External Clearing of Financial Transmission Rights

August 4, 2021

For Public Use

This page is intentionally left blank.

Contents

Executive Summary

The 2019 Report of the Independent Consultants on the GreenHat Default (GreenHat Report) published recommendations to reduce the probability of a future default in the PJM Interconnection, LLC (PJM) Financial Transmission Rights (FTR) Market. This report summarizes the work performed by PJM management to address report recommendation "B3," which urged PJM to "examine the specifics, the costs and the benefits of outsourcing to a Commodity Future Trade Commission (CFTC) regulated-external derivatives clearing organization (Exchange) the administration of all or part of the FTR market."[1]

In addition to comprehensive FTR credit reforms achieved by PJM and its stakeholders to date, in accordance with the recommendations of the GreenHat Report, and through risk structures at Exchanges, external clearing could provide some value in the form of default-risk protection. FTR positions novated to an Exchange would be isolated from an FTR default. Additionally, PJM members trading on an Exchange would have the benefit of master netting agreements, allowing the potential to reduce collateralization requirements by managing exposures across a book of business.

Notwithstanding the value that external clearing provides, analysis performed by PJM management has identified complex challenges presented by the adoption of an external clearing model. PJM management is recommending not to move forward with external clearing of FTRs.

FTRs allow market participants to hedge against congestion charges.

FTRs do not require the holder to physically deliver energy.

FTRs are traded in long-term, annual, monthly and secondary markets.

2020

FTR Auction Revenues	FTR Cleared MWhs
$1.6 B	5.1 B

Background

External Clearing Proposal

To pursue the recommendation of the GreenHat report, PJM management solicited interest from U.S.-based Exchanges that trade in electricity contracts. Of four Exchanges, one submitted a proposal for services. Nodal Exchange, LLC (Nodal Exchange) provided a proposal sponsored by four PJM members – NextEra Energy, Public Service Enterprise Group and Vitol Inc. In this proposal, Nodal Exchange outlined an external clearing framework that would be operated by a subsidiary, Nodal Clear.

[1] "Report of the Independent Consultants on the GreenHat Default," Robert Anderson, Neal Wolkoff and Arleigh P. Helfer III, March 26, 2018. https://www.pjm.com/-/media/library/reports-notices/special-reports/2019/report-of-the-independent-consultants-on-the-greenhat-default.pdf

Nodal Exchange Proposal

In the Nodal Exchange proposal, PJM would continue to operate and award FTR positions using the current Federal Energy Regulatory Commission (FERC)-regulated auction process. FTR auction participants would be required to establish relationships with futures commission merchants (FCMs) at Nodal Clear. FCMs, not PJM, would dictate the initial margin required of PJM members to post at the Exchange, based on their projected FTR auction bids. FTR auction participants that do not meet FCM credit requirements would have their bids rejected from the PJM-run auction.

FTR auction winners would be required to novate awarded positions for futures contracts at Nodal Exchange. The resulting futures contract, which meets the definition of a derivative financial instrument, would be termed an Exchange for FTR (EFTR). At the time of novation, PJM Settlement, Inc. (PJM Settlement)[2] becomes a counterparty to each EFTR transaction at the Exchange.

From a regulatory perspective, once an FTR is converted to an EFTR, the CFTC would have exclusive jurisdiction over the resulting futures contract positions at the Exchange, including positions for which PJM Settlement would be counterparty. FERC would be fully divested of jurisdiction over FTRs once they are novated at the Exchange.

In the external clearing proposal, the payment mechanism to deliver congestion revenue to FTR holders, collected hourly in the Day-Ahead Energy Market, would be replaced with variation margin payments in the futures market. PJM Settlement would be responsible for twice-daily variation margining due to, and due from, Nodal Clear through expiry of positions. Variation margin due to Nodal Clear by PJM Settlement would be paid for by PJM via a combination of treasury instruments (revolving lines of credit and fronted letters of credit).

PJM Settlement would require a $1.75 billion facility, which would be subject to FERC approval at inception and renewal (every 2–4 years), comprising a $750 million syndicated revolving line of credit, with a $500 million accordion feature and $500 million in fronted letters of credit. Estimated annual costs, based on current market conditions, to procure the required credit facilities total $11.1 million at origination and renewal, and $8.3 million on an ongoing basis.

PJM/Stakeholder Analysis

Since 2019, PJM and its stakeholder community have engaged in comprehensive study and consideration of the FTR external clearing option pursuant to the recommendation of the independent GreenHat report. This included a 2019 initial PJM paper, an independent consultant’s report on the external clearing option, and more in the context of extensive Financial Risk Mitigation Senior Task Force (FRMSTF) discussions.

[2] PJM Settlement is a FERC-regulated, wholly owned subsidiary of PJM, established to handle all of the credit, billing and settlement function for PJM’s members’ transactions in the PJM markets and for transmission service. PJM Settlement acts as a counterparty to members’ pool transactions in the PJM markets.

The 2019 initial PJM paper provided to stakeholders in the FRMSTF stated: “A broad conclusion is that clearing can be successfully applied to FTRs, but is not without its complexities, and would require some adaptation, by both PJM and participants, particularly those not presently engaged in futures trading.” The independent consultant’s report on the external clearing option, which was authored by two of the three independent consultants who prepared the GreenHat report, highlighted positive opportunities associated with the Nodal Exchange proposal, along with a number of concerns in the areas of regulatory uncertainty, cost and risk mitigation.[3]

Internally, PJM management’s analysis of the external clearing model has also included cross-divisional coordination, requests for proposals from settlement banks, consultation with external legal advisors, and meetings with regulators.

As a result, complexities associated with external clearing have been identified at three levels. Significant issues are posed for PJM, PJM members, and the prospects for the regulatory approvals required to move forward with the Nodal Exchange proposal, or any external clearing option.

External Clearing Issues at PJM

Voluntary vs. Mandatory Clearing

Some PJM members have requested optionality in external clearing. Because of the complexities identified below, PJM would only support a mandatory model.

By their charters or by law, some members (public power, municipal and co-op organizations) may be barred by their organizational charter from engaging in speculative transactions (FTR transactions may or may not be viewed as speculative depending on the circumstances). As a result, mandatory external clearing could be seen as a barrier to entry in the FTR Market. These members would either not be able to participate in an external FTR market or would have to engage a third-party agent to fulfill their external clearing needs.

Voluntary external clearing of FTRs would result in FTRs residing in separate risk pools, with different regulatory and risk management regimes.

Treasury facilities to support variation margining would need to be established, assuming all awarded positions will be exchanged for EFTRs. This would result in complexity around the allocation of facility support costs over position terms.

PJM Counterparty Risk

Clearing as defined in the Nodal Exchange proposal would not relieve PJM of its duties and risks. Included in Nodal Exchange’s proposal is a reverse EFTR provision. Via this provision, Nodal Clear has the right to return trades to PJM Settlement, meaning PJM Settlement would take back all novated positions from the Exchange in the event that PJM Settlement cannot cover a variation margin call.

[3] “Memorandum Re: Proposal (9/24/19) by Nodal Exchange concerning FTRs,” Neal Wolkoff and Robert Anderson, November 7, 2019 https://pjm.com/-/media/committees-groups/task-forces/frmstf/postings/independent-consultants-comments-nodal-exchange-proposal.ashx

While that risk is remote, the existence of the reverse EFTR provision means that external clearing does not eliminate all financial risk or administrative burden for PJM and PJM members. For example, PJM's current FTR credit and billing processes and systems would need to remain in place to accommodate a reverse EFTR transaction should that occur.

PJM Settlement – Financial Considerations

PJM Settlement may not meet the financial standards set forth by the CFTC to transact at an Exchange, including minimum capital requirements.

Currently, PJM Settlement's financial position is primarily composed of cash collateral posted by PJM members to support market activity. In an external clearing model, PJM Settlement would no longer hold cash collateral for FTR positions. This would significantly reduce PJM Settlement's total assets. All variation margin requirements would be funded through treasury instruments versus cash. Sums involved would be so significant as to involve multiple revolving lines of credit and fronted letters of credit estimated at $1.75 billion.

PJM and PJM Settlement both have an Aa2 rating from Moody's Investor Services. Strong credit ratings have afforded these entities favorable borrowing rates. That in turn has enabled PJM to reduce debt service expenses. It is reasonable to assume that the reduction in cash collateral held by PJM Settlement, coupled with the significant financial obligations that PJM Settlement would be assuming with the variation margin facilities required, would have a negative impact on PJM and PJM Settlement's credit ratings. A negative impact on credit ratings would impact interest costs of PJM and PJM Settlement's treasury facilities utilized to fund capital and short-term cash needs in the normal course of business, thereby increasing costs to members.

In the event that any lines of credit or letters of credit are ever drawn upon, PJM would need to provide a path for repayment of those monies through rate assessments/changes or longer-term borrowing coupled with collection through rates.

Legal Considerations

CFTC and FERC Regulation

In 2013, the CFTC issued an order exempting PJM and PJM market participants from the Commodity Exchange Act and CFTC regulations with respect to FTRs and other PJM products (exemption order). The CFTC relied heavily on FERC regulation of PJM and FTRs in granting the exemption order.

PJM management has briefed representatives of both CFTC and FERC regarding the Nodal Exchange proposal. Conversations with regulators have confirmed that adoption of the Nodal Exchange proposal would require reopening the exemption order. This will likely create uncertain timing and outcome risks.

Reopening the CFTC exemption order could disrupt FERC's current regulatory alignment with a CFTC, raise market surveillance concerns with proposed optional clearing, and may constrain FERC's jurisdictional oversight of holders of cleared FTRs (as well as PJM's oversight and ability to implement rules like its FTR forfeiture rule).

Further, the exemption order was granted as a single exemption to all regional transmission organizations (RTOs) that had filed for exemptions at that time. Reopening the exemption process to implement external clearing could affect not just PJM, but the other RTOs as well.

In revisiting the 2013 exemption order, PJM has identified legal representations made in application for the CFTC exemption that legal analysis indicates either would, or may, no longer be true if the external clearing proposal is adopted. Refer to Appendix A for examples of specific representations that would require legal review and likely updating.

Central Counterparty

PJM Settlement is designated a central counterparty (CCP) for pool transactions in PJM markets. This standing provides the ability for PJM Settlement to assert setoff rights in the event of a bankruptcy of a PJM member. Under the Nodal proposal, Nodal Clear will be the CCP to EFTRs, with PJM and PJM market participants holding open futures positions. Additional legal research is required for PJM, and PJM members, to understand bankruptcy protection in the external clearing model.

Market Considerations

Underfunding Mechanism

The PJM Auction Revenue Rights (ARR)/FTR Market is designed to ensure that there are sufficient revenues from Day-Ahead Energy Market Transmission Congestion Charges to satisfy all FTR obligations for the auction period under expected conditions. The market also ensures that there are sufficient revenues from the annual FTR auction to satisfy all ARR obligations.

To ensure revenue sufficiency, the power flow model used for simultaneous feasibility determinations is a markets model that uses flows caused by sources and sinks of requested ARRs (including Incremental ARRs) or FTRs, as well as market limits to determine the capability available to accommodate financial rights that are simultaneously feasible.

However, system configuration differences in the markets model used in the FTR auctions versus that in the Day-Ahead Energy Market can result in too few Transmission Congestion Charges collected in order to satisfy all FTR obligations, or what is referred to as “underfunding.” PJM currently has processes in place to accommodate underfunding as part of FTR Market settlement.

In an external clearing model, however, underfunding within the PJM markets would result in a mismatch between variation margins paid at the Exchange versus Day-Ahead Energy Market collections. PJM would need to track underfunding of EFTRs and develop a mechanism to collect the differential from PJM members outside of the Exchange.

Market Design

There may be a risk to the fundamental ARR/FTR Market design resulting from external clearing. Specifically, external clearing requirements could create a disincentive for load serving entities to convert ARRs to FTRs via self-scheduling or to purchase FTRs directly.

If fewer ARRs are converted to FTRs and/or fewer FTRs are purchased by load serving entities, the core fundamental market design for FTRs (to provide a true congestion hedge to those who pay for the cost of a transmission system) may be broken because only ARR revenues would support hedging.

While ARRs do provide a hedging opportunity, they do not provide the same potential for a perfect hedge to congestion like FTRs. If only financial players are acquiring FTRs, the value of an FTR market is diminished.

External Clearing Issues – PJM Members

Access to FCMs

Members would be required to establish relationships with FCMs in order to novate positions and transact on the Exchange. As noted above, some members (public power, municipal and co-op organizations), may be barred by design from speculative transactions and would have to engage a third-party agent to facilitate external clearing.

In the current FTR Market construct, members are evaluated for creditworthiness against a uniform set of FTR credit rules, provided in Attachment Q of the PJM Open Access Transmission Tariff, and PJM has latitude in determining if a counterparty provides an unreasonable credit risk. In establishing FCM relationships under external clearing, each PJM member would be evaluated independently against the FCM's proprietary system for determining creditworthiness of customers. Failure to meet FCM creditworthiness standards may prevent PJM members from securing an account with an FCM. Further, an FCM may limit or impute a multiplier on collateral based on participant exposures, due to assessment of participant risk and/or an FCMs' own exposure. PJM anticipates that larger FTR participants would be required to have multiple FCM relationships to maintain current trading levels and volume.

Incremental Costs

PJM Expense

Incremental PJM expense to support external clearing, above and beyond Schedule 9-2 FTR Administration Service charges,[4] is estimated in a range of $9 million to $12 million per year. Included in this estimate is the cost of treasury facilities required to support variation margin requirements, incremental personnel and the cost of system modifications.

Member Costs Associated with Nodal Exchange and FCMs

EFTR holders would be responsible for costs of clearing FTRs at the Exchange, including settlement fees and FCM fees.

- Nodal Clear EFTR fees would be assessed per path megawatt-hour, while settlement fees would apply to expiry-level positions that are held to final settlement.[5] Trading activity beyond EFTR would incur standard rate fees, which have not been disclosed by Nodal Exchange.

---

[4] Schedule 9-2, FTR Administration Service comprises all of the activities of PJM associated with administering the FTRs provided for under the PJM Open Access Transmission Tariff, Attachment K, including but not limited to, coordination of FTR bilateral trading, administration of FTR auctions, support of PJM's on-line, internet-based FTR reporting tool, and analyses to determine what total combination of FTRs can be outstanding and accommodated by the PJM system at a given time.

[5] EFTR fees are expected to be $0.0050 per MWh in an optional clearing modal and $0.0000 in a mandatory clearing model. Settlement fees will be $0.0025 per MWh in both optional and mandatory clearing models. PJM will not be charged transaction or settlement fees. Nodal Exchange has disclosed that based on average annual FTR volume from 2017–2019, mandatory clearing fees would be $16 million; option clearing fees would also be $16 million assuming 33% of the market is cleared ("FTR Clearing: Summary of Costs and Benefits," Nodal Exchange, June 2, 2021. https://pjm.com/-/media/committees-groups/task-forces/frmstf/2021/20210602/20210602-item-04b-pjm-frmstf-ftr-clearing-costs-and-benefits.ashx)

- FCM fees may range from transaction-based, open interest-based, fixed annual fees or a combination of the above. PJM can not provide a member-level estimate of FCM fees.

  As the GreenHat report stated, "The individual approach of the clearing house model as it relates to member entry and trading means that costs will not be uniformly applied to PJM participants in the FTR Market. In addition, PJM will be unable to provide visibility for member costs associated with these entry and trading considerations."

Complexities Associated With External Clearing – Exchange Governance

Governance – Nodal Exchange Board of Directors Independence

Consideration of the independence of the Nodal Exchange governance structure is required. The Commodity Exchange Act and CFTC regulations require that the governing boards of Exchanges include market participants.

Two members of PJM, who are FTR participants and sponsors of the Nodal Exchange proposal (NextEra Energy and Public Service Enterprise Group), have employees serving as directors on the Nodal Exchange board. This requirement could be viewed as conflicting with PJM's independence requirements.

Management Recommendation

PJM management has completed formal evaluation of GreenHat Report recommendation "B3." Through the FRMSTF, PJM and stakeholders have taken action to implement the majority of recommendations made by the independent consultants,[6] and PJM has significantly advanced PJM's role as manager of risk.

Further analysis and work to implement recommendation "B3," utilizing the Nodal Exchange proposal, would require two to three years. Assuming PJM could obtain the regulatory approvals required to move forward with an external clearing proposal, there continues to be uncertainty that could leave PJM and the PJM membership exposed to risk.

PJM is currently developing a historical simulation methodology for margining that management believes is a better alternative to external clearing. This methodology has been introduced into the stakeholder forum through the FRMSTF and, with stakeholder approval, could be implemented in the next 12 months. The methodology provides a mechanism for PJM to margin members in a way similar to Exchange margining.

If the sponsors of the Nodal Exchange proposal or other members would like to continue to see a proposal for external clearing addressed in the stakeholder process, members have the opportunity to draft and present a problem statement and issue charge at the Risk Management Committee. If the problem statement and charge were adopted, the work would be sequenced with other stakeholder work.

[6] FRMSTF Recommendations Dashboard https://pjm.com/committees-and-groups/task-forces/frmstf/recommendations-dashboard

Appendix A

In revisiting the exemption order, PJM has identified legal representations made in application for the CFTC exemption that legal analysis indicates either would, or may, no longer be true if the external clearing proposal is adopted. The representation “the Requestor serves as the market administrator for the market on which the FTRs are transacted” would be true only for the auction. The following representations made that PJM, would not be true after establishment of the EFTR:

- Each party to the transaction is a member of the Requestor (or is the Requestor itself), and the transaction is executed on a market administered by that Requestor.
- Each of the Transactions is part of, and inextricably linked to, the organized wholesale electricity markets that are subject to FERC’s . . . regulation and oversight.
- Congestion management. The ISO/RTO must ensure the development and operation of market mechanisms to manage transmission congestion which accommodate broad participation by all market participants, and provide all transmission customers with efficient price signals that show the consequences of their transmission usage decisions.
- As a result of FERC . . . oversight, the ISOs/RTOs have established comprehensive and integrated credit policies to manage the credit risk and protect the financial integrity of the organized wholesale energy markets. These credit policies consider the creditworthiness of market participants, update exposure calculations on a regular basis and establish credit limits for market activity.
- At least one ISO/RTO, PJM, has already formed a separate legal entity to act as the CCP to each transaction made by market participants in the PJM markets.
- The ISOs/RTOs ensure financial integrity, in part, through the risk management requirements that apply to their market participants.
- As part of the comprehensive regulatory oversight that FERC exercises over the ISO/RTO markets, FERC has the power to impose remedies, including significant civil penalties, for violations such as fraud and other abusive practices.
- The Requestors, Transactions and Participants are subject to comprehensive enforcement regimes pursuant to their tariffs . . . and FERC . . . oversight.