



## **Item 4: Periodic Report on Credit Work Group Activity**

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Chair, Credit Work Group

Finance & Audit Committee Meeting

ERCOT Public  
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# Credit Work Group Update – Reviewed NPRRs

- The Following NPRRs were Reviewed by CWG with Potential Credit Impact
  - NPRR791 Clarifications to IEL, MCE and Aggregate Amount Owed by Breaching Party
    - Endorsed unanimously in August 2016 (with minor PRS desktop edit reviewed in September 2016)
- Other NPRRs Reviewed by CWG without Potential Credit Impact
  - NPRR769 NPRR Alignment w/VCMRR013, Clarifications to Verifiable Cost Appeal Process
  - NPRR775 Enhanced Implementation of Limits for Fast Responding Regulation Service
  - NPRR783 Revision of Network Operations Model Consistency Audit Requirement
  - NPRR788 RMR Study Modifications
  - NPRR789 Publish All Load Forecast Results
  - NPRR790 Addition of Phase Angle Limits to the Network Operations Model
  - NPRR793 Clarifications to RMR RUC Commitment and Other RMR Cleanups
  - NPRR795 Provisions for Refunds of Capital Contributions Made in Connection with an RMR Agreement
  - NPRR797 Actual Load by Forecast Zone Report and Display
  - NPRR801 Non-Controllable Load Resource MW in PRC

# NPRR791 Clarifications to IEL, MCE and Aggregate Amount Owed by Breaching Party

- Clarifies that IEL for generation is based on estimated QSE to QSE energy sales.
- Counter-Party Credit Application updated to reflect QSE to QSE energy sales.
- Restores the IEL for traders originally defined in NPRR620, *Collateral Requirements for Counter-Parties with No Load or Generation*, which was omitted from NPRR741, *Clarifications to TPE and EAL Credit Exposure Calculations*.
- Corrects subscripts in the MCE formula that were inadvertently overwritten by NPRR743, *Revision to MCE to Have a Floor For Load Exposure*.
- Modifies the RTQQNET and DARTNET in the gray boxed language for NPRR741 to match the current baseline Protocols.
- The “Deferred Invoice Exposure” concept was removed by NPRR728, *Removal of Language and Definitions to NPRR484, Revisions to Congestion Revenue Rights Credit Calculations and Payments*, and NPRR554, *Clarification of Future Credit Exposure Calculation*.

# NPRR773, Broadening Scope of Acceptable Letter of Credit Issuers and Binding Documents

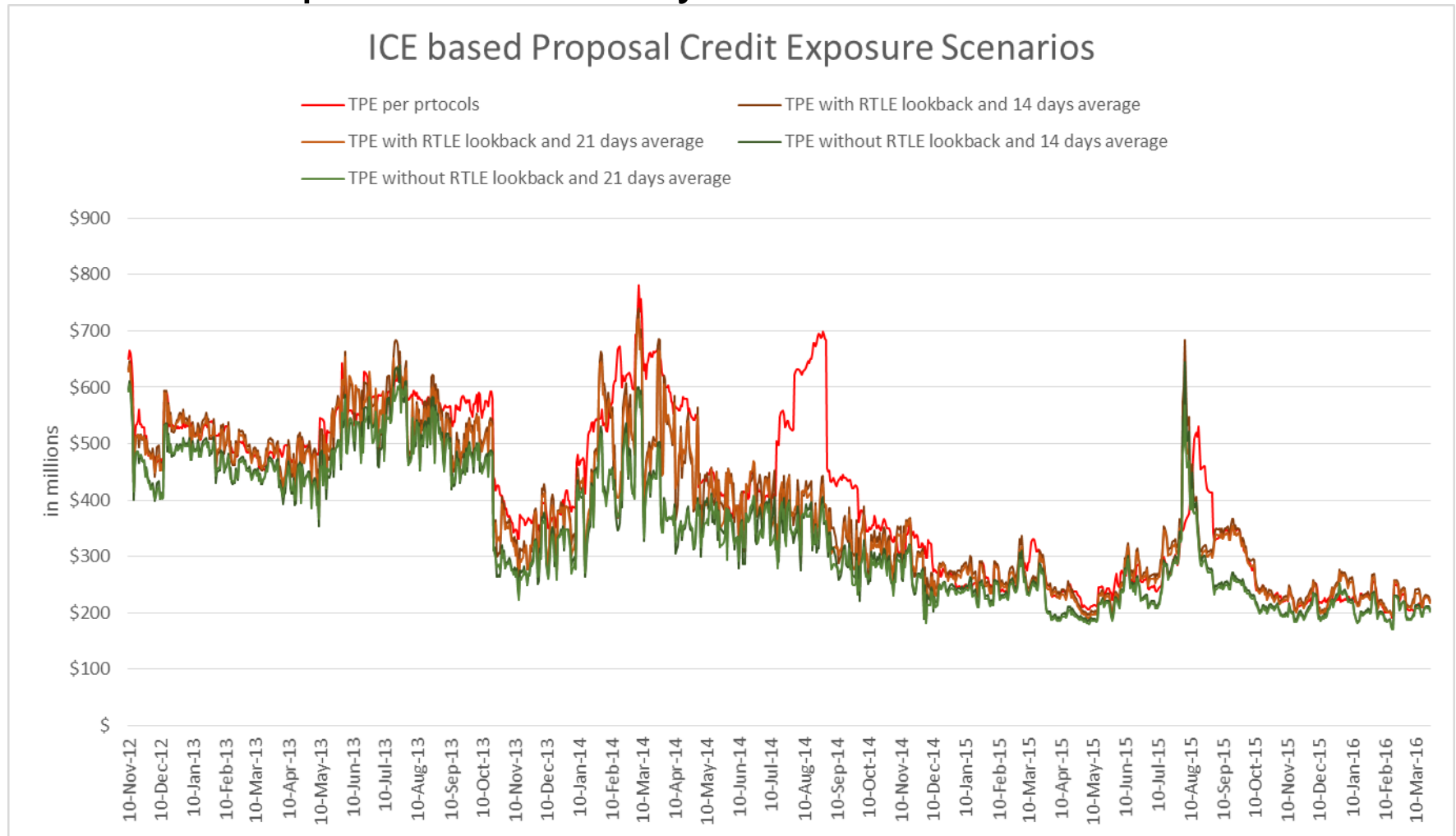
- Review of Market Participant Credit-Related Binding Documents:
  - ERCOT has proposed changes to the Market Participant Letter of Credit Binding Document to incorporate changes required by NPRR773.
  - ERCOT legal has requested outside counsel to review the following Credit-Related Binding Documents:
    - *Market Participant Letter of Credit*
    - *Surety Bond*
    - *Foreign Market Participant Guarantee Agreement*
    - *Market Participant Guarantee Agreement*
- Significant changes were proposed to the language and terms and conditions of the Binding Documents by outside counsel.
- CWG voted to table approval of the proposed changes until October while Market Participants conducted further review.

# NPRR800 Forward Pricing Credit Methodology

- NPRR800 Prepared by ERCOT and endorsed by CWG to incorporate Forward Pricing Credit Methodology:
  - Market Adjustment Factor (MAF) replaces Seasonal Adjustment Factor (SAF).
  - Adds Real-Time Forward Adjustment Factor (RFAF) in the Minimum Current Exposure (MCE) and Estimate Aggregate Liability (EAL) calculation.
  - Adds Day-Ahead Forward Adjustment Factor (DFAF) in the Estimate Aggregate Liability (EAL) calculation.
  - Adjustment factors derived from 21-day North Hub ICE Price Curves.
  - A new report-Forward Adjustment Factors Summary Report will add to ERCOT MIS for daily posting.
- NPRR800 referred by PRS to CWG in September 2016:
  - ERCOT has provided interested Market Participants with approximately 3½ years of back-cast Counter-Party-specific data for analysis.
  - CWG will discuss NPRR800 and Counter-Party-specific results in October.
- NPRR638 has been withdrawn by ERCOT in consideration of the newly submitted NPRR.

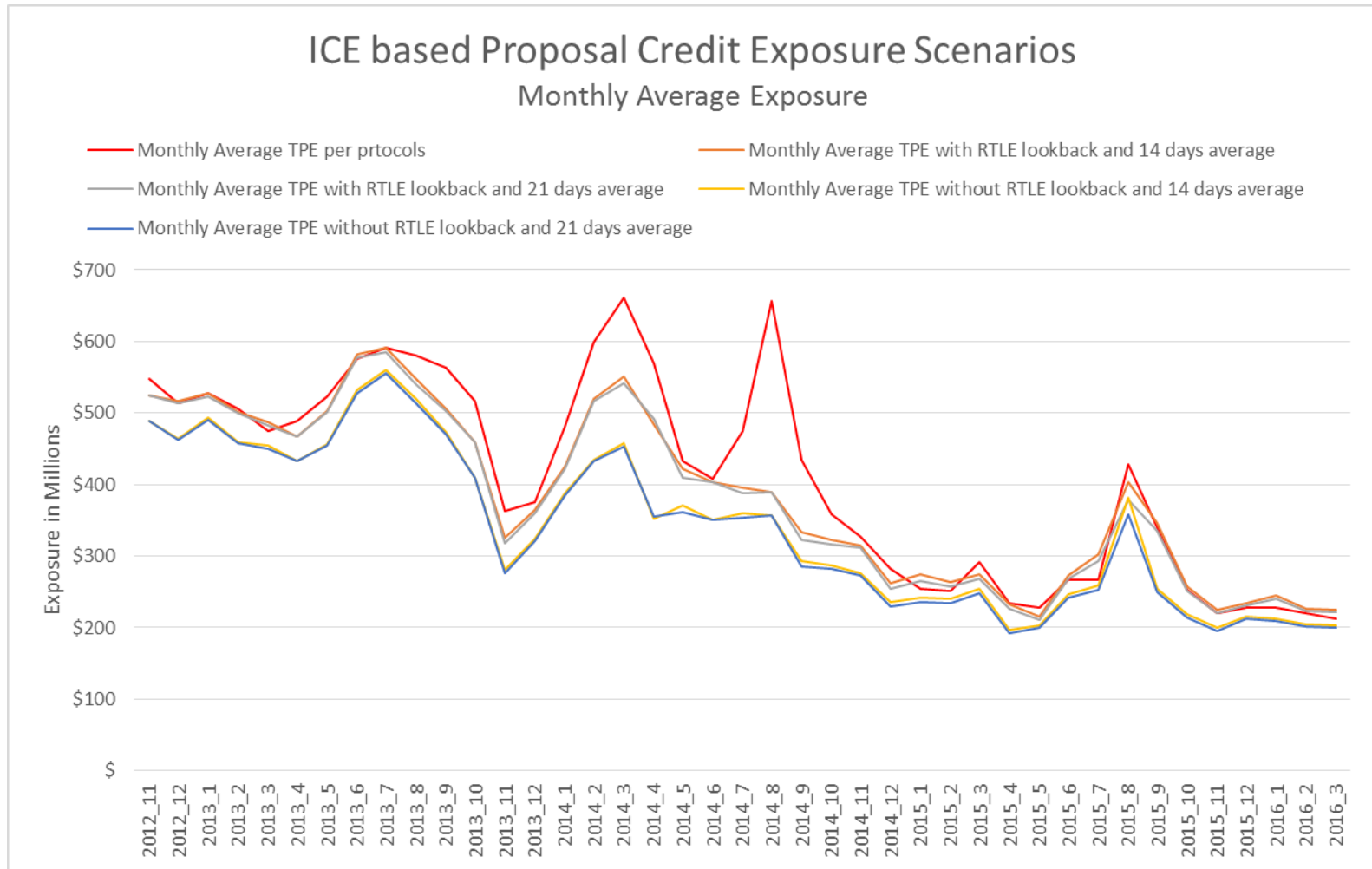
# Credit Exposure Analysis using ICE Prices

## Results – Exposure Summary:



# Credit Exposure Analysis using ICE Prices

## Results – Monthly Average Exposure:



# Credit Exposure Analysis using ICE Prices

## Results – Market-wide exposure options descriptive statistics:

- Average exposure under all proposed options is significantly lower
- There is high correlation between exposure under proposed options to exposure under current protocols
- Relative variability is similar across all options

Statistic	TPE per protocols	TPE with RTLE lookback and 14 days average	TPE with RTLE lookback and 21 days average	TPE without RTLE lookback and 14 days average	TPE without RTLE lookback and 21 days average
<b>Correlation with TPE per protocols</b>		87%	88%	86%	87%
<b>Mean</b>	\$409	\$383	\$378	\$342	\$338
<b>Std Dev</b>	\$143	\$126	\$125	\$116	\$115
<b>Relative Variability (Std Dev / Mean)</b>	35%	33%	33%	34%	34%



# Credit Exposure Analysis using ICE Prices

Results – Average Market-wide Aggregate Exposure by Category:

Average Market-wide Aggregate Exposure (in millions) by Category

Category	TPE per protocols	TPE with RTLE lookback and 14 days average	TPE with RTLE lookback and 21 days average	TPE without RTLE lookback and 14 days average	TPE without RTLE lookback and 21 days average
Load-Only	\$31	\$27	\$26	\$24	\$23
Generation-Only	\$22	\$22	\$22	\$20	\$20
Load & Generation	\$255	\$239	\$235	\$215	\$212
Trader Only	\$100	\$96	\$95	\$83	\$83
<b>All Categories Combined</b>	<b>\$409</b>	<b>\$383</b>	<b>\$378</b>	<b>\$342</b>	<b>\$338</b>

# Credit Exposure Analysis using ICE Prices

Results – Change in Average Market-wide Aggregate Exposure by Category:

Change in Average Market-wide Aggregate Exposure (in millions) by Category

Category	TPE with RTLE lookback and 14 days average	TPE with RTLE lookback and 21 days average	TPE without RTLE lookback and 14 days average	TPE without RTLE lookback and 21 days average
Load-Only	-\$4	-\$5	-\$7	-\$8
Generation-Only	-\$1	-\$1	-\$2	-\$2
Load & Generation	-\$16	-\$20	-\$41	-\$44
Trader Only	-\$5	-\$5	-\$17	-\$17
<b>All Categories Combined</b>	<b>-\$26</b>	<b>-\$31</b>	<b>-\$67</b>	<b>-\$71</b>

# Credit Exposure Analysis using ICE Prices

Results – Percentage Change in Average Market-wide Aggregate Exposure by Category:

- Exposure under any of the proposed scenarios is significantly lower

Percentage change in Average Market-wide Aggregate Exposure by

Category	TPE with RTLE lookback and 14 days average	TPE with RTLE lookback and 21 days average	TPE without RTLE lookback and 14 days average	TPE without RTLE lookback and 21 days average
Load-Only	-13%	-15%	-23%	-24%
Generation-Only	-2%	-3%	-9%	-10%
Load & Generation	-6%	-8%	-16%	-17%
Trader Only	-5%	-5%	-17%	-17%
All Categories Combined	-6%	-8%	-16%	-17%

# Credit Work Group Update – Exposure Review

- Quarterly Review provided by ERCOT as of June 2016 of Credit Exposure by Market Segment and Credit Rating

Distribution of TPE by Rating and Category in June 2016

Rating Group	CRR Only	Gen Only	Load Only	Load and Gen	Trader	Total TPE	Percent TPE
AAA	0	0	0	0	0	0	0.0%
AA- to AA+	25,956	0	0	5,885,323	0	5,911,279	2.2%
A- to A+	3,895	3,372	1,483,642	42,279,096	1,610,915	45,380,921	17.1%
BBB- to BBB+	178,381	4,216,240	8,625,480	29,156,553	13,646,277	55,822,931	21.0%
BB- to BB+	0	0	2,824,190	0	36,204	2,860,394	1.1%
B- to B+	0	676,474	0	14,894,897	18,882,126	34,453,497	13.0%
CCC+ and below	0	0	0	0	0	0	0.0%
Not Rated	1,275,668	16,772,694	5,644,600	49,098,619	48,277,667	121,069,250	45.6%
<b>Total TPE</b>	<b>1,483,901</b>	<b>21,668,780</b>	<b>18,577,913</b>	<b>141,314,488</b>	<b>82,453,190</b>	<b>265,498,272</b>	<b>100.0%</b>
<b>Percent TPE</b>	<b>0.6%</b>	<b>8.2%</b>	<b>7.0%</b>	<b>53.2%</b>	<b>31.1%</b>	<b>100.0%</b>	

Distribution of Excess Collateral by Rating and Category in June 2016

Rating Group	CRR Only	Gen Only	Load Only	Load and Gen	Trader	Excess Collateral	Percent Excess Collateral
AAA	0	0	0	0	0	0	0.0%
AA- to AA+	2,633,714	0	0	56,245,937	0	58,879,651	3.6%
A- to A+	293,161	3,496,628	843,233	158,950,875	81,415,924	244,999,821	15.1%
BBB- to BBB+	18,821,619	42,287,204	106,723,069	404,414,435	135,916,332	708,162,660	43.8%
BB- to BB+	0	0	18,650,810	0	12,519,715	31,170,525	1.9%
B- to B+	0	9,323,526	390,473	59,438,492	26,473,212	95,625,704	5.9%
CCC+ and below	0	0	0	0	0	0	0.0%
Not Rated	11,432,971	36,989,894	20,757,192	190,112,403	219,952,895	479,245,356	29.6%
<b>Total Excess Collateral</b>	<b>33,181,465</b>	<b>92,097,252</b>	<b>147,364,778</b>	<b>869,162,143</b>	<b>476,278,079</b>	<b>1,618,083,717</b>	<b>100.0%</b>
<b>Percent Excess Collateral</b>	<b>2.1%</b>	<b>5.7%</b>	<b>9.1%</b>	<b>53.7%</b>	<b>29.4%</b>	<b>100.0%</b>	



# Market Continuity Workshop - Credit Issues

- Workshop held on May 2<sup>nd</sup> to discuss topics related to recovery of ERCOT activities in the event of a significant market disruption.
- Discussion points from August 2016 CWG / MCWG Meeting:
  - A market outage would be treated as a *force majeure* event
  - ERCOT would seek emergency funding to pay generators
  - Credit requirements for DAM would be suspended for some period of time
  - Any Mass Transitions that might follow from REP defaults would be suspended
  - Excess cash would be used to cover QSE invoices first
  - Collateral calls would be suspended for some period of time
  - DAM may be restricted to load and generation for some period of time
- Further Workshop proposed for October/November – TBA.
- CWG/MCWG has postponed discussion until the next Workshop.

## Credit Work Group Update - Other Topics

- Proposed refresh of the Credit Monitoring and Management System (CMM) incorporating recently approved NPRRs in the planning stage and targeted for implementation in Q3/Q4 2017.
- NPRR803 introduced to “Remove Grey-boxed Language from NPRR439, Updating a Counter-Party’s Available Credit Limit for Current Day DAM” resulting in a potential project savings of \$125k to \$135k from the cost of the CMM technology refresh.
- Credit Training – next session in Houston on October 25<sup>th</sup>.

# Questions?