



Item 5: Periodic Report on Credit Work Group Activity

Donald Meek

Chair, Credit Work Group

Finance & Audit Committee Meeting

ERCOT Public

April 8, 2019

Credit Work Group Update – Reviewed NPRRs

- **NPRRs Reviewed Without Credit Impact**

- NPRR 855 – Must-Run Alternative (MRA) Details and Revisions Resulting from PUCT Project No. 46369, Rulemaking Relating to Reliability Must-Run Service
- NPRR 891 – Removal of NOIE Capacity Reporting Threshold for the Unregistered Distribution Generation Report
- NPRR 896 – Reliability Must-Run and Must-Run Alternative Evaluation Process
- NPRR 900 – Clean-up Items Applicable to the State of Texas REC Trading Program
- NPRR 912 – Settlement of Switchable Generation Resources (SWGRs) Instructed to Switch to ERCOT
- NPRR 920 – Change to Ramp Rate Calculation in Resource Limit Calculator
- NPRR 921 – RTF-2 Elimination of the Terms All-Inclusive Generation Resource and All-Inclusive Resource
- NPRR 922 – Modifications to DC Tie Import Forecast Method
- NPRR 923 – Revision to Weather Responsiveness Determination Process
- NPRR 924 – Addition of Form to Section 23 – Independent Market Information System Registered Entity (IMRE) Application for Registration
- NPRR 925 – Increasing Minimum Quantity for PTP Obligation Bids

Credit Work Group Update – Reviewed NPRRs

- **NPRRs Reviewed With Positive Credit Impacts**
 - **NPRR 908 – Revisions to Mass Transition Processes**
 - This NPRR aligns Retail Market Guide references and Emergency Qualified Scheduling Entities Mass Transition notification requirements in the Protocols to those revised in Retail Market Guide Revision Request (RMGRR) 159.
 - The Credit Work Group unanimously voted to endorse NPRR 908 as having positive credit implications by increasing transparency and notice to the market during the Mass Transition process.

Independent Consultants Report on PJM GreenHat Default

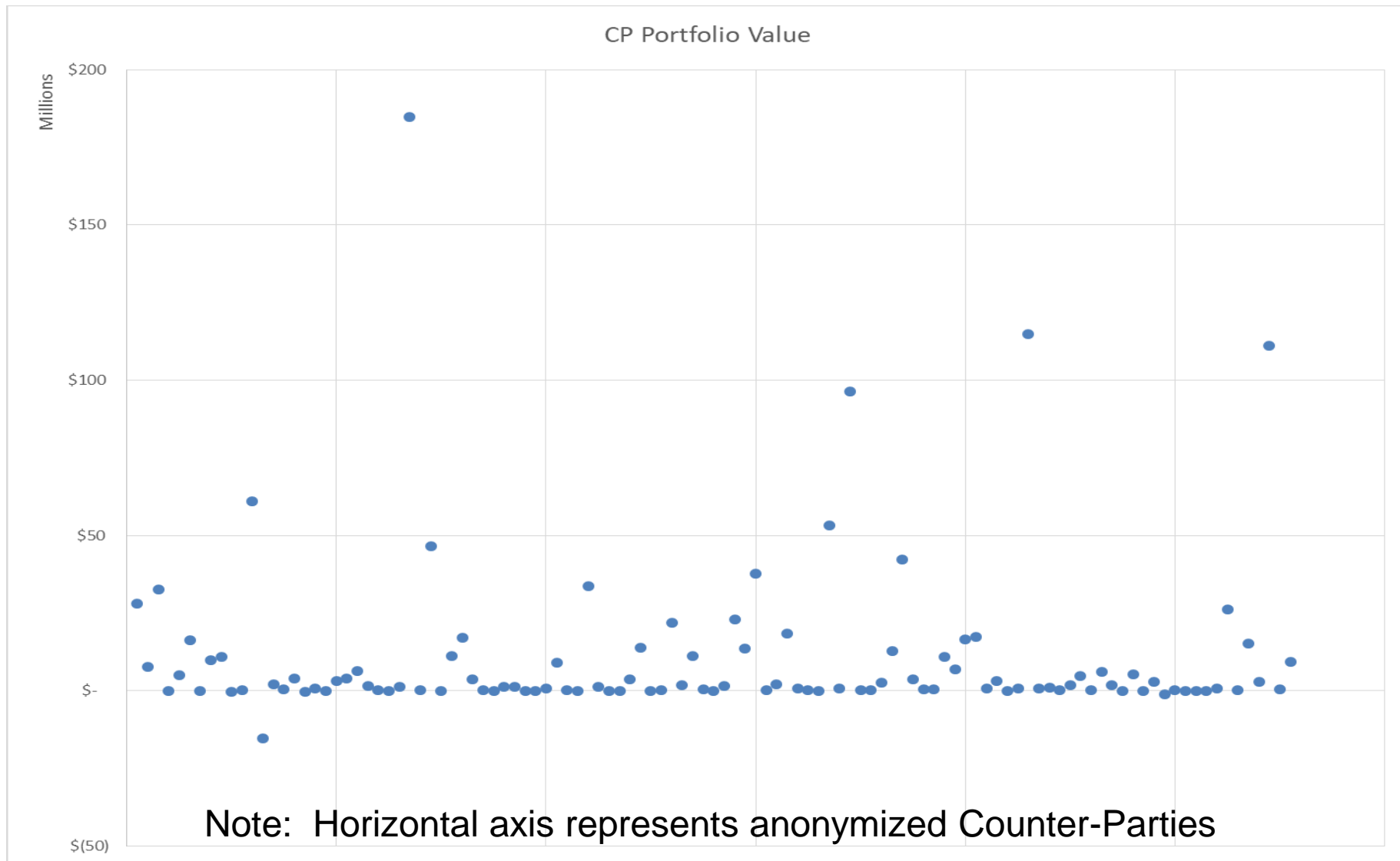
- On March 26th, 2019 an independent consultant's report commissioned by a Special Committee of the PJM Board of Managers related to the default by GreenHat Energy was released.
- The scope and objectives of the independent report were to:
 - Set forth the facts and circumstances that led to a sizable default.
 - Assess complications that emerged from PJM's action or inaction.
 - Recommend changes to prevent, deter, or mitigate defaults that may occur in PJM's FTR markets in the future, and increase the robustness of the PJM FTR markets going forward.
- Many of the facts and circumstances related to the GreenHat Energy default are unique to the PJM marketplace. However, some findings and recommendations may be applicable as 'lessons learned' for ERCOT.
- The GreenHat default independent consultant's recommendations and subsequent PJM responses will be reviewed and considered by CWG to the extent they may be applicable in the ERCOT marketplace.

ERCOT CRR Portfolio Inventory by Counterparty

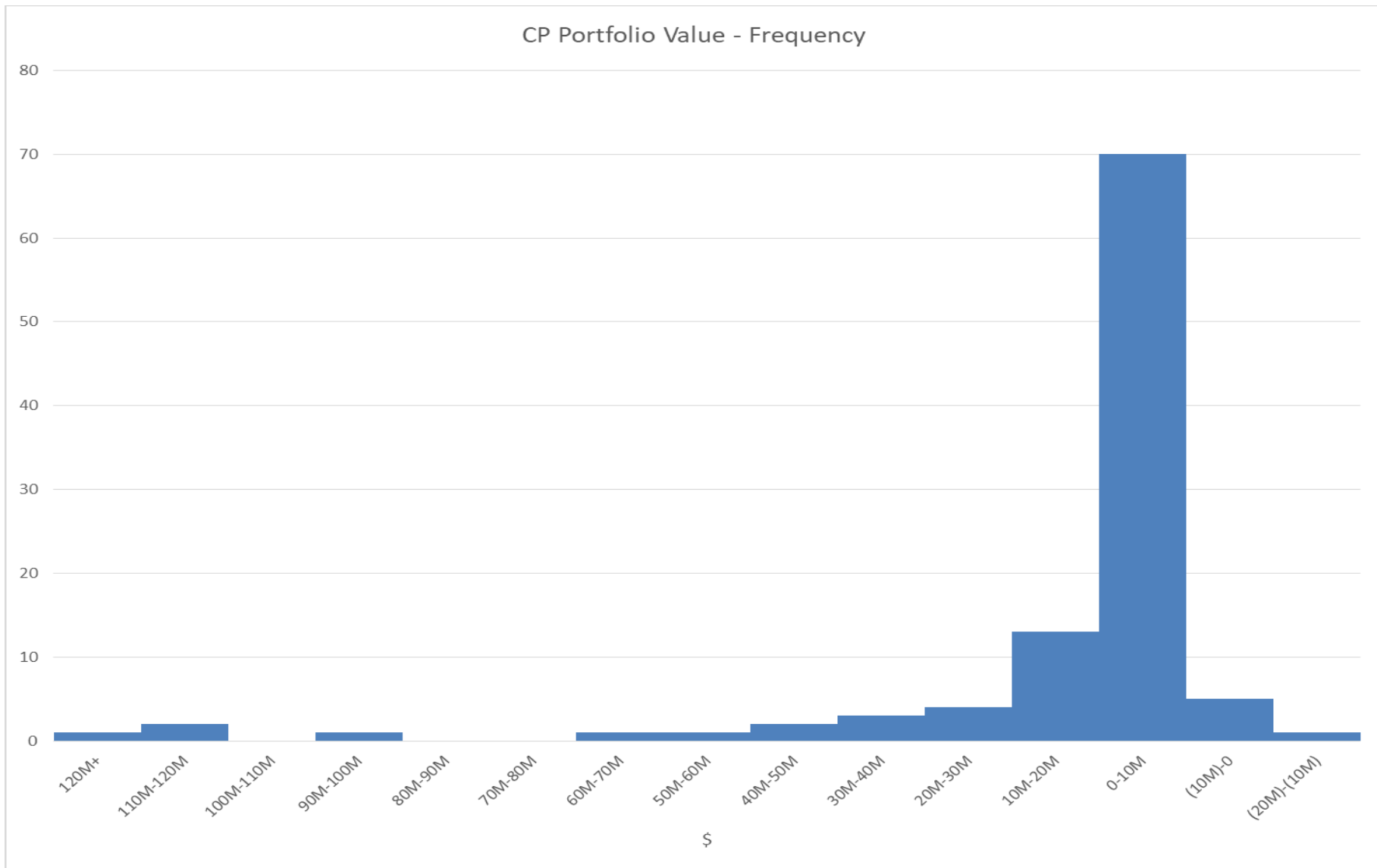
Assumptions for CRR portfolio inventory

- Based on CRR inventory as of 3/1/19
- The value is based on the most recent auction clearing price available for each CRR
 - PCRRs that have been allocated but not yet priced were ignored
- Inventory is aggregated to the Counter-Party level

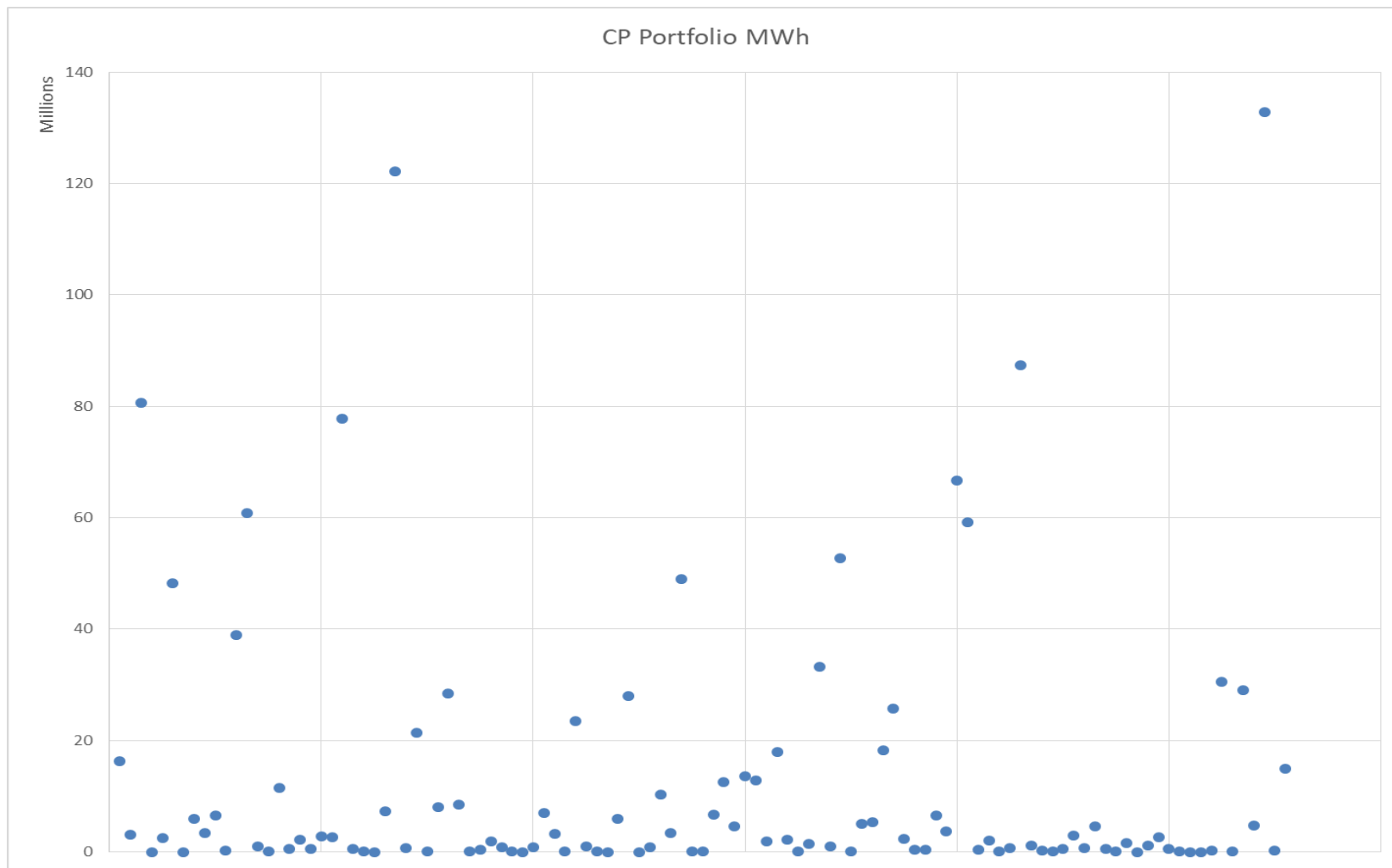
CRR Portfolio Value by Counter-Party



CRR Portfolio Value by Counter-Party

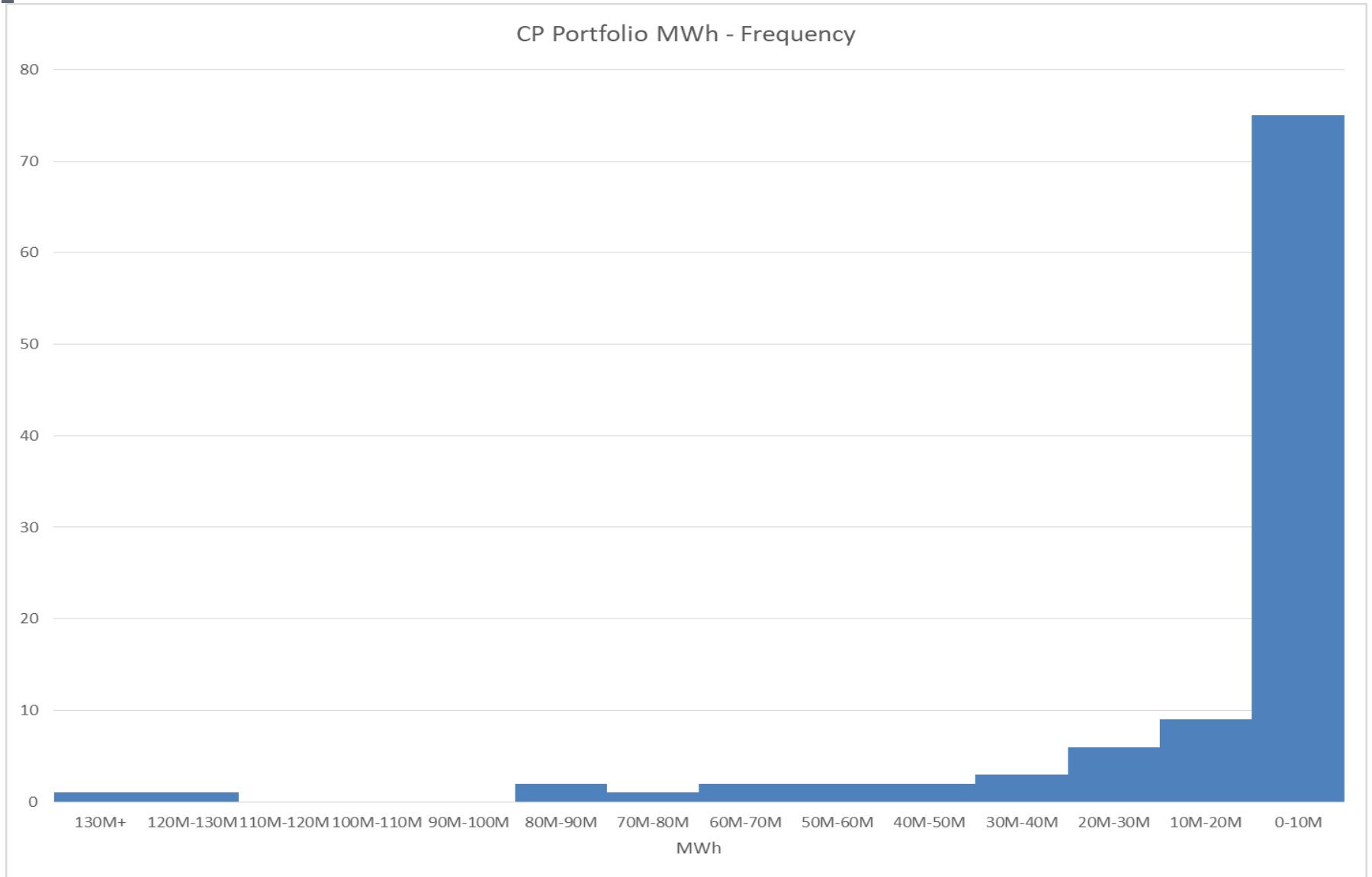


CRR Portfolio Position Size by Counter-Party



Note: Horizontal axis represents anonymized Counter-Parties

CRR Portfolio Position Size by Counter-Party



Market Entry Qualifications

The traditional “Five C’s of Credit” include:

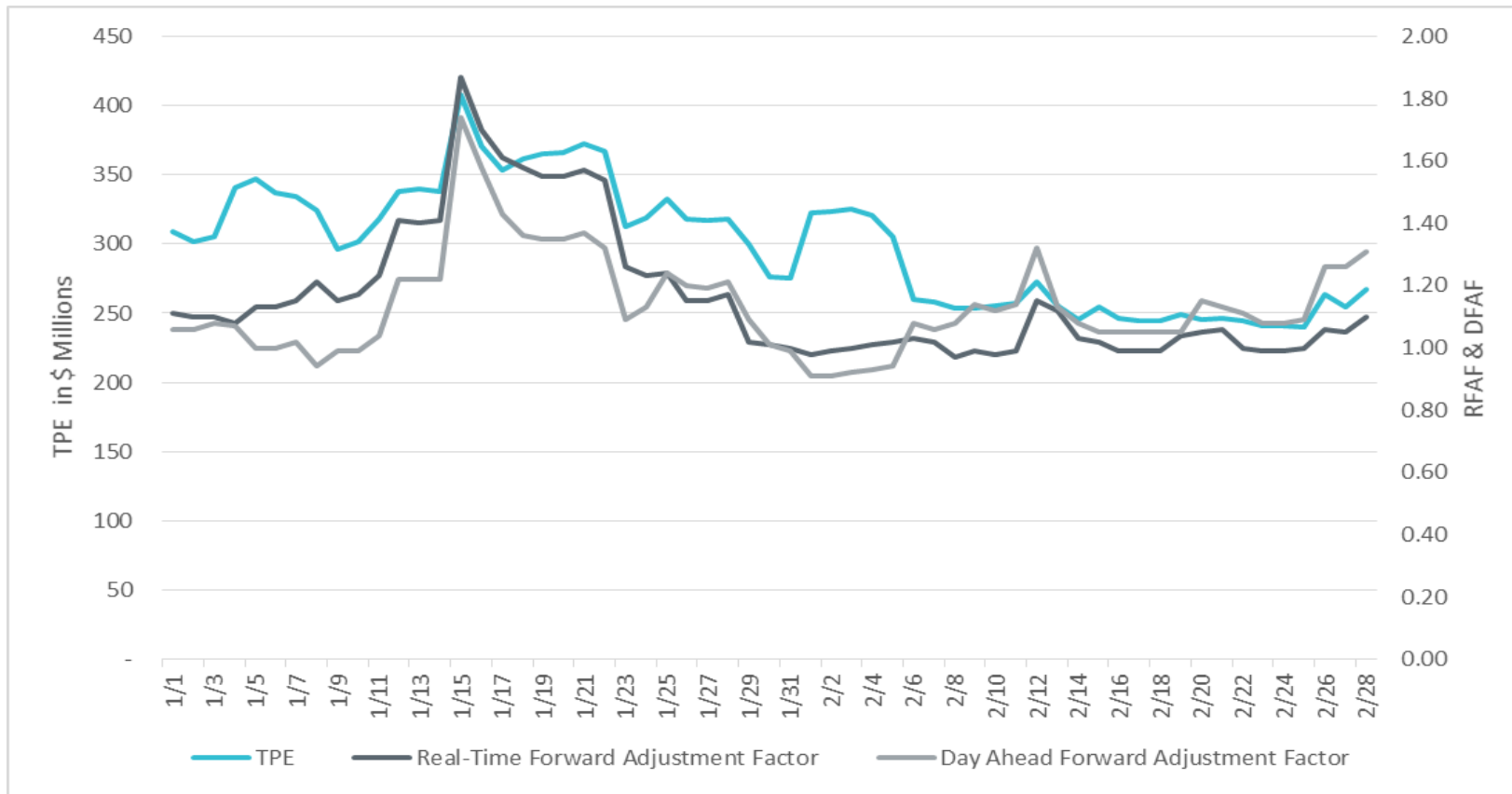
- Character
 - Capacity / Cash Flow
 - Capital
 - Conditions
 - Collateral
-
- ERCOT does not conduct background checks on new market entrants and Protocol language largely focuses on market entry qualifications for entities, affiliates, and principals who were involved in an ERCOT market default resulting in an unrepaid loss over the previous two years.
 - There is a concern that market participant involvement in the discussion of potential additional market entry qualifications may have antitrust considerations and ERCOT legal has been asked to review this concern.

Credit Exposure Update

February 2019 compared to January 2019

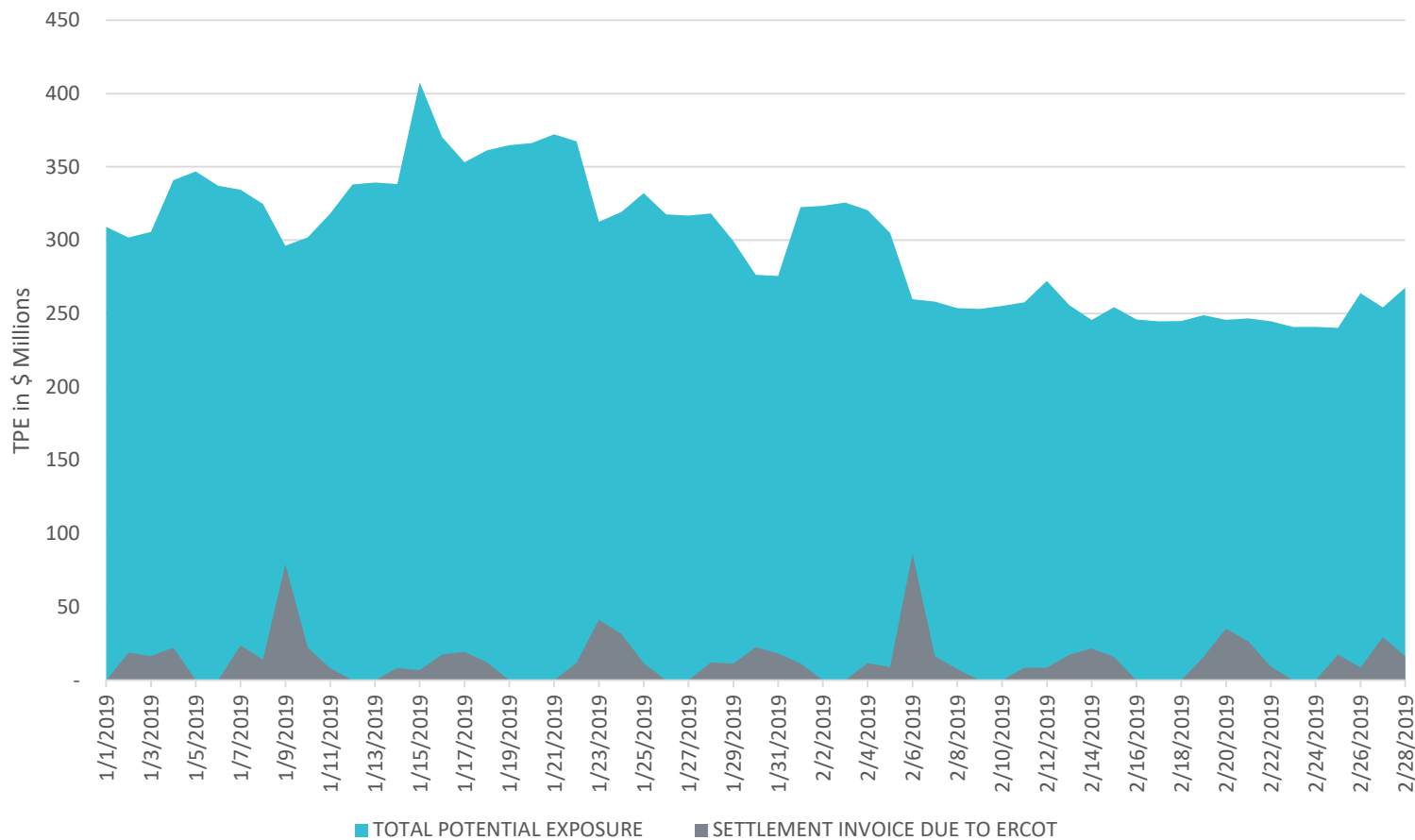
- Market-wide average TPE decreased from \$330.5 million to \$263.8 million
- The drop in TPE is due to lower Forward Adjustment Factors in February
- Discretionary Collateral is defined as Secured Collateral in excess of TPE, CRR Locked ACL and DAM Exposure
- Average Discretionary Collateral increased from \$996.7 million to \$ 1,034.8 million
- The increase in Discretionary Collateral is largely due to decrease in TPE of Load and Generation entities
- Number of active Counter-Parties increased from 228 to 233
- No unusual collateral call activity

TPE and Forward Adjustment Factors Jan. / Feb. 2019



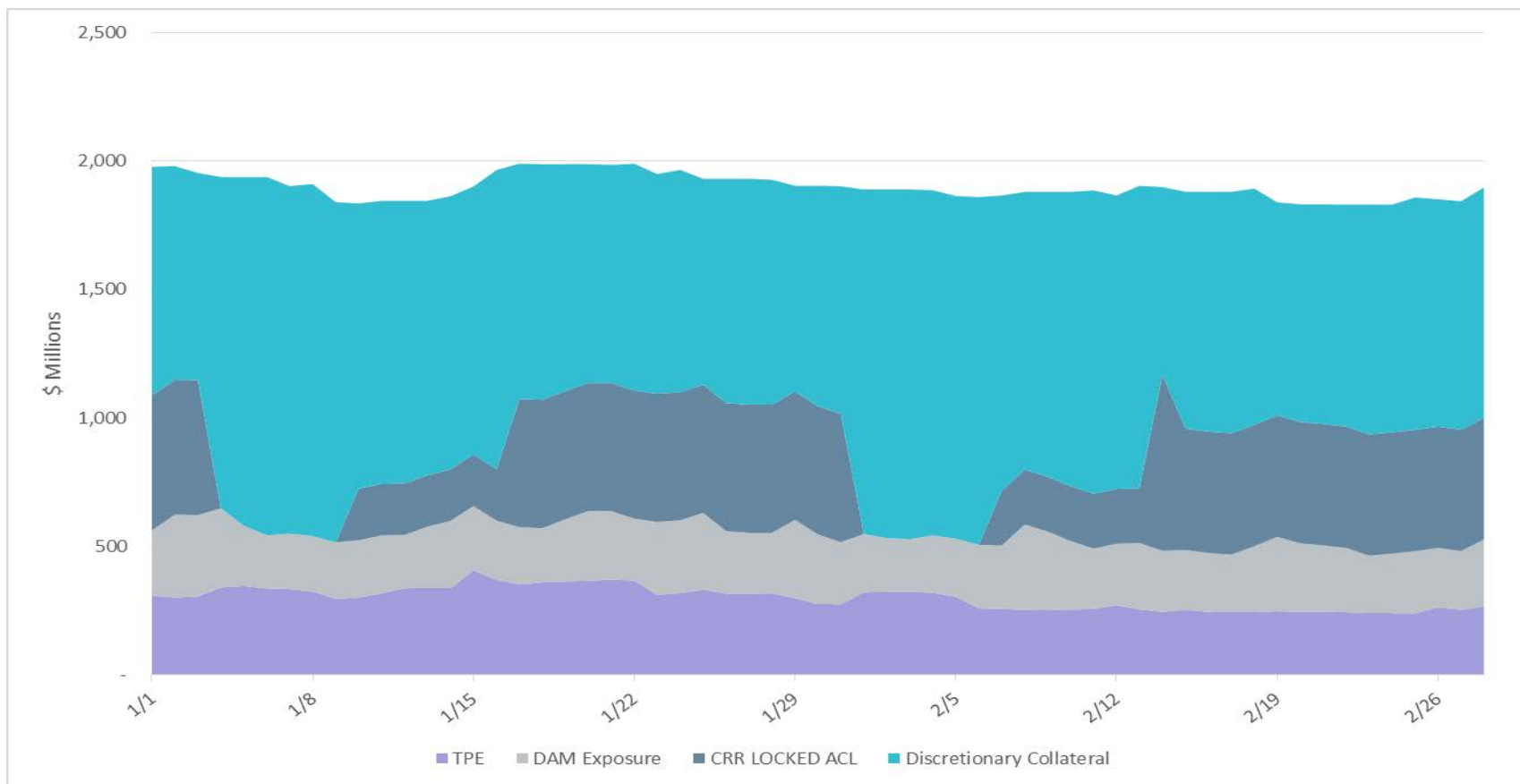
The Real-Time (RFAF) and Day-Ahead (DFAF) forward adjustment factors capture the ratio of forward ERCOT North prices to actual prices.

Settlement Invoice Charges / Total Potential Exposure Jan 2019- Feb 2019



Discretionary Collateral Jan 2019- Feb 2019

At a Counter-Party level, no unusual changes were noted



Note: Discretionary collateral doesn't include Unsecured Credit Limit or parent guarantees

Counter-Party Credit Changes Jan– Feb 2019

Summary of distribution by Category

Category	CP Distribution			Average TPE Distribution			Average Excess Collateral Distribution		
	Jan-19	Feb-19	Change	Jan-19	Feb-19	Change	Jan-19	Feb-19	Change
CRR Only	9.65%	9.44%	-0.21%	0.61%	1.27%	0.66%	2.07%	1.96%	-0.11%
Gen Only	14.47%	14.59%	0.12%	6.76%	7.44%	0.68%	4.10%	4.09%	0.00%
Load Only	14.91%	14.59%	-0.32%	10.95%	8.66%	-2.29%	9.56%	9.40%	-0.17%
Load and Gen	14.5%	14.2%	-0.31%	48.68%	45.03%	-3.65%	59.22%	59.72%	0.50%
Trader	46.5%	47.2%	0.72%	33.00%	37.60%	4.60%	25.05%	24.83%	-0.22%

Summary of distribution by Rating Group

Rating Group	CP Distribution			Average TPE Distribution			Average Excess Collateral		
	Jan-19	Feb-19	Change	Jan-19	Feb-19	Change	Jan-19	Feb-19	Change
0									
AAA	0.0%	0.0%	0.00%	0.0%	0.0%	0.00%	0.0%	0.0%	0.00%
AA- to AA+	4.4%	4.3%	-0.09%	2.2%	2.7%	0.54%	1.7%	1.7%	0.00%
A- to A+	7.5%	7.3%	-0.16%	10.0%	11.9%	1.93%	22.1%	21.9%	-0.19%
BBB- to BBB+	11.0%	10.7%	-0.24%	25.0%	21.4%	-3.61%	28.0%	27.8%	-0.14%
Investment Grade	22.8%	22.3%	-0.49%	37.1%	36.0%	-1.14%	51.8%	51.5%	-0.33%
BB- to BB+	1.8%	1.7%	-0.04%	6.0%	4.7%	-1.36%	5.6%	5.9%	0.36%
B- to B+	4.4%	4.3%	-0.09%	21.5%	22.6%	1.16%	10.0%	10.2%	0.21%
CCC+ and below	0.0%	0.0%	0.00%	0.0%	0.0%	0.00%	0.0%	0.0%	0.00%
Not Rated	71.1%	71.7%	0.62%	35.4%	36.7%	1.34%	32.6%	32.4%	-0.24%
Non-investment Grade	77.2%	77.7%	0.49%	62.9%	64.0%	1.14%	48.2%	48.5%	0.33%

Counter-Party Credit Exposure – February 2019

Distribution of TPE by Rating and Category

Rating Group	CRR Only	Gen Only	Load Only	Load and Gen	Trader	Total TPE	Percent TPE
AAA	0	0	0	0	0	0	0.00%
AA- to AA+	785,453	0	0	6,333,137	0	7,118,589	2.70%
A- to A+	214,334	1,367,945	4,744,462	24,064,810	979,439	31,370,990	11.89%
BBB- to BBB+	0	4,663,848	9,531,955	26,433,847	15,849,833	56,479,484	21.41%
Investment Grade	999,787	6,031,793	14,276,417	56,831,794	16,829,273	94,969,063	36.00%
BB- to BB+	0	0	6,301,729	1,394,957	4,643,648	12,340,333	4.68%
B- to B+	0	12,971	0	31,609,246	28,031,065	59,653,282	22.61%
CCC+ and below	0	0	0	0	0	0	0.00%
Not Rated	2,354,028	13,588,879	2,262,958	28,931,823	49,679,171	96,816,860	36.70%
Non-Investment Grade	2,354,028	13,601,850	8,564,687	61,936,027	82,353,884	168,810,475	64.00%
Total TPE	3,353,814	19,633,643	22,841,104	118,767,821	99,183,157	263,779,538	100.00%
Percent TPE	1.27%	7.44%	8.66%	45.03%	37.60%	100.00%	

Distribution of Discretionary Collateral by Rating and Category

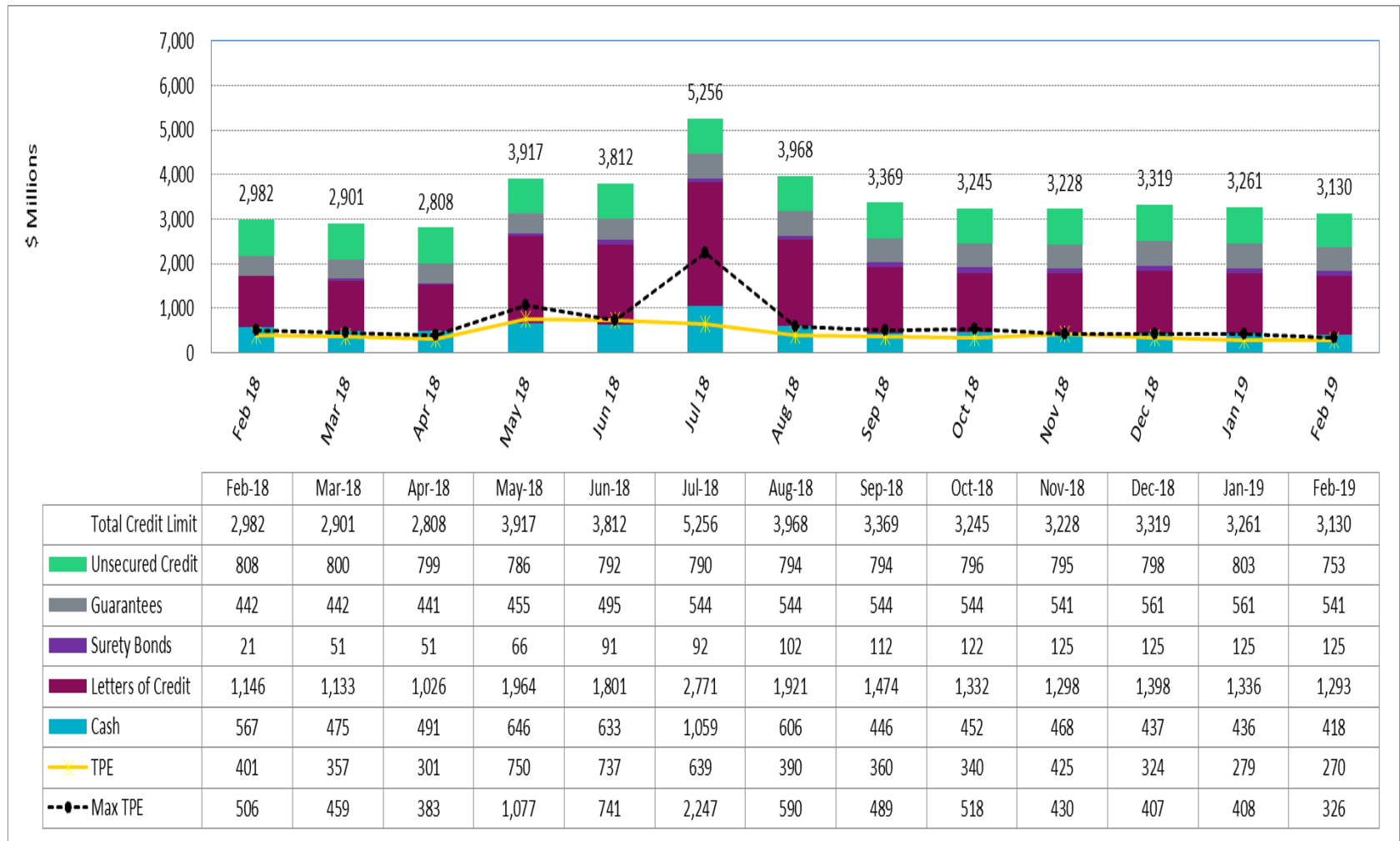
Rating Group	CRR Only	Gen Only	Load Only	Load and Gen	Trader	Excess Collateral	Percent Excess Collateral
AAA	0	0	0	0	0	0	0.00%
AA- to AA+	5,608,122	0	0	31,296,883	0	36,905,005	1.72%
A- to A+	13,933,555	33,632,055	54,098,395	301,805,033	67,079,363	470,548,402	21.95%
BBB- to BBB+	3,150,000	28,328,437	85,796,068	343,470,474	135,998,442	596,743,421	27.84%
Investment Grade	22,691,677	61,960,493	139,894,463	676,572,391	203,077,805	1,104,196,828	51.51%
BB- to BB+	0	0	43,803,316	29,160,896	53,896,262	126,860,474	5.92%
B- to B+	0	172,073	0	195,812,187	22,242,512	218,226,773	10.18%
CCC+ and below	0	0	0	0	0	0	0.00%
Not Rated	19,298,348	25,645,834	17,745,502	378,746,045	253,043,229	694,478,959	32.40%
Non-Investment Grade	19,298,348	25,817,908	61,548,818	603,719,128	329,182,004	1,039,566,206	48.49%
Total Excess Collateral	41,990,025	87,778,400	201,443,281	1,280,291,519	532,259,809	2,143,763,034	100.00%
Percent Excess Collateral	1.96%	4.09%	9.40%	59.72%	24.83%	100.00%	

Counter-Party Credit Exposure – February 2019 Average TPE and Excess Collateral for the Bottom Quintile of Market Participants

Quintile Distribution of Discretionary Collateral by Rating and Category								
Rating Group	CRR Only	Gen Only	Load Only	Load and Gen	Trader	Total Quintile Excess Collateral	Percent Quintile Excess Collateral	Percent Total Excess Collateral
AAA	0	0	0	0	0	0	0.00%	0.00%
AA- to AA+	0	0	0	0	0	0	0.00%	0.00%
A- to A+	147,889	0	0	0	0	147,889	4.32%	0.01%
BBB- to BBB+	150,000	2,989	0	0	0	152,989	4.47%	0.01%
Investment Grade	297,889	2,989	0	0	0	300,878	8.79%	0.01%
BB- to BB+	0	0	0	0	0	0	0.00%	0.00%
B- to B+	0	172,073	0	0	102,146	274,219	8.01%	0.01%
CCC+ and below	0	0	0	0	0	0	0.00%	0.00%
Not Rated	11,778	385,679	351,575	203,499	1,896,292	2,848,822	83.20%	0.13%
Non-Investment Grade	11,778	557,752	351,575	203,499	1,998,438	3,123,042	91.21%	0.15%
Total Quintile Excess Collateral	309,667	560,741	351,575	203,499	1,998,438	3,423,920	100.00%	0.16%
Percent Quintile Excess Collateral	9.04%	16.38%	10.27%	5.94%	58.37%	100.00%		
Percent Total Excess Collateral	0.01%	0.03%	0.02%	0.01%	0.09%	0.16%		

Quintile Distribution of Average TPE by Rating and Category								
Rating Group	CRR Only	Gen Only	Load Only	Load and Gen	Trader	Quintile Average TPE	Percent Quintile Average TPE	Percent Total Average TPE
AAA	0	0	0	0	0	0	0.0%	0.00%
AA- to AA+	0	0	0	0	0	0	0.0%	0.00%
A- to A+	0	0	0	0	0	0	0.0%	0.00%
BBB- to BBB+	0	463	0	0	0	463	0.0%	0.00%
Investment Grade	0	463	0	0	0	463	0.0%	0.00%
BB- to BB+	0	0	0	0	0	0	0.0%	0.00%
B- to B+	0	12,971	0	0	0	12,971	0.4%	0.00%
CCC+ and below	0	0	0	0	0	0	0.0%	0.00%
Not Rated	0	850,333	257,548	201,520	1,948,583	3,257,984	99.6%	1.24%
Non-Investment Grade	0	863,304	257,548	201,520	1,948,583	3,270,955	99.99%	1.24%
Quintile Average TPE	0	863,766	257,548	201,520	1,948,583	3,271,417	100.0%	1.24%
Percent Quintile Average TPE	0.0%	26.4%	7.9%	6.2%	59.6%	100.0%		
Percent Total Average TPE	0.00%	0.33%	0.10%	0.08%	0.74%	1.24%		

Available Credit by Type Compared to Total Potential Exposure (TPE)

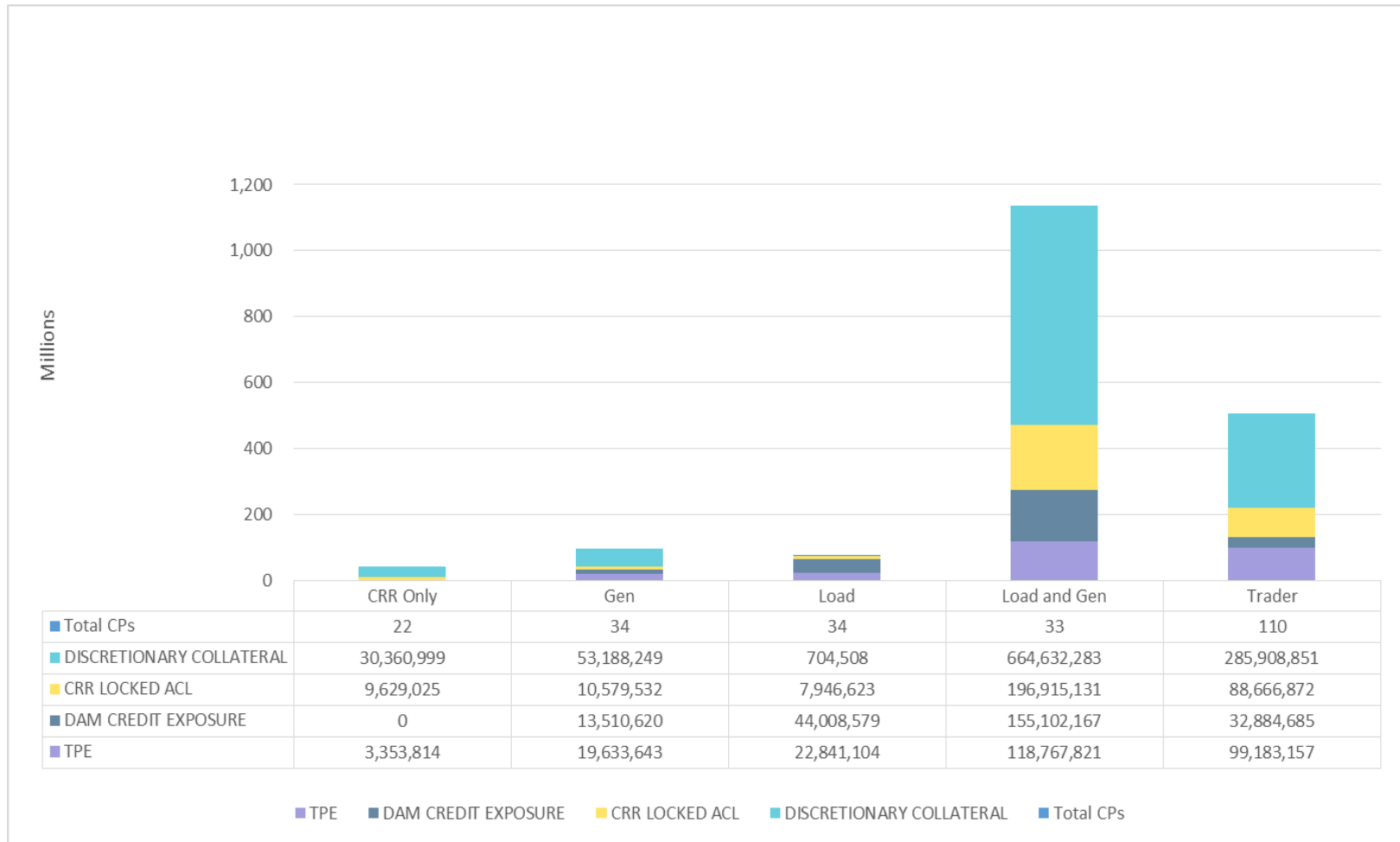


*Numbers are as of month end except for Max TPE



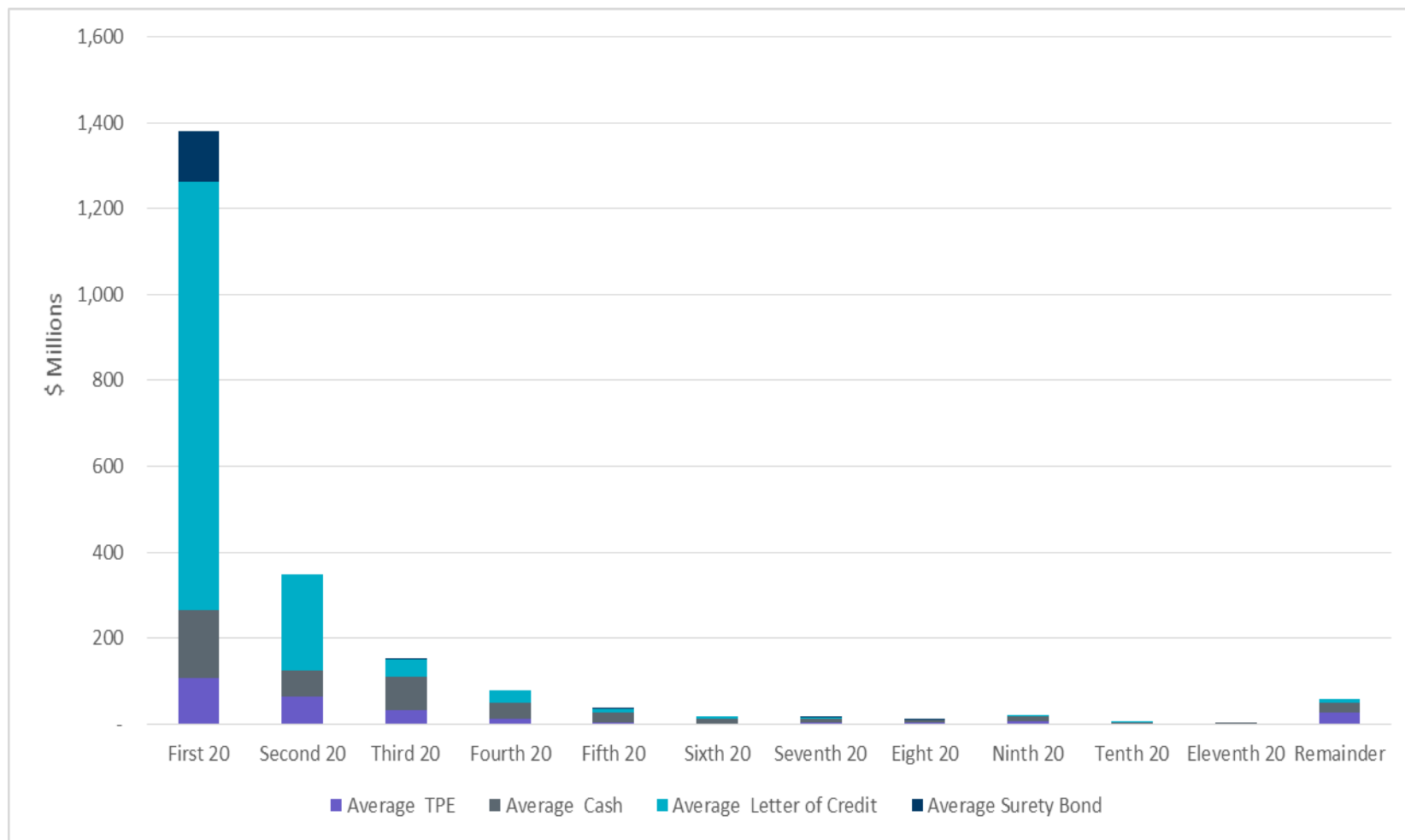
TPE and Discretionary Collateral by Market Segment- Feb 2019

Load and Generation entities accounted for the largest portion of discretionary collateral



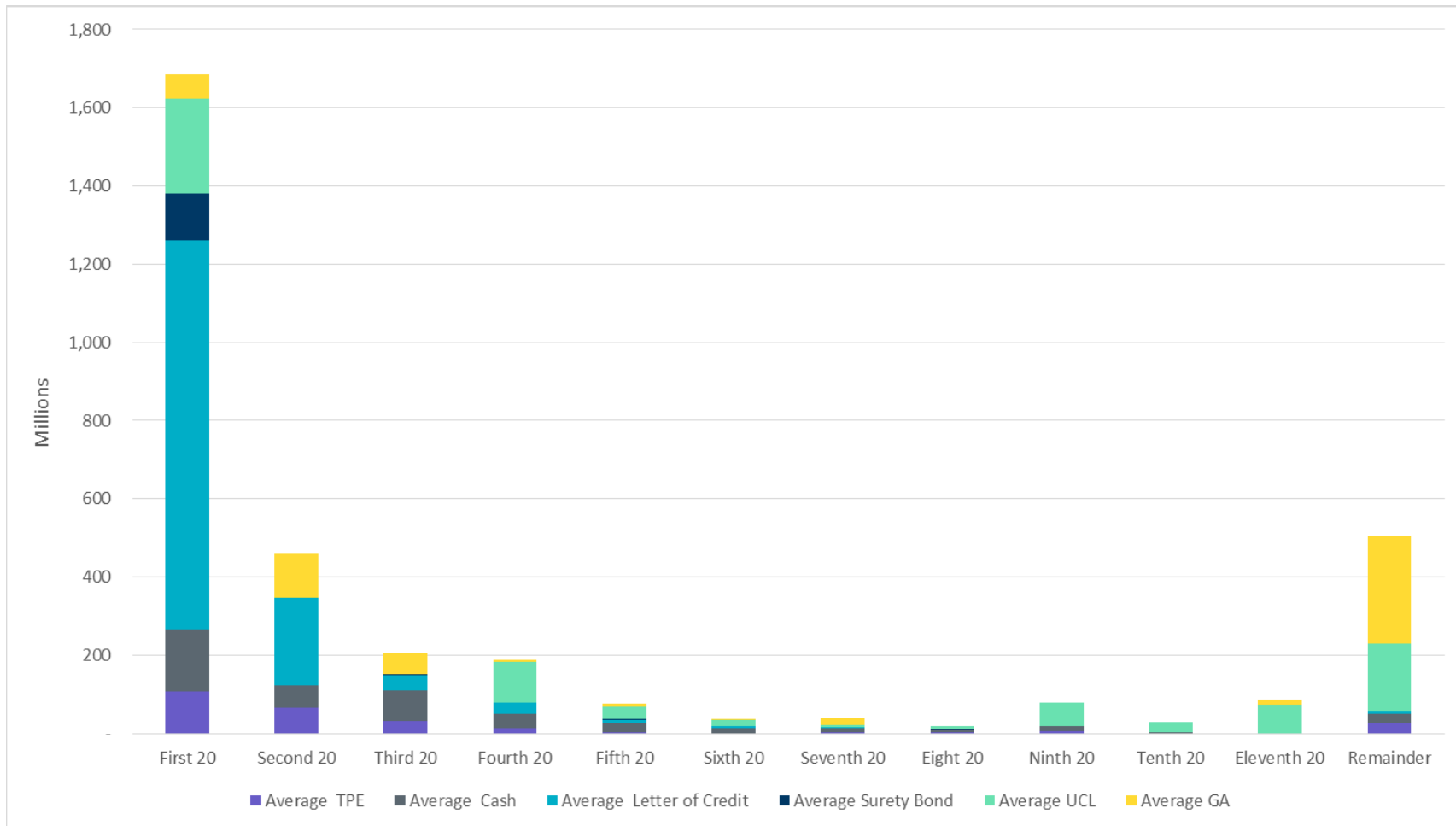
Secured collateral distribution/ TPE- Feb 2019

Posting of discretionary collateral is relatively concentrated.

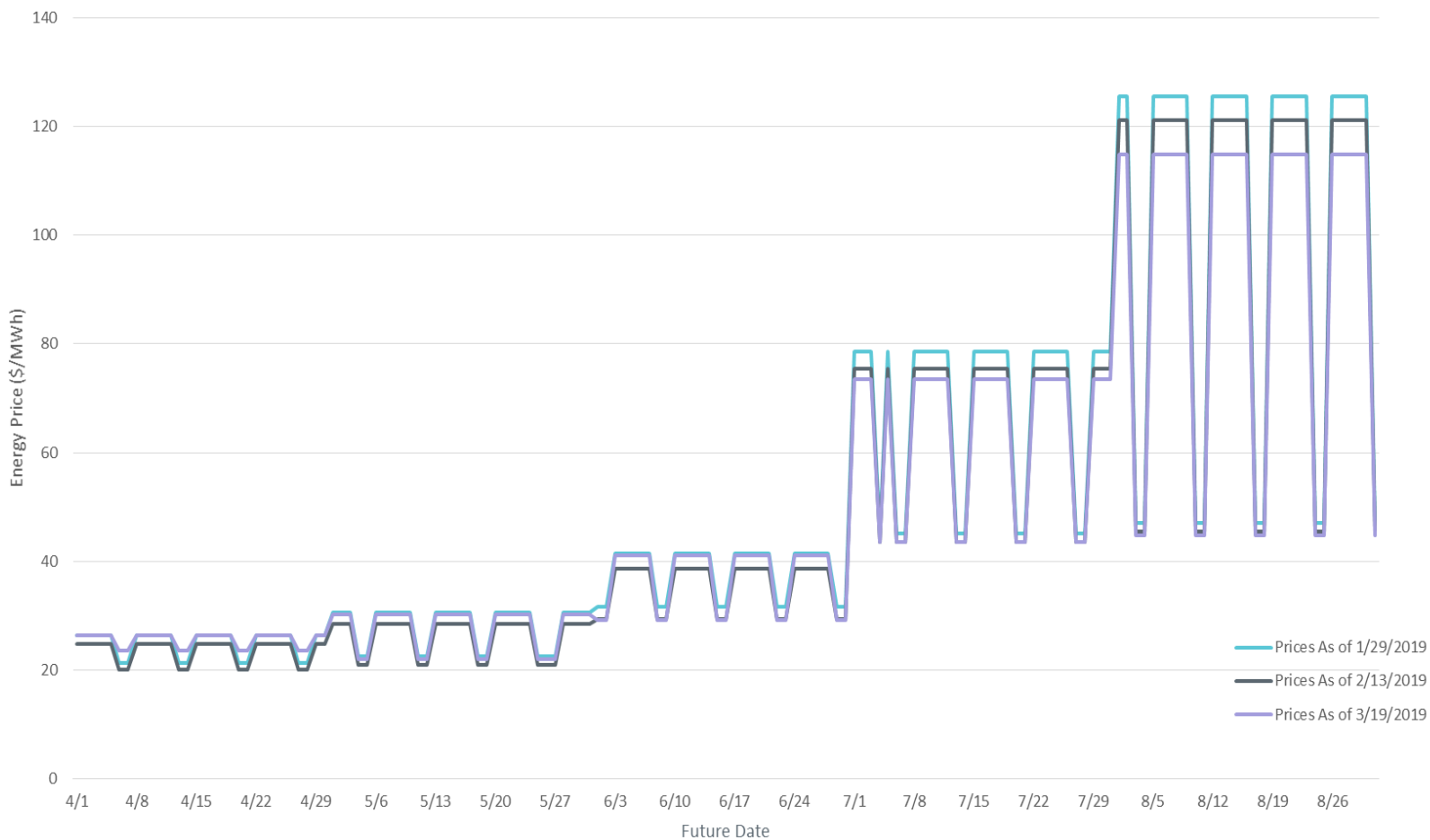


Secured collateral and Unsecured Credit Limit (UCL) distribution/ TPE- Feb 2019

TPE in the last bucket is covered by Guarantees and Unsecured Credit



ICE Daily Average Prices April-August 2019



*Daily Average Price = (Peak price*16 +Off-Peak price*8)/24



Credit Monitoring & Management (CMM) Refresh

Project Overview

- Improve the ability to support and maintain the CMM system by upgrading the technology and replacing vendor application components.
 - Phase 1A – Implement NPRRs 648, 683, 743, 760, and 800 via the existing CMM application (Completed February 2018)
 - Phase 1B – Implement modern architecture, user improvements, and NPRRs 519, 620, 660, and 741
 - Phase 2 – Implement user improvements and NPRRs 484-1B, 829, 867, 907

Note: NPRR 755 will be implemented as part of Phase 1B. However, the implementation date has not yet been determined.

CMM Tech Refresh Project Update

Revision/Change Request	Project Status	Target Release Date
NPRR 484 (1B) – Revision to Congestion Revenue Rights Credit Calculations and Payments	NS	TBD
NPRR 519 – Exemption of ERS-Only QSEs from Collateral and Capitalization Requirements	E	June 2019
NPRR 620 – Collateral Requirements for Counter-Parties with No Load or Generation	E	June 2019
NPRR 660 – Remove CRR State Change Adder	E	June 2019
NPRR 702 – Flexible Accounts, Payment of Invoices, and Disposition of Interest on Cash Collateral	NS	TBD
NPRR 741 – Clarification to TPE and EAL Credit Exposure Calculations	E	June 2019
<i>NPRR 755 – Data Agent Only QSE Registration</i>	<i>E</i>	<i>TBD</i>
NPRR 829 – Incorporate Real-Time Non-Modeled Telemetered Net Generation by Load Zone into the Estimate of RTL	NS	TBD
NPRR 867 – Revisions to CRR Auction Credit Lock Amount to Reduce Excess Collateral	NS	TBD
NPRR 907 – Revise Definition of M1a to Reflect Actual Calendar Days	NS	TBD

Project Status Codes: NS = Not Started, I = Initiation, P = Planning, E = Execution, H = On Hold
TBD = To Be Determined

Other CWG Topics for Discussion

- ERCOT will hold a training session related to changes planned to be introduced in Phase 1B of the CMM refresh as well as refresher training on Phase 1A changes, including NPRR 800, Revisions to Credit Exposure Calculations to Use Electricity Futures Market Prices.
- The Acquisition Transfer Contact List developed for Summer 2018 providing M&A contact information at potentially acquiring market participants is being reviewed and updated for Summer 2019.
- A simulated Mass Transition exercise is planned for Q2 2019 to be held in conjunction with the TDSPs and POLR REPs in each of the competitive load zones. Approximately 3,500 ESI IDs are anticipated to be included in the exercise.
- ERCOT held a Summer Preparedness Workshop on March 4th.

Questions?