

Item 5: Periodic Report on Credit Work Group Activity

Donald Meek Chair, Credit Work Group

Finance & Audit Committee Meeting

ERCOT Public August 6, 2018

Credit Work Group Update – Reviewed NPRRs

• NPRRs Reviewed Without Credit Impact

- NPRR 862 Updates to Address Revisions under PUCT Project 46369
- NPRR 866 Mapping Registered Distributed Generation and Load Resources to Transmission Loads in the Network Operations Model
- NPRR 874 Change to Report for Net Allocation to Load Settlement Stability
- NPRR 875 Clarification for the Implementation of NPRR 864, RUC Modifications to Consider Market-Based Solutions
- NPRR 878 ERS Obligation Report for TDSPs

• NPRRs with Positive Credit Impacts

- NPRR 877 Use of Actual Interval Data for IDR ESI IDs for Initial Settlement
 - The Credit WG unanimously voted to note that NPRR877 has positive credit implications as it more accurately matches credit exposure to activity.



NPRR 850 – Market Suspension and Restart

- ERCOT employed stakeholder feedback to develop a principles-based approach to Market Suspension and Market Restart.
- ERCOT has drafted proposed language to handle collateral requests during the transition from pre-to post-market restart.
 - Based upon feedback from the CWG, ERCOT has added discretionary language to allow up to two additional days for Market Participants to make payment on any outstanding invoices / collateral calls during a Market Restart.
- Credit Working Group is awaiting further comments or feedback from other ERCOT stakeholder working groups prior to filing additional comments.

Discussion will continue at upcoming CWG/MCWG meetings.



Posting of Transaction/Acquisition Business Contact Information (REP Book Sales)

- During the Summer of 2018, to better facilitate the sale/acquisition of a Retail Electric Provider's (REP's) portfolio, ERCOT has solicited and posted on the ERCOT public website a list of REPs (with contact names who are available 24x7) who are able to respond to other REPs that wish to quickly sell their books prior to a possible credit default/mass transition.
- A Retail Market Guide Revision Request (RMGRR) will be considered to document procedures for a Competitive Retailer to provide Transition/Acquisition Business contact information to be posted publically.
- Longer term maintenance of such a list may require an NPRR to include an M&A contact in the market participant registration forms.
- ERCOT will work with legal to explore a longer term approach.

This issues related to a longer term approach to providing ongoing M&A contact information to requesting market participants will be discussed further at RMS and CWG/MCWG.



ERCOT Mass Transition Drill "Lessons Learned"

Two important 'lessons learned' from the May 2018 ERCOT Mass Transition Drill:

1) When a credit default is declared no earlier than 15:00 on a given day, there is a minimum 2 hours window before a mass transition conference call can be held. This means that the call has to happen the next day because the notice cannot typically be issued before 15:30 to 16:00 by the time it clears ERCOT approval and notification processes.

This adds a day of delay to the mass transition timeline and potentially increases uplift. ERCOT is going to discuss at RMS if this window can be decreased. This will not require an NPRR but a Retail Market Guide Revision Request (RMGRR), which has a much shorter process than an NPRR.

2) Meter reads are performed (to establish the beginning of the new service with the POLR) two days after the declared default. This would require an NPRR to change the protocols.

There is additional default risk in reading meters two days after a declared default that would be reduced with one day reads, which is now possible given the extensive usage of AMS/IDR meters. This change would require confirmation/coordination with the TDSPs that they are capable of such a task as well as an NPRR and RMGRR – a much longer process.

ERCOT will endeavor to conduct another Mass Transition Drill after the peak summer season.



ERCOT Mass Transition – Breeze Energy

On May 30, 2018 Breeze Energy - a competitive Retail Electric Rrovider (REP) with approximately 9,800 ESI IDs - exited the ERCOT marketplace with its customers either voluntarily transitioning to another REP or involuntarily transferring to a Provider of Last Resort (POLR).

There were a number of identified issues and 'lessons learned' from the Breeze Energy Mass Transition:

- The mass transition process of approximately 9,800 ESI IDs took between 7 and 10 days to fully complete in coordination between ERCOT and the involved TDSPs.
 ERCOT's collateral calculations presume 100,000 ESI IDs per day are transitioned.
- Certain Breeze Energy customers who selected another competitive REP had issues with the switching order queue at certain TDSPs and were switched first to their preferred REP and then subsequently to a POLR instead of just remaining with the REP of their choice.
- Each involved TDSP has its own mass transition process with some being more manual than others with different exception processes. Most TDSPs have not had to deal with a mass transition event for several years and staff turnover has identified a need for additional training and workflow process reviews at several entities.



Letter of Credit (LC) Concentration Limit Update

- After two LC Issuers previously exceeded their credit concentration limits, subsequent market participant reductions in LCs contracted with those issuers has resulted in currently no issuers exceeding their limits.
- Currently any institution which has reached its concentration limit may not supply an new LC to an ERCOT market participant, however any existing LC holder may amend/increase its LC with that financial institution during a 4 month window without limit.
- There was discussion that if a credit concentration limit was breached due to a downgrade in a financial institution's credit rating it would be prudent to not allow a 4 month amendment window.
 - For example, Bank X has a \$300 million LC limit and market participants have established LCs with that Bank for a total of \$250 million outstanding. If Bank X's credit rating were to fall to a level that ERCOT would only grant a \$200 million LC limit and market participants currently have an aggregate of \$250 million outstanding, no new LCs – including increases to currently established LCs – would be allowed.
- There was also concern regarding the content of the concentration limit exceedance market notices.



Letter of Credit Issuer Limits – July 2018

Detailed statistics

Lettter of Credit Concentration Limits (\$ millions) LCs. Average LCs Excess Maximum Outstanding Capacity as % Current LCs Issued, Issued, June Computed as of July of July 16, Excess / June 01,2018 01,2018 -July LC Issuer **Issuer Limit** 16,2018 2018 Limit -July 16,2018 16,2018 Bank of America NA 750.00 272.90 477.10 64% 272.90 165.96 Bank of Nova Scotia 297.29 87.55 209.74 71% 87.55 82.39 750.00 199.22 550.78 73% 201.22 200.06 Bank of Tokyo-Mitsubishi UFJ, Ltd. New York Branch 507.18 82% 110.58 Barclays Bank PLC 617.18 110.00 116.00 **BNP** Paribas 85% 750.00 110.45 639.55 112.20 110.03 99% BOKF NA(FI) 19.24 0.20 19.04 0.20 0.20 Canadian Imperial Bank 146.95 24.46 122.49 83% 39.46 26.26 Citibank NA 750.00 74.10 675.90 90% 98.00 80.06 CoBank ACB 77.01 35.00 55% 35.00 35.00 42.01 96% Comerica Bank 50.30 2.20 48.10 2.20 2.20 100% Cooperatieve Rabobank U.A. 383.95 0.20 383.75 0.20 0.20 Credit Agricole Corporate & Investment Bank SA (FI) 170.42 170.42 100% Credit Suisse AG 295.89 45.60 250.29 85% 45.60 43.34 **DNB Bank ASA** 172.57 150.00 22.57 13% 150.00 150.00 90.65 15.00 75.65 83% 15.00 KeyBank National Association(FI) 15.00 416.00 81% Lloyds Bank PLC 515.81 99.80 99.80 99.80 Mizuho Corporate Bank Ltd. 462.01 287.95 174.06 38% 294.55 279.22 Morgan Stanley Bank, N.A.(FI) 60.53 50% 80.98 121.03 60.50 205.50 MUEG Union Bank N.A. 103.30 8.00 95.30 92% 8.00 8.00 Natixis 139.40 113.00 26.40 19% 152.80 100.52 PNC Bank NA 214.85 41.75 173.1081% 41.75 41.75 Royal Bank of Canada (FI) 384.53 384.53 100% Societe Generale 472.87 97.00 375.87 79% 97.00 97.00 Sumitomo Mitsui Banking Corporation. 516.72 0.50 516.22 100% 0.50 0.50 Toronto-Dominion Bank, The (FI) 365.34 10.00 355.34 97% 10.00 10.00 US Bank(FI) 304.41 12.00 292.41 96% 12.00 9.86 750.00 108.30 641.70 86% 108.30 Wells Fargo 104.12 1.965.67

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Review of ERCOT NPRR 800 Collateral Parameters

| Parameter | Parameter Value |
|---|--------------------|
| Electricity-Futures Based Factors (RFAF & DFAF) Parameters | |
| Number of Forward Weeks | 3 weeks |
| Real-Time Weight Factors for Forward Week (RWF) Week 1 Week 2 Week 3 | 1/3 1/3 1/3 |
| Day-Ahead Weight Factors for Forward Week (DWF) Week 1 Week 2 Week 3 | 1/3 1/3 1/3 |
| Reference Hub (rHub) | ERCOT North Hub |
| M1 (Multiplier for RTLE and DALE) Parameters | |
| M1a (no. of days for termination upon default) M1b (minimum no. of days to transition; based on no. of ESI IDs) ESI ID daily transition rate (to determine no. of days to transition) | 12 8 100,000 |
| RTLE Look-Back No Load or Gen (NPRR 620; for implementation) All Others | 20 40 |

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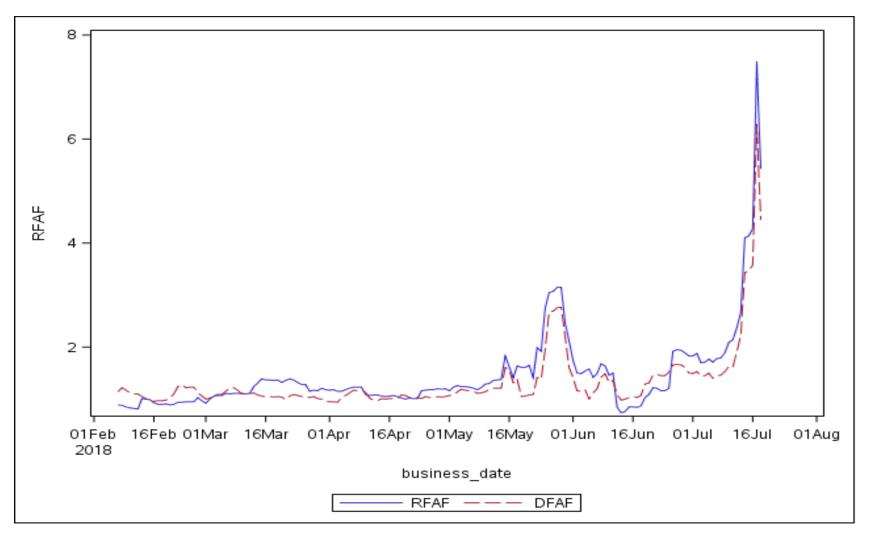
M1a / M1b – Number of Days in a Mass Transition

| | Best | Worst | | (| 21 | (| 22 | | Q3 | Q4 | |
|---|------|-------|-----|-----------|------------|-----------|------------|-----------|------------|-----------|------------|
| | Case | Case | Day | Best case | Worst case |
| Initial transaction | M1a | | 1 | (Mon.) | (Thur.) | (Mon.) | (Thur.) | (Mon.) | (Thur.) | (Mon.) | (Tue.) |
| Collateral call issuance | | | 2 | (Tue.) | (Fri.) | (Tue.) | (Fri.) | (Tue.) | (Fri.) | (Tue.) | (Wed.) |
| Collateral call cure (2 Bank Business Days) | | | 3 | (Wed.) | (Sat.) | (Wed.) | (Sat.) | (Wed.) | (Sat.) | (Wed.) | (Thur.) |
| Breach notice issuance | | | 4 | (Thur.) | (Sun.) | (Thur.) | (Sun.) | (Thur.) | (Sun.) | (Thur.) | (Fri.) |
| Breach cure (1 Bank Business Day) | | | 5 | (Fri.) | (Mon.) | (Fri.) | (Mon.) | (Fri.) | (Mon.) | (Fri.) | (Sat.) |
| Termination, Mass Transition notification | | | 6 | (Sat.) | (Tue.) | (Sat.) | (Tue.) | (Sat.) | (Tue.) | (Sat.) | (Sun.) |
| Mass Transition | | M1a | 7 | (Sun.) | (Wed.) | (Sun.) | (Wed.) | (Sun.) | (Wed.) | (Sun.) | (Mon.) |
| Mass Transition complete (min two days) | M1b | | 8 | (Mon.) | (Thur.) | (Mon.) | (Thur.) | (Mon.) | (Thur.) | (Mon.) | (Tue.) |
| | | | 9 | (Tue.) | (Fri.) | (Tue.) | (Fri.) | (Tue.) | (Fri.) | (Tue.) | (Wed.) |
| | | | 10 | (Wed.) | (Sat.) | (Wed.) | (Sat.) | (Wed.) | (Sat.) | (Wed.) | (Thur.) |
| | | | 11 | (Thur.) | (Sun.) | (Thur.) | (Sun.) | (Thur.) | (Sun.) | (Thur.) | (Fri.) |
| | | | 12 | (Fri.) | (Mon.) | (Fri.) | (Mon.) | (Fri.) | (Mon.) | (Fri.) | (Sat.) |
| | | | 13 | (Sat.) | (Tue.) | (Sat.) | (Tue.) | (Sat.) | (Tue.) | (Sat.) | (Sun.) |
| | | M1b | 14 | (Sun.) | (Wed.) | (Sun.) | (Wed.) | (Sun.) | (Wed.) | (Sun.) | (Mon.) |
| | | | 15 | (Mon.) | (Thur.) | (Mon.) | (Thur.) | (Mon.) | (Thur.) | (Mon.) | (Tue.) |
| | | | 16 | (Tue.) | (Fri.) | (Tue.) | (Fri.) | (Tue.) | (Fri.) | (Tue.) | (Wed.) |
| | | | 17 | (Wed.) | (Sat.) | (Wed.) | (Sat.) | (Wed.) | (Sat.) | (Wed.) | (Thur.) |
| | | | 18 | (Thur.) | (Sun.) | (Thur.) | (Sun.) | (Thur.) | (Sun.) | (Thur.) | (Fri.) |
| | | | 19 | (Fri.) | (Mon.) | (Fri.) | (Mon.) | (Fri.) | (Mon.) | (Fri.) | (Sat.) |
| | | | 20 | (Sat.) | (Tue.) | (Sat.) | (Tue.) | (Sat.) | (Tue.) | (Sat.) | (Sun.) |
| | | | 21 | (Sun.) | (Wed.) | (Sun.) | (Wed.) | (Sun.) | (Wed.) | (Sun.) | (Mon.) |
| | | | 22 | (Mon.) | (Thur.) | (Mon.) | (Thur.) | (Mon.) | (Thur.) | (Mon.) | (Tue.) |
| | | | 23 | (Tue.) | (Fri.) | (Tue.) | (Fri.) | (Tue.) | (Fri.) | (Tue.) | (Wed.) |
| | | | 24 | (Wed.) | (Sat.) | (Wed.) | (Sat.) | (Wed.) | (Sat.) | (Wed.) | (Thur.) |
| | | | 25 | (Thur.) | (Sun.) | (Thur.) | (Sun.) | (Thur.) | (Sun.) | (Thur.) | (Fri.) |
| | | | 26 | (Fri.) | (Mon.) | (Fri.) | (Mon.) | (Fri.) | (Mon.) | (Fri.) | (Sat.) |
| | | | 27 | (Sat.) | (Tue.) | (Sat.) | (Tue.) | (Sat.) | (Tue.) | (Sat.) | (Sun.) |
| | | | 28 | (Sun.) | (Wed.) | (Sun.) | (Wed.) | (Sun.) | (Wed.) | (Sun.) | (Mon.) |
| | | | 29 | (Mon.) | (Thur.) | (Mon.) | (Thur.) | (Mon.) | (Thur.) | (Mon.) | (Tue.) |
| | | | 30 | (Tue.) | (Fri.) | (Tue.) | (Fri.) | (Tue.) | (Fri.) | (Tue.) | (Wed.) |
| | | | 31 | (Wed.) | (Sat.) | (Wed.) | (Sat.) | (Wed.) | (Sat.) | (Wed.) | (Thur.) |
| | | | 32 | (Thur.) | (Sun.) | (Thur.) | (Sun.) | (Thur.) | (Sun.) | (Thur.) | (Fri.) |
| | | | 33 | (Fri.) | (Mon.) | (Fri.) | (Mon.) | (Fri.) | (Mon.) | (Fri.) | (Sat.) |
| | | | 34 | (Sat.) | (Tue.) | (Sat.) | (Tue.) | (Sat.) | (Tue.) | (Sat.) | (Sun.) |
| | | | 35 | (Sun.) | (Wed.) | (Sun.) | (Wed.) | (Sun.) | (Wed.) | (Sun.) | (Mon.) |
| | | | 36 | (Mon.) | (Thur.) | (Mon.) | (Thur.) | (Mon.) | (Thur.) | (Mon.) | (Tue.) |
| | | | 37 | (Tue.) | (Fri.) | (Tue.) | (Fri.) | (Tue.) | (Fri.) | (Tue.) | (Wed.) |
| | | | 38 | (Wed.) | (Sat.) | (Wed.) | (Sat.) | (Wed.) | (Sat.) | (Wed.) | (Thur.) |
| | | | 39 | (Thur.) | (Sun.) | (Thur.) | (Sun.) | (Thur.) | (Sun.) | (Thur.) | (Fri.) |
| | | | 40 | (Fri.) | (Mon.) | (Fri.) | (Mon.) | (Fri.) | (Mon.) | (Fri.) | (Sat.) |
| | | | 41 | (Sat.) | (Tue.) | (Sat.) | (Tue.) | (Sat.) | (Tue.) | (Sat.) | (Sun.) |

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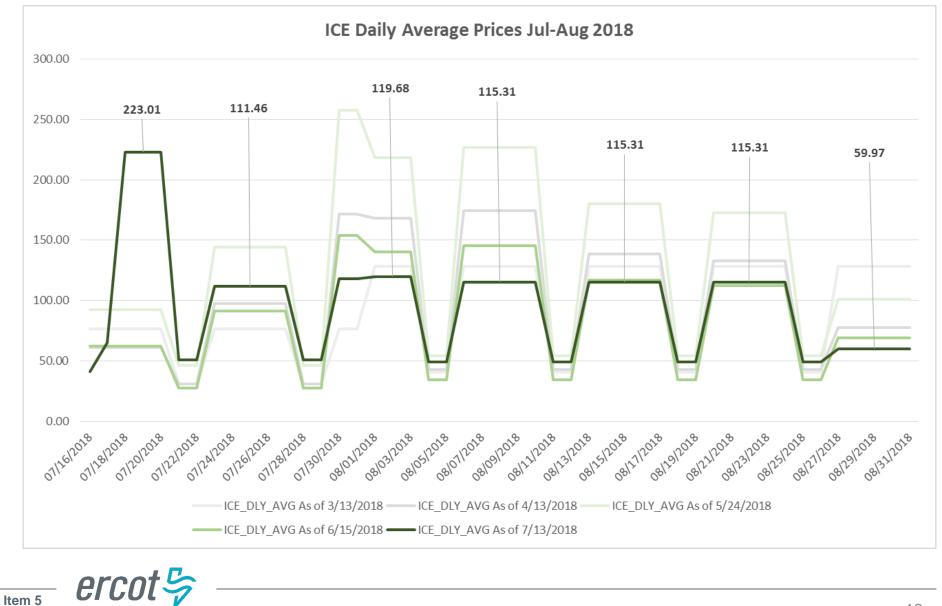
ERCOT Forward Adjustment Factors

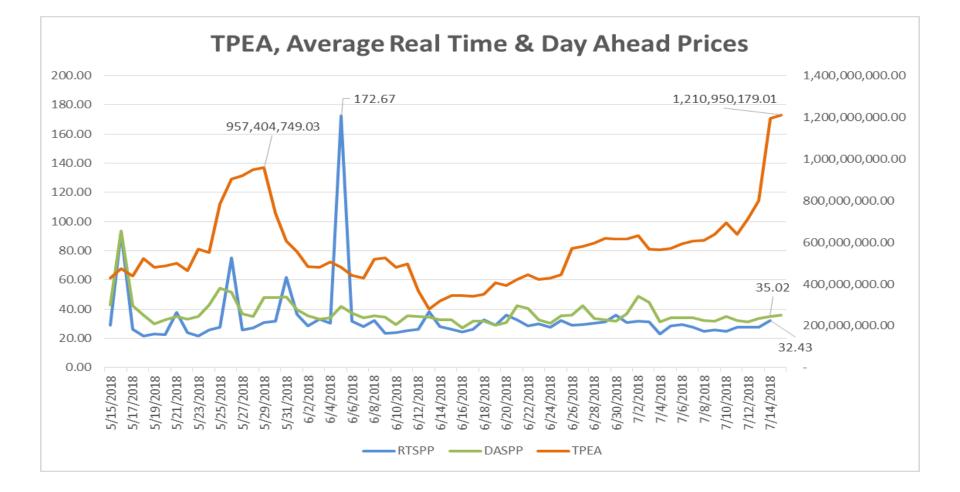


Forward adjustment factors are calculated as the ratio of 21 days forward ICE prices to 14 days Real-Time or 7 days Day-Ahead historic prices.

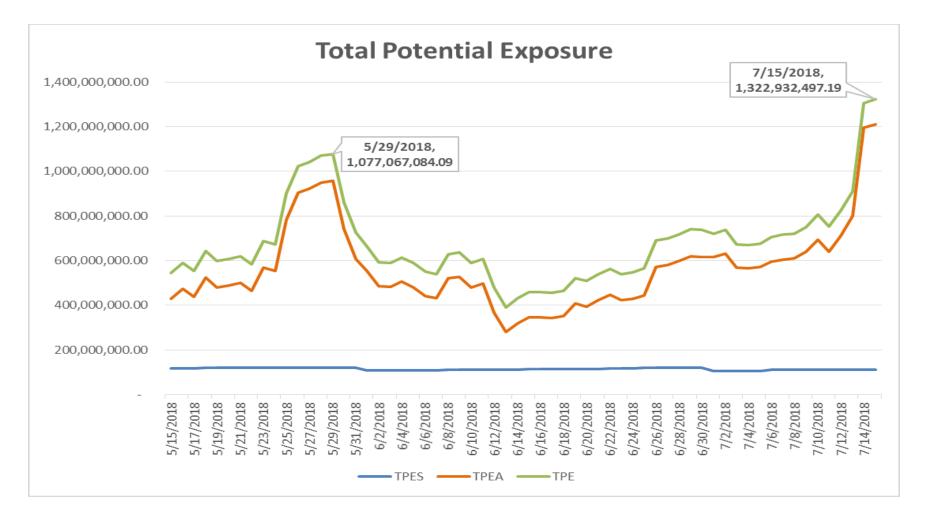
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ICE Forward Curves July – August 2018

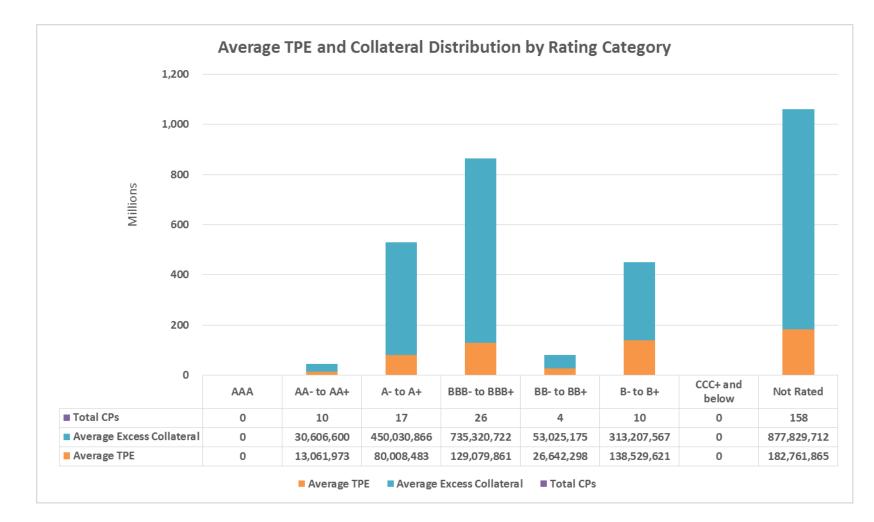


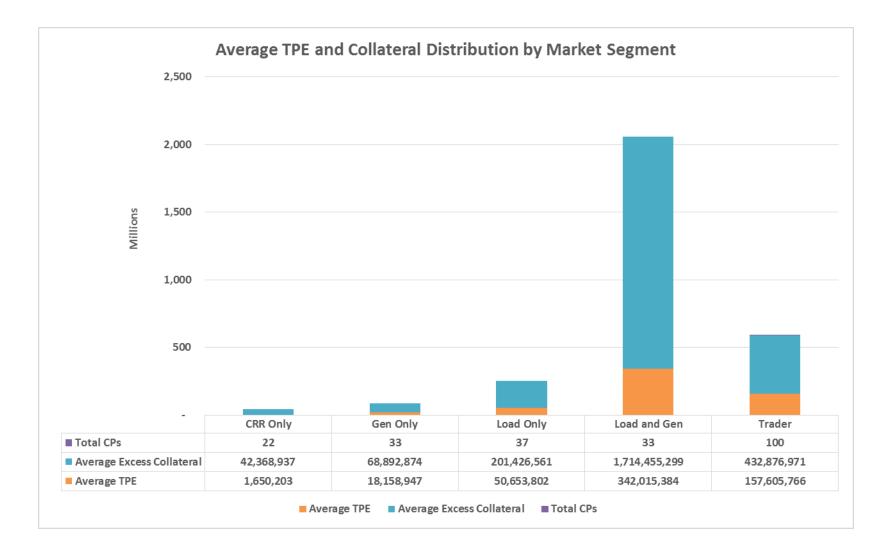




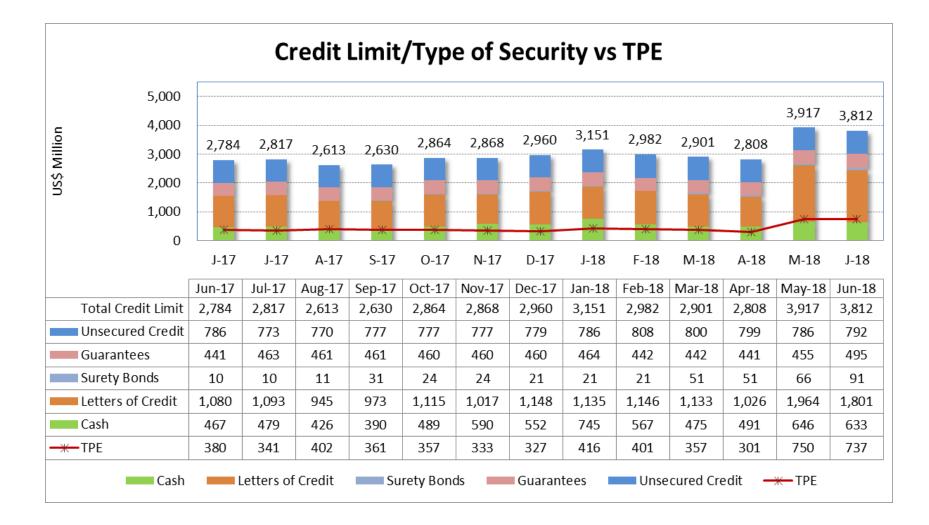


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Counter-Party Credit Exposure – June 2018

| Distribution of TPE b | y Rating and Category |
|-----------------------|-----------------------|
|-----------------------|-----------------------|

| Distribution of TPE by Nath | ig and category | | | | | | |
|-----------------------------|-----------------|------------|------------|---------------|-------------|-------------|-------------|
| Rating Group | CRR Only | Gen Only | Load Only | Load and Gen | Trader | Total TPE | Percent TPE |
| ААА | 0 | 0 | 0 | 0 | 0 | 0 | 0.00% |
| AA- to AA+ | 219,532 | 0 | 0 | 12,842,441 | 0 | 13,061,973 | 2.29% |
| A- to A+ | 0 | 3,224,389 | 11,137,056 | 60,533,446 | 5,113,593 | 80,008,483 | 14.03% |
| BBB- to BBB+ | 3,501 | 5,218,768 | 10,144,242 | 86,480,179 | 27,233,171 | 129,079,861 | 22.64% |
| Investment Grade | 223,033 | 8,443,157 | 21,281,298 | 159,856,065 | 32,346,765 | 222,150,317 | 38.97% |
| BB- to BB+ | 0 | 0 | 12,068,468 | 1,894,438 | 12,679,392 | 26,642,298 | 4.67% |
| B- to B+ | 0 | 53,010 | 0 | 111,230,450 | 27,246,161 | 138,529,621 | 24.30% |
| CCC+ and below | 0 | 0 | 0 | 0 | 0 | 0 | 0.00% |
| Not Rated | 1,427,170 | 9,662,781 | 17,304,036 | 69,034,431 | 85,333,448 | 182,761,865 | 32.06% |
| Non-Investment Grade | 1,427,170 | 9,715,790 | 29,372,504 | 182,159,319 | 125,259,001 | 347,933,784 | 61.03% |
| Total TPE | 1,650,203 | 18,158,947 | 50,653,802 | 342,015,384 | 157,605,766 | 570,084,102 | 100.00% |
| Percent TPE | 0.29% | 3.19% | 8.89% | 59.99% | 27.65% | 100.00% | |

| | | | | | | Excess | Percent Excess |
|-------------------------|------------|------------|-------------|---------------|-------------|---------------|----------------|
| Rating Group | CRR Only | Gen Only | Load Only | Load and Gen | Trader | Collateral | Collateral |
| AAA | 0 | 0 | 0 | 0 | 0 | 0 | 0.00% |
| AA- to AA+ | 6,518,481 | 0 | 0 | 24,088,119 | 0 | 30,606,600 | 1.24% |
| A- to A+ | 14,157,050 | 31,775,611 | 45,462,944 | 325,690,051 | 32,945,209 | 450,030,866 | 18.29% |
| BBB- to BBB+ | 3,146,499 | 17,125,464 | 98,655,769 | 517,877,887 | 98,515,104 | 735,320,722 | 29.89% |
| Investment Grade | 23,822,030 | 48,901,075 | 144,118,713 | 867,656,057 | 131,460,313 | 1,215,958,189 | 49.43% |
| BB- to BB+ | 0 | 0 | 16,503,244 | 13,661,414 | 22,860,518 | 53,025,175 | 2.16% |
| B- to B+ | 0 | 132,035 | 0 | 286,086,221 | 26,989,312 | 313,207,567 | 12.73% |
| CCC+ and below | 0 | 0 | 0 | 0 | 0 | 0 | 0.00% |
| Not Rated | 18,546,907 | 19,859,764 | 40,804,604 | 547,051,607 | 251,566,829 | 877,829,712 | 35.68% |
| Non-Investment Grade | 18,546,907 | 19,991,799 | 57,307,848 | 846,799,242 | 301,416,658 | 1,244,062,453 | 50.57% |
| Total Excess Collateral | 42,368,937 | 68,892,874 | 201,426,561 | 1,714,455,299 | 432,876,971 | 2,460,020,642 | 100.00% |
| Percent Excess | | | | | | | |
| Collateral | 1.72% | 2.80% | 8.19% | 69.69% | 17.60% | 100.00% | |

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Counter-Party Credit Changes May - June 2018

| n by Market S | egment | | | | | | | |
|---------------|--|---|--|--|---|---|---|--|
| CP D | istribution | ı | Average | TPE Distrib | ution | - | | |
| May-18 | Jun-18 | Change | May-18 | Jun-18 | Change | May-18 | Jun-18 | Change |
| 9.82% | 9.78% | -0.04% | 0.37% | 0.29% | -0.08% | 2.25% | 1.72% | -0.53% |
| 14.73% | 14.67% | -0.07% | 3.90% | 3.19% | -0.71% | 4.96% | 2.80% | -2.16% |
| 16.96% | 16.44% | -0.52% | 8.93% | 8.89% | -0.04% | 8.26% | 8.19% | -0.08% |
| 14.7% | 14.7% | -0.07% | 58.83% | 59.99% | 1.16% | 61.43% | 69.69% | 8.26% |
| 43.8% | 44.4% | 0.69% | 27.97% | 27.65% | -0.33% | 23.09% | 17.60% | -5.49% |
| | CP D May-18 9.82% 14.73% 16.96% 14.7% | May-18 Jun-18 9.82% 9.78% 14.73% 14.67% 16.96% 16.44% 14.7% 14.7% | CP Distribution May-18 Jun-18 Change 9.82% 9.78% -0.04% 14.73% 14.67% -0.07% 16.96% 16.44% -0.52% 14.7% 14.7% -0.07% | CP Distribution Average May-18 Jun-18 Change May-18 9.82% 9.78% -0.04% 0.37% 14.73% 14.67% -0.07% 3.90% 16.96% 16.44% -0.52% 8.93% 14.7% 14.7% -0.07% 58.83% | CP Distribution Average TPE Distribution May-18 Jun-18 Change May-18 Jun-18 9.82% 9.78% -0.04% 0.37% 0.29% 14.73% 14.67% -0.07% 3.90% 3.19% 16.96% 16.44% -0.52% 8.93% 8.89% 14.7% 14.7% -0.07% 58.83% 59.99% | CP Distribution Average TPE Distribution May-18 Jun-18 Change May-18 Jun-18 Change 9.82% 9.78% -0.04% 0.37% 0.29% -0.08% 14.73% 14.67% -0.07% 3.90% 3.19% -0.71% 16.96% 16.44% -0.52% 8.93% 8.89% -0.04% 14.7% 14.7% -0.07% 58.83% 59.99% 1.16% | CP Distribution Average TPE Distribution Average D May-18 Jun-18 Change May-18 Jun-18 Change May-18 9.82% 9.78% -0.04% 0.37% 0.29% -0.08% 2.25% 14.73% 14.67% -0.07% 3.90% 3.19% -0.71% 4.96% 16.96% 16.44% -0.52% 8.93% 8.89% -0.04% 8.26% 14.7% 14.7% -0.07% 58.83% 59.99% 1.16% 61.43% | CP Distribution Average TPE Distribution Average Excess Constribution May-18 Jun-18 Change May-18 Jun-18 Jun-18 Change May-18 Jun-18 Jun-18 |

| Summary of distribution | n by Rating G | roup | | | | | | | |
|-------------------------|---------------|--------|--------|--------------------------|--------|--------|---|--------|--------|
| Rating Group | | | | Average TPE Distribution | | | Average Excess Collateral Distribution | | |
| | May-18 | Jun-18 | Change | May-18 | Jun-18 | Change | May-18 | Jun-18 | Change |
| AAA | 0.0% | 0.0% | 0.00% | 0.0% | 0.0% | 0.00% | 0.0% | 0.0% | 0.00% |
| AA- to AA+ | 4.5% | 4.4% | -0.02% | 2.6% | 2.3% | -0.28% | 1.6% | 1.2% | -0.36% |
| A- to A+ | 8.0% | 7.6% | -0.48% | 9.4% | 14.0% | 4.65% | 18.2% | 18.3% | 0.14% |
| BBB- to BBB+ | 11.6% | 11.6% | -0.05% | 23.7% | 22.6% | -1.08% | 29.2% | 29.9% | 0.67% |
| BB- to BB+ | 1.8% | 1.8% | -0.01% | 4.7% | 4.7% | -0.01% | 2.4% | 2.2% | -0.26% |
| B- to B+ | 4.5% | 4.4% | -0.02% | 27.3% | 24.3% | -2.99% | 14.0% | 12.7% | -1.22% |
| CCC+ and below | 0.0% | 0.0% | 0.00% | 0.0% | 0.0% | 0.00% | 0.0% | 0.0% | 0.00% |
| Not Rated | 69.6% | 70.2% | 0.58% | 32.3% | 32.1% | -0.28% | 34.7% | 35.7% | 1.03% |
| Investment Grade | 24.1% | 23.6% | -0.55% | 35.7% | 39.0% | 3.29% | 49.0% | 49.4% | 0.45% |
| Non-investment Grade | 75.9% | 76.4% | 0.55% | 64.3% | 61.0% | -3.29% | 51.0% | 50.6% | -0.45% |
| | | | | | | | | | |

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Counter-Party Credit Exposure – June 2018 Average TPE and Excess Collateral for the Bottom Quintile of Market Participants

| Quintile Distribution o | of Average TPE by | Rating and Ca | | | | | | |
|---|---|---|--|--|--|--|--|---|
| Rating Group | CRR Only | Gen Only | Load Only | Load and Gen | Trader | Quintile Average TPE | Percent Quintile Average TPE | Percent Total Average |
| AAA | 0 | 0 | 0 | 0 | 0 | 0 | 0.0% | |
| AA- to AA+ | 337 | 0 | 0 | 0 | 0 | 337 | 0.0% | |
| A- to A+ | 0 | 0 | 0 | 0 | 0 | 0 | 0.0% | |
| BBB- to BBB+ | 3,501 | 250 | 0 | 0 | 0 | 3,751 | 0.1% | |
| Investment Grade | 3,838 | 250 | 0 | 0 | 0 | 4,088 | 0.1% | |
| BB- to BB+ | 0 | 0 | 0 | 0 | 0 | 0 | 0.0% | 0.00 |
| B- to B+ | 0 | 53,010 | 0 | 0 | 0 | 53,010 | 1.8% | 0.01 |
| CCC+ and below | 0 | 0 | 0 | 0 | 0 | 0 | 0.0% | 0.00 |
| Not Rated | 14,858 | 614,038 | 893,141 | 202,699 | 1,155,093 | 2,879,828 | 98.1% | 0.51 |
| Non-Investment Gra | 14,858 | 667,048 | 893,141 | 202,699 | 1,155,093 | 2,932,838 | 99.86% | 0.51 |
| Quintile Average | | | | | | | | |
| TPE | 18,695 | 667,298 | 893,141 | 202,699 | 1,155,093 | 2,936,926 | 100.0% | 0.52 |
| Percent Quintile | | | | | | | | |
| Average TPE | 0.6% | 22.7% | 30.4% | 6.9% | 39.3% | 100.0% | | |
| | | | | | | | | |
| Percent Total | | | | | | | | |
| Average TPE | 0.00% | 0.12% | 0.16% | 0.04% | 0.20% | 0.52% | | |
| | | | · · · · · · | 0.04% | 0.20% | 0.52% | 1 | |
| Average TPE | | | · · · · · · | 0.04% | 0.20% | 0.52% | Percent | |
| Average TPE | | | · · · · · · | 0.04% | 0.20% | | Percent | Percent |
| Average TPE | | | · · · · · · | 0.04% | 0.20% | Total Quintile | Percent Quintile | |
| Average TPE | | | d Category | 0.04% | 0.20% | | Percent | Percent Total Excess Collateral |
| Average TPE Quintile Distribution of Rating Group | f Excess Collatera CRR Only | l by Rating an Gen Only | d Category Load Only | Load and Gen | Trader | Total Quintile Excess Collateral | Percent Quintile Excess Collateral | Total Exces Collateral |
| Average TPE Quintile Distribution of Rating Group AAA | f Excess Collatera CRR Only 0 | l by Rating an Gen Only 0 | Load Only | Load and Gen 0 | Trader 0 | Total Quintile Excess Collateral 0 | Percent Quintile Excess Collateral 0.00% | Total Exces Collateral 0.009 |
| Average TPE Quintile Distribution of Rating Group AAA AA- to AA+ | f Excess Collatera CRR Only 0 75,451 | l by Rating an Gen Only 0 0 | Load Only 0 | Load and Gen 0 0 | Trader 0 0 | Total Quintile Excess Collateral 0 75,451 | Percent Quintile Excess Collateral 0.00% 2.86% | Total Excess Collateral 0.00% 0.00% |
| Average TPE Quintile Distribution of Rating Group AAA AA- to AA+ A- to A+ | f Excess Collatera CRR Only 0 75,451 157,050 | l by Rating an Gen Only 0 0 0 | Load Only 0 0 | Load and Gen 0 0 | Trader 0 0 | Total Quintile Excess Collateral 0 75,451 157,050 | Percent Quintile Excess Collateral 0.00% 2.86% 5.94% | Total Excess Collateral 0.00% 0.00% 0.01% |
| Average TPE Quintile Distribution of Rating Group AAA AA- to AA+ A- to A+ BBB- to BBB+ | f Excess Collatera CRR Only 0 75,451 157,050 146,499 | Gen Only 0 0 0 103,246 | Load Only 0 0 0 0 | Load and Gen 0 0 0 | Trader 0 0 0 0 | Total Quintile Excess Collateral 0 75,451 157,050 249,745 | Percent Quintile Excess Collateral 0.00% 2.86% 5.94% 9.45% | Total Excess Collateral 0.009 0.009 0.019 0.019 |
| Average TPE Quintile Distribution of Rating Group AAA AA- to AA+ A- to AA+ BBB- to BBB+ Investment Grade | f Excess Collatera CRR Only 0 75,451 157,050 146,499 379,000 | Gen Only 0 0 0 103,246 103,246 | Load Only 0 0 0 0 0 0 0 | Load and Gen 0 0 0 0 0 | Trader 0 0 0 0 0 0 | Total Quintile Excess Collateral 0 75,451 157,050 249,745 482,246 | Percent Quintile Excess Collateral 0.00% 2.86% 5.94% 9.45% 18.25% | Total Excess Collateral 0.009 0.009 0.019 0.019 0.029 |
| Average TPE Quintile Distribution of Rating Group AAA AA- to AA+ A- to AA+ BBB- to BBB+ Investment Grade BB- to BB+ | f Excess Collatera 0 75,451 157,050 146,499 379,000 0 | Gen Only 0 0 103,246 103,246 0 | Load Only 0 0 0 0 0 0 0 0 0 | Load and Gen 0 0 0 0 0 0 0 | Trader 0 0 0 0 0 0 0 | Total Quintile Excess Collateral 0 75,451 157,050 249,745 482,246 0 | Percent Quintile Excess Collateral 0.00% 2.86% 5.94% 9.45% 18.25% 0.00% | Total Excess Collateral 0.009 0.009 0.019 0.019 0.029 0.009 |
| Average TPE Quintile Distribution of Rating Group AAA AA- to AA+ A- to A+ BBB- to BBB+ Investment Grade BB- to BB+ B- to B+ B- to B+ B- to B+ | f Excess Collatera 0 75,451 157,050 146,499 379,000 0 0 | Gen Only 0 0 103,246 103,246 0 132,035 | Load Only 0 0 0 0 0 0 0 0 0 0 0 0 | Load and Gen 0 0 0 0 0 0 0 0 0 | Trader 0 0 0 0 0 0 0 102,136 | Total Quintile Excess Collateral 0 75,451 157,050 249,745 482,246 0 234,170 | Percent Quintile Excess Collateral 0.00% 2.86% 5.94% 9.45% 18.25% 0.00% 8.86% | Total Excess Collateral 0.009 0.019 0.019 0.029 0.009 0.019 |
| Average TPE Quintile Distribution of Rating Group AAA AA- to AA+ A- to AA+ BBB- to BBB+ Investment Grade BB- to BB+ B- to B+ B- to B+ CCC+ and below | f Excess Collatera 0 75,451 157,050 146,499 379,000 0 0 0 | Gen Only 0 0 103,246 103,246 0 132,035 0 | Load Only 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Load and Gen 0 0 0 0 0 0 0 0 0 0 0 | Trader 0 0 0 0 0 0 102,136 0 | Total Quintile Excess Collateral 0 75,451 157,050 249,745 482,246 0 234,170 0 | Percent Quintile Excess Collateral 0.00% 2.86% 5.94% 9.45% 18.25% 0.00% 8.86% 0.00% | Total Excess Collateral 0.009 0.019 0.019 0.029 0.009 0.019 0.019 0.009 |
| Average TPE Quintile Distribution of Rating Group AAA AA- to AA+ A- to A+ BBB- to BBB+ Investment Grade BB- to BB+ B- to B+ B- to B+ CCC+ and below Not Rated | f Excess Collatera 0 75,451 157,050 146,499 379,000 0 0 0 0 112,807 | Gen Only 0 0 0 103,246 103,246 0 132,035 0 333,744 | Load Only 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Load and Gen 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Trader 0 0 0 0 0 0 102,136 0 808,910 | Total Quintile Excess Collateral 0 75,451 157,050 249,745 482,246 0 234,170 0 1,925,560 | Percent Quintile Excess Collateral 0.00% 2.86% 5.94% 9.45% 18.25% 0.00% 8.86% 0.00% 72.88% | Total Excess Collateral 0.009 0.019 0.019 0.029 0.009 0.019 0.009 0.009 0.089 |
| Average TPE Quintile Distribution of Rating Group AAA AAA AA- to AA+ A- to A+ BBB- to BBB+ Investment Grade BB- to BB+ B- to B+ B- to B+ CCC+ and below Not Rated Non-Investment Gra | f Excess Collatera 0 75,451 157,050 146,499 379,000 0 0 0 | Gen Only 0 0 103,246 103,246 0 132,035 0 | Load Only 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Load and Gen 0 0 0 0 0 0 0 0 0 0 0 | Trader 0 0 0 0 0 0 102,136 0 | Total Quintile Excess Collateral 0 75,451 157,050 249,745 482,246 0 234,170 0 | Percent Quintile Excess Collateral 0.00% 2.86% 5.94% 9.45% 18.25% 0.00% 8.86% 0.00% | Total Excess Collateral 0.009 0.019 0.019 0.029 0.009 0.019 0.009 0.009 0.089 |
| Average TPE Quintile Distribution of Rating Group AAA AA- to AA+ A- to AA+ BBB- to BBB+ Investment Grade BB- to BB+ B- to B+ B- to B+ CCC+ and below Not Rated Non-Investment Gra Total Quintile | f Excess Collatera 0 75,451 157,050 146,499 379,000 0 0 0 0 112,807 | Gen Only 0 0 0 103,246 103,246 0 132,035 0 333,744 | Load Only 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Load and Gen 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Trader 0 0 0 0 0 0 102,136 0 808,910 | Total Quintile Excess Collateral 0 75,451 157,050 249,745 482,246 0 234,170 0 1,925,560 | Percent Quintile Excess Collateral 0.00% 2.86% 5.94% 9.45% 18.25% 0.00% 8.86% 0.00% 72.88% | Total Excess Collateral 0.00% 0.01% 0.01% 0.02% 0.00% 0.01% 0.00% 0.08% 0.08% |
| Average TPE Quintile Distribution of Rating Group AAA AA- to AA+ A- to AA+ BBB- to BBB+ Investment Grade BB- to BB+ B- to B+ B- to B+ CCC+ and below Not Rated Non-Investment Gra Total Quintile | f Excess Collatera 0 75,451 157,050 146,499 379,000 0 0 0 0 112,807 | Gen Only 0 0 0 103,246 103,246 0 132,035 0 333,744 | Load Only 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Load and Gen 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Trader 0 0 0 0 0 0 102,136 0 808,910 | Total Quintile Excess Collateral 0 75,451 157,050 249,745 482,246 0 234,170 0 1,925,560 | Percent Quintile Excess Collateral 0.00% 2.86% 5.94% 9.45% 18.25% 0.00% 8.86% 0.00% 72.88% | Total Exces Collateral 0.009 0.019 0.019 0.029 0.009 0.019 0.009 0.089 0.099 |
| Average TPE Quintile Distribution of Rating Group AAA AAA AA- to AA+ A- to A+ BBB- to BBB+ Investment Grade BB- to BB+ B- to B+ B- to B+ CCC+ and below Not Rated Non-Investment Gra | f Excess Collatera CRR Only 0 75,451 157,050 146,499 379,000 0 0 0 112,807 112,807 | Gen Only 0 0 0 103,246 103,246 0 132,035 0 333,744 465,779 | Load Only 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Load and Gen 0 0 0 0 0 0 0 0 0 0 52,320 52,320 | Trader 0 0 0 0 0 0 102,136 0 808,910 911,045 | Total Quintile Excess Collateral 0 75,451 157,050 249,745 482,246 0 234,170 0 1,925,560 2,159,731 | Percent Quintile Excess Collateral 0.00% 2.86% 5.94% 9.45% 18.25% 0.00% 8.86% 0.00% 72.88% 81.75% | Total Exces Collateral 0.009 0.019 0.019 0.029 0.009 0.019 0.009 0.089 0.099 |
| Average TPE Quintile Distribution of Rating Group AAA AAA + to AA+ A- to AA+ BBB- to BBB+ Investment Grade BB- to BB+ B- to B+ B- to B+ CCC+ and below Not Rated Non-Investment Grade Excess Collateral | f Excess Collatera CRR Only 0 75,451 157,050 146,499 379,000 0 0 0 112,807 112,807 | Gen Only 0 0 0 103,246 103,246 0 132,035 0 333,744 465,779 | Load Only 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Load and Gen 0 0 0 0 0 0 0 0 0 0 52,320 52,320 | Trader 0 0 0 0 0 0 102,136 0 808,910 911,045 | Total Quintile Excess Collateral 0 75,451 157,050 249,745 482,246 0 234,170 0 1,925,560 2,159,731 | Percent Quintile Excess Collateral 0.00% 2.86% 5.94% 9.45% 18.25% 0.00% 8.86% 0.00% 72.88% 81.75% | Total Exces Collateral 0.009 0.019 0.019 0.029 0.009 0.019 0.009 0.089 0.099 |
| Average TPE Quintile Distribution of Rating Group AAA AAA AAA + to AA+ A- to AA+ BBB- to BBB+ Investment Grade BB- to BB+ B- to B+ CCC+ and below Not Rated Non-Investment Grad Total Quintile Excess Collateral Percent Quintile | f Excess Collatera 0 75,451 157,050 146,499 379,000 0 0 0 112,807 112,807 491,807 | Gen Only 0 0 0 103,246 103,246 0 132,035 0 333,744 465,779 569,025 | Load Only 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Load and Gen 0 0 0 0 0 0 0 0 0 0 0 0 0 0 52,320 52,320 52,320 | Trader 0 0 0 0 0 0 102,136 0 102,136 0 808,910 911,045 | Total Quintile Excess Collateral 0 75,451 157,050 249,745 482,246 0 234,170 0 1,925,560 2,159,731 2,641,977 | Percent Quintile Excess Collateral 0.00% 2.86% 5.94% 9.45% 18.25% 0.00% 8.86% 0.00% 72.88% 81.75% | Total Exces Collateral 0.009 0.019 0.019 0.029 0.009 0.019 0.009 0.009 0.089 |

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Item 5

Other CWG Topics for Discussion

- ERCOT is working on preparing a scenario analysis of the expected credit exposures in a 'stressed' market, however actual market events have largely matched the stress case scenarios and actual market data may offer better opportunities for analysis than the scenario data.
- A presentation was made to the CWG on Surety Bonds issued by insurance companies which may offer diversification from Letters of Credit issued by other types of financial institutions.
 - Currently ERCOT has a limit of \$10 million per Counter-Party per Issuer for Surety Bonds as opposed to no limit per Counter-Party by LC issuers.
 - Surety bonds have changed dramatically over the last several years and now are much closer in terms and conditions to a letter of credit.
 - ERCOT legal will need to be involved to ensure that the standard Surety Bond agreement language satisfies ERCOT credit requirements.











| Component | Definition |
|-----------|--|
| RFAF | Real-Time Forward Adjustment Factor—The adjustment factor for RTM-related forward exposure |
| DFAF | Day-Ahead Forward Adjustment Factor—The adjustment factor for DAM-related forward exposure |
| RTLE | Real-Time Liability Extrapolated—M1 multiplied by the sum of the net amount, with zero substituted for missing values, due to or from ERCOT by the Counter-Party in the 14 most recent Operating Days for which RTM Initial Statements are produced for Counter-Parties according to the ERCOT Settlement Calendar divided by 14. |
| DALE | Average Daily Day-Ahead Liability Extrapolated—M1 multiplied by the sum of the net amount, with zero substituted for missing values, due to or from ERCOT by the Counter-Party in the seven most recent Operating Days for which DAM Settlement Statements are produced for Counter-Parties according to the ERCOT Settlement Calendar divided by seven. |
| MCE | Minimum Current Exposure—For each Counter-Party, ERCOT shall determine a Minimum Current Exposure (MCE) |
| M1 | Multiplier for DALE and RTLE. Provides for forward risk during a Counter-Party termination upon default based upon the sum of the time period required for any termination upon default (M1a) and the time period required for a Mass Transition only (M1b). The M1a component is applicable to all Counter-Parties. The M1b component is applicable only to Counter-Parties representing any QSE associated with a LSE. |
| M1a | Time period required for any termination upon default. |
| M1b | Weighted average transition days = $Min(B, (2 + Max(1, (u+1)/2))^{*}(1-DF))$, rounded up to whole days |



- EAL _q = Max [IEL during the first 40-day period only beginning on the date that the Counter-Party commences activity in ERCOT markets, *RFAF* * Max {RTLE during the previous *Irq* days}, RTLF] + *DFAF* * DALE + Max [RTLCNS, Max {URTA during the previous *Irq* days}] + OUT _q + ILE _q
- MCE = *RFAF* * MAF * Max[{ [L i, od, p * RTSPP i, od, p]/n}, { [[[L i, od, p * T2 G i, od, p * (1-NUCADJ) * T3] * RTSPP i, od, p] + [RTQQNET i, od, p * T5]]/n}, { [G i, od, p * NUCADJ * T1 * RTSPP i, od, p]/n}, { ((DARTNET i, od, p)) * T4/n}]

