Update on FTR Discussion and Some Further Questions

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Review of What We Know

- Negative balancing congestion arises only when real-time transmission capacity is *less than* day-ahead transmission capacity - this condition is often present in PJM
- Negative Balancing Congestion has been the *largest contributor* to FTR underfunding during 2010-2014 (~90 percent or ~$1.28 of ~$1.41 billion during Jun 2010 – May 2014)[1]
- UTC and virtual transactions have contributed a significant portion of deviations that make up negative balancing congestion (~87 percent or ~$292 of ~$334 million in 2013)[2]
- FTRs do not contribute to negative balancing congestion
- LSEs and generators with fixed day-ahead schedules and no deviations do not contribute to negative balancing congestion
- "Total congestion" in a two settlement market does not equal "total congestion" in a single settlement market with the same transmission capacity[3]
- LSEs do not own all FTRs but have a right of first refusal to convert ARRs to FTRs[4]
- One hundred percent of the transmission capacity in PJM is available in the Annual FTR Auction – while conversion rates of ARRs to FTRs have declined in recent years, ARR holders have received a majority (~90 percent or higher) of Auction Revenues with the excess revenue being used to improve FTR funding[5]

1. FTR/ARR Funding and Education, PJM FTRSTF, Aug 4, 2014
http://www.pjm.com/~/media/committees-groups/task-forces/ftrstf/20140804/20140804-updated-education-presentation.ashx
2. FTRSTF Education, Howard Haas, PJM FTRSTF July 16, 2014
http://www.pjm.com/~/media/committees-groups/task-forces/ftrstf/20140716/20140716-ma-underfunding-education-follow-up.ashx
3. Congestion Accounting in a Multi-Settlement Market, PJM FTRSTF, Aug 4, 2014
http://www.pjm.com/~/media/committees-groups/task-forces/ftrstf/20140827/20140827-response-to-ma-ftr-and-congestion-presentation.ashx
4. Source: FERC Order in ER03-406, March 12, 2003
http://www.pjm.com/~/media/committees-groups/task-forces/ftrstf/20140804/20140804-2003-arr-ferc-filing.ashx

Review of What We Know (continued)

- Settling FTRs on day-ahead LMPs does not result in double payments by load serving entities once FTR/ARR ownership is factored in[6] – the IMM disagrees based on the assumptions that (1) load does not own any FTRs and (2) any change in allocation of balancing congestion would be to LSEs[7]

- The question before the FTRSTF
  - should FTRs be a hedge for day-ahead congestion or should they distribute "total = day-ahead + balancing congestion"?
  - it may not be possible to meet both objectives at the same time

5, 6. A Closer Look at Congestion and FTRs in PJM, Harry Singh, PJM FTRSTF, Aug 27, 2014
http://www.pjm.com/~/media/committees-groups/task-forces/ftrstf/20140827/20140827-response-to-ma-ftr-and-congestion-presentation.ashx

7. FTR and Congestion Discussion, Howard Haas, PJM FTRSTF, Aug 4, 2014
http://www.pjm.com/~/media/committees-groups/task-forces/ftrstf/20140804/20140804-imm-ftr-vs-congestion-discussion.ashx

IMM Statements on the Intent of FTRs

2010 SOM

An FTR provides holders revenues, or charges, equal to the difference in prices in the Day-Ahead Energy Market across the specific FTR transmission path[1]

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- FTR **designed** to allocate total congestion, not day ahead only congestion, not target allocation[2]
- Total Congestion = Total Day Ahead Congestion + Total Balancing Congestion

1. 2010 State of the Market – Section 8, March 10, 2011 Monitoring Analytics LLC, p 529
http://monitoringanalytics.com/reports/PJM_State_of_the_Market/2010/2010-som-pjm-volume2-sec8.pdf

2. FTRs and Congestion, Howard Haas, PJM FTRSTF Aug 27, 2014, Slide 2
http://www.pjm.com/~/media/committees-groups/task-forces/ftrstf/20140827/20140827-ma-ftr-and-congestion-discussion-response.ashx
For an alternative history of what FTRs were designed to be, see Background on FTR Development, Scott Harvey, PJM FTRSTF Aug 27, 2014
http://www.pjm.com/~/media/committees-groups/task-forces/ftrstf/20140827/20140827-background-on-ftr-development-presentation.ashx

IMM Statements on Two Settlement Market

2010 SOM

- ARR and FTR holders do not need to deliver energy to receive ARR or FTR credits, and neither instrument represents a right to the physical delivery of power. Both can, however, help protect load-serving entities (LSEs) and other market participants from congestion costs in the PJM Day- Ahead Energy Market. Market participants can also hedge against real-time congestion by matching real-time energy schedules with day-ahead energy schedules.[1]

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- **No position in PJM day ahead market is held harmless to interactions between the day ahead and real time markets (balancing, uplift)**[2]
- All positions are financial day ahead and trued up via (balancing) adjustments, based on actual system conditions

1. 2010 State of the Market – Section 8, March 10, 2011 Monitoring Analytics LLC, p 529
http://monitoringanalytics.com/reports/PJM_State_of_the_Market/2010/2010-som-pjm-volume2-sec8.pdf

2. FTRs and Congestion, Howard Haas, PJM FTRSTF Aug 27, 2014, Slide 13
http://www.pjm.com/~/media/committees-groups/task-forces/ftrstf/20140827/20140827-ma-ftr-and-congestion-discussion-response.ashx

IMM Statements on Role of ARRs/FTRs

2004 SOM

- Effective June 1, 2003, PJM replaced the allocation of FTRs with an allocation of Auction Revenue Rights (ARRs) and an associated Annual FTR Auction. The process for allocating ARRs is identical to the previous process for allocating FTRs, but the revenues received for the allocated ARRs are based on the results of the Annual FTR Auction. Firm transmission customers have the option either to take ARRs or to take the underlying FTRs through a process called self-scheduling.

- ARRs and FTRs are both financial instruments that entitle the holder to receive revenues or to pay charges based on nodal price differences. ARRs provide holders with revenues or charges based on the locational price difference between ARR sources (origins) and sinks (destinations) determined in the Annual FTR Auction. In other words, ARR revenues are a function of FTR auction participants' expectations of locational price differences in the Day-Ahead Energy Market. FTRs provide holders with revenues or charges based on the locational price differences actually experienced in the Day-Ahead Energy Market

- ARR and FTR holders do not need to deliver energy to receive ARR or FTR credits, and neither instrument represents a right to the physical delivery of power. Both can, however, help protect load-serving entities (LSEs) and other market participants from congestion costs in the PJM Day- Ahead Energy Market. Market participants can also hedge against real-time congestion by matching real-time energy schedules with day-ahead energy schedules.

2012 SOM

- The annual ARR allocation provides firm transmission service customers with the financial equivalent of physically firm transmission service, without requiring physical transmission rights that are difficult to define and enforce. The fixed charges paid for firm transmission services result in the transmission system which provides physically firm transmission service. With the creation of ARRs, FTRs no longer serve their original function of providing firm transmission customers with the financial equivalent of physically firm transmission service. FTR holders, with the creation of ARRs, do not have the right to financially firm transmission service and FTR holders do not have the right to revenue adequacy.

- FTR holders, with the creation of ARRs, do not have the right to financially firm transmission service and FTR holders do not have the right to revenue adequacy. FTR holders appropriately receive revenues based on actual congestion in both day ahead and real time markets. When day ahead congestion differs significantly from real time congestion, as has occurred only recently, this is evidence that there are reporting issues, cross subsidization issues, issues with the level of FTRs sold, and issues with the differences between modeling in the day ahead and real time. Such differences are not an indication that FTR holders are being under allocated total congestion dollars.

2004 State of the Market, March 8, 2005 Market Monitoring Unit, p 39 and 2012 State of the Market – Volume 1, March 15, 2012, p 51
http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2004/pjm-som-2004.pdf
http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2012/2012-som-pjm-volume1.pdf

How is an LSE to Hedge its Day-Ahead Congestion Exposure? An Unanswered Question

- An LSE wants to construct a remote generator and fund a merchant transmission line to enable energy delivery to its load
- While the LSE has locked in a long-term supply arrangement to meet its load by building a generator, it has also taken on a congestion or basis risk based on the CLMP[1] difference between its new supply source and its load
- The LSE is awarded long-term FTRs to hedge this congestion/basis risk
- LSE expects to schedule load and generation in the Day-Ahead market and would be exposed to congestion charges based on the difference between DA CLMPs at generation and load locations
- If the LSE's FTRs are settled using DA CLMPs, they will adequately hedge the LSE's congestion exposure
- If the LSE's FTRs are settled based on an allocation of "total congestion" that includes balancing congestion, they will no longer hedge the LSE's actual congestion exposure
- Neither the LSE day-ahead schedule nor the FTR have anything to do with real-time deviations that contribute to negative balancing congestion – why should the LSE subsidize transactions that contribute to those deviations?

1. CLMP represents the congestion component of a Locational Marginal Price (LMP). Difference in CLMPs across two locations represents the basis risk due to congestion, while difference in LMPs represents basis risk due to congestion and losses. Since the introduction of marginal losses in PJM, FTRs are settled using CLMPs instead of LMPs.

Questions

- If FTRs are *designed* to allocate total congestion and not day-ahead congestion, why does the FTR Forfeiture Rule assume that FTRs receive day-ahead congestion?
- The IMM has presented data to the FTRSTF illustrating impacts of UTC and virtual transactions on negative balancing congestion and consequently to FTR underfunding – this is a significant observation
- However, the IMM has also stated that balancing congestion is a component of total congestion instead of an uplift charge – does this preclude any allocation of negative balancing congestion to UTC and virtual transactions that the IMM has shown are contributing to it? If so, wouldn't this be a subsidy by LSEs (through their ARR/FTR ownership) to UTC/virtual transactions?
- If FTRs are intended to distribute "total = day-ahead + balancing congestion" in aggregate, which they currently do, what then is the objective of the IMM's eight suggestions to improve FTR funding?
- Could one objective perhaps be to improve the hedge effectiveness of FTRs in the day-ahead market?

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