

Review of PJM’s Auction Revenue Rights (ARRs) and Financial Transmission Rights (FTRs)

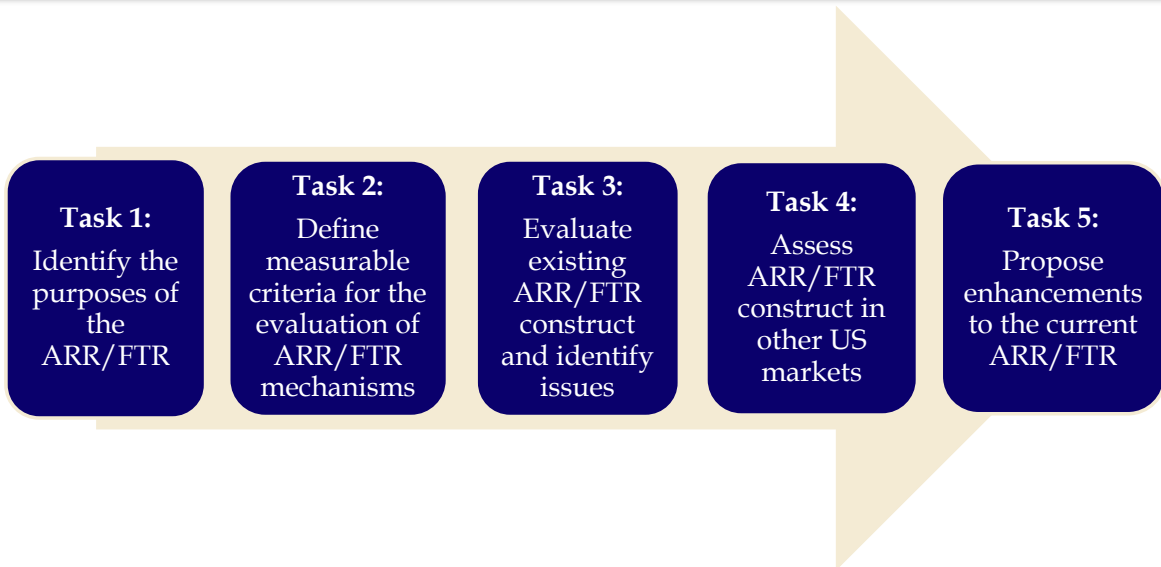


Synopsis



December 16, 2020

Goal of engagement

The key objective of this engagement is to determine if the current ARR and FTR processes employed by PJM, including the ARR allocation and FTR auctions, constitute the appropriate mechanism by which to ensure that load is receiving the optimal value of the transmission system, which it is paying through regulated transmission access charges



Task 1: Based on LEI’s critical review of relevant PJM filings and FERC Orders, FTRs (and ARRs) serve two purposes

- #1 Facilitate the return of overpayment in locational marginal prices (“LMP”) (known as congestion charges) back to load 
- #2 Enable hedging and support forward market activity through price discovery 

Task 2: Selecting the appropriate evaluation criteria

Equity	Efficiency	Transparency	Simplicity
fair treatment of affected parties	optimal allocation of resources to those that value them the most	clarity of process and outcomes; access to relevant information for purposes of decision-making	simplicity should be strived for, when it does not compromise functionality

Task 3: Summary of key findings in the evaluation of the current ARR/FTR design

- *Purpose #1 is generally being achieved.* Over 80% of congestion charges collected by PJM has been returned to load in the past six planning periods at the aggregate level; recent changes have improved the payout to load.
- *Allocation of congestion charges to load may not be equitable between LSEs.* Some LSEs do not have sufficient ARRs allocated to cover their baseload; congestion charges returned to load by zone do not correlate with the load size, LMP paid, or transmission revenue requirements paid by the zone; surplus allocation is material portion of total payout, not allocated pro rata to load or other primary factors.
- *A path-based construct continues to be relevant in the present day.* The majority of load continues to be served through bilaterals (and self-supply); path-based construct also promotes granular price discovery.
- *A dual system of property rights (ARR/FTR) creates value for load.* The existing ARR construct gives load a choice to hold on to an ARR (and securitize congestion charges in advance of settlement) or to self-schedule an ARR (and get a “perfect hedge” for congestion on a specific path that the LSE has committed resources and load); holding onto ARRs have been the preferred option of many LSEs, and with hindsight, it would have been the more profitable strategy for load for many years.
- *All existing FTR auctions are generally working properly and should be retained.* They are effective in achieving Purpose #1 and supportive of Purpose #2. Although there has historically been some “leakage” of congestion charges to non-load entities (to remunerate non-load entities for the risk they take in the FTR auction), these entities have positively contributed to the efficiency of the FTR auctions and liquidity of the forward market.
- *Purpose #2 is being achieved, as evidenced by investment trends and presence of liquid forward market in PJM.* Illustrative examples suggest that the long run benefits for load are higher than the cost incurred by load (e.g., the “leakage” in congestion charges to non-load entities through FTR net profits). The current ARR/FTR mechanism, when evaluated against both Purpose #1 and Purpose #2, is creating overall positive value for load. Enhancements in ARR allocation process could reduce the “leakage”, which further improves the value of the ARR/FTR mechanism to load.

Task 4: Comparative analysis of FTR/ARR designs in other US markets uncovered several differences

LEI analyzed Congestion Revenue Rights (“CRR”) mechanisms in California ISO (“CAISO”), Electric Reliability Council of Texas (“ERCOT”), and the ARR/FTR mechanism employed in Midcontinental ISO (“MISO”), with the goal of identifying areas of improvement for PJM



Based on LEI’s understanding of the market circumstances, some differences would not be beneficial or relevant to PJM:

- simple allocation rules (like pro rata to load) in combination with a single right system would reduce flexibility and value that PJM load gets from ARRs, and would conflict with the zonal transmission rate design;
- reduction of FTR paths may negatively impact efficiency of FTR auctions and undermine the value of the ARRs and longer-term benefits to load






Other differences could be enhancements for further consideration by PJM and its stakeholders. PJM should consider:

- feasibility of more granular ARR products (peak, off-peak, and seasonal);
- revisiting the FTR forfeiture rule based on the experiences of other ISOs/RTOs

Task 5: Recommendations for exploring changes to the current design

LEI recommends that PJM stakeholders focus on enhancing equity-related aspects of the current design of ARRs/FTRs while maintaining efficiency-related aspects of the existing mechanism

Proposed enhancements to the current design

 <p>Equity</p>	 <p>Efficiency</p>	 <p>Transparency and simplicity</p>
<ul style="list-style-type: none"> • Develop an objective definition of equity; establish a more detailed understanding of zonal patterns of congestion • Expand biddable points and time of use periods for ARRs • Add flexibility to self-scheduling rules • Explore alternatives to historical path assignment of ARRs • Explore alternative allocation approaches for distributing surplus congestion 	<ul style="list-style-type: none"> • Maintain PJM's annual, monthly and long-term FTR auctions • Continue to allow non-load participation and current set of biddable points • Monitor competition and profitability trends over time • Determine a minimum premium for options • Evaluate changes to the current FTR forfeiture rule 	<ul style="list-style-type: none"> • Issue a network model manual • Provide detailed documentation of changes over time • Periodically retain transmission expert to independently review the network model

About London Economics International LLC (LEI)

LEI is a US-based economic, financial, and strategic advisory professional services firm that combines detailed understanding of the power sector with in-depth expertise in many economic and financial issues, such as asset valuation, procurement, regulatory economics, and market design.

717 Atlantic Avenue, Suite 1A
 Boston, Massachusetts 02111
 Tel: (617) 933-7200



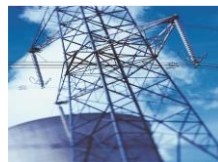
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