



Comparison of ISO/RTO Credit Policies and Risk Management for FTR/TCC/TCR/CRR Products

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June 6, 2019



Membership Requirements for FTR/TCC/TCR/CRR Participation

- Each ISO/RTO requires attestation from an officer of the company that all traders receive training specific to the market in which they are transacting
- NYISO and NE-ISO require that traders complete and pass an ISO-prescribed training for the TCC/FTR product



Risk Policy Review for FTR/TCC/TCR/CRR Participants

	Risk Policy Review	Reviewer
PJM	All non-hedging FTR participants must submit a risk policy for review; If there have been no material changes to the policies since the last submission, the Market Participant may instead provide a certification attesting that they have not materially changed.	PJM
CAISO	All CRR holders must submit a risk policy and CRR narrative responses for review if they are a new customer; attest annually to no changes or provide updated risk policy and CRR narrative responses	CAISO or designated third party
ERCOT	All CRR Holders who are ineligible for unsecured credit and who have exposure in CRR Obligations must submit a risk policy for review	ERCOT
ISO-NE	All FTR participants must submit a risk policy for review prior to participation. If there have been no material changes to the policies since the last submission, the Market Participant may instead provide a certification attesting that they have not materially changed.	ISO-NE or its designee
MISO	All Market Participants must complete a 'Minimum Market Participation Criteria—Annual Certification Form' attesting that they are in compliance with MISO's Tariff defined Training, Risk Management, Operational Capabilities, Capitalization and Appropriate Person Requirements. On a monthly basis MISO reviews Market activity and any MP who holds FTR positions in excess of 1,000 MW greater than their physical obligations must provide a current copy of their Risk Policy. MISO will audit Risk Policy compliance with Tariff. Once the audit is approved Risk Policy will not be required for another 12 months.	MISO
NYISO	All TCC Market Participants must submit their risk management policies and procedures annually (unless they solely own Grandfathered Rights, Grandfathered TCCs and/or Fixed Price TCCs). In addition, if the TCC Market Participant's activity in any of the last 36 months have a concentration of low positive or negative TCCs, they must submit their risk policies for review. If there have been no material changes to the policies since the last submission, the Market Participant may instead provide a certification attesting that they have not materially changed.	NYISO or third party
SPP	All Market Participants must complete an 'Annual Minimum Market Participation Criteria and Risk Management Certification Form'; SPP audits 5% of all Market Participants for risk documentation	SPP

*All ISO/RTOs require attestation from an authorized officer of company who attests they are authorized to sign the form



Minimum Capital Requirements for FTR/TCC/TCR/CRR Participation



Minimum Capital Requirements for FTR/TCC/TCR/CRR Participants

Audited financials are required to meet the Minimum Capital Requirements, CAISO permits unaudited financial statements that are signed and attested to by an officer of the company

	Minimum Capital Requirements	Collateral Alternative
CAISO	\$1M Tangible Net Worth, \$10 M Total Assets	\$500K minimum*
ERCOT	\$1M Tangible Net Worth, \$10M Total Assets	\$500K restricted
ISO-NE	\$1M Tangible Net Worth, \$10M Total Assets, Minimum BBB-/Baa3	25% additional required
MISO	\$1M Tangible Net Worth, \$10M Total Assets	\$500K minimum, \$250K restricted for Annual FTR positions. \$200K minimum, \$100K restricted for prompt month only positions
NYISO	\$1M Tangible Net Worth, \$10M Total Assets	\$500K restricted
PJM	\$1M Tangible Net Worth, \$10M Tangible Assets	\$500K restricted, 10% reduction of remaining collateral
SPP	\$1M Tangible Net Worth, \$10M Total Assets, Minimum BBB-	\$200K minimum or 2x market exposure

*CAISO Collateral Alternative - \$500K for participants with < 6 months activity; \$500K with > 6 months activity and estimated liability for prior 6 months > \$100K; \$100K with > 6 months activity and estimated liability for prior 6 months < \$100K

Requirements for Screened Activity for FTR/TCC/TCR/CRR

- Collateral Call cure period is 24 Hours for NE-ISO, and 2 business days for all other ISO/RTOs
- All ISO/RTOs require collateral prior to bid/offer submissions and Market Participants must have sufficient collateral in order to participate
- All ISO/RTOs have credit requirements for cleared/held positions
 - The specific calculations vary across the ISO/RTOs, but each has a consideration of historical values (comparisons on next slide)
 - Some ISO/RTOs have a component of the requirement which considers auction charges/credits
 - ERCOT requires payment at the time of the auction clearing
 - NYISO holds the higher of the credit requirement or payment due the NYISO as collateral until the TCC is paid, payments are due prior to the start of the TCC term
 - NE-ISO and CAISO hold payment as collateral until paid
 - MISO holds the acquisition price as collateral
 - PJM assesses charges at the time of delivery
 - SPP holds the acquisition cost as a part of the credit requirement, but it can be reduced by submitting weekly settlement payments

	Historical Value Reference
CAISO	3 year historical LMP/MCC data
ERCOT	Portfolio Weighted Adder (PWA)-100 percentile of a volume-weighted average price based on 3 years of historical CRR path values
ISO-NE	Proxy price based on 36 month rolling look back
MISO	Higher of the 50 th Percentile Value and 75 th Percentile Value for each Commercial Price Node calculated on a rolling twelve (12) month basis
NYISO	Certain values use historical data to account for volatility
PJM	Weighted Average of monthly/class type historical DA CLMP values (50% / 30% / 20%)
SPP	<ul style="list-style-type: none"> Weighted average hourly DA MCC differences of the prior two years (75% / 25%) 75th percentile of the opposite flow value, 90th percentile of the opposite flow value, depending on mean price

- Currently, PJM is the only ISO/RTO which has a per-MWh minimum (10¢ per-MWh) and a PROMOD simulation aspect to the credit policy
- Several ISO/RTOs, including PJM, have a Mark-to-Auction or Mark-to-Market component (or have filed provisions with FERC)
 - CAISO
 - ERCOT
 - ISO-NE
 - NYISO

	Mark-to-Auction or Mark-to-Market Valuation
PJM	Most Recent Auction Clearing Prices
CAISO	Current month/annual CRR clearing prices
ERCOT	Portfolio Weighted Auction -Clearing Price (PWACP) A volume-weighted average price calculated using prices from the most recent CRR Auction
ISO-NE	Most Recent Auction Clearing Prices
NYISO	<ul style="list-style-type: none"> • Congestion rents over the past 90 days and extrapolate out the duration of the TCC • Market clearing price