



To: Long Term Transmission Rights Working Group
From: ISO New England Market Development
Date: 24 October 2006
Subject: LTTR Design Summary – Revision 5.2

On 20 July 2006, the Commission issued its Long-Term Transmission Rights Final Rule, which requires each transmission organization that is a public utility with one or more organized electricity markets (primarily RTOs/ISOs) to make available long-term firm transmission rights that satisfy each of the seven guidelines established by the Commission in the LTTR Final Rule. Compliance filings are due 29 January 2007. The compliance filings must include either: (1) tariff sheets and rate schedules that make available LTTRs that satisfy each of the guidelines set forth in the final regulations, or (2) an explanation of how the transmission organization's current tariff and rate schedules already provide for long-term firm transmission rights that satisfy each of the guidelines. The LTTR Final Rule makes clear that implementation of LTTRs is a high priority for the Commission and that other important market initiatives of RTOs/ISOs might have to take a lower priority to ensure timely compliance.

The LTTR Final Rule adopts seven of the eight guidelines that were included in the LTTR Notice of Proposed Rulemaking (LTTR NOPR), and provides clarification of many of the issues that were raised regarding the LTTR NOPR. While the Commission repeatedly states that it will allow flexibility within each of the guidelines, it also emphasizes that each of the guidelines must be met.

The development and integration of a compliant LTTR solution within the existing FTR/ARR process poses major challenges. To meet the compliance filing deadline, the LTTR design must be materially complete no later than early October. The ISO, working with the stakeholders, has met this milestone. The design is currently working through the stakeholder process and is being reviewed by the implementation experts at the ISO.

This document includes a brief discussion of the guidelines and an evaluation of the current FTR design relative to the requirements of the Final Rule; some of the design principles and assumptions that Market Development and the stakeholders have agreed to; and a fairly detailed summary of the proposed LTTR design.

The LTTR Final Rule Guidelines

The final rule establishes the following guidelines for the design of an LTTR scheme:

- 1. An LTTR must specify a source, sink, and fixed quantity*

The existing FTR system is consistent with this guideline. However, FERC expresses apparent preference for the PJM approach which allows for the direct conversion of ARR's so

allocated into FTRs. The ARR allocation system in New England is not based on a source, sink, and fixed quantity paradigm. Adopting the PJM approach could require substantial changes to market infrastructure.

2. *The value of the LTTR hedge is fixed for its term*

This is the so-called “full Funding” requirement. That is, the LTTR should fully offset any congestion costs along its defined path and quantity across its life. The existing FTR/ARR system in New England is not fully-funded, ARR revenue and congestion costs incurred may not be equal. Complying with the full funding requirement is a fundamental design change and may require allocating costs to parties that do not bear such exposure today.

3. *Parties that pay for transmission expansion are eligible to receive LTTRs*

This guideline broadly is consistent with the concept underlying the existing ISO’s Qualified Upgrade Award (QUA) process, although it is not perfectly analogous since the QUA process does not provide a right with a fixed value over its life. The QUA process as it applies to upgrades made to facilitate “delivery” rather than generation interconnection will likely have to be modified to meet the requirements of this guideline.

4. *LTTRs must have an effective minimum term of 10 years*

LTTRs can have lives in excess of 10 years, but they must have lives of at least 10 years. A ten year life can be achieved via the allocation of a single 10 year right or with a series of shorter term rights that can be rolled over periodically.

5. *Load Serving Entities (LSE) have priority over non-LSEs in the allocation of LTTRs*

Load Serving Entity is defined broadly in the rule to include any entity that purchases power at wholesale and sells it to an end-user. The rule does not prevent any class of participant from gaining LTTRs; rather it gives priority (right of first refusal) to LSEs. How this priority is recognized is a key component of the design and will be among the first design issues to be resolved.

6. *Rights are re-assignable to follow load*

To accommodate the requirements of retail choice, LTTRs can be reassigned to follow load. Depending on the design, reassignment logically will be mandatory or voluntary.

7. *LSEs do not have to participate in an auction to acquire LTTRs*

The final rule does not preclude the use of an auction to value or acquire rights, rather it specifies that an LSE need not offer a winning bid into that auction to acquire the right. This is a fundamental change from our existing design where all FTRs are acquired via auction.

In addition to the above, under the final rule, transmission organizations must make their transmission planning and expansion procedures and plans publicly available, including (but not limited to) both the actual plans and any underlying information used to develop the plans. Compliance with this part of the rule should be straightforward and appears largely consistent with the RSP process in place today.

Design Principles and Starting Assumptions

Market Development has worked with a NEPOOL working group for the last two and a half months to develop the design contained herein. This is not a consensus design. Not all market participants agree that this design meets the spirit or the letter of the Final Rule. That said, Market Development and most of the participants in the working group agree that it is a good design that meets the core design principles laid out below.

1. LSEs that receive an allocation of LTTRs should pay a price that reflects its market value.
2. An allocation of LTTRs to an LSE should not come at the expense of other market participants -- no cross subsidies.
3. The introduction of long-term rights should not eliminate the ability of participants to take short term FTR positions.
4. The LTTR allocation scheme must be compatible with competitive markets -- the introduction of allocated rights should not create perverse incentives to hoard transmission rights or create opportunities for arbitrage.
5. The design should make the minimum number of changes to existing infrastructure required to comply with the Final Rule.
6. The existing ARR system of distributing auction revenues should not be changed in any fundamental way.
7. Of the percentage of the network set aside for long term rights, a “sufficient” amount should be reserved to provide for the reasonable hedging needs of LSEs consistent with their priority status under the Final Rule.

LTTR Design Summary

DESIGN COMPONENT	BRIEF DESCRIPTION
Definitions	
Long Term Transmission Right (LTTR)	A financial instrument awarded via allocation or auction that confers on the holder the right to receive and the obligation to pay the congestion costs on a path defined by a source, sink and MW for one or more years.
Load Serving Entity (LSE)	A Market Participant that, in accordance with ISO New England System Rules, is supplying the Load Serving Obligation.
Load Serving Obligation	Real-Time Load Obligation, excluding pumps and station service load obligation.
Simultaneous Feasibility Test	As applied to the award of transmission rights determines whether transmission line flows are physically achievable without exceeding the MW flow limits.
Congestion Revenue Assurance Fund	A fund that assures that transmission rights are fully funded
Percent of network available to long-term rights	
Percent of network for LTTRs	Total not to exceed 50%: minimizes risk that LTTRs are infeasible primarily due to transmission outages and deratings during the year
Percent available for allocation	25% of the network capability will be made available to LSEs seeking allocated LTTRs
Percent available for auction	For the prompt year, 50% of network capability, subject to preloading of previously awarded LTTRs and requested Allocated LTTRs, is available for auction. The percentage of the network available in each year is scaled to match expected future levels of interest. Thus, the network capability available for the balance of the years in the ten year strip is reduced as follows: Yr 1 = up to 50%; Yr 2 = 22.5%; Yr 3 = 20%; . . . Yr 10 = 2.5% Years 2 through 10 are treated as independent tranches, i.e., no preloading of Allocated LTTRs.
Outages and deratings	The long-term allocation and auction process will use a network model that assumes all lines in. The ratings of facilities may be scaled by a value that reflects the average impact of deratings and outages on network performance. The monthly auctions will continue to include actual outages and deratings.
Monthly FTRs	Up to 95% of the network capability will be available for auction in each month (as it is in current practice).

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ARR process	
Allocation to Congestion Paying LSEs	The methodology is essentially the same as the process used today. Some changes will be required to reflect the replacement of the QUA process with the IARR process (see below) and the ARR\$ that LSEs receiving an allocation forgo. Some data currently not retained in a database will be required; changes are required to store these values.
ARR dollars	As is done today, negative paths will be set to zero and an SFT run to ensure the feasibility of the remaining paths. The estimated annual ARR dollars for each LSE based on the RTLO values used to establish eligibility will establish the budget available to fund an Allocated LTTR.
NEMA contracts	No anticipated changes to stages 3 and 4 of the ARR\$ allocation process. The application of these stages will affect the size of the estimated budget that a NEMA contract holder would have.
Foregone ARR \$	LSE forgoes its claim to a compensating portion of ARR revenues to pay for Allocated LTTRs. If ARR\$ are inadequate, cash payment will be required. <i>Refer to Exhibit 1 for an example.</i>
Allocated Long Term Transmission Rights	
Characteristics	<ul style="list-style-type: none"> • Sink is a Load Zone or a node in the case of an eligible ARD. • Source is an existing generator node or an external node • Settle as obligations • 24 hour rights • Marketable – i.e., ownership is transferable • Allocated LTTRs will be awarded in ten year increments. Once an allocation is made, there is no difference between an Allocated LTTR and an Auctioned LTTR with respect to marketability.is
Eligibility	Restricted to LSEs. Eligibility would be established annually.
Limitations	<ul style="list-style-type: none"> • Definition: <i>Maximum LTTR Allocation MW</i> – the coincident peak load recorded in the previous calendar year of the Load Assets that the LSE is serving at the time eligibility is evaluated, multiplied by the Load Zone load factor. • The total amount of Allocated LTTRs requested in any year shall not exceed the Maximum LTTR Allocation MW for the relevant Load Zone less

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	<p>the total LTTRs held that sink at that Load Zone.</p> <ul style="list-style-type: none"> • Awarded Allocated LTTRs must be simultaneously feasibility with all previously Allocated LTTRs. • If Allocated LTTR nominations cause infeasibility on one or more network elements, the infeasibility will be resolved using an approach that maximizes the quantity of LTTRs awarded.
Allocation process	<ul style="list-style-type: none"> • Allocated LTTR MW awards and costs are established at the time of allocation. • The MW award is fixed and a schedule of costs for the ten years of the right are established • Process Summary <ul style="list-style-type: none"> ○ On an annual basis: <ul style="list-style-type: none"> ○ ISO provides eligible LSEs with Maximum LTTR Allocation MW values per Load Zone based on historical year data, adjusted to reflect existing Allocated LTTR holdings ○ LSE nominates desired Allocated LTTR paths (source, sink, MW) ○ ISO evaluates and, if necessary, adjusts nominated MW amounts to ensure simultaneous feasibility with existing LTTRs and network limits. ○ LSE accepts or rejects modified nominations (this step has 2 rounds) based on SFT results ○ Nominated Allocated LTTR paths are preloaded into the auction ○ Based on the auction results, ISO estimates the ARR \$ budget for each LSE and makes the Allocated LTTR awards. ○ Allocated LTTRs valued using current year auction prices. Allocated LTTR cost is compared to estimated budget derived from initial year results. <ul style="list-style-type: none"> (a) If the cost of the Allocated LTTRs is \leq the annual budget, the LSE will forgo annual ARR\$ in kind. (b) If cost of Allocated LTTRs $>$ annual budget at the time of allocation, then the Allocated LTTR award will be scaled so that cost = budget. <p><i>Refer to Exhibit 2 for examples.</i></p>
Pricing	<p>The Allocated LTTR MW is fixed for the term of the right. The schedule of costs depend on the annual clearing prices established by the long-term strip auction. If there is insufficient interest to ensure proper price formation in a given year, the previous</p>

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	year's prices will be used.
Reassignment	<p>A LSE that acquires a Load Serving Obligation due to the transfer of a Load Asset or IBL may opt to accept a pro-rata share of the associated Allocated LTTRs, subject to continuing eligibility, for the remainder of their term. Such Allocated LTTRs are deemed reassigned.</p> <p>If the acquiring LSE opts not to take the Allocated LTTRs, the original holder has the following options:</p> <ul style="list-style-type: none"> (a) Sell the LTTRs into the market (b) Rather than forgo ARR\$, pay the cash value of the LTTRs to retain them
Settlement	The settlement would require a reduction in the ARR \$ distributed to Allocated LTTR holders.
Auctioned long term transmission rights	
Characteristics	<ul style="list-style-type: none"> • Sink is a node, zone, hub, etc. • Source is a node, zone, hub, etc. • Settle as obligations • 24 hour, on-peak, or off-peak rights • Marketable, i.e., ownership is transferable • One year instruments sold in strips out as long as ten years. • Future enhancement not required for compliance – multi-year instruments
Eligibility	Same eligibility criteria as apply to participation in existing FTR auction
Limitations	Auction clearing is subject to SFT; no other non-price based limitations
Auction design	<ul style="list-style-type: none"> • Open auction accept bids/offers (bids/offers binding) • Auction clears subject to SFT • Auction results posted and establish Allocated LTTRs MW and costs • NOTE: While not required for compliance, consider the benefits of introducing a reconfiguration auction or multiple rounds.
Relationship to short term FTRs	Replaces annual FTR auction. Auctioned LTTRs and Allocated LTTRs can be sold into short term auctions: monthly, balance of year (when developed)
Pricing	Prices are established through the auction
Trading / transfer	Auctioned LTTRs may be traded on the secondary market or transferred through the ISO eFTR system at a price.
Participant funded system expansion	

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Incremental Auction Revenue Right (IARR) mechanism	<ul style="list-style-type: none"> • Evaluate as options the incremental MW of LTTRs created by participant funded transmission upgrades between a source and a sink. • Award those MW in the form of a point-to-point IARR to the participant for as long as the participant supports the cost of the upgrade or 30 years, if shorter. [current QUA language: for as long as the participant supports the cost of the upgrade or for the life of the upgrade, if shorter.] • IARR awards are evaluated in order of project in service-date and made at the time the project goes in service and support payments begin.
Allocated Incremental LTTR (ILTTR)	An IARR holder may nominate an ILTTR on that path in an amount up to the MW amount of the IARR.
ILTTR Characteristics	<ul style="list-style-type: none"> • Sink and source match the IARR sink and source; MW <= IARR MW • Settle as options • 24 hour rights • Marketable – i.e., transferable within the ISO settlement system. • An IARR may be converted into one or more strips of ILTTRs. Once converted, the underlying IARR ceases to exist for the time period that the ILTTR strip covers. For example, if the IARR is converted to an ILTTR for years 1 through 20, the IARR ceases to exist for years 1 through 20, but would continue in years 21 through 30.
Full funding	
	<ul style="list-style-type: none"> •
Congestion Revenue Assurance Fund	<ul style="list-style-type: none"> • Create a Congestion Revenue Assurance Fund (CRAF) <ul style="list-style-type: none"> ○ The CRAF is a backstop mechanism against underfunding ○ On a monthly basis, surplus congestion revenues would carry-forward to cover any shortfalls in a subsequent month. ○ Surplus congestion revenue would be put into the CRAF at year end ○ Minimum and maximum funding levels would be established based on evaluation of underfunding exposure (actuarial assessment) ○ As needed to fund LTTRs or monthly FTRs the fund would be tapped.
Charge/credit allocator	<ul style="list-style-type: none"> • Network Load will be credited/charged for surpluses/shortfalls in the Congestion Revenue

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	Assurance Fund when the fund goes below the minimum funding level or above the maximum funding level at the end of a monthly billing cycle.
Regional System Plan tie-in	<ul style="list-style-type: none"> • Assess proposed new transmission projects using economic and reliability criteria. • Add an SFT component that assesses the impact of new projects on existing rights. To first order, new projects should not impair existing rights. • The economic transmission criteria should be expanded to look at the cost of transmission relative to charges to Network Load to fund Congestion Revenue Assurance Fund shortfalls. If the annual payments into the CRAF exceed the cost of transmission upgrades that would obviate the need for such charges to Network Load in the future, then the upgrade should be included in the RSP as an economic project.
Financial Assurance	Details still being developed.