibility makes it harder to tell how great the problem is right now
  - In some instances, markets are not yet fully developed (*e.g.*, ancillary services in some areas)
  - Mitigation
- **include among things for which we want to explore “solution sets”?**
  - Desires: look at full spectrum of possible solutions; not just automatically jump to a “big” solution; deal with possible problems before we are in trouble again
    - a. Need ability to detect and correct abuses (including effective data gathering and enforcement tools)
    - b. Need for comprehensive view of all products (transmission, energy, and ancillary services) and how they are affecting each other
    - c. Ability to address problems proactively rather than after-the-fact (creating incentives not to abuse market power)

- d. Need for equitable mitigation measures and in-region approach to mitigation
  - e. Jurisdictional differences (some entities are regulated by FERC and by state PUCs, some entities are governed by state or federal statutes, and some entities are subject to Canadian regulatory provisions)
  - f. Need for an independent entity to address market power issues
3. Access
- a. Issues Related to Interconnection/Integration Process (New Service Requests)**
- (i) Cumbersome process for system users to gain access (interconnection and transmission service – bundled or unbundled); including access for load-serving entities behind other utilities’ systems over dual-use facilities
  - (ii) Generator interconnection queuing process is an “administrative nightmare”
  - (iii) Renewables – how can they more easily interconnect with and use the transmission grid?
  - (iv) Lack of effective mechanisms for service and study coordination between transmission providers/systems
- b. Issues Related to System Operation and Rules Applicable to Transmission Service**
- (i) Different “rules of the road” for and treatment of generators that are part of vertically integrated utility systems versus other generators (QFs/co-gens, IPPs)
    - (1) Not all generators obtain service on the same terms and conditions

- (2) Different application of penalties; *e.g.*, independent generators have to buy imbalance and pay penalties, but utilities that operate control areas can “exchange” inadvertent interchange
  - (3) Inequitable treatment concerning RAS requirements
  - (4) QF/co-gen problems are not always the same as those for IPPs
- (ii) Different “rules of the road” for and treatment of loads that are end-use customers of vertically integrated utility systems versus other types of wholesale and retail load customers (full requirements, TDUs, unbundled versus bundled end users)
- (1) Asymmetry in obligations of different types of suppliers (transmission providers with state-imposed obligation to serve)
  - (2) Different sources of obligations (contracts, state laws and regulations, federal laws and regulations)
  - (3) Inequitable treatment concerning RAS requirements (response by loads to support transfer capability or reliability)
  - (4) Inequitable treatment in service to unbundled retail customers compared to bundled retail customer charges
  - (5) Different treatment regarding penalties for similar actions

- 4\*. Lack of price signals - inefficient dispatch (at least at some times and some places) and inefficient resource location results

[need to consider both (and distinguish between) wholesale energy price issues and transmission price issues]

[Aug. 6 – two problems? – manner of fixed cost recovery (charging short-term fees to recover fixed costs; the other is price signals related to congestion management)]

[Aug. 6 – One problem – insufficient tools for short-term congestion management; another category of problem – a lack of mechanism for signaling optimal resource location]

Possible umbrella – lack of information and mechanisms (incentives?) to produce better outcomes (could be pricing or other information is the solution – not assume that prices are the only way to address these problems or provide a complete solution)?

*Are we really talking about lack of transparency?* “Information without equity is meaningless” (equity of access to and completeness of information for all)

[Aug. 6 – (1) recovery of fixed costs of system – problems from an equity standpoint?; (2) issues associated with short-term or operational considerations (congestion management) – underlying problems of unused capacity; effectiveness of tools we use currently?; (3) long-term infrastructure issues – location of supply resources and system expansion (incremental costs) – root problem is absence of information?] – economic efficiency issues relate to all three of the foregoing – can we make changes that will improve the efficiency of the system as a whole?

[Aug. 6 – are many of the issues added above covered under section B and section C? – parse it down to those issues that result from lack of information and good mechanisms or incentives?]

Aug. 6 – Will the recipient of the information understand what it means?

**Aug. 6 – Possible consensus that these are all issues that should be addressed (opportunity for improvement) (some reservation on this point with respect to various sub-issues), but not necessarily how to do it, and whether “better price signals” or a certain kind of price signal would necessarily be the right answer**

[concern about equity issues – improvement for some at the expense of others?]

[“better prices would lead to better outcomes” is too theoretical] Is the “be-all and end-all” goal for the system “economic efficiency”?

- a. No correlation between marginal price of transactions and actual cost (transactions that do not add costs to operation of the system may be charged nevertheless; transactions that are more expensive than just their embedded cost component may not pay their full costs) [“short-term transaction charges to recover part of long-term costs”]

[Aug. 6 - no price signal that tells you whether you are dealing with a congested part of the system or not; current system is simply curtailment pro-rata (your transaction gets “bumped”); brings in the question of how you do congestion management now – example of an overload where all schedules were cut to zero and still there was no reduction in line loading – problems with the contract path regime]

[There seems to be no way to rationalize capacity on the system (at least no easily)]

- b. Lack of (price signals) incentives to “do the right thing” (from whose perspective and at what cost (and who pays)?)

[Various options as to what kind of price signals could be introduced – for example, time-of-use pricing]

- c. Transparency of pricing [wholesale energy markets]
- d. Impact on resource development

[Aug. 6 - concerns about practical implications, versus acknowledge this issue as a problem in the abstract]

4\*\*. Problems with dealing with multiple transmission systems/providers

[Aug. 6 – confirm consensus that these problems warrant actions (although not necessarily each subcategory listed below)]

- a. Rate pancaking [effect access for generators and access for load]
- b. Many transactions must be arranged with multiple service providers (“transactional pancaking”)
- c. Impact on wholesale energy markets (options available; ability to complete economic transactions; resource development; long-term power contracting)
- d. Sub-optimal operating and planning solutions
- e. Effect on diversity of resource options (especially resources remote from load)

## 5. Ancillary Services

- a. Need for markets for imbalance energy and ancillary services that are workable for both those buying and those selling (including demand response); inability to deal effectively with transmission capacity implications
- b. Not all parties have adequate access to workable markets for ancillary services

[\*. Inability to hedge replacement energy costs related to long-term forced outages] [*move to market structure category*]

- c. Market power in ancillary services arena
- d. Opportunity to use the resources each control area sets aside to follow load more efficiently

- e. Opportunity to use contingency reserve resources more efficiently (or cost effectively)

**Consensus: These are problems and opportunities that warrant action**

6. Losses; loss methodology

*[SDL to clean up if possible]*

- a. Problem: Losses as they are assigned today do not always reflect the quantity of or costs of the underlying power associated with those losses
- b. Inefficient outcomes due to current practices:
  - (i) Some resources are not used or are not developed because they are charged for greater losses than they actually create on the system
  - (ii) Sometimes dispatch that would reduce losses doesn't occur because there is no way to signal the reduction of losses
- c. Is there an opportunity for a more consistent methodology?

**Consensus: Explore whether there are different ways to approach losses to lead to more efficient outcomes**

[concern: want to know in advance what will be charged]

## **B. Operational and Reliability Concerns:**

1. Over time, we are using the system we have more heavily than we did in the past, so that there are now reduced margins as compared to the past – we don't have a good mechanism to make regional decisions about whether we do or don't have a problem and what we should do about it

[maybe we need to better understand root causes]

[also, we have improved many of the things we do to support reliability, such as modeling]

[concerns that we are now facing increased reliability risks (increased risk of failure) – not shared by all – how do we decide what the right balance is between economic efficiencies and risk of failure?]

reduced margins means that it is more important that we have effective and efficient operational tools

*[below, under section C, we have identified problems with continuing to make the level of investment needed to continue to meet reliability standards]*

2. *[heading needed here]*
  - a. Poor tools for managing overloads on the system; conflicts among existing curtailment procedures
  - b. Need for efficient method to manage loop flow
3. Fragmented operations (multiple control areas); lack of system-wide visibility in day ahead
4. Use of net load versus gross load for calculating reserve determinations with respect to load “behind the meter”
5. Problem of setting reliability standards without looking adequately considering cost consequences

- a. Is it reasonable? Are unintended consequences managed?
  - b. Where does the burden of implementing the standard belong (effect on use of the system)?
  - c. How are customer preferences taken into account?
6. Generation response when system is stressed; disconnect between schedules and physical generation
  7. No financial settlement for redispatch to address reliability issues in real time
  8. Over-reliance on short-term and non-firm use of the system
  9. Inability to get complete and current information about the entire system for reliability purposes

**C. Obstacles or Uncertainties Associated with Long-Term Investment:**

How to do planning effectively now and in the future

Adequacy of incentives for and cost recovery associated with long-term investment; equity (who pays)

1. Adequacy standards and infrastructure
  - a. Includes generation, transmission, and DSM
  - b. Clarification needed on state role in transmission and generation adequacy?
  - c. Reserving transmission capacity for future load growth

- d. Over time, the system has gotten “tighter” – unintended loss of margin or flexibility in the system because of economic pressures –  
challenges of securing sufficient investment to continue to meet reliability standards
  - e. Opportunity to make investments for reliability on a more coordinated, regional basis
2. Infrastructure investment
- a. Need to ensure that sufficient and timely investment is made in the transmission system to serve load growth, to provide capacity to new users, and to alleviate congestion
  - b. Multiple planning processes; limited construction progress
  - c. Lack of access to capital leads to over-use of short-term measures [one contributing factor is uncertainty concerning cost recovery?]
  - d. Need for better information (and to make better use of the information we have) – the information doesn’t make the decision; it helps us make better decisions
3. Cost recovery
- a. Uncertainty about regulatory support for and method of recovery (and complexity added by multi-jurisdiction environment)
  - b. Need for right people (benefiting parties) to pay for system improvements
4. Fragmented planning – current regional planning process is not able to effectively integrate load, generation, DSM – jurisdictional issues, different ownership and decision-making power with respect to different elements of the power system
- a. Need to address uncertainty about what generation will be built and where it will be delivered (and it can change hourly, daily, seasonally)

**Dimensions of fragmentation that can act as obstacles to effective planning or to infrastructure investment:**

- a. Multiple owners/investors and “pieces” of the power system (loads, transmission, generation)
- b. Multiple jurisdictions
- c. Solutions that straddle multiple systems may be difficult to implement
- d. Different time frames
- e. Multiple solutions
- f. Fragmentation of how generators make requests for new interconnection, as opposed to a system-wide integrated look at how best to address a broad spectrum of proposed new resources

We don't have a good substitute yet for the fact that we no longer have the entire system planned by vertically integrated utilities – information, knowledge, investment responsibility, etc., are no longer residing in a single entity

Need to figure out where one party's actions can adversely affect others – where is fragmentation a problem?

Ability to manage future risks

Lack of incentive to use scarce capital to invest in transmission infrastructure (but it may be helpful to distinguish between investment for reliability purposes versus investment to create expanded economic opportunities)

What are the monopoly franchise obligations under today's circumstances?

Also, the incentives now tend to encourage building just for near-term needs

**Need to look at whether there are ways to do this better –  
planning is an issue – how all the sub-issues fit together is  
something for further exploration**

5. Accommodation of technology innovation (and need for environment that fosters innovation)
6. Order 888 generation interconnection queuing does not facilitate an integrated look at resource mix – recent FERC interconnection orders may help some on this
7. Disconnect between ability to identify needed solutions versus ability to implement the solutions (fragmentation)
8. Interregional (seams) issues with respect to planning
9. Need for good mechanisms to manage uncertainty

**D. Implementation Issues and General Concerns; Constraints on Solution Sets:**

1. Political and regulatory uncertainty
2. Seams (within the region and across the interconnection)
3. How to analyze cost/benefit and risk considerations, and who does the analysis?
4. Staging or phasing of implementation
5. Recognizing Canadian sovereignty
6. Contract enforceability (existing rights holders of all kinds)
  - a. *e.g.*, lack of effective remedy to deal with problems under current transmission service contracts
7. Liability issues

8. Need to ensure that adequate transmission capacity is dedicated to moving power to serve regional retail loads [and in a manner that does not require load-serving entities to obtain transmission through competitive bidding] – move this category and subcategory to “transition issues”
9. Credit issues – how to manage exposure of service providers and suppliers to risks of nonpayment (especially imbalance and congestion charges in real time)
10. Concerns about shifting to rely more on price signals (potential cost shifts; moving away from cost-based service approach; volatility; etc.) [*formerly under pricing efficiency as “concerns about adding price signals”*]
11. Differences among state laws concerning franchised (exclusive) service territories
12. Security/Critical Infrastructure
  - a. Cyber and physical security requirements are coming from two directions: DOE and Department of Homeland Security (DHS). These requirements will affect non-federal and federal RTO West participants.
  - b. BPA has established criteria that it used to determine its own critical facilities and other PTOs may be required to do the same. As the requirements for these facilities become clearer, are there unique obligations for these critical facilities that should be the responsibility of RTO West?