"DRAFT"

FINANCIAL TRANSMISSION RIGHTS

MARKET & CREDIT POLICY OVERVIEW

PREPARED FOR:

FTR CREDIT WORKING GROUP

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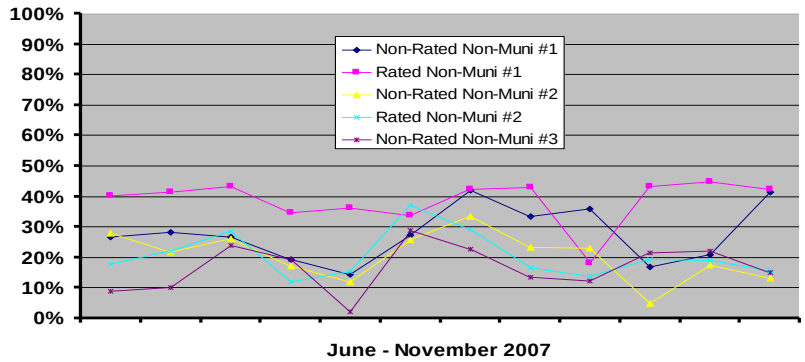
The overarching goal of ISO New England's Financial Assurance Policy is to establish requirements that minimize NEPOOL's (or the "Pool") exposure to Participant defaults without inhibiting legitimate market participation. Over the past three years, numerous initiatives have commenced toward achieving this two pronged objective. The leading initiative occurred in the fall of 2004, when the ISO shifted the bill cycle for hourly market services from monthly billing to weekly billing. Shifting to a weekly bill cycle reduced the level of payment default exposure as a result of the ISO collecting outstanding balances weeks sooner than under monthly billing. As a result of the reduced risk exposure, weekly billing reduced Pool-wide margin requirements by an estimated 50%.

On the heels of implementing weekly billing, the ISO continued its efforts toward further reducing default risk and, therefore, Participants' total cost of market participation. Toward this end, the ISO evaluated the feasibility of integrating its settlements and credit functions with those of a clearinghouse provider. Although the clearinghouse model is widely accepted in exchange traded financial markets, and the ISO's stakeholders supported the concept throughout the evaluation process, it became apparent that clearing solution providers were unable to develop a financially feasible solution in support of the ISO's markets. While the concept of third party clearing was eventually shelved, the ISO integrated many of the lessons learned from the evaluation process into its processes, procedures, and eventually its policies.

June 2007 marked the next major milestone in the evolution of the ISO's Financial Assurance Policy ("FAP"), as the ISO implemented the "Tier 2" changes to the FAP as filed with the Federal Energy Regulatory Commission ("FERC") on February 16, 2006. Among the many changes incorporated in the filing, the ISO significantly altered the methodology by which it determines margin requirements associated with both physical (energy markets) and financial (incremental offers / decrement bids "virtuals" and financial transmission rights "FTRs") market participation. Initial analysis conducted by the ISO covering the period of 6/07 – 11/07 indicates that Participants' physical energy margin requirements have been reduced by approximately 20% as a result of the Tier 2 changes.[1] This was made possible, in part, by the ISO and its stakeholders' efforts toward continuously reducing the settlements cycle times as well as trimming the grace period for invoice payments. Furthermore, the FAP language was crafted with the flexibility to permit additional reductions in margin requirements as the ISO takes further strides toward shortening settlement cycle times.

Figure 1 – Reduction in Margin Requirements under Tier 2 FAP for Sample Market Participants

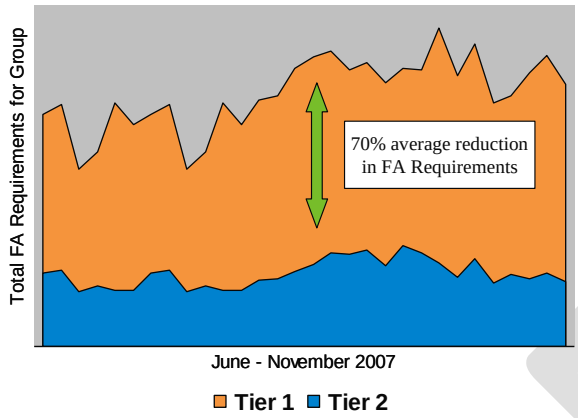


Market Participants encountering the largest reduction in margin requirements are those that participate in virtual transactions. The ISO's analysis of five Participants exclusively involved with bidding virtuals indicates that virtual traders have benefited from an average reduction in margin requirements of more than 70% as a

[1] Results based upon sampling of five Participants exclusively involved in physical energy markets activity throughout study period.

result of the Tier 2 changes. Once again, these examples of margin savings have been made possible through the ISO's efforts toward improving cycle times as well as weaving traditional financial market risk theories into the ISO's credit policies.

Figure 2 – Comparison of Virtual Market Margin Requirements for Sample Participants

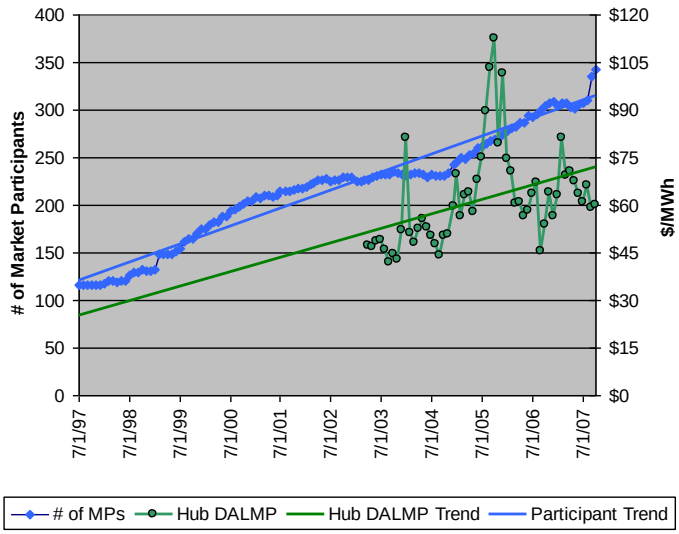


The breadth and depth of market activity has swelled over the past few years. While recent modifications to the FAP have resulted in a reduction in individual non-FTR margin requirements, aggregate NEPOOL requirements have nearly doubled from the levels experienced in 2004. The following are just a few of the factors contributing to this dramatic increase in total Pool-wide margin requirements, and, by extension, risk exposure:

- Escalating commodity costs
- 50% increase in the number of Market Participants from 10/04 to 10/07
- Continual introduction of new market offerings supported by the ISO

The ISO is aware of the credit challenges posed by the increased breadth of market offerings as well as the diversification of its Participant base. As more market activity shifts toward the ISO's purely financial markets, the greater the credit challenges become. While, in absolute terms the FTR market only represents a few percentage points of overall ISO invoiced activity, no market presents a greater credit challenge.

Figure 3 - Number of NEPOOL Participants v. Hub Day Ahead Average LMPs



FTRs are more closely aligned to traditional exchange traded futures instrument than they are to the ISO's other markets offerings. With the recent events involving payment defaults by FTR participants in PJM and the pending introduction of the Long Term Transmission Rights ("LTTR") market, a close relative of the present day FTRs, it has become abundantly clear that it is imperative that the ISO redouble its efforts toward further aligning its processes and policies with those employed by traditional commodities markets when addressing FTR risk mitigation strategies. Increased market and default risk merits the ISO's further reliance upon accepted financial industry practices in defining its credit policies.

Overview of FTR Market

FTRs are financial instruments that entitle the holder to receive compensation for congestion costs that arise when the transmission grid is congested in the Day-Ahead Energy Market and differences in Day-Ahead Locational Marginal Prices ("LMPs") result from the scheduled dispatch of generators to relieve the congestion. While FTRs are designed to serve as a method to manage congestion risk, they also act to convey financial obligations to the FTR holder.

In the wholesale energy market generators receive the LMP at the point where they inject power into the transmission system, while load pays the LMP at the zone where they have withdrawn power. If a constraint exists on the transmission system, the LMP may differ between the generator and the load, thereby exposing one or both parties to a pricing disconnect from that of their underlying contracts. FTRs provide the method by which the parties may hedge against this congestion exposure. For each hour in which congestion exists in the Day-Ahead market between the receipt (FTR Sink) and delivery points (FTR source), the holder of the FTR is awarded a share of the congestion charges collected for that hour.[2] If the difference in LMPs between the sink and source is positive (in the direction of the FTR) the FTR holder receives payment in the form of congestion revenues. If the difference is negative (opposite direction of the FTR), the FTR holder is required to pay the congestion cost. The purchaser of an FTR offers a fixed price it is willing to pay or be paid (award obligation) at a fixed point in time in exchange for accepting uncertain congestion revenue or payment streams in the future (congestion costs[3]).

Although LMPs are composed of an energy component, a congestion component, and a loss component, FTRs do not hedge against the loss component. Consistent with the financial nature of the instrument, obligations/credits accrue to FTR holders regardless of who delivered energy or the amount delivered across the path designated in the FTR; in other words, FTRs convey no physical rights or obligations to transmission.

FTRs can be acquired in two ways:

1. *FTR Auction* – The ISO conducts monthly (one month term) and annual auctions (twelve month term) to permit eligible FTR bidders to acquire FTRs. The monthly auction also allows FTR holders an opportunity to sell FTRs that they currently hold for the auctioned month.
2. *Secondary Market* - The FTR secondary market is a market in which FTR holders may sell FTRs on a bilateral basis.

Once an FTR is acquired, the FTR auction and *e*FTR secondary market provide the only options for re-registering ownership when disposing of an FTR. Although disposing of an FTR results in prospective congestion costs being transferred to the purchasing party, the original owner of the FTR is contractually responsible for the payment (or receipt) of the award obligation to the ISO. The purchaser of an FTR in a bilateral transaction arranged outside of the FTR auction or *e*FTR secondary market receives only a contractual right against the seller of the FTR and has no rights or obligations in ISO settlements.

The ISO first conducts an annual auction with a term of twelve months spanning January to December. The amount of the transmission system made available for the annual auction is limited to 50% of the system. The percent limit is imposed on the auction by reducing the ratings of all lines and transfer limits

[2] If congestion costs collected in the Day-Ahead and Real-Time energy markets are insufficient to fully fund the congestion revenue fund, FTR holders may collect less than 100% of the expected congestion rents.
[3] Congestion "costs" will be used in this paper to mean payments either to or from the FTR holder as the example may dictate.

of all interfaces to that percentage. The monthly auction is similar to the annual auction, except that FTRs awarded previously in the long-term auction are represented as corresponding fixed injections and withdrawals in addition to the new buy bids and sell offers for this auction. In the monthly auction, the transmission line flow limits are increased from the long-term limit to the monthly limit of approximately one hundred percent.[4]

FTRs can be bid upon between nodes, external nodes (or their appropriate proxy bidding locations), load zones, and the hub in any combination (e.g. node to node, node to load zone, load zone to load zone, hub to node).

FTR Market Settlements

An FTR consists of two distinct settlement components, the clearing price (credit or obligation) derived through the auction process (award obligation) plus the contractual obligation of the FTR holder to pay (or be paid) the future congestion charges arising from ownership of the FTR (congestion cost). As described below, these settlement components represent vastly different risk exposures to the Pool. As is the case with all settlement obligations, if an FTR holder defaults on its payment obligation, the payment shortfall is allocated to all Market Participants consistent with the mutualized default allocation methodology defined in the ISO's Billing Policy.

Award Obligation

The award obligation is a fixed value and represents the clearing price (in $/MW) for the FTR path, as established through the auction, multiplied by the number of MWs cleared by the bidder for that path. In other words, the award obligation represents how much the FTR holder owes the ISO (positive priced FTR) or is owed by the ISO (negative priced FTR) for the rights to the congestions costs that may accrue over the term of the FTR. Once awarded, the clearing price does not change throughout the term of the FTR; however, the award obligation will move toward zero as the FTR contract cash settles over its term.[5] In a competitive market, the auction price should approximate the expected congestion cost of the FTR over its term plus some adders. Among other considerations, the clearing price will be affected by:

- Liquidity of the marketplace
- Variability of expected congestion costs
- Risk tolerance of the individual FTR bidders

Participants in the FTR market vary and can be generally divided into three groups, load serving entities (LSEs), generators, and speculators, although lines are often blurred as a single corporate entity may serve load, own generation and conduct speculative trades. Each group has a different motivation for market participation and different risk tolerances. Furthermore, as the market is principally designed as a hedging tool, participants utilizing it for that purpose have unique underlying contractual terms and conditions that further influence bidding strategy and, therefore, market clearing prices. In short, there are numerous exogenous variables that ultimately determine FTR clearing prices and, by extension, award obligations. While it may be

[4] Less than 100% of the transmission system is made available through the FTR auction process as a means to help insure that the Congestion Revenue Fund will remain fully funded.

[5] Monthly FTRs are invoiced at a single point in time causing the associated award obligation to become zero. Invoicing for annual FTRs occurs throughout the term of the instrument in twelve installments, resulting in an essentially straight line depreciation of the long-term award obligation over its term. The first installment occurs approximately midway through the second month of the twelve month term.

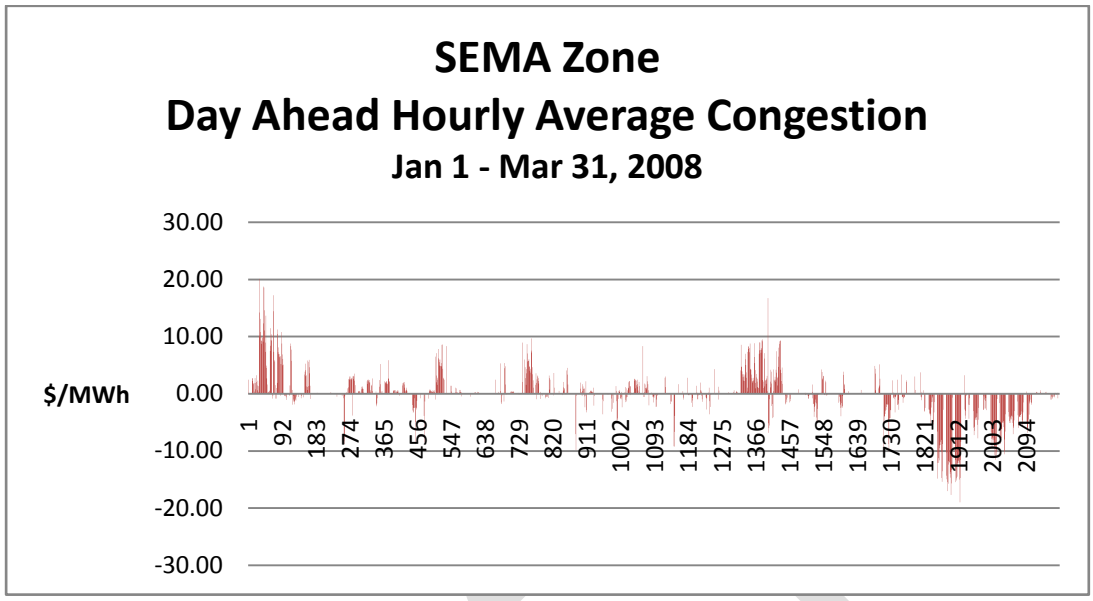
difficult to predict clearing prices prior to the auction, it is, however, possible to estimate the maximum possible award obligation an FTR ***bid*** represents prior to it clearing.

Whether the FTR holder owes the Pool or is owed by the Pool, cash settlement of award obligations and congestion costs occur after the FTR month has completed. As an example, the monthly FTR auction for May, 2008 will clear no later than April 22. Therefore, by April 22, 2008, FTR bidders' award obligations for May, 2008 FTRs are known. However, award obligations are not collected (paid) from (to) the FTR holders until the non-hourly bill incorporating congestion costs for the month of May is issued. This invoice will be distributed on June 12, 2008 with a payment due date of June 17th, nearly a full two months after the award obligations are known.[6]

Congestion Costs

While the task of estimating the maximum possible default exposure of an FTR's award obligation is rather straightforward, the same can not be said of its prospective congestion costs. Congestion is measured in the Day Ahead energy market on an hourly basis and occurs as a result of prospective system operating conditions for the following day. congestion costs are highly variable and can swing from positive one hour to negative the next. It is precisely for the purpose of hedging against this variability that the FTR market was created. With the combination of highly variable returns, lengthy terms (tenor), a lumpy auction process (monthly/annual), and an illiquid secondary market, it is easy to see the challenge faced in creating a workable credit policy for this market.

[6] The ISO filed and received approval by FERC to alter the invoicing schedule of FTR and auction revenue rights line items from monthly to weekly billing. The date of implementation for this change is unknown at this time.


SEMA Zone
Day Ahead Hourly Average Congestion
Jan 1 - Mar 31, 2008
$/MWh
30.00
20.00
10.00
0.00
-10.00
-20.00
-30.00
1
92
183
274
365
456
547
638
729
820
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1002
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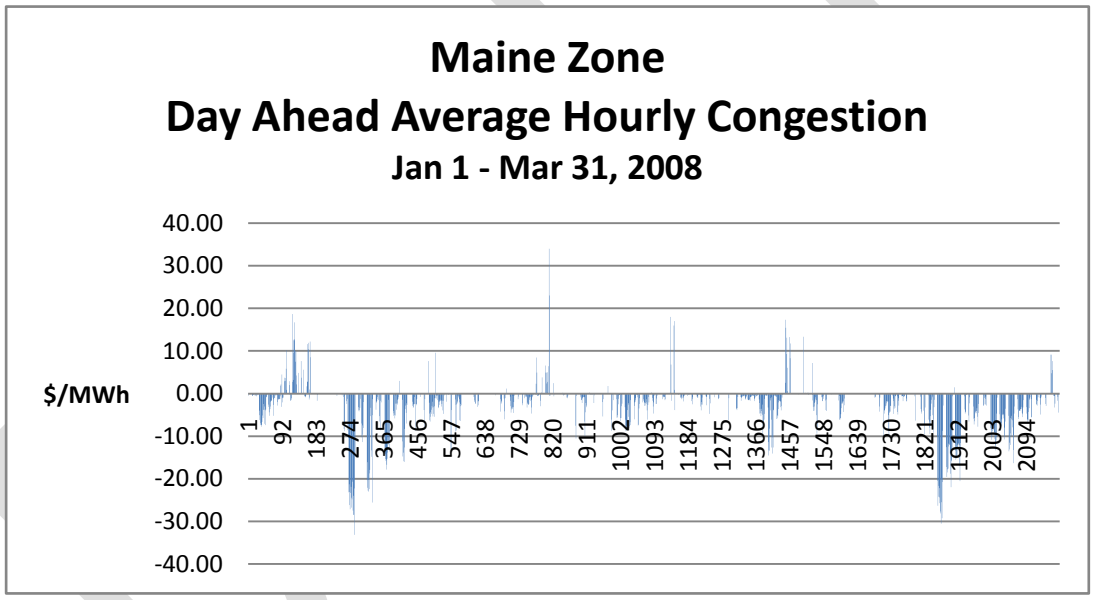
Maine Zone
Day Ahead Average Hourly Congestion
Jan 1 - Mar 31, 2008
$/MWh
40.00
30.00
20.00
10.00
0.00
-10.00
-20.00
-30.00
-40.00
1
92
183
274
365
456
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729
820
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1002
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1184
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1821
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2003
2094

General FTR Credit Risks

Most credit policies are shaped by the answer to the following question: What is the financial exposure to the market in the event a participant defaults on its payment obligations? If we view this question in the context of FTR award obligations, we quickly see that the answer can be quite different depending on whether the FTR is held on a predominantly congested path – "prevailing flow" (e.g., hub into Connecticut) or if the FTR is sourced in the opposite direction of congestion – "counterflow" (e.g., hub into Maine).

Positive priced FTRs indicate the willingness of the FTR holder to lock in a fixed obligation in advance of the anticipated receipt of future congestion revenues associated with the prevailing flow FTR ("longing the market" - buy low / sell high). On the other hand, negative bids indicate the threshold price that the FTR holder is willing to accept in exchange for assuming the anticipated congestion costs associated with a counter-flow FTR ("shorting the market" - sell high / buy low).[7]

By separating the market in the following manner we can better illustrate some of the market risk factors involved with different types of FTR bids:

- Large positive priced FTR
- Near zero priced FTR
- Large negative priced FTR

Large Positive Priced FTR

Large positive price prevailing flow bids result in the bidder locking in an obligation with the expectation that congestion costs (in this case, expected revenues) over the term of the FTR will offset the pending award obligation. The most obvious risk is if congestion does not materialize on the path, thereby resulting in the FTR holder paying the cost of the award obligation without receiving the benefit of material congestion cost offsets. Fortunately, this form of exposure is quantifiable at the time of bid submittal and therefore is easily managed.

Consistent with the use of FTRs as hedging instruments to layoff market risk, FTR bidders tend to over-price prevailing flow FTRs, resulting in award obligations in excess of actual congestion cost offsets. In an efficient market, the auction pricing premium would result in an arbitrage opportunity that would quickly be traded away. Regardless of any questions about the pricing efficiency of the FTR market, award obligation default risk on positively priced FTRs does not pose a material challenge to credit policy and is addressed through the BidFA and AwardFA methodologies discussed below.

Historically, large positive priced FTRs have proven mostly resistant to congestion cost risk. However, recent events in PJM illustrate how changes to the transmission system, both planned and unplanned,

[7] It is important to stress that the terms "long" and "short" as they are commonly used in futures contracts indicate that, in the case of a long position, the holder of the position will profit if the price increases but its loss exposure is capped at the purchase price of the contract. On the other hand, a short holder is betting that the price of the contract will decrease over time, exposing the holder to risk equal to the maximum plausible increase in the value of the contract. In essence, a short holder is exposed to nearly unlimited theoretical risk. The difference in the application of these terms to the FTR market is that, unlike traditional futures contracts, a prevailing flow FTR (long) can change its stripes and become a counterflow FTR (short) thereby exposing a holder of a positively priced "long" FTR to the same nearly limitless loss exposure as that of a holder of a negatively priced "short" FTR holder.

can result in power flow and congestion patterns far removed from historical norms.[8] Given the right system conditions, even large positive priced FTRs may impart congestion cost risk.

During the course of a normal month, it is common for system conditions to change such that traditional prevailing flow paths perform as counterflow paths over short durations. Fortunately, extended periods of such "flipping" on predominantly congested paths occur infrequently. Certainly, one of the principal drivers for such conditions occurring is a change to the transmission system, specifically transmission outages. Such outages can be broadly categorized as planned or unplanned. In either case, transmission outages can materially impact the value of FTR paths, even subjecting the most highly priced path to the possibility of performing as a counterflow path for extended periods of time. If notice of planned transmission outage has been provided to market participants prior to the purchase of FTRs spanning the term of the outage, it is expected that the FTR bidders will adjust their bid prices to reflect the expected change to FTR values. Conversely, if the outage is announced (whether planned or unplanned) after FTR bidders had purchased positions covering the outage period, the FTR holders could be at risk of sustaining significant congestion costs with limited opportunities to mitigate their loss exposure.[9]

Even short periods of counterflow on positively priced paths can significantly impact monthly FTR returns. The greatest potential for suffering significant FTR losses, however, occurs when an FTR holder purchases an FTR path at a high $/MW-mo price in the auction only to witness the path perform in a counterflow manner, thereby resulting in the accrual of congestion costs to the FTR holder. In essence, the FTR holder pays in the auction for the right to pay future congestion costs – lose, lose.

Near Zero Priced FTR

FTRs clearing at prices approaching zero do not create material award obligation default risk, although they present their own form of credit exposure. If we presume that clearing prices generally reflect the market's expectation of future congestion costs over an FTR path, we would, therefore, assume that neither award obligation exposure nor congestion cost exposure are of much significance for near zero priced FTRs. Of course, we know this not to be the case.

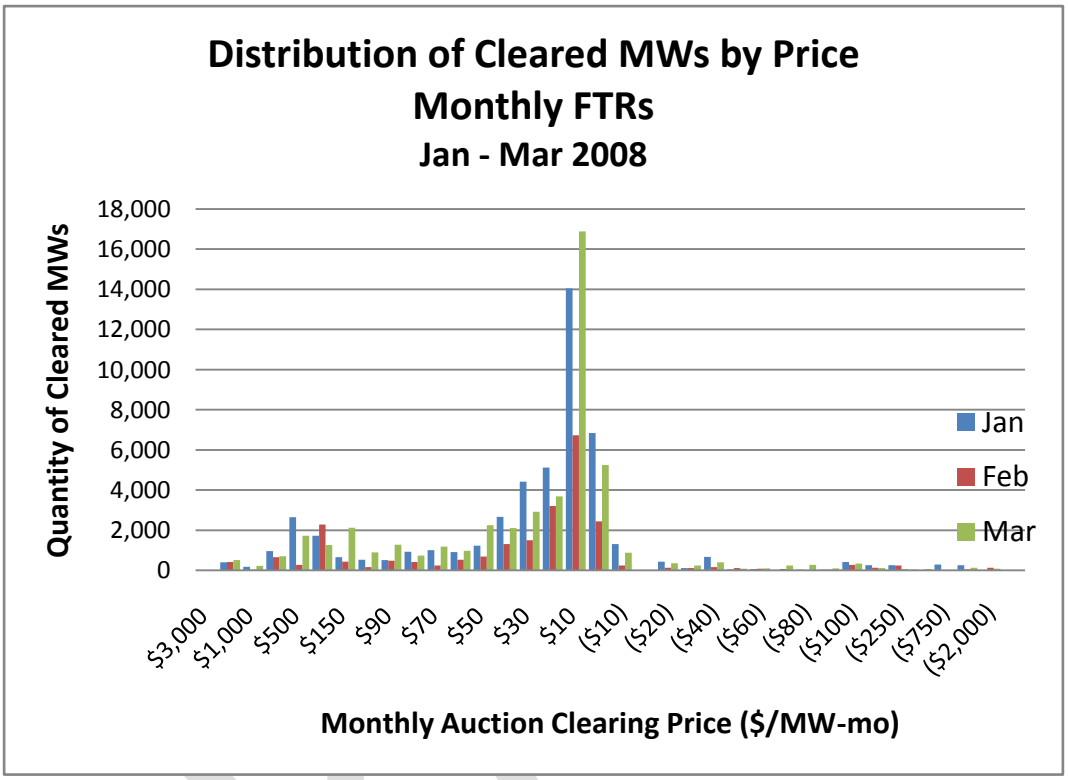
While award obligation collateral requirements, in the form of BidFA and AwardFA (as discussed below), serve to insulate the Pool from uncovered exposure due to an FTR holder defaulting on its award obligation payment requirement, the congestion cost risk must also be addressed. Even a small amount of congestion cost obligation (in $/MWh) on a positively priced path could result in a significant loss for an FTR holder. As example, an FTR that results in an auction award obligation of $10 while only accruing offsetting congestion revenues of $1 over its term results in a loss of 90% of the bidder's initial investment. Of course, the opposite holds true, in that just small amounts of net congestion revenues for a near zero priced FTR could result in spectacular returns on investment for the FTR holder.

Bidding for near zero FTRs is similar to trading highly leveraged positions in financial markets. Small initial outlays provide the FTR holder the prospect of stellar returns, or, alternatively, equally spectacular losses. The prospect of such returns is one of the reasons bidding for near zero priced

[8] This is not to suggest that the PJM FTR defaults was attributable to transmission outages, this is just meant to illustrate how such outages paired with other market and non-market factors can contribute to FTR values materially altering from historical norms and market expectations. Please refer to PJM's website www.pjm.com for details concerning the issue.

[9] The ISO provides no means for holders of monthly FTRs to close their positions after the month commences. Holders of annual FTRs have limited opportunities to take action to curtail future losses as the ISO will permit the FTR holder to offer only their prompt month positions into the next scheduled monthly auction. The ISO does support a secondary market; however, this too limits the tenor of the offer to just the prompt month.

FTRs is such a popular strategy. FTR bidders are often motivated by maximizing returns on initial investment (i.e., collateral). Many FTR bidders compile significant portfolios of FTRs priced at or near $0/MW. To illustrate this point, an analysis of the FTR market during the three month period of January 2008 to March 2008 reveals that 45% of cleared FTRs – in MWs – were priced between -$10 to $10/MW. For the month of March, over 23,000 MWs cleared within this price range.



Large Negative Priced FTR

Negative bids are a wager that congestion costs on the path will end up totaling less than the negative bid for that path. Congestion costs offset the purchase price of positive priced FTRs, such that more congestion equals a better return on the FTR investment. The opposite is true for negatively priced FTRs – congestion costs act to degrade the returns of negative FTRs. As mentioned previously, the likelihood of a traditionally congested path (high positive priced FTR) flipping is low; on the other hand, there is a substantial chance of congestion costs spiking above historic norms. It is the prospect of observed congestion costs exceeding expectations that causes counterflow FTRs to be viewed as representing greater default risk to the Pool. It's important to emphasize that the job of a properly designed credit policy is not to protect against normal market operations; rather, it is to guard against conditions of market stress. On average, positive priced FTRs exceed their associated congestion revenues, thereby rewarding those holding counterflow positions. However, the reason, in part, high priced prevailing flow FTRs clear at the levels that they do is that there is a real possibility that system conditions may change, resulting in congestion cost spikes and thereby exposing counterflow FTR holders to losses.

As a negative bid entitles the FTR holder to a fixed payment obligation from the ISO, there is no exposure to award obligation default. Furthermore, as this payment is issued to the holder after the month has been settled, there is limited exposure to the possibility of a counterflow FTR holder

receiving award obligation payments while simultaneously defaulting on its associated congestion cost requirement. The exposure comes from the combination of a straight line award obligation payment schedule for annual FTRs coupled with the seasonal nature of congestion costs.

As example, let us assume an FTR holder "purchases" a twelve month 100MW counterflow FTR for ($240,000) in the annual auction. This path experiences congestion (obligation to the FTR holder) only during the summer months. Over the first six months of ownership, the FTR holder is rewarded with $120,000 in award obligation payments from the ISO (6mo @ $20,000/mo[10]). However, over the following three months the path is expected to be congested, resulting in expected congestion costs of $80,000 / mo. The FTR holder may find itself unable (or unwilling) to make good on the pending net obligations ($20,000 award obligation - $80,000 congestion cost = -$60,000 / mo) and instead opts to default. The outstanding default exposure to the Pool amounts to the $240,000 congestion costs (3 months x -$80,000 / mo) less the $120,000 of unpaid award obligations due the FTR holder (remaining 6 months x $20,000 / mo) for a net default exposure over the life of the FTR of $120,000.

While the total default may eventually net to $120,000, the exposure to the non-defaulting Market Participants is made worse as a result of the uneven timing of the cash flows. Those Market Participants operating in the ISO's markets during the summer period, where the FTR holder is defaulting at a rate of $60,000 / mo, are saddled with the burden of absorbing these costs. It is only later, as the ISO utilizes its right of offset to claim the $20,000 / mo of award obligations, that those paying for the default are partially refunded. It is not hard to envision such a scenario. Given the ISO's policy of mutualizing payment defaults it would not be unreasonable to assume that those participants capable of market exit would at least consider the possibility of doing so, whether permanently or temporarily, in order to avoid sharing in the payment default allocation. This in turn would expose the remaining participants to a larger share of the default burden.

[10] Note that annual award obligations are invoiced based upon the ratio of (# of days in month / # of days in year). Therefore, invoiced amounts will not result in even installments throughout the term.

Overview of FTR FA Requirements

The ISO has established Financial Assurance requirements for current FTR market participation as the sum of the following four components:[11]

- **Award Obligation**
  - BidFA – represents the potential auction award obligation of the *uncleared* bid
  - Award FA – corresponds to the award obligation of the *cleared* bid
- **Congestion Cost**
  - Settlement Risk FA (SRFA) – reflects the potential future congestion cost associated with the FTR bid
  - Settlement FA – actual congestion cost of the FTR as determined at the time of market settlement

These components are established at various times throughout the FTR lifecycle. At auction close, SRFA and Bid FA values are calculated for the submitted bids. Upon auction clearing, these requirements are recalculated and Bid FA is replaced by Award FA while SRFA is assessed on the awarded paths.

As the FTR month commences and settlements begin to accrue, the forecasted risk component, SRFA, depreciates while the actual congestion costs (credit or obligation) are accounted for in the form of Settlement FA.

BidFA

Regardless of whether the FTR term is for a single month (short-term) or for a calendar year (long-term), once the award obligation is established the financial obligation remains fixed until paid down by the FTR holder – whether in its entirety as is the case for monthly FTRs or in one month increments for annual FTRs. This lack of variability permits the ISO to accurately answer the question posed at the beginning of this section, "What is the financial exposure to the market in the event a Participant defaults on its payment obligation(s)." At any point in time the ISO can determine an FTR holder's award obligation default exposure with 100% certainty. As such, it is a straightforward process to establish credit requirements for this portion of an FTR position.

Evaluated Prior to Auction

Bid FA is a calculated value that represents the largest possible award obligation the bidder may be subject to as a result of the submittal of its FTR bids.[12] This calculation occurs prior to the running of the auction and is meant to insure that, regardless of auction results, the FTR bidder will have sufficient FA to meet the pending award obligation. If, upon running the credit evaluation process, at FTR auction close the FTR Bidder does not have sufficient available FA to meet the calculated BidFA and SRFA margin requirements, all of that participant's bids will be removed prior to the running of the auction. If not for the pre-auction credit evaluation, the potential exists that an FTR bidder may be awarded FTRs without the ability to post the requisite margin requirements, thereby exposing the Pool to uncovered default exposure.

[11] Summary of the FAP excludes considerable detail of calculation mechanics. Refer to ISO New England's website for additional training materials regarding the calculation of Financial Assurance requirements, particularly as they pertain to FTR market participation.

[12] When multiple bids are submitted for a single FTR path the ISO calculates BidFA requirements by optimizing for the selection of the largest combined margin requirement when considering the group of bids' BidFA and SRFA requirements.

Under current FTR market design, once an FTR is awarded it cannot be rescinded. This is a critical point and is the linchpin assumption underlying the current credit policies for FTR market participation.

Negative Bid Credits

As negative bids represent potential future payments to the participant, the ISO permits negative Bid FA values to offset the calculated SRFA obligation on a path specific basis. A negative bid resulting in a net credit (i.e., Bid FA credit greater than SRFA obligation) is not permitted to be used to offset other credit obligations, including those posed by the participant's other FTR bids. This limit is employed to guard against the possibility of FTR participants placing unreasonably large negative bids for the purpose of creating artificial margin offsets to "fund" additional bidding activity.

Award FA

Evaluated After Auction

Award FA is calculated subsequent to the clearing of the auction. This value mirrors the actual award obligation resulting from the bidder's cleared FTR portfolio. The FTR bidder's total Award FA value will always be equal to or less than their Bid FA requirements. This is a result of two factors; first, it is unlikely that all of an FTR holder's bids will be accepted, and second, the FTR holder's bid price will not always set the path clearing price. In such cases the FTR holder's award obligation will be lower than its willingness to pay (Bid Price or Bid FA).

Negative Bid Credits for Awarded FTRs

Once the FTR bid has been awarded, the limit on negative bid net credits is lifted for monthly FTRs. To the extent that a cleared negative bid is larger (in absolute terms) than the forecasted congestion cost (SRFA) of the FTR, the resultant net margin credit is permitted to offset collateral requirements accruing as a result of other market activity. However, the ISO does maintain an offset cap for annual FTR holders such that, if the overall portfolio results in an FTR award FA credit, only $1/12^{th}$ of this credit is permitted to be used as a margin offset by the FTR holder.

As the ISO operates as a clearinghouse for all market and settlement activity, it is essential that there is a balanced flow of monies being paid to and from the ISO on a weekly basis. The ISO must ensure that its participants are capable of meeting their weekly payment obligations. In the event of a payment default by an FTR holder, the ISO is unable to monetize the future cash flow due the participant (award obligation credit). Therefore, if the ISO were to permit the use of future revenue streams[13] to lower overall margin requirements, it would introduce the possibility of under collateralized current period default exposure. The ISO desires to minimize the risk of such occurrences; therefore, the ISO does not permit forecasted future FTR returns to be used to cover current margin requirements.

Award Obligation as Advanced Invoicing

[13] Further out in time than the current bill period.

Invoicing of award obligations occurs approximately two months after the obligations are known; therefore, it can be argued that, for those FTR holders posting cash collateral, the "payment" of FTR award obligations effectively occurs upon posting BidFA margin. As BidFA will never be less than, and in almost all cases is greater than, the ultimate Award FA values, the FTR bidder has essentially paid for its auction award prior to being awarded its first FTR path.

SRFA

SRFA represents an estimate of the forward risk of congestion costs. This forecasted requirement is calculated by use of a proxy methodology based upon historic path specific returns.

In short, the ISO evaluates the historical congestion cost experienced for each month over the prior thirty-six months[14] on each path bid upon in the auction.[15] Then, utilizing a risk threshold value agreed upon by the ISO and its stakeholders, a proxy value is created for each path based upon the average monthly historical congestion costs observed for that path. For annual FTRs the ISO has set a 75% risk threshold while monthly FTRs are subject to a more stringent 95% risk threshold. The risk threshold represents the probability of the FTR path resulting in returns *better than* the calculated proxy value. Said differently, there is a 5% likelihood that an FTR holder of a monthly FTR will incur congestion costs greater than its posted SRFA margin.

The SRFA margin requirement results in vastly different collateral obligations depending on whether the bid is for a historically prevailing flow or counterflow path. For most large positive FTR paths the SRFA requirement is likely to be at or near $0 as odds are low that such paths have experienced many months of net congestion costs (i.e., counterflow conditions). To the contrary, those paths that have experienced extensive periods of counterflow congestion conditions will experience significant SRFA credit obligations.

While negative FTR Bid FA and Award FA are permitted to offset the risk adjusted forecast of congestion costs (subject to limitations discussed above), the same is not true of calculated SRFA credits. As the SRFA value is merely a forecast of potential congestion costs, the ISO and its stakeholders chose to limit the exposure to its market participants of SRFA forecast error and opted to not permit estimated SRFA credits to lower an FTR bidder's margin requirements. The current FTR requirements calculation methodology was developed in 2005, at a point in time when the FTR market was still in its relative infancy. As the market continues to mature, there may be an opportunity to reassess the collective appetite toward permitting risk adjusted forecasts of SRFA credits to be permitted to lower FTR bidder's overall FTR margin requirements.

[14] Rules exist to accommodate paths that may not have a full thirty-six months of history. See the aforementioned training materials for details.
[15] Separate proxies are produced depending on whether used for long-term or short-term auction or for on-peak or off-peak FTRs.