

PJM FTR Credit Alternatives

Suggested Improvements/Increased FTR Market Protection

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Coming out of the stakeholder process, we believe any new credit policy needs to address a number of key concerns

PJM FTR Credit Changes

– Requirements –

Credit Risk/Collateral Efficiency

- Improve or keep the same credit “coverage”
- Reduce or keep the same total member credit requirements

“Material” Default Protection (Tower, Others)

- Provide sufficient coverage against the potential for “material” portfolio defaults (e.g., Tower portfolios)

Zero Credit Requirement Portfolios

- Enforce a minimum credit requirement for any portfolio with nonzero open MWhs

FTR Auction Operational Improvement

- Reduce or eliminate the need for re-clearing of auctions due to undiversified adder collateral calls





We believe some simple modifications to PJM's previous proposal could address all of these needs

PJM FTR Credit Changes

– New Proposal –

	Undiversified Adder	Historical Adj.	\$/MWh Minimum	Mark to Market
Proposed Change	<ul style="list-style-type: none">Modify undiversified adder to the following: in any portfolio-month with > \$2MM net counterflow position, credit requirement will be 3x the value above \$2MM; otherwise, the undiversified requirement is \$0	<ul style="list-style-type: none">Maintain 10% adjustment for prevailing flow FTRsImplement previously-agreed 25% adjustment for counterflow FTRs	<ul style="list-style-type: none">Implement a simple minimum on a member's total credit requirement, based on the total MWhs held	<ul style="list-style-type: none">Mark portfolio utilizing the most recent auction for each period. If this value is greater than collateral currently posted, require posting mark to market value
Purpose	<ul style="list-style-type: none">Protect against "material" defaults such as Tower, while not overcollateralizing other portfoliosSignificantly reduce likelihood of intra-auction collateral calls	<ul style="list-style-type: none">Protect against smaller defaults and add a buffer for the less frequent use of the undiversified adder	<ul style="list-style-type: none">Protect against smaller defaults / "netting" of collateral requirementsNonzero credit for an open portfolio makes fundamental credit sense	<ul style="list-style-type: none">Protect against continued accumulation of a position viewed as unprofitable by the marketThis treatment is standard across most financial markets





Mark-to-Market is a tool used throughout the financial industry and should be used by PJM to help protect its membership

PJM FTR Credit Changes

– Mark-to-Market Proposal –

- **Proposal:**

- Mark each participants FTR portfolio utilizing the most recent auction price for each period. Require posting collateral equal to the mark-to-market losses on a portfolio if they are greater than collateral currently posted
- Participants who are unable to post the higher mark-to-market collateral would be restricted from future position acquisition
- PJM currently has the ability to close out portfolios in default

- **Benefits:**

- Mark-to-market is a standard collateral tool used in most financial markets
- Mark-to-market uses forward looking market prices to determine collateral instead of backward looking reference prices
- Prevent portfolios from continuing to expand when they are viewed poorly by the market. This will protect PJM membership from defaults when congestion patterns have changed from historical reference prices

- **Implementation Details:**

- Stakeholders and PJM must decide on the specifics noted above (i.e., should PJM make a collateral call and/or future restrictions on trading)





We suggest adding a \$/MWh minimum credit requirement is a prudent risk management policy

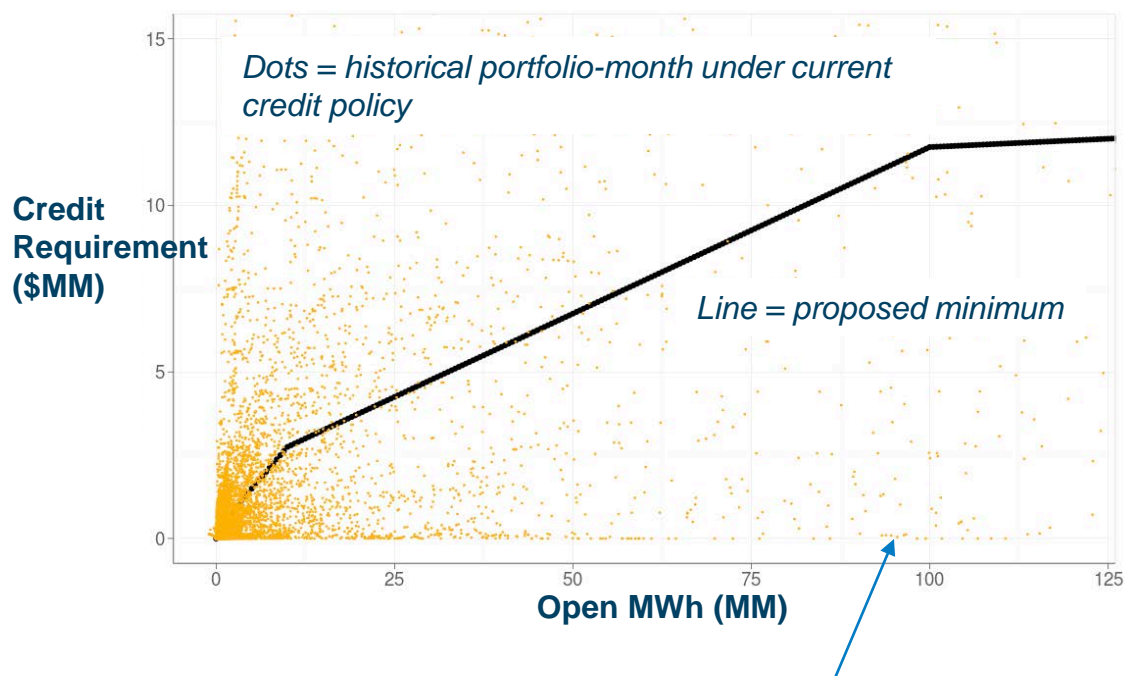
\$/MWh Minimum

– Overview –

Marginal Open MWh Minimum Credit Rates

Open MWh	Marginal Credit Rate	Base From Prior Tier
First 1MM MWh	\$0.50 / MWh	-
1MM – 10MM MWh	\$0.25 / MWh	\$500K
10MM – 100MM MWh	\$0.10 / MWh	\$2.75MM
Above 100 MM MWh	\$0.01 / MWh	\$11.75MM

Cumulative \$/MWh Requirement Curve



Under the current credit policy, there are large portfolios in terms of open MWh with zero or close to zero credit requirement

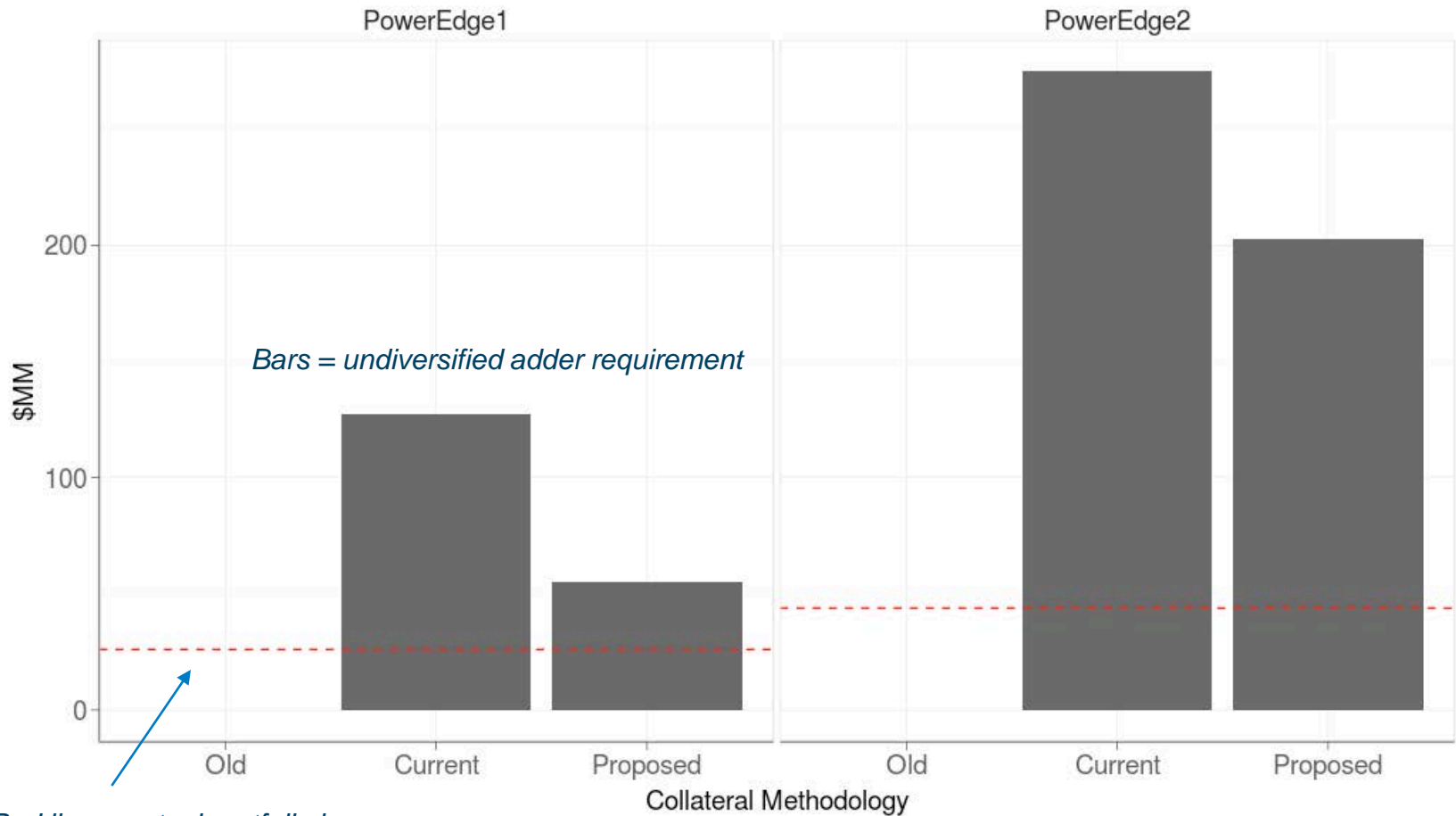




Proposal would cover the risk of both Tower portfolios

PJM FTR Credit

– Tower Required Credit vs. Portfolio Loss –



Red line = actual portfolio loss





A portfolio would have to post collateral equal to the greater of the calculated collateral or its mark-to-market losses

Mark to Market Example

– Example Portfolio, All Paths are 24h, As of Nov 17 –

Path	MW	Auction Bought In	Month/Class	Price at Acquisition	Auction Marked To	Latest Auction Price	Mark To Market
A	1	17/18 Annual	2017-11-01	\$500	Nov BOPP	\$100	(\$400)
A	1	17/18 Annual	Q3: 2017-12-01 to 2018-02-28	\$1,500	Nov BOPP	\$2000	\$500
A	1	17/18 Annual	Q4: 2018-03-01 to 2018-05-31	\$1,500	Nov BOPP	\$500	(\$1,000)
B	1	Oct BOPP	Q4: 2018-03-01 to 2018-05-31	\$500	Nov BOPP	\$400	(\$100)
C	1	18/21 LT Rd. 1	YR1: 2018-06-01 to 2019-05-31	\$10,000	18/21 LT Rd. 2	(\$10,000)	(\$20,000)
D	1	18/21 LT Rd. 2	YR1: 2018-06-01 to 2019-05-31	\$200	18/21 LT Rd. 2	\$200	\$0
Total							(\$21,000)

To obtain a mark to market value for Path A, break down remaining open position to individual periods from latest BOPP auction. Assume original invest is evenly distributed. In this instance, some strips are marked positively and others negatively

Total Collateral on Portfolio (existing rules):
 Total Proposed Collateral (Minimum \$/MWh):
 Total Collateral with Mark to Market:

\$0
\$12,407 (24,815 MWh @ \$0.5/MWh)
\$21,000

Above Portfolio would have to post \$21,000 in collateral as the mark to market loss value is larger than the \$12,407 collateral required by the \$/MWh minimum

