

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

PJM Interconnection, L.L.C.

Docket Nos. ER22-2029-000

PJM Interconnection, L.L.C.

EL22-32-000
(Consolidated)

COMMENTS OF THE ENERGY TRADING INSTITUTE

Pursuant to the paper hearing procedures established by the Federal Energy Regulatory Commission’s (“FERC” or “Commission”) order for the above-captioned proceeding,¹ Energy Trading Institute (“ETI”) hereby files these comments into the paper hearing record in this consolidated proceeding regarding the June 3, 2022 filing submitted by PJM Interconnection L.L.C. (“PJM”) proposing revisions to the PJM Open Access Transmission Tariff (“Tariff”) to revise the calculation of the Financial Transmission Right (“FTR”) Credit Requirement (the “Revised FTR Credit Requirement”), which sets the collateral that FTR Market Participants are required to provide in order to participate in PJM’s FTR Market based on comprehensive stakeholder engagement and a robust cost-benefit analysis.²

ETI’s comments below are responsive to the questions asked as established by the paper hearing procedures in the Consolidation Order.³ ETI continues to support PJM’s Revised FTR Credit Requirement and respectfully requests that the Commission approve PJM’s filing for the reasons discussed below.

¹ *PJM Interconnection L.L.C.*, 180 FERC ¶ 61,073, at P. 55-57 (2022) (“Consolidation Order”) (consolidating Docket No. ER22-2029 and Docket No. EL22-32, and establishing a comment deadline to be 60 days within the issuance of the order on August 2, 2022).

² PJM Interconnection, L.L.C., *Revisions to PJM’s FTR Credit Requirement*, Docket No. ER22-2029-000 (filed June 3, 2022) (“PJM Revised Tariff”).

³ See Consolidation Order at Appendix.

COMMUNICATIONS AND CORRESPONDENCE

ETI requests that the following names be placed on the service list for this proceeding, and that all correspondence and communication with respect to this proceeding be addressed to the following:⁴

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I. BACKGROUND

The PJM FTR Credit Requirement is “the amount of credit that a Participant must provide in order to support the FTR positions that it holds and/or for which it is bidding.”⁵ The FTR Credit Requirement is in place to mitigate the risk that an FTR Participant’s portfolio could suffer losses, potentially resulting in a default that PJM Members, and ultimately ratepayers, would have to absorb. PJM has proposed a Revised FTR Credit Requirement that follows a value-at-risk approach in adopting a historical simulation (“HSIM”) model with a 97% confidence interval. As further discussed below, PJM’s Revised FTR Credit Requirement should be found to be just and

⁴ Persons denoted with an asterisk (*) are those designated for service pursuant to 18 C.F.R. § 385.2010.

⁵ See Tariff, Part I, Definitions – E – F.

reasonable as PJM has provided substantial analysis to support the use of the HSI model and a 97% confidence interval.

PJM currently determines each FTR Participant's FTR Credit Requirement on a portfolio basis using the following five factors, which have been previously approved by the Commission: (1) a financial exposure calculation for each FTR path based on FTR Historical Value;⁶ (2) the addition of an increment for portfolios considered undiversified;⁷ (3) the application of a \$0.10 per megawatt hour ("MWh") volumetric minimum charge;⁸ (4) the subtraction of Auction Revenue Rights ("ARR") Credits in an FTR Participant's account;⁹ and (5) the subtraction of negative Mark-to-Auction ("MTA") values.¹⁰ Under the current Tariff, long-term FTR Credit Requirement calculations are updated annually.

PJM originally filed a revision to its current FTR Credit Requirement in December 2021.¹¹ The Commission rejected PJM's December 2021 Filing on February 28, 2022, finding that the record was insufficient to find the proposal just and reasonable.¹²

Following the February 28 Order, PJM sought significant stakeholder feedback on how to best address the Commission's concerns. The result is PJM's Revised FTR Credit Requirement

⁶ See Tariff, Attachment Q, section VI.C.2; *PJM Interconnection, L.L.C.*, Letter Order Docket No. ER06-594-000, at 1 (Mar. 22, 2006) ("ER06-594 Order").

⁷ See Tariff, Attachment Q, section VI.C.6; *PJM Interconnection, L.L.C.*, 122 FERC ¶ 61,279, at 79 (2008).

⁸ See Tariff, Attachment Q, section VI.C.2; *PJM Interconnection, L.L.C.*, 164 FERC ¶ 61,215, at 13 (2018).

⁹ See Tariff, Attachment Q, section VI.C.2; ER06-594 Order at 1.

¹⁰ See Tariff, Attachment Q, section VI.C.9; *PJM Interconnection, L.L.C.*, 167 FERC ¶ 61,002, at 7-10 (2019).

¹¹ See *PJM Interconnection, L.L.C.*, Revisions to PJM's FTR Credit Requirement and Request for 28-Day Comment Period, Docket No. ER22-703-000 (Dec. 21, 2021) ("December 2021 Filing").

¹² See *PJM Interconnection, L.L.C.*, 178 FERC ¶ 61,146 at P 31 ("February 28 Order"); *reh'g denied*, 179 FERC ¶ 62,028 (2022).

which adopts the widely accepted VaR approach to replace the monthly path requirements with a HSIM model. The VaR approach uses “observed price movements in a [] HSIM model to estimate PJM’s exposure, on a per-portfolio basis, from a particular FTR Participant and its FTR market activity.”¹³ As Dr. Eydeland explains in his Affidavit, the HSIM model is “widely accepted in different markets for calculating initial margin and other capital requirements.”¹⁴ As PJM notes, the HSIM model is preferable because it is “continuously updated with new pricing information for FTR paths after every auction, thereby adding to the historic information used in the simulation.”¹⁵

The Revised FTR Credit Requirement will rely on a HSIM model that uses “FTR auction data from 2008 to the most recent auction to determine the distribution of a participant’s portfolio value over the margin period of risk.”¹⁶ The HSIM model will provide the advantage of using historical data to capture events and correlations that would not necessarily be included or predicted under a mere theoretical model.¹⁷ After the HSIM margin has been determined, any applicable auction revenue right credits are applied, along with the mark-to-auction valuation and the 10¢ per MWh volumetric minimum value adjustment components under the current FTR Credit Requirement.¹⁸ Additionally, PJM proposes to apply a separate component to adjust for

¹³ PJM Revised Tariff at 2.

¹⁴ Eydeland Affidavit at 5.

¹⁵ PJM Revised Tariff at n. 34.

¹⁶ *Id.* at 41.

¹⁷ Eydeland Affidavit at 42.

¹⁸ Drauschak Affidavit at 4.

net realized gains and losses in the FTR portfolio to end up with the final FTR Credit Requirement calculations.¹⁹

According to PJM, “the Revised FTR Credit Requirement will enable PJM to maintain collateral that is reasonably calibrated to protect PJM and Members against the risks of FTR portfolio losses.”²⁰ PJM proposes to employ a HSIM model with a 97% confidence interval and finds that this model at this confidence interval satisfies the objective of protecting PJM and its Members against the risk of FTR portfolio losses while ensuring appropriate costs for PJM Market Participants. PJM also notes its filing has the support of an “overwhelming majority” of PJM Members, including those who would be responsible for covering the majority of any future default.²¹

II. COMMENTS

ETI continues to support PJM’s Revised FTR Credit Requirement with the widely accepted use of a HSIM model with a 97% confidence interval. PJM’s proposal provides a significant increase in protection to the PJM Market and Market Participants, particularly when compared with the current FTR Credit Requirement. PJM’s Revised Tariff and supporting documentation confirms that the Revised FTR Credit Requirement appropriately protects PJM Market Participants by reducing the failure rate²² as compared with the current requirements while placing all FTR Market Participants “on a level playing field based on their risk profile.”²³ It is also important to

¹⁹ *Id.*

²⁰ PJM Revised Tariff at 3.

²¹ *Id.*

²² *Infra.* at 8. Defined as “how often FTR portfolio losses are expected to exceed the collateral required by the FTR Credit Requirement.”

²³ *Id.* at 48.

note that the Revised FTR Credit Requirement enjoys broad stakeholder support and was supported by 65.4% of the PJM Members Committee, while only 10.1% of the Members Committee voted for the filing of a HSIM with a more restrictive 99% confidence interval.²⁴ ETI urges the Commission to find the Revised FTR Credit Requirement just and reasonable as an appropriate method to mitigate the risk of significant losses in the event of an FTR Market Participant's default, while also protecting PJM Market Participants and consumers from unreasonable costs and burdens of over-collateralization.

A. The Commission Should Find PJM's Revised FTR Credit Requirement Just and Reasonable

Based on PJM's detailed analysis, PJM has demonstrated that the Revised FTR Credit Requirement is just and reasonable. "PJM developed the HSIM model to more accurately determine the appropriate amount of initial margin for a FTR Participant's portfolio using available historical pricing data from PJM market for FTRs on all paths in PJM."²⁵ The HSIM model is a widely-adopted risk-based approach used in a majority of markets that has the benefit of being both easy to implement and transparent—resulting in a low probability of dispute. As Dr. Eydeland explains, "[u]nlike alternative, theoretical-based, approaches to determining initial margin, that require calculation of correlation coefficients the HSIM approach is free from this intermediate step and uses historical data directly to determine the joint distribution of underlying risk factors without any assumptions or constraints on the choice of this distribution."²⁶

²⁴ PJM Revised Tariff at n. 9.

²⁵ Drauschak Affidavit at 4.

²⁶ Eydeland Affidavit at 5.

The HSIM method will employ a 97% confidence interval—meaning that there is a high likelihood (in this case 97%) that the margin required from a market participant will not be exceeded by the losses from that Market Participant’s FTR portfolio.²⁷ The adoption of a HSIM model with a 97% confidence interval allows PJM to better assess historic price volatility and “better align the amount of collateral posted to PJM by an FTR Market Participant with the risks presented by such portfolio should that FTR Market Participant default on its obligations.”²⁸

As PJM explains in its filing, the 97% confidence interval is a just and reasonable component of the HSIM model and Revised FTR Credit Requirement because:

- (i) the 97% confidence interval provides most of the protection that a 99% confidence interval would provide;
- (ii) a 99% confidence interval greatly increases collateral requirements relative to a 97% confidence interval;
- (iii) the 99% confidence interval’s increased collateral requirement falls disproportionately on FTR Participants that serve load; and
- (iv) the incremental costs of using a 99% confidence interval (relative to using 97%) appear to exceed the incremental benefit of using a 99% confidence interval.²⁹

PJM’s Revised FTR Credit Requirement lowers the risk that an FTR Market Participant’s default will be passed onto the PJM Market because:

[b]y requiring margin that is sufficient to cover the wide range of possible portfolio losses simulated from the greatly expanded set of historic market data, the HSIM model substantially reduces both i) the risk that actual portfolio losses will exceed the margin; and ii) the overall dollar amount by which portfolio losses exceed the margin, which reduces the risk of payment defaults due to FTR portfolio losses.³⁰

²⁷ See Eydeland Affidavit at 8 (“The confidence interval addresses the level of statistical certainty that the actual outcome will be within the range of possible outcomes produced by the HSIM model.”).

²⁸ Drauschak Affidavit at 5.

²⁹ PJM Revised Tariff at 17.

³⁰ Drauschak Affidavit at 10-11.

PJM’s use of a HSIM with a 97% confidence interval is just and reasonable as it is a balanced approach that is appropriately designed to protect PJM, PJM Market Participants and consumers from the risk of market participant defaults, thereby improving PJM’s risk management process without creating unreasonable barriers to entry as a result of overly burdensome collateralization requirements. When overly burdensome credit measures are put in place, market liquidity is harmed, and markets become riskier. Here, PJM’s Revised FTR Credit Requirement adopts a balanced approach.

B. Use of a 97% Confidence Interval Results in a Substantially Reduced Failure Rate as Compared to PJM’s Current FTR Credit Requirement.

PJM’s use of a 97% confidence interval in its Revised FTR Credit Requirement offers far superior results as compared to the previous requirements. In the context of PJM’s analysis, the “failure rate” is described as “how often FTR portfolio losses are expected to exceed the collateral required by the FTR Credit Requirement.”³¹ PJM updated its analysis from its December 2021 Filing to estimate the collateral that would have been collected for the February and March 2022 FTR Auctions if the Revised FTR Credit Requirement had been in place. PJM’s analysis found a substantial decrease in the failure rate under the Revised FTR Credit Requirement:

For the February 2022 FTR Auction, PJM’s analysis determined that the failure rate under the current FTR Credit Requirement was 11.7 % and resulted in a shortfall [] of \$41.7 million ... [b]y contrast, PJM’s back-testing estimated that the failure rate under the Revised FTR Credit Requirement would have been 3.6% (i.e., 11 failures over 308 portfolios); and the shortfall would have been only \$2.3 million.

For the March 2022 FTR Auction, PJM found that the failure rate under the current effective FTR Credit Requirement was 11.3% (i.e., 34 failures over 301 portfolios); and that the shortfall was \$3.1 million. By contrast, PJM’s back-testing estimated that the failure rate under the Revised FTR Credit Requirement would have been 3.0% (i.e., 9 failures over 301 portfolios); and the shortfall would have been only \$0.6 million.³²

³¹ *Id.* at 27.

³² *Id.* at 28.

As PJM notes, “the back-testing shows these reductions in the estimated shortfall (94% lower from the February auction and 80% lower from the March auction) from using the Revised FTR Credit Requirement even though the Revised FTR Credit Requirement would yield much lower overall collateral than the status quo rules.”³³ **As demonstrated in PJM’s analysis of the back-test, the revised FTR Credit Requirement is far superior to the previous rule structure. Further, the 97% HSIM proposal does not significantly and unnecessarily increase the cost of capital and preserves critical liquidity. Put simply, this proposal protects the market and does not harm customers, which is not the case under the 99% HSIM scenario.**

C. Use of HSIM with a 99% Confidence Interval is Overly Onerous to PJM Market Participants and Has a De Minimis Mitigating Impact on the Failure Rate.

PJM’s substantial cost-benefit analysis demonstrates that the 97% confidence interval is the superior and reasonable methodology to be applied in PJM’s FTR Credit Requirement. The 97% confidence interval protects the PJM Market, reduces the FTR Market Participate failure rate without harming liquidity and does not push additional, unnecessary costs onto PJM Market Participants and in turn, ratepayers. For those reasons, ETI urges the Commission to accept the 97% confidence interval as the permanent credit requirement..

The incremental costs of using a 99% confidence interval exceed its incremental benefit. PJM’s analysis found that use of a 99% confidential interval results in substantially higher costs with “[t]he aggregate increase in collateral from [] estimates due to using a 99% confidence interval, for all FTR Market Participants, was \$585.3 million, or a 48.0% increase in collateral relative to using a 97% confidence interval.”³⁴ Further, PJM estimates that employing a 99%

³³ *Id.* at 28-29 (emphasis added).

³⁴ *Id.* at 20.

confidence interval would cost FTR Market Participants an additional \$22.4 million more than use of the 97% confidence interval.³⁵ As described below, the costs avoided under the 99% confidence interval remain lower than the costs required to fund the additional collateral, making the 99% confidence interval an unnecessary cost burden for consumers.

PJM estimates that while the 99% confidence interval has a failure rate of about 1%, the Members' aggregate benefit in using a 99% confidence interval is only \$2.7 million in avoided default allocations—far below PJM's low estimate of the \$22.4 million in aggregate cost of funding the additional collateral required with a 99% confidence interval.³⁶ Further, it is timely in this elevated interest rate environment to emphasize PJM's warning that rising interest rates could increase cost estimates such that it would raise "the cost of obtaining and maintaining the funds used as collateral, [and] would further skew the cost-benefit comparison against using a 99% confidence interval."³⁷

As Ms. Drauschak explained:

Using a higher confidence interval in the HSIM model will increase the margin required by the HSIM model, since the higher interval requires the model to capture more extreme scenarios. That increased collateral imposes an increased financial cost on the FTR Participant that must provide the collateral. This cost is real even if the Participant uses its own internal funds, which has time value when it is deployed as collateral instead of for other business purposes.³⁸

ETI supports PJM's explanation that while a 99% confidence interval may provide incremental risk protection, the costs associated with using a higher confidence interval exceed

³⁵ *Id.* at 21.

³⁶ *Id.* at 23-24.

³⁷ *Id.* at 25.

³⁸ Drauschak Affidavit at 14.

any incremental benefits. Further, that incremental benefit could be eroded by significantly limiting liquidity. As a result thereof, ETI urges the Commission to find that PJM's proposal to use a 97% confidence interval is just and reasonable, instead of the more burdensome 99% confidence interval as demonstrated by PJM's detailed cost-benefit analysis.

i. A 99% Confidence Interval Results in an Unwarranted Cost Burden to Load Serving Entities and Other Traditional Electric Utilities.

Another factor in support of the 97% confidence interval is that utilizing the higher confidence interval results in disproportionate burdens for FTR Participants that serve load.³⁹ PJM estimates that load serving entities would see a 55.3% increase in their required collateral should a 99% confidence interval be used.⁴⁰ Specifically, with a 99% confidence interval, electric distributors would see an increase of 57.5% in their required collateral, generation owners a 63.0% increase, and transmission owners a 114.1% increase.⁴¹ This substantial increase would result in unnecessarily higher rates for customers.

Under PJM's Revised FTR Credit Requirement, PJM has a better ability to manage risk without the burden unreasonably falling on load serving market participants.

D. The Collateral Reduction under the Revised FTR Credit Requirement is the Result of Removing the Undiversified Adder Component and Does Not Pose an Unreasonable Risk to the PJM Market.

The Revised FTR Credit Requirement results in a collateral reduction, however the reduction is caused by the elimination of the undiversified adder component and allowing positive MTA adjustments to reduce the FTR Credit Requirement, and is not the result of the 97%

³⁹ PJM Revised Tariff at 17.

⁴⁰ *Id.* at 26.

⁴¹ *Id.*

confidence interval.⁴² As PJM describes, the elimination of the undiversified adder reduces collateral by \$894 million in the February 2022 auction back-test and by \$841 million in the March 2022 auction back-test, and allowing the FTR Credit Requirement to be decreased when the MTA value is positive reduces collateral by \$848 million in the February 2022 auction back-test and by \$661 million in the March 2022 auction back-test.⁴³ However, the resulting collateral reduction does not expose PJM and PJM Market Participants to an increased risk of portfolio losses. As discussed above, and as extensively analyzed in PJM's Revised Tariff filing, the adoption of the HSIM model with a confidence interval of 97% significantly reduces the failure rate to 3% as compared to 11% under the current rules. The undiversified adder was never tied to actual market risk and resulted in over-collateralization while not sufficiently protecting the PJM Market against the risks of default. Furthermore, the GreenHat Report recommended the removal of the undiversified adder component of the FTR Credit Requirement specifically because it is not correlated with market risk and therefore less likely to require collateral that is reasonably calibrated to protect against the risks of default due to FTR portfolio losses.⁴⁴ That the Revised FTR Credit Requirement both reduces the failure rate and results in properly tailored collateral allocations shows how carefully constructed PJM's Revised Tariff is, and further supports the conclusion that the Revised FTR Credit Requirement is just and reasonable.

III. CONCLUSION

For the reasons discussed above, ETI respectfully requests that the Commission approve PJM's Revised FTR Credit Requirement as proposed.

⁴² *Id.* at 30.

⁴³ *Id.*

⁴⁴ *Id.* at 33 (citing to GreenHat Report at Appendix page 1 (Recommendation A)).

Dated: September 30, 2022

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CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Houston, TX this 30th day of September, 2022.

/s/ Casey Khan

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