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About This Manual

This is the ISO New England Manual for Financial Transmission Rights. The reader is referred first to Market Rule 1 for an explanation and information regarding the operation of the markets. Terms that are capitalized in this manual generally are defined in Section I of the ISO Tariff.
Section 1: Financial Transmission Rights Overview

1.1 Definition and Purpose of FTRs

A Financial Transmission Right (FTR) is a financial instrument that entitles 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 dispatch of generators to relieve the congestion. Each FTR is unidirectional and is defined in megawatts from a point of receipt (where the power is injected onto the New England grid) to a point of delivery (where the power is withdrawn from the New England grid). For each hour in which congestion exists on the New England Transmission System between the receipt and delivery points specified in the FTR, the holder of the FTR is awarded a share of the congestion charges collected for that hour. Non-PTF external interfaces are excluded from the FTR Auction because flows over those facilities are limited to those with transmission reservations and, therefore, there will be no congestion over those facilities because external interface limits are honored in the clearing of the Day-Ahead Energy Market. Since there is no congestion over these facilities in the Day-Ahead Energy Market, there is no need to offer FTRs.

The purpose of FTRs is to provide a mechanism to manage congestion risk. FTRs entitle the holder to payments based on the congestion costs associated with a particular energy transaction and thus act as a hedge against those costs. Essentially, FTRs are financial entitlements to the Day-Ahead Price Congestion Component differences for the associated receipt and delivery points. They do not represent a right for physical delivery of power.

The holder of the FTR is not required to deliver energy in order to receive a Transmission Congestion Credit. If a constraint exists on the New England Transmission System, the holders of FTRs receive a credit based on the FTR MW quantity and the difference between the Congestion Components of the Day-Ahead LMPs at the point of delivery (where the power is withdrawn from the New England grid) and point of receipt (where the power is injected onto the New England grid). This credit is paid to the FTR Holder regardless of who delivered energy or the amount delivered across the path designated in the FTR. Likewise, an FTR will be a financial obligation if the congested flow is in the opposite direction of the held FTR.

The ISO conducts periodic auctions to allow Eligible FTR Bidders to acquire FTRs. The auction also allows FTR Holders an opportunity to sell FTRs that they are currently holding. Offers to sell or requests to buy FTRs are submitted through an Internet computer application called eFTR.
1.2 Valuation of FTRs

The hourly economic value of an FTR is based on the FTR MW quantity and the difference between the Congestion Components of the Day-Ahead LMPs at the point of delivery (where power is withdrawn from the New England grid) and the point of receipt (where the power is injected into the New England grid) designated in the FTR. Therefore, it is important to note that an FTR can provide financial benefit, but it can also be a financial liability resulting in additional charges to the holder.

(1) It is a benefit when the path designated in the FTR is in the same direction as the congested flow. (The Congestion Component of the Day-Ahead LMP at the point of delivery (where power is withdrawn from the New England grid) is higher than the Congestion Component of the Day-Ahead LMP at the point of receipt (where power is injected into the New England grid)).

(2) An FTR can be a liability when the designated path is in the direction opposite to the congested flow. (The Congestion Component of the Day-Ahead LMP at the point of receipt (where power is injected into the New England grid) is higher than the Congestion Component of the Day-Ahead LMP at the point of delivery (where power is withdrawn from the New England grid)).
1.3 Requirements To Participate

To participate in the FTR Auction, a Market Participant must satisfy the established financial assurance criteria and become an Eligible FTR Bidder or FTR Holder.

The financial assurance criteria for Market Participants and for Market Participants that are participating as FTR Holders only (FTR Holder Only Market Participants) can be found in Exhibit 1A of Section 1 of the Transmission, Markets and Services Tariff. The Transmission, Markets and Services Tariff can be found on the ISO’s website.
1.4 Eligible FTR Bidder and FTR Holder Actions

As a Market Participant in the FTR process, you are required to perform the following actions:

(1) for those FTRs you wish to buy in the auction, enter the required information and submit the bids to buy using eFTR.

(2) for those FTRs you wish to sell in the auction, enter the required information and post the FTRs for resale using eFTR.
1.5 ISO Actions

The ISO performs the following actions:

1. Registers Eligible FTR Bidders and FTR Holders
2. Initiates, directs, and oversees the FTR Auction
3. Posts FTR Auction results
4. Maintains a record of the FTRs
5. Incorporates FTRs into monthly settlements
6. Determines FTR Auction settlement
7. Maintains system models used for FTR and ARR calculations in accordance with the ISO’s data retention policy as it applies to data that may be subject to a future request for billing adjustment and publishes related information as appropriate
8. Prior to each FTR Auction, the ISO will make available, as a minimum, the following information for the time period for which the FTR Auction is to take place to the extent that the release of such data does not create a competitive advantage to specific Market Participants or violate the Information Policy:
   a. The FTR model to be used in the auction including a complete one-line system diagram with all Pricing Nodes (indicating the Load Zone or other Location (including Designated Congestion Areas) that the Node is part of) and including all Nodes used to calculate the Hub Price;
   b. Generator Locations, transmission lines and components, transmission impedances, transmission ratings, transfer capabilities, and operating and transmission operation guides and other relevant assumptions and inputs used for the FTR Auction model.
9. After FTR Auction results are posted, the ISO will make available to Market Participants information relating to:
   a. A change in assignment of a Pricing Node to a Load Zone, Reliability Region, or Designated Congestion Area;
   b. A change in the definition of the Hub or External Nodes.
3.1 FTR Auction Overview

The FTR Auction provides a method of auctioning the FTR capability on the New England Transmission System. The auction also allows FTR Holders an opportunity to offer for sale any FTRs that they currently hold.

FTR Auctions are conducted by the ISO for annual and monthly auctions. The ISO provides notice of the annual auctions at least ninety (90) days prior to the first effective date of the FTRs to be auctioned. At the time of such notice ISO will post a schedule with dates for the opening and closing of bid submission windows and the posting date that results will be published. The assumptions for the two rounds of the annual auctions will specify the calendar year to be auctioned and will include modeling data to be used in the FTR auctions. Twenty-five percent of the available FTRs are auctioned in the first-round and the remaining balance of available FTRs up to fifty percent is auctioned in the second-round.

Following the annual auctions described above, FTR auctions will be held on a monthly basis. The ISO provides notice of the monthly auctions at least forty (40) days prior to the first effective day of the FTRs to be auctioned. The notice will provide a schedule for the bidding window, posting of results, and auction assumptions. After the annual FTR Auctions have been conducted, the remaining feasible FTRs, each having a term of one month, will be made available in the monthly FTR Auctions.

Each auction consists of an on-peak and an off-peak auction.

- FTRs awarded in the on-peak auctions are valid for hours ending 0800 to 2300 on weekdays.
- FTRs awarded in the off-peak auctions are valid for hours ending 2400 to 0700 on weekdays and for hours ending 0100 to 2400 on weekends and NERC holidays.

FTRs acquired in an FTR Auction have the following characteristics:

1. a term as established by the auction: one month or one year.
2. a magnitude specified to the nearest 0.1 MW.
3. (a) are available between any specified Locations for which an LMP is calculated and posted (subject to simultaneous feasibility). The list of Locations includes Hub, Load Zone, Node and External Node.

   (b) the exceptions noted in subsection (3) (a) above are the External Nodes associated with Non-PTF external tie lines. For these External Nodes, proxy locations for FTR bidding are provided. These proxy bidding locations represent the connection points to the Non-PTF external tie line facilities and are shown in the table below.
Table 3.1 Proxy Bidding Locations for Non-PTF External Tie Lines

<table>
<thead>
<tr>
<th>External Interface</th>
<th>External Node</th>
<th>Proxies for FTR Auction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase II</td>
<td>HQ_P1_P2 345-kV</td>
<td>Sandy Pond 345-kV</td>
</tr>
<tr>
<td>Cross Sound Cable</td>
<td>Shoreham 138-kV</td>
<td>Halvarsson 345-kV</td>
</tr>
</tbody>
</table>

(4) may be designated as injections (points of receipt) at and withdrawals (points of delivery) from Locations within the New England Transmission System and External Nodes.

(5) do not hedge the FTR Holder against payment for losses.

The FTR Auction not only allows Eligible FTR Bidders to purchase the specific FTRs offered into the auction by sellers, but also enables bidders to purchase FTRs that are different from, but are enabled by, one or more of the FTRs offered into the auction. In this sense, the auction can be used (through the purchase and sale of FTRs) to reconfigure an FTR from its original definition to another definition.
3.2 eFTR

eFTR is an Internet application that allows Eligible FTR Bidders and FTR Holders to participate in the FTR Auction. Figure 3.1 presents a conceptual view of the FTR Auction subsystems.

Bids to purchase or offers to sell FTRs are submitted by Eligible FTR Bidders and FTR Holders through the Market User Interface (MUI). All entered quotes are validated and entered into the FTR Auction database by the MUI.

In addition to the quotes, other data that is required by the FTR Auction is provided by other ISO systems. These items include network modeling including the external grid, outage schedules, and facility ratings. The network model used for the FTR Auction and ARR allocation is the model developed for the EMS. This model is then adjusted by removing load and generation for use in the FTR Auction. (The load distribution and generation from the EMS is retained in the model used to calculate ARRs.) Once an FTR Auction is complete, the FTR Auction database and all models used to finalize the FTR Auction results will be archived and retained in accordance with the ISO’s data retention policy as that policy applies to data that may be needed to resolve requests for billing adjustments under applicable billing adjustment procedures.

The FTR Auction subsystem consists of the following three components:

1. **Pre-processing Function** - performs all activities necessary to set up a base case for the evaluation process, including evaluating the quotes and preparing a set of FTRs to be tested for simultaneous feasibility.

2. **Simultaneous Feasibility Testing Function** - performs the evaluation process to determine the new set of FTRs for the FTR market. The highest bid-based valued combination of feasible FTRs is selected. This function also determines the market clearing price for every FTR.
(3) *Post-processing Function* - ensures that the appropriate data items are transferred to the FTR Auction database for posting on the MUI and ensures the results are transferred to the settlement and billing subsystems.
3.3 Simultaneous Feasibility Test

The Simultaneous Feasibility Test (SFT) is a market feasibility test that ensures that the transmission system can support the awarded set of FTRs during the modeled system conditions. If the FTRs can be supported under modeled system conditions and congestion occurs, the ISO should collect enough Transmission Congestion Revenue to cover the Transmission Congestion Credits, thus becoming revenue adequate. The purpose of the SFT is to preserve the economic value of FTRs to the FTR Holders by ensuring that all FTRs awarded can be honored.

The SFT uses a power flow that models the auction bids and offers and expected network topology during the period being analyzed. It is not a system reliability test and is not intended to model actual system operating conditions. FTR bids are modeled as generation at the points of receipt (where power is injected into the New England grid) and load at the points of delivery (where power is withdrawn from the New England grid). SFTs are run during the determination of the winning quotes for the FTR Auction.

Inputs to the SFT model include all FTR bids and offers for the auction period, all pre-existing FTRs for the study period, transmission line outage schedules, expected configuration of transmission facilities, thermal operating limits for transmission lines, voltage and stability limits that are valid for the study period, outages of individual generating units to the extent that such outages impact voltage or stability limits that are valid for the study period, and estimates of uncompensated power flow circulation through the New England Control Area from other Control Areas.

The SFT evaluates the ability of all system facilities to remain within limits during operation. The system must also be able to sustain any single transmission contingency event with all system facilities remaining within applicable emergency limits.
3.4 Determining the Winning Quotes

The winning quotes are determined by the set of simultaneously feasible FTRs with the highest total auction value, as determined by the bids of the buyers and taking into account the reservation prices of the sellers.

- The valuation of the awarded FTRs during the auction is based on the quotes submitted into the FTR Auction. Therefore, the set of quotes that maximizes the quote-based value of the FTRs awarded to the FTR Bidders that would receive them is the winning set.
- This ensures that the ISO awards the set of FTRs and allocates them among auction bidders in such a way that the value-based transmission utilization is maximized.

The major steps performed to determine the winning quotes include:

1. Selecting the model appropriate to the FTR Auction.
2. Downloading data from the FTR market user database, including bids and offers and any previously awarded FTRs.
3. Solving the linear program problem.
4. Checking the simultaneous feasibility of the FTR Auction solution.
5. Repeating Steps 3 and 4 until solution is reached.
6. Uploading the results to the FTR MUI.

After determining the winning quotes, the results are published and settlements occur. Winning bidders pay or receive payments for FTRs acquired in the auction based on the market prices clearing in the FTR Auction; FTR sellers pay or receive payments for the FTRs they surrender to the ISO based on the market prices clearing in the FTR Auction. This settlement is separate from the transmission congestion settlements.

All auction revenues, net of payment to entities selling FTRs into the auction, are allocated: (i) to ARR Holders as described in Section 7 of this manual, FTR Auction Revenue Settlement; and (ii) to entities paying for transmission upgrades which make it possible to award additional FTRs in an auction (excluding upgrades paid for by the Regional Network Service (RNS) rate) as described in Section 8 of this manual, Incremental Auction Revenue Rights.
3.5 Auction Time Line

The ISO initiates, directs, and oversees the FTR Auctions.

3.5.1 Annual Auctions

(1) For annual FTR Auctions, the auction assumptions, including the modeling assumptions to be used for the FTR Auctions and dates and times for the opening and closing of bid submission windows will be announced by the ISO no later than 90 days prior to the first effective day of the FTRs to be auctioned.

(2) The annual FTR Auction shall be conducted for FTRs effective for a single calendar year in two sequential rounds. Twenty-five percent of the available network capacity shall be available for the initial round of the annual FTR Auction. The FTRs that remain feasible with fifty percent of the network capacity available and after deducting the network capability associated with FTRs sold in the initial round shall be made available during the second round of the annual FTR Auction.

(3) The ISO performs the FTR Auction clearing analyses.

(4) The FTR Auction results for the first-round annual auctions, as specified in Section III.7.3.7, will be published prior to the open of the bidding window for the second-round annual auctions. The FTR Auction results for the second-round annual auctions will be published prior to the open of the bidding window for the first monthly auctions.

(5) The identities of winning bidders and the quantities of FTRs cleared by individual bidders in the first round will not be published until the close of the final round of the annual FTR Auction.

(6) Results of the on-peak auction and off-peak auction will be posted separately. The ISO shall not disclose the price specified in any bid to purchase or the reservation price specified in any offer to sell.

3.5.2 Monthly Auctions

(1) For monthly FTR Auctions, the auction assumptions, including the modeling assumptions to be used for the FTR Auctions and dates and times for the opening and closing of bid submission windows will be announced by the ISO no later than 40 days prior to the first effective day of the FTRs to be auctioned.

(2) The ISO shall conduct monthly FTR Auctions, after the completion of the annual FTR Auction, every month. A monthly FTR shall be effective for a single full calendar month. FTRs shall be made available for monthly auctions after accounting for all FTRs sold in the annual FTR Auctions.

(3) The ISO performs the FTR Auction clearing analyses.

(4) The FTR Auction results for the monthly auction will be published prior to the first effective day of the FTRs awarded in the auction.
(5) Results of the on-peak auction and off-peak auction will be posted separately. The ISO shall not disclose the price specified in any bid to purchase or the reservation price specified in any offer to sell.
3.6 Auction Business Rules

The following information summarizes the FTR Auction business rules:

1. To submit bids or offers into the FTR Auction, an entity must satisfy established financial assurance criteria and become an Eligible FTR Bidder or FTR Holder. Such financial assurance criteria must be met at the time the auction-quoting period ends and before the auction is begun.

2. FTR Holders cannot submit offers to sell FTRs that they do not own at the time of the bid submittal. This ownership must extend throughout the entire duration of that auction period.

3. Invalid quotes into the auction are rejected. These quotes may be resubmitted and, if time stamped (as received by the ISO) before the close of the auction-quoting period, are included in the auction.

4. All outstanding FTRs that were previously awarded for the current auction period in previous auctions and not offered for sale in the current auction are modeled as fixed injections and withdrawals in the auction analysis.

5. Each offer to sell a specified MW quantity of FTRs for the auction period is deemed an offer to sell a quantity of FTRs equal to or less than the specified quantity at or above a price in dollars per MW. An offer to sell may not specify a minimum quantity being offered. Each offer to sell a previously awarded FTR may specify a reservation price, below which the FTR seller will not sell the FTR.

6. Each bid to purchase a specified MW quantity of FTRs for the auction period is deemed a bid to purchase a quantity of FTRs equal to or less than the specified quantity at or below a price in dollars per MW. A bid to purchase may not specify a minimum quantity that the bidder wishes to purchase.

7. A bid to purchase may specify as points of receipt (where power is injected into the New England grid) or points of delivery (where power is withdrawn from the New England grid) any Location for which the ISO calculates and posts Locational Marginal Prices in accordance with Section 2 of Market Rule 1.

8. FTRs are awarded to winning bidders in mandatory FTR Auctions.
Section 4: Reserved
Section 5: FTRs and Market Settlements

5.1 Calculating Transmission Congestion Credit Target Allocations

The Transmission Congestion Credit target allocation is the amount of credit the FTR Holder should receive in each constrained hour due to the value of an FTR.

The ISO determines a target allocation of Transmission Congestion Credits for each hour for each FTR by using the following formula:

\[
\text{Target Allocation} = FTR \times \left( \text{CDALMP}_{\text{Delivery}} - \text{CDALMP}_{\text{Receipt}} \right)
\]

where:

1. \( FTR \) - Financial Transmission Rights held by the FTR Holder between the designated point of delivery (where power is withdrawn from the New England grid) and the designated point of receipt (where the power is injected into the New England grid), in megawatts

2. \( \text{CDALMP}_{\text{Delivery}} \) - The Congestion Component of the Day-Ahead LMP in dollars per MW during the hour at the point of delivery (where the power is withdrawn from the New England grid) designated in the FTR

3. \( \text{CDALMP}_{\text{Receipt}} \) - The Congestion Component of the Day-Ahead LMP in dollars per MW during the hour at the point of receipt (where the power is injected into the New England grid) designated in the FTR

For each FTR Holder, a positive or a negative target allocation is calculated for each hour of the month. The positive and negative target allocations are summed separately for each FTR Holder for the month. All negative target allocations are obligations to pay and are added to Transmission Congestion Revenue. Positive target allocations are summed for each FTR Holder and compensated as Transmission Congestion Credits.

For additional information, refer to the ISO New England Manual for Market Rule 1 Accounting (M-28), Section 6: Transmission Congestion Accounting.
5.2 Calculating Transmission Congestion Credits

The ISO compares the total of all monthly positive FTR target allocations to the sum of the available Transmission Congestion Revenues, being (1) the hourly Day-Ahead Congestion Revenue amounts for the month; (2) the hourly Real-Time Congestion Revenue amounts for the month including Congestion Costs resulting from transmission use scheduled in the Real-Time Energy Market by Market Participants without settlement accounts in the Energy Market and by non-Market Participant Transmission Customers; and (3) the total of all negative FTR target allocations.

(1) If the total of the positive target allocations is less than the Monthly Transmission Congestion Revenues, the Transmission Congestion Credit for each FTR Holder is equal to its positive target allocation. Excess Monthly Transmission Congestion Revenues are carried over until the end of the calendar year as described later in this section.

(2) If the total of the positive target allocations is equal to the Monthly Transmission Congestion Revenues, the Transmission Congestion Credit for each FTR Holder is equal to its positive target allocation.

(3) If the total of the positive target allocations is greater than the Monthly Transmission Congestion Revenues, the Transmission Congestion Credit for each FTR Holder is equal to a share of the total Monthly Transmission Congestion Revenues in proportion to its positive target allocation. The shortfalls in monthly Transmission Congestion Credits in a month may be offset by excess Monthly Transmission Congestion Revenues available at the end of the calendar year, as described later in this section.

For additional information, refer to the *ISO New England Manual for Market Rule 1 Accounting (M-28), Section 6: Transmission Congestion Accounting.*
5.3 Distributing Excess Transmission Congestion Revenues

The objective of the excess Transmission Congestion Revenue distribution is to cover deficiencies in the share of Transmission Congestion Credits received by each FTR Holder during a calendar year as compared to their target allocations for such months.

(1) *Stage One* - The ISO allocates any excess Transmission Congestion Revenues at the end of the calendar year in proportion to, but not greater than, any unpaid monthly Transmission Congestion Credit target allocations plus interest as described in Section 6.3.5 of ISO New England Manual M-28.

(2) *Stage Two* - The ISO distributes any excess Transmission Congestion Revenues remaining after the stage one distribution to the entities who paid Transmission Congestion Costs in that calendar year in proportion to the amount of total Transmission Congestion Costs during the year.

For additional information, refer to the *ISO New England Manual for Market Rule 1 Accounting (M-28), Section 6: Transmission Congestion Accounting.*
Section 6: Reserved
Section 7: FTR Auction Revenue Settlement

7.1 Distribution of FTR Auction Revenues

FTR Auction Revenues are distributed to:

1. **Sellers of FTRs** – FTR Holders offering FTRs in an auction are paid the clearing price for any of their FTRs sold.

2. **ARR Recipients** – The remaining auction revenues are distributed to those entities receiving Auction Revenue Rights (ARRs). ARRs are:
   
   (a) awarded to entities paying for transmission upgrades which make it possible to award additional FTRs in an auction (excluding upgrades paid for by the Regional Network Service (RNS) rate), and
   
   (b) allocated to Congestion Paying LSEs.

For such Congestion Paying LSEs, a four-stage process is used to determine each entity’s ARRs based on its load share of all generation and tie sources within the capability of the transmission system. Special recognition is given to certain contractual arrangements and the parties to those agreements.

The method used to award a portion of the FTR Auction revenues that were made possible in part by transmission upgrades is discussed in Section 8, Incremental Auction Revenue Rights.
7.2 ARR Overview

Revenues from the FTR Auction will be allocated: (i) to entities paying for transmission upgrades; and (ii) to Congestion Paying LSEs. This will be accomplished by defining a set ARRs.

FTR Auction Revenues associated with Incremental Auction Revenue Rights are allocated, in accordance with Section 8 of this manual, to an entity who pays for transmission upgrades. The balance of the auction revenues are allocated to Congestion Paying LSEs through the following process. Details of the process are described in subsequent subsections and in Appendix C of Market Rule 1.

1. Following the four-stage ARR Allocation process, Allocate ARRs (quantified in megawatts) from each generator source Node or tie line source External Node to each load Node using:
   (a) the same network model on which the related FTR Auction was based;
   (b) the Seasonal Claimed Capability (SCC) for each generator source;
   (c) the rated Total Transfer Capability for each tie line source; and
   (d) the load distribution from the network model; and
   (e) presuming all generation and transmission facilities to be in service.

2. Value the ARRs using the clearing prices from the FTR Auction being settled.

3. Sum the value of the simultaneously feasible ARRs by Load Zone.

4. Distribute to each ARR Holder in the Load Zone its share of the ARR value allocated to the Load Zone.
   (a) The distribution is in proportion to the ARR Holder’s Real-Time Load Obligation excluding External Transaction Sales in the Load Zone at the time of the New England Control Area’s coincident peak for the month being settled including adjustments for Excepted Transactions and NEMA Contracts, and
   (b) in proportion to the ARR Holder’s Reserved Capacity (if any) at the Point of Delivery for any Long-Term Firm Through or Out Service for which the ARR Holder is the Transmission Customer.

5. Since the four-stage ARR Allocation process is not inherently revenue neutral, a proportional adjustment is applied to the auction revenue awards to distribute all available FTR Auction Revenues each month. The proportional adjustment is applied to ARRs awarded in the four-stage ARR Allocation process only.
7.3 ARR Definition, Entities Eligible for Allocations and Required Actions

ARRs represent shares of the revenues generated by the sale of FTRs in a specific auction. They are expressed in terms of MW amounts and, like FTRs, they are characterized by:

1. an injection Node/External Node
2. a withdrawal Node
3. a MW quantity

In addition to the rights to FTR Auction Revenues awarded to entities that pay for transmission upgrades that increase the transfer capability of the New England Transmission System described in Section 8, rights to FTR Auction Revenues are allocated to Congestion Paying LSEs. A Congestion Paying LSE is, for the purpose of the allocation of FTR Auction Revenues to ARR Holders as provided for in Appendix C of Market Rule 1, a Transmission Customer that is responsible for paying for Congestion Costs as a Transmission Customer paying for Regional Network Service or Long Term Point-to-Point Transmission Service under the Open Access Transmission Tariff, unless such Transmission Customer has transferred its obligation to supply load in accordance with System Rules, in which case the Congestion Paying LSE shall be the Market Participant supplying the transferred load obligation. The term Congestion Paying LSE shall be deemed to include, but not be limited to, the seller of Internal Bilateral Transactions that transfer Real-Time Load Obligations under the System Rules.

All data required for calculating ARRs will be extracted from the market system databases, with no additional data input required from Market Participants. However, specific actions are required to qualify for ARR allocations relating to two components of the calculation: Excepted Transactions and NEMA Contracts.

7.3.1 Excepted Transactions

Appendix C to Market Rule 1 provides that holders of certain contracts, called Excepted Transactions, have an option to be assigned ARRs in the initial stage of the allocation process. Excepted Transactions are listed in Attachments G and G-1 to the Open Access Transmission Tariff. Such ARRs are from the generation sources/External Nodes to the Node(s) of the load consistent with the Excepted Transaction. This option is available upon request for the earlier of ten years following the SMD Effective Date or termination of the Excepted Transaction. Excepted Transaction treatment terminates with an effective date of February 28, 2012.

7.3.2 NEMA Contracts

Appendix C to Market Rule 1 also provides that certain other long-term contracts having delivery points in Northeastern Massachusetts (“NEMA Contracts”) be allocated ARRs provided copies of the contracts were furnished to the ISO by October 1, 2000 in the form that such contracts existed as of November 1, 1999. Such ARRs are from the generation sources to the Node(s) of the NEMA LSE’s load consistent with the NEMA Contract. This ARR allocation is available until the earlier of the expiration of the term of the NEMA Contract or until NEMA is no longer significantly constrained. To the degree a NEMA LSE
transfers its responsibility for paying the Congestion Costs resulting from the NEMA Contract, the entitlements to ARRs associated with that load are also transferred.


7.4 ARR Allocation

Auction Revenues associated with Incremental Auction Revenue Rights are allocated, in accordance with Section 8 of this manual, to an entity who pays for transmission upgrades. The balance of the auction revenues are allocated to Congestion Paying LSEs through the following four-stage process. Incremental Auction Revenue Rights awarded to an entity who pays for transmission upgrades are not subject to reduction in the ARR allocation process described below.

Stage 1 – ARRs are initially assigned based on (1) energy deliveries pursuant to Excepted Transactions and (2) load ratio share of the capability of every New England generator and tie line source (with adjustments to generation and load associated with Excepted Transactions).

Stage 2 – Any of the initially assigned ARRs that have a negative value in the associated FTR Auction are eliminated to assure that no negative revenues are allocated. The remaining ARRs are subjected to a SFT (as previously described in Section 3, FTR Auction) to assure that the transmission system can support the awarded set of ARRs under normal system conditions and to assure that the ARR payments do not exceed the auction revenues. As required, those ARRs that contribute to network flow violations are adjusted proportionately until all network flow constraints are satisfied.

At the completion of Stage 2, the ARRs allocated to load serving entities in Northeastern Massachusetts (NEMA LSEs) are identified for further processing in Stages 3 and 4. The allocation of non-NEMA ARRs at the conclusion of Stage 2 will not be modified.

Stage 3 – The ARRs allocated to NEMA LSEs in Stage 2 are removed and replaced by an initial assignment of Stage 3 ARRs defined by certain qualifying long-term contracts (“NEMA Contracts”) for delivery to points in NEMA. As in Stage 2, any of the initially assigned Stage 3 ARRs that have a negative value in the associated FTR Auction are eliminated. The remaining Stage 3 ARRs (in combination with the non-NEMA ARRs determined in Stage 2) are subjected to a SFT in which only the Stage 3 ARRs are reduced.

The fourth stage of the allocation determines the final allocation of ARRs for a given auction. The allocation of non-NEMA ARRs at the conclusion of Stage 2 and the NEMA Contract ARRs determined in Stage 3 are not modified in Stage 4.

Stage 4 – A set of Stage 4 ARRs are defined for all NEMA LSEs based on their Stage 2 allocations, with those of LSEs holding NEMA Contracts being adjusted to account for ARRs allocated to them in Stage 3. A final SFT is conducted with only the Stage 4 ARRs being subject to reduction.

The calculation of load ratio shares of each New England generator and tie line source uses data representative of load (including Reserved Capacity), generation and tie line sources on a monthly basis as follows:

Load – load distribution from the network model used for the FTR Auction being settled and Reserved Capacity in the amount of Long Term Through or Out Service;

Generation – demonstrated Seasonal Claimed Capability (SCC); and

Tie line source – based on rated Total Transfer Capability of the interface for the month.
The data used in this process is also modified as appropriate for each allocation period to account for changes in the transmission system and generation and for adjustments to Excepted Transactions and NEMA Contracts.
7.5 Valuation of ARRs

Once the ARR allocation has been determined for a particular auction, each ARR is valued by the results of that auction.

Entities eligible for Incremental Auction Revenue Rights, described in Section 8, are entitled to receive a monthly share of the FTR Auction Revenues reflecting the incremental value, as determined in the auction, of additional FTRs made possible by such transmission upgrade. The balance of the FTR Auction Revenues are valued using the four stage auction process as follows:

Holders of Excepted Transactions and NEMA Contracts are awarded auction revenues based on the product of the MW amount of each ARR associated with the Excepted Transaction and NEMA Contract and the market clearing price, as determined in the auction, for an FTR having the same origin Node(s) and destination Node(s) as the ARR.

ARRs associated with load share of generation and tie sources are accumulated by Load Zone (or by External Node if associated with Long Term Firm Through or Out Service) and are valued by the product of the MW amount of each ARR and the market clearing price, as determined in the auction, for an FTR having the same origin Node and destination Node as the ARR. The associated auction revenues are awarded based on the share of Real-Time Load Obligation excluding External Transaction sales at the time of the New England Control Area’s coincident peak for the month being settled of each Congestion Paying LSE in the Load Zone.

Since the four stage ARR allocation process is not inherently revenue neutral, a final proportional adjustment is applied to the auction revenue awards to distribute all available auction funds each month.
7.6 Auction Settlement Timeline

7.6.1 Monthly Auctions
The ARR allocations associated with the monthly FTR Auctions are determined at the beginning of the second month following the auction, using data for the month immediately following the auction (i.e., the month in which the auctioned FTRs are effective). The auction revenues are collected and distributed concurrently with that second month’s settlement.

7.6.2 Long-Term Auctions
ARR allocations for the longer-term auctions are determined as for the monthly auctions, in monthly increments. A portion of the revenues associated with each long-term auction is distributed monthly, according to the number of days in the month.
7.7 Congestion Paying LSE Actions

Congestion Paying LSEs may request ARR allocation for eligible Excepted Transactions.

For as long as a NEMA LSE listed in Exhibit 1 to Appendix C of Market Rule 1 has a right to request Stage 3 ARRs, it shall have an ongoing obligation to provide updated information for eligible NEMA Contracts.
7.8 ISO Actions

The ISO performs the following actions:

1. receive, validate and monitor NEMA Contracts
2. respond to requests for ARR allocations associated with Excepted Transactions
3. select and validate network model and data inputs appropriate for related auction period
4. conduct ARR allocation
5. settle the FTR Auction
6. distribute FTR Auction Revenues to ARR Holders
Section 8: Incremental Auction Revenue Rights

8.1 Incremental Auction Revenue Rights and Eligibility for Awarding Incremental Auction Revenue Rights

Incremental Auction Revenue Rights are awarded to entities that pay for transmission upgrades that increase the transfer capability of the New England Transmission System, making it possible to award additional FTRs made possible by the transmission upgrade in the FTR Auction. Transmission upgrades in-service on or after March 1, 1997 may qualify for Incremental Auction Revenue Rights. Generator Interconnection Upgrades and Elective Upgrades, each described in the Open Access Transmission Tariff, qualify for this treatment; upgrades paid for by the RNS rate do not.

When the cost of transmission upgrades is shared, either (1) with other supporting entities or (2) as a qualifying portion of an upgrade that is also partially paid by the RNS rate, Incremental Auction Revenue Rights are awarded in direct proportion to the percentage of the cost of the upgrades paid by each of the supporting entities. Incremental Auction Revenue Rights exist for as long as the costs of the upgrade are supported (either through upfront payments or periodic installments) or for the life of the upgrade (such as in the case where the upgrade is supplanted by a prior-planned, but subsequently installed, upgrade), if shorter.

The delivery and receipt points of Incremental Auction Revenue Rights are active FTR public pricing Nodes. In the event that an active pricing Node is removed from the network model and it affects an awarded path, the ISO will assess the related path and reassign the applicable pricing Node to another active pricing Node and will inform the affected entity.
8.2 Incremental Auction Revenue Rights Award Process

Incremental Auction Revenue Rights are awarded for each upgrade for the incremental amount of FTRs made possible by the upgrade between defined receipt and delivery locations as provided in Section III of Market Rule 1 Appendix C.
8.3 Incremental Auction Revenue Rights Business Rules

   The following information summarizes the Incremental Auction Revenue Rights business rules:

   (1) The ISO will interact with only one Market Participant per transmission upgrade project.

   (2) Incremental Auction Revenue Rights are not subject to reduction in the FTR Auction Revenue settlement described in Section 7.
8.4 ISO Actions

The ISO performs the following actions:

Under the Incremental Auction Revenue Rights methodology used, the ISO:

(1) Sets Incremental Auction Revenue Rights every month. Each month, Incremental Auction Revenue Rights holders will receive a monthly share of their annual Incremental Auction Revenue Rights award value based on the annual FTR Auction clearing prices, and the monthly value of the Incremental Auction Revenue Rights Award based on the monthly FTR Auction clearing prices.

(2) Maintains a record of FTR Auction Revenues awarded pursuant to the Incremental Auction Revenue Rights methodology for use in the FTR Auction Revenue settlement
Revision History

Approval

Approval Date: August 8, 2002
Effective Date: November 1, 2002

Revision History

Revision: 1 - Approval Date: February 14, 2003
Section No. Revision Summary
Sections 1, 7 & 8 Replaces the term Congestion Paying Entity with Congestion Paying LSE.
7.2(4)(a) Replaces the term Real-Time Adjusted Load Obligation with Real-Time Load Obligation.
8.2 Clarifies the calculation of Qualified Upgrade Awards by the software.

Revision: 2 - Approval Date: April 4, 2003
Section No. Revision Summary
1.1 Clarifies that Non-PTF external interfaces are excluded from the FTR Auction.
3.1 Excludes MTF and other Non-PTF tie lines from the FTR capability being auctioned.
3.1(3) Clarifies that prices at External Nodes reflect losses but not congestion on Non-PTF facilities and states that proxy bidding locations are shown in Table 3.1 for FTRs between External Nodes and other Locations.
6.2 Clarifies the last paragraph of the section by noting that External Nodes are modeled at proxy bidding locations for purposes of the FTR Auctions.

Revision: 3 - Approval Date: January 7, 2005
Section No. Revision Summary
The following revision is contingent upon FERC acceptance of the corresponding revision to Market Rule 1 to be filed by NEPOOL.
3.6(8) Deletes previous item (8) which stated “A bid to purchase may not specify a negative price per megawatt.”

Revision: 4 - Approval Date: June 28, 2004
Section No. Revision Summary
Entire Manual revised to reflect RTO terminology and to reflect the Market Rule 1 and Transmission Markets and Service Tariff provisions filed with the FERC (e.g., the elimination of Internal Point-to-Point Transmission Service).

Revision: 5 - Approval Date: May 6, 2005
Section No. Revision Summary
The following revisions are contingent upon FERC acceptance of the corresponding revisions to Market Rule 1 to be filed by the ISO.

5.2……………….Removed statement that congestion revenues are carried over to the following month. Now states that excess monthly transmission congestion revenue is carried over to the end of the year.

5.2(1)…………....Removed statement that congestion revenues are carried over to the following month. Now states that excess monthly transmission congestion revenue is carried over to the end of the year.


Revision: 6 - Approval Date: October 12, 2007
Section No. Revision Summary
List of Figures and Tables….. Adds “ISO New England Business Procedures” to the Table 1.1 title.
Introduction….. Adds “ISO New England Business Procedures” to this section.
Table 1.1…….. Adds “ISO New England Business Procedures” to the title and adds “Ancillary Service Schedule No. 2 Business Procedure” to the Transmission column.
Table 3.1……… Revises the table by replacing the New Brunswick external interface’s external node name “Keswick 345-kV” with “Salisbury 345-kV” and deleting the Comerford 230 kV proxy bidding location for the Phase I/II external interface.

Revision: 7 - Approval Date: October 12, 2007
Section No. Revision Summary
Table 3.1……… Revises the table by deleting the New Brunswick external interface.

Revision: 8 - Approval Date: October 15, 2010
Section No. Revision Summary
The following sections were revised to reflect the suspension of the ISO-administered secondary FTR market as filed with the FERC in changes to Market Rule 1 and Section I of the Tariff: 1.1, 1.3, 1.4, 1.5(5) (deleted), 3.2, 3.6(8), 4 (deleted), and 6.6.1.

Introduction…Incorporates standardized description of the content and purpose of ISO New England Manuals and deleted section listing.

Opening introduction for each section…Deletes the opening introduction for each section.

1.3……………….Corrects reference to ISO New England Financial Assurance Policy.

3.4……………….Corrects numbering of steps.

Revision: 9 - Approval Date: December 9, 2011
Section No. Revision Summary
3.4, 7.1(2), 7.2,
7.4 & 7.5…… Replaces the term Qualified Upgrade Awards with Incremental Auction Revenue Rights.
8.1, 8.2, 8.3 & 8.4…………...Revises these sections to reflect the implementation of Incremental Auction Revenue Rights.

Revision: 10 - Approval Date: August 3, 2012
Section No. Revision Summary
Entire Manual revised to reflect the Market Rule 1 provisions filed with the FERC to implement the Annual FTR Auction Rounds.