



Item 7: Periodic Report on Credit Work Group Activity

Donald Meek

Chair, Credit Work Group

Finance & Audit Committee Meeting

August 12, 2019

ERCOT Public

Credit Work Group Update – Reviewed NPRRs

- **NPRRs Reviewed Without Credit Impact**
 - NPRR 936 – CRR Account Holder Limits
 - NPRR 939 – Modification to Load Resources Providing RRS to Maintain Minimum PRC on Generators During Scarcity Conditions
 - NPRR 940 – Removal of Language Related to NPRR664, Fuel Index Price for Resource Definition and Real-Time Make-Whole Payments for Exceptional Fuel Cost Events
 - NPRR 942 – Clarification of Revised Transaction Limit Posting
 - NPRR 943 – Holiday Schedule Update
 - NPRR 944 – As Built Day-Ahead Market Energy Bid Curve Submission Validation
 - NPRR 948 – Instrument Transformer Testing Schedule and Removal of Reference to Fiber-Optic Current Transformers
 - NPRR 949 – January 1, 2023 Changes to EPS Meter Communications Path
 - NPRR 951 – Active and Inactive SCED Constraint Reporting
 - NPRR 952 – Use of Katy Hub for the Fuel Index Price
 - NPRR 954 – Allow Opt out of 867 EPS Data

ERCOT CRR Portfolio Liquidation

Review of CRR Repossession Process

- One of the issues noted in a review of the current ERCOT CRR liquidation process is that ERCOT Protocols only provide for a single one-time auction of repossessed CRRs, regardless of the size and composition of the portfolio to be liquidated.
- It was felt that additional flexibility may be required in certain circumstances.
- ERCOT is in the process of creating a NPRR to provide for the possibility of different liquidation processes in various circumstances.
- Three categories of CRR portfolio positions to be considered:
 1. CRRs settling during the current month OR the prompt month and the default occurs late in the current month (auction bid window is already closed/ there is not enough time to hold a one-time special auction)
 2. Small positively valued portfolios
 3. Negatively valued portfolios or large positively valued portfolios

Market Entry Qualifications

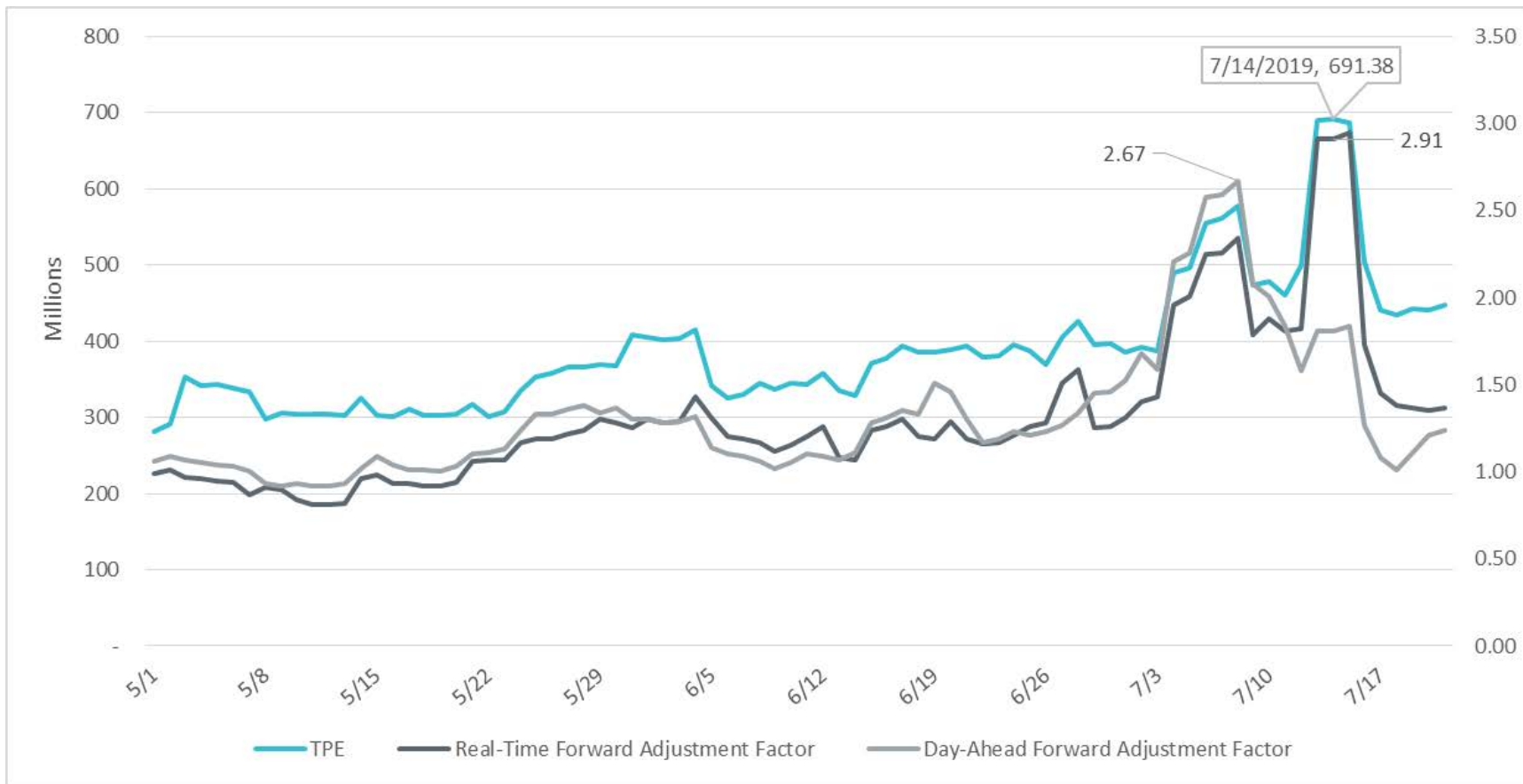
- ERCOT Legal reviewed market entry qualification processes for other financial markets and ISOs, and created a matrix comparing requirements and qualifications.
- All financial market regulators reviewed (FINRA/SEC, NFA/CFTC, CME/CBOT/NYMEX, ICE, NASDAQ, Texas State Securities Board) conduct some form of background check and require disclosure of numerous categories of reportable matters as part of their registration processes. Most also require ongoing disclosure of new events, and some require periodic recertification.
- All ISOs/RTOs reviewed have in the past not conducted background checks, although PJM and NYISO indicated movement in that direction.
- ERCOT Legal has also reviewed the PJM consultants' recommendations related to the GreenHat default which include background checks.
- ERCOT Legal continues to evaluate whether changes to ERCOT's market entry qualifications are needed, and will present any such suggestions at a future CWG/MCWG meeting.

Credit Exposure Update

June 2019 compared to May 2019

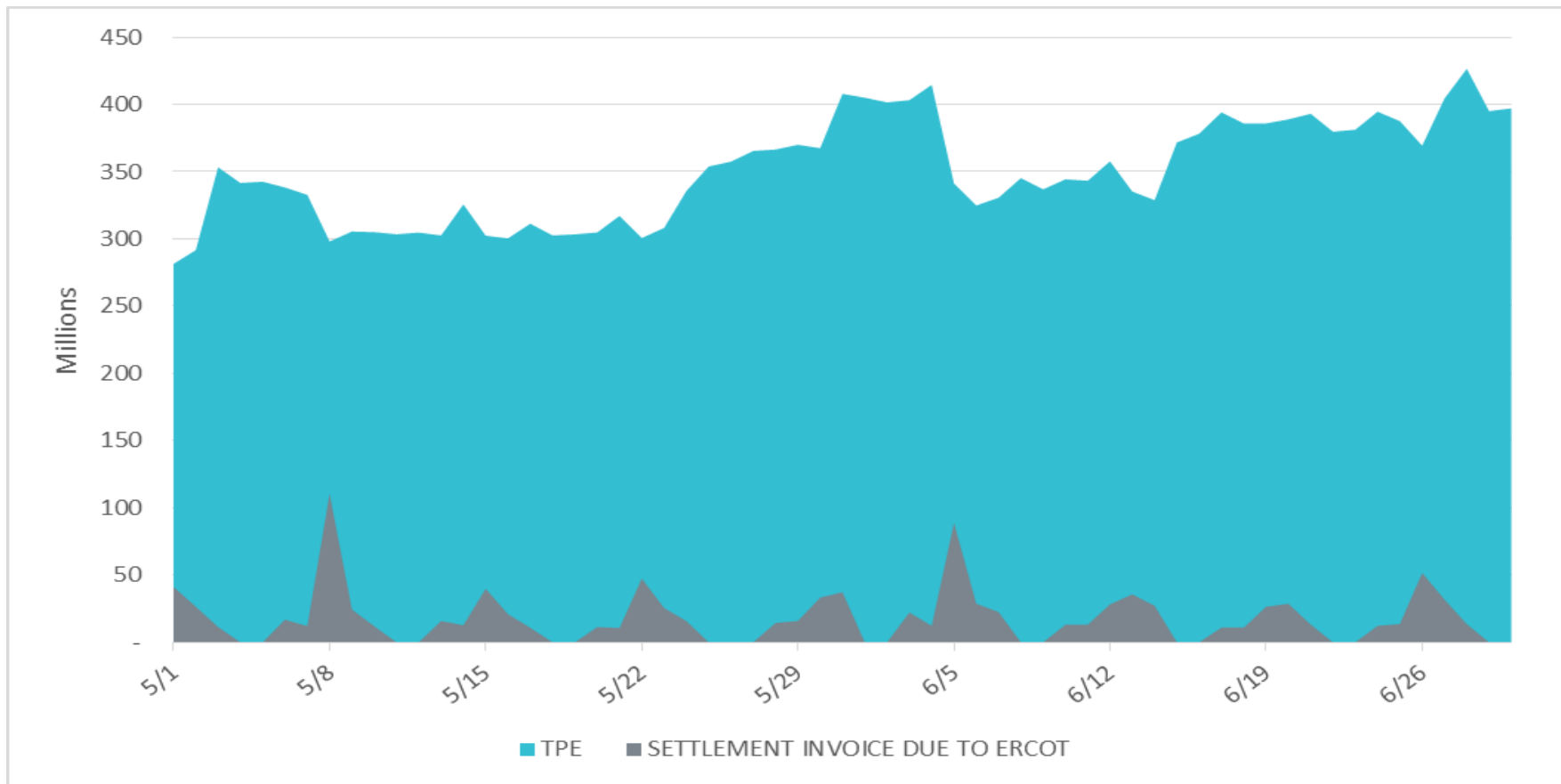
- Market-wide average TPE increased from \$324.0 million to \$372.7 million
- The increase in TPE is due to higher Forward Adjustment Factors in June
- Discretionary Collateral is defined as Secured Collateral in excess of TPE, CRR Locked ACL and DAM Exposure
- Average Discretionary Collateral increased from \$ 870.7 million to \$1,164.9 million
- The increase in Discretionary Collateral is largely due to increase in Secured Collateral and decrease in the number of auction lock days in June compared to May
- Number of active Counter-Parties increased from 239 to 243
- No unusual collateral call activity

TPE and Forward Adjustment Factors May / June 2019



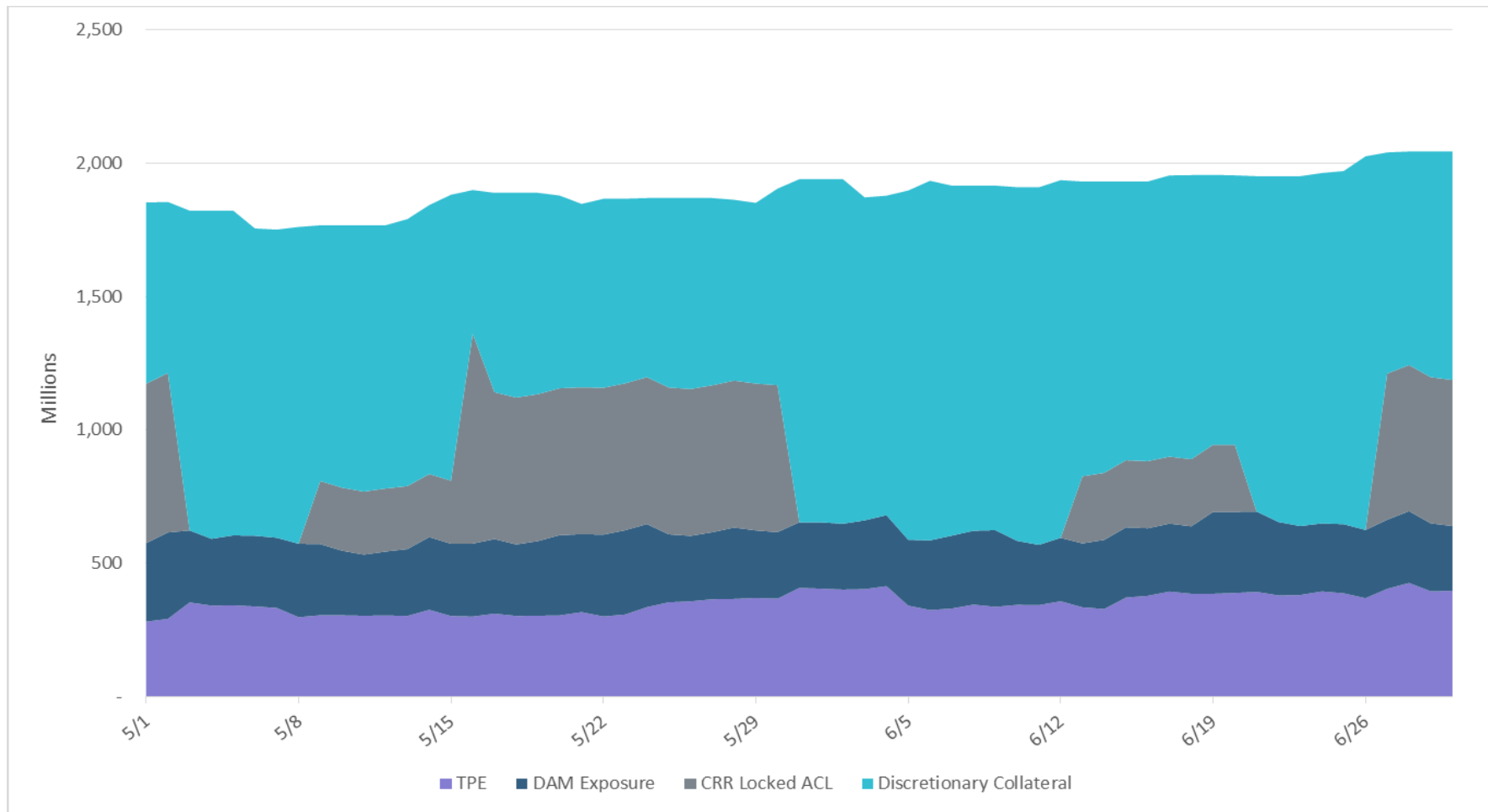
The Real-Time (RFAF) and Day-Ahead (DFAF) forward adjustment factors capture the ratio of forward ERCOT North prices to actual prices.

Settlement Invoice Charges / Total Potential Exposure May 2019 - June 2019



Discretionary Collateral May 2019 - June 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 May – June 2019

Category	Counter-Party Distribution			Average TPE Distribution			Average Excess Collateral Distribution		
	May-19	Jun-19	Change	May-19	Jun-19	Change	May-19	Jun-19	Change
CRR Only	11.30%	11.11%	-0.19%	1.63%	1.29%	-0.34%	2.57%	2.45%	-0.12%
Generation Only	14.23%	14.40%	0.18%	7.23%	6.74%	-0.49%	2.24%	1.87%	-0.37%
Load Only	13.39%	13.58%	0.19%	10.38%	10.51%	0.13%	10.11%	10.14%	0.04%
Load and Gen	13.39%	13.17%	-0.22%	45.38%	49.37%	4.00%	58.69%	59.44%	0.76%
Trader	47.70%	47.74%	0.04%	35.38%	32.08%	-3.30%	26.39%	26.09%	-0.30%

Rating Group	Counter-Party Distribution			Average TPE Distribution			Average Excess Collateral		
	May-19	Jun-19	Change	May-19	Jun-19	Change	May-19	Jun-19	Change
AAA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
AA- to AA+	4.18%	4.12%	-0.07%	2.01%	2.20%	0.19%	1.98%	1.75%	-0.23%
A- to A+	7.11%	7.00%	-0.12%	10.73%	10.69%	-0.04%	21.89%	23.59%	1.71%
BBB- to BBB+	12.13%	11.93%	-0.20%	22.90%	23.69%	0.79%	28.29%	28.85%	0.56%
Investment Grade	23.43%	23.05%	-0.39%	35.64%	36.58%	0.94%	52.16%	54.19%	2.04%
BB- to BB+	2.93%	2.88%	-0.05%	24.79%	23.99%	-0.81%	11.59%	10.29%	-1.30%
B- to B+	2.09%	2.06%	-0.03%	2.57%	2.16%	-0.41%	1.71%	1.30%	-0.40%
CCC+ and below	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Not Rated	71.55%	72.02%	0.47%	37.00%	37.28%	0.28%	34.54%	34.21%	-0.34%
Non-investment Grade	76.57%	76.95%	0.39%	64.36%	63.42%	-0.94%	47.84%	45.81%	-2.04%

Counter-Party Credit Exposure – June 2019

Rating Group	CRR Only	Generation Only	Load Only	Load and Generation	Trader	Total TPE	Percent TPE
AAA	0	0	0	0	0	0	0.00%
AA- to AA+	558,844	0	267,918	7,375,534	0	8,202,296	2.20%
A- to A+	26,592	0	2,104,721	28,149,389	9,559,138	39,839,839	10.69%
BBB- to BBB+	34,820	8,911,627	22,952,664	34,920,999	21,473,171	88,293,281	23.69%
Investment Grade	620,256	8,911,627	25,325,303	70,445,921	31,032,309	136,335,417	36.58%
BB- to BB+	0	0	8,152,156	51,966,325	29,276,187	89,394,668	23.99%
B- to B+	0	298,310	0	6,151,274	1,586,464	8,036,047	2.16%
CCC+ and below	0	0	0	0	0	0	0.00%
Not Rated	4,200,731	15,907,814	5,710,729	55,455,987	57,656,802	138,932,064	37.28%
Non-Investment Grade	4,200,731	16,206,124	13,862,886	113,573,585	88,519,453	236,362,779	63.42%
Total TPE	4,820,988	25,117,751	39,188,188	184,019,507	119,551,762	372,698,196	100.00%
Percent TPE	1.29%	6.74%	10.51%	49.37%	32.08%	100.00%	

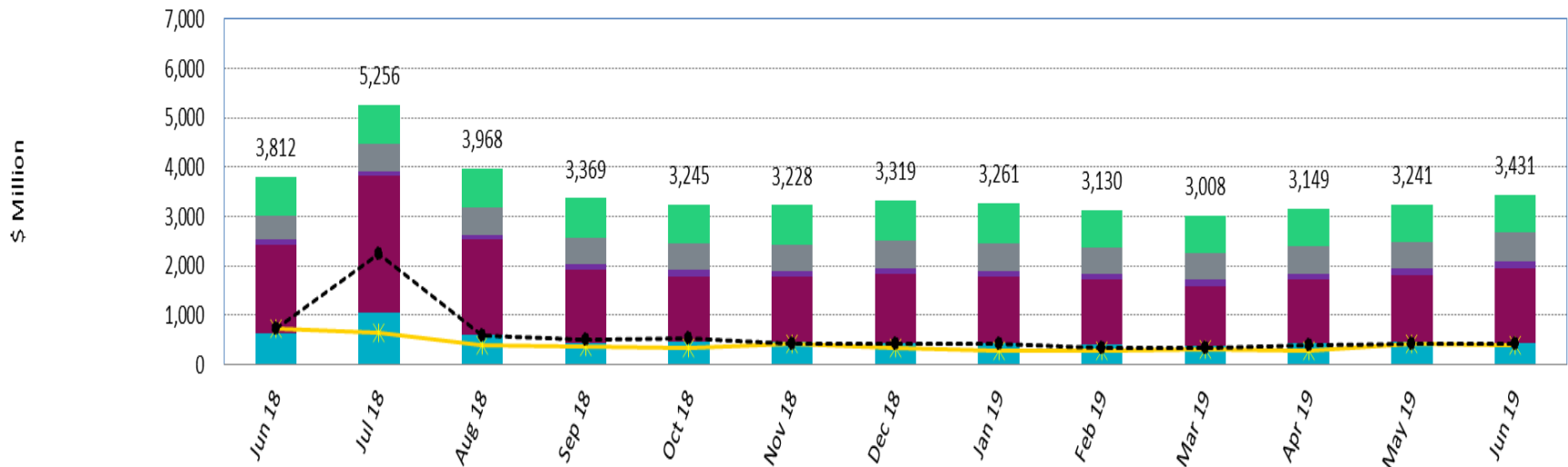
Rating Group	CRR Only	Generation Only	Load Only	Load and Generation	Trader	Excess Collateral	Percent Excess Collateral
AAA	0	0	0	0	0	0	0.00%
AA- to AA+	6,631,577	0	20,846,102	10,185,374	0	37,663,053	1.75%
A- to A+	14,129,559	0	67,765,279	377,372,192	48,240,863	507,507,894	23.59%
BBB- to BBB+	3,115,180	24,505,047	76,877,918	287,914,423	228,105,848	620,518,415	28.85%
Investment Grade	23,876,316	24,505,047	165,489,299	675,471,990	276,346,711	1,165,689,363	54.19%
BB- to BB+	0	0	41,952,888	165,089,534	14,358,935	221,401,357	10.29%
B- to B+	0	279,551	0	24,568,726	3,210,040	28,058,317	1.30%
CCC+ and below	0	0	0	0	0	0	0.00%
Not Rated	28,774,532	15,507,287	10,766,293	413,475,717	267,255,050	735,778,878	34.21%
Non-Investment Grade	28,774,532	15,786,837	52,719,181	603,133,977	284,824,025	985,238,552	45.81%
Total Excess Collateral	52,650,848	40,291,884	218,208,480	1,278,605,967	561,170,736	2,150,927,915	100.00%
Percent Excess Collateral	2.45%	1.87%	10.14%	59.44%	26.09%	100.00%	

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

Rating Group	CRR Only	Generation Only	Load Only	Load and Generation	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+	1,806	0	0	0	0	1,806	0.1%	0.00%
A- to A+	0	0	0	0	0	0	0.0%	0.00%
BBB- to BBB+	6,238	21	291	0	123,686	130,237	3.9%	0.03%
Investment Grade	8,044	21	291	0	123,686	132,043	4.0%	0.04%
BB- to BB+	0	0	0	0	39,150	39,150	1.2%	0.01%
B- to B+	0	0	0	0	39,150	39,150	1.2%	0.01%
CCC+ and below	0	0	0	0	0	0	0.0%	0.00%
Not Rated	0	878,563	326,407	0	1,896,452	3,101,422	93.6%	0.83%
Non-Investment Gra	0	878,563	326,407	0	1,974,752	3,179,722	96.01%	0.85%
Quintile Average	8,044	878,585	326,698	0	2,098,438	3,311,764	100.0%	0.89%
Percent Quintile Average TPE	0.2%	26.5%	9.9%	0.0%	63.4%	100.0%		
Percent Total Average TPE	0.00%	0.24%	0.09%	0.00%	0.56%	0.89%		

Rating Group	CRR Only	Generation Only	Load Only	Load and Generation	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+	130,920	0	0	0	0	130,920	4.31%	0.01%
A- to A+	156,150	0	0	0	0	156,150	5.14%	0.01%
BBB- to BBB+	143,762	103,476	62,580	0	67,147	376,965	12.40%	0.02%
Investment Grade	430,832	103,476	62,580	0	67,147	664,035	21.84%	0.03%
BB- to BB+	0	0	0	0	95,970	95,970	3.16%	0.00%
B- to B+	0	0	0	0	90,686	90,686	2.98%	0.00%
CCC+ and below	0	0	0	0	0	0	0.00%	0.00%
Not Rated	131,777	409,890	234,403	0	1,413,720	2,189,790	72.02%	0.10%
Non-Investment Gra	131,777	409,890	234,403	0	1,600,376	2,376,447	78.16%	0.11%
Total Quintile Excess Collateral	562,610	513,366	296,984	0	1,667,523	3,040,482	100.00%	0.14%
Percent Quintile Excess Collateral	18.50%	16.88%	9.77%	0.00%	54.84%	100.00%		
Percent Total Excess Collateral	0.03%	0.02%	0.01%	0.00%	0.08%	0.14%		

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



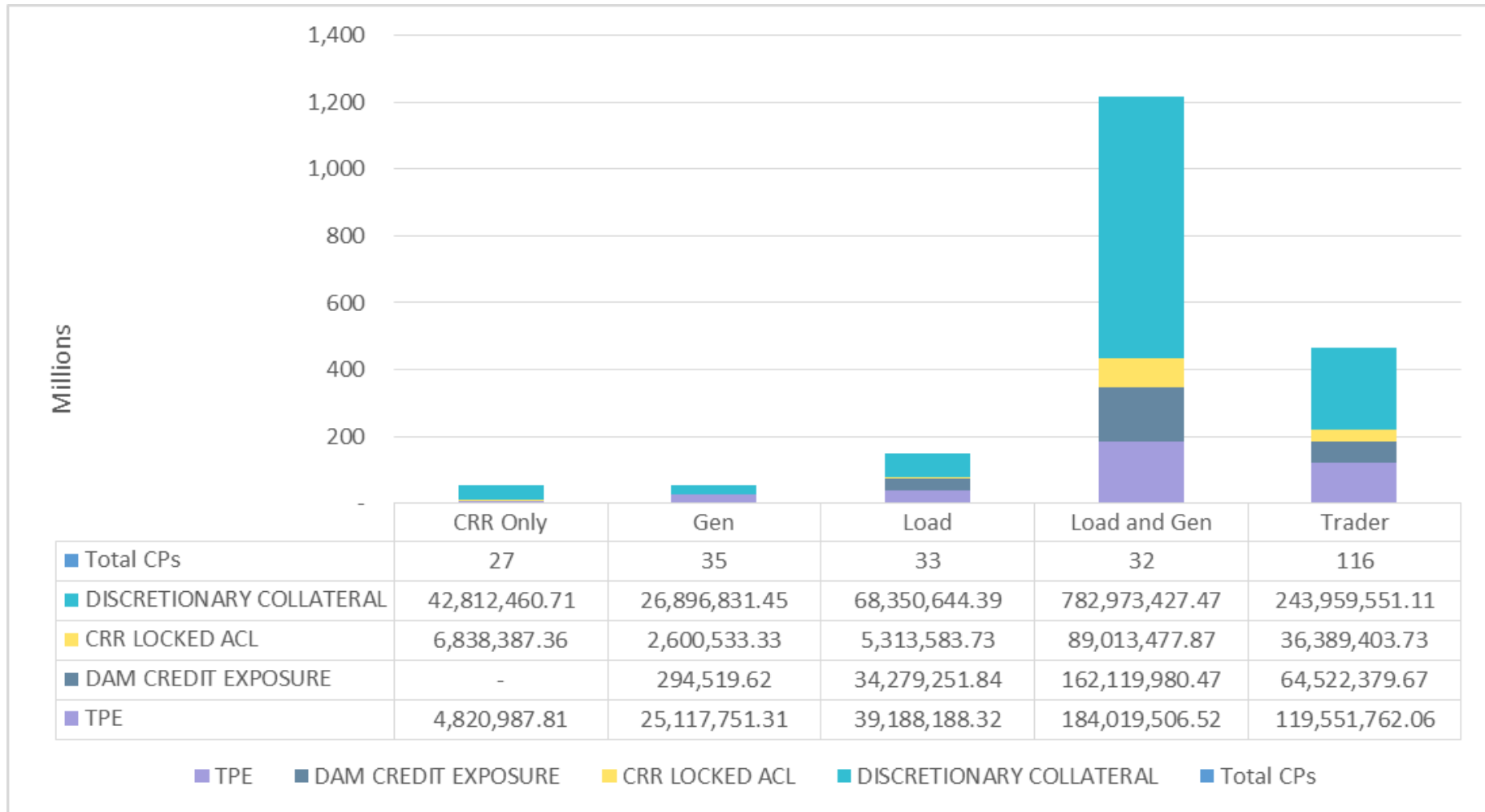
	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19
Total Credit Limit	3,812	5,256	3,968	3,369	3,245	3,228	3,319	3,261	3,130	3,008	3,149	3,241	3,431
Unsecured Credit	792	790	794	794	796	795	798	803	753	755	765	765	757
Guarantees	495	544	544	544	544	541	561	561	541	541	541	541	586
Surety Bonds	91	92	102	112	122	125	125	125	125	125	125	125	128
Letters of Credit	1,801	2,771	1,921	1,474	1,332	1,298	1,398	1,336	1,293	1,199	1,284	1,346	1,537
Cash	633	1,059	606	446	452	468	437	436	418	388	434	464	424
TPE	737	639	390	360	340	425	324	279	270	294	285	405	385
Max TPE	741	2,247	590	489	518	430	407	408	326	328	377	408	427

*Numbers are as of month ended except for Max TPE



TPE and Discretionary Collateral by Market Segment - June 2019

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

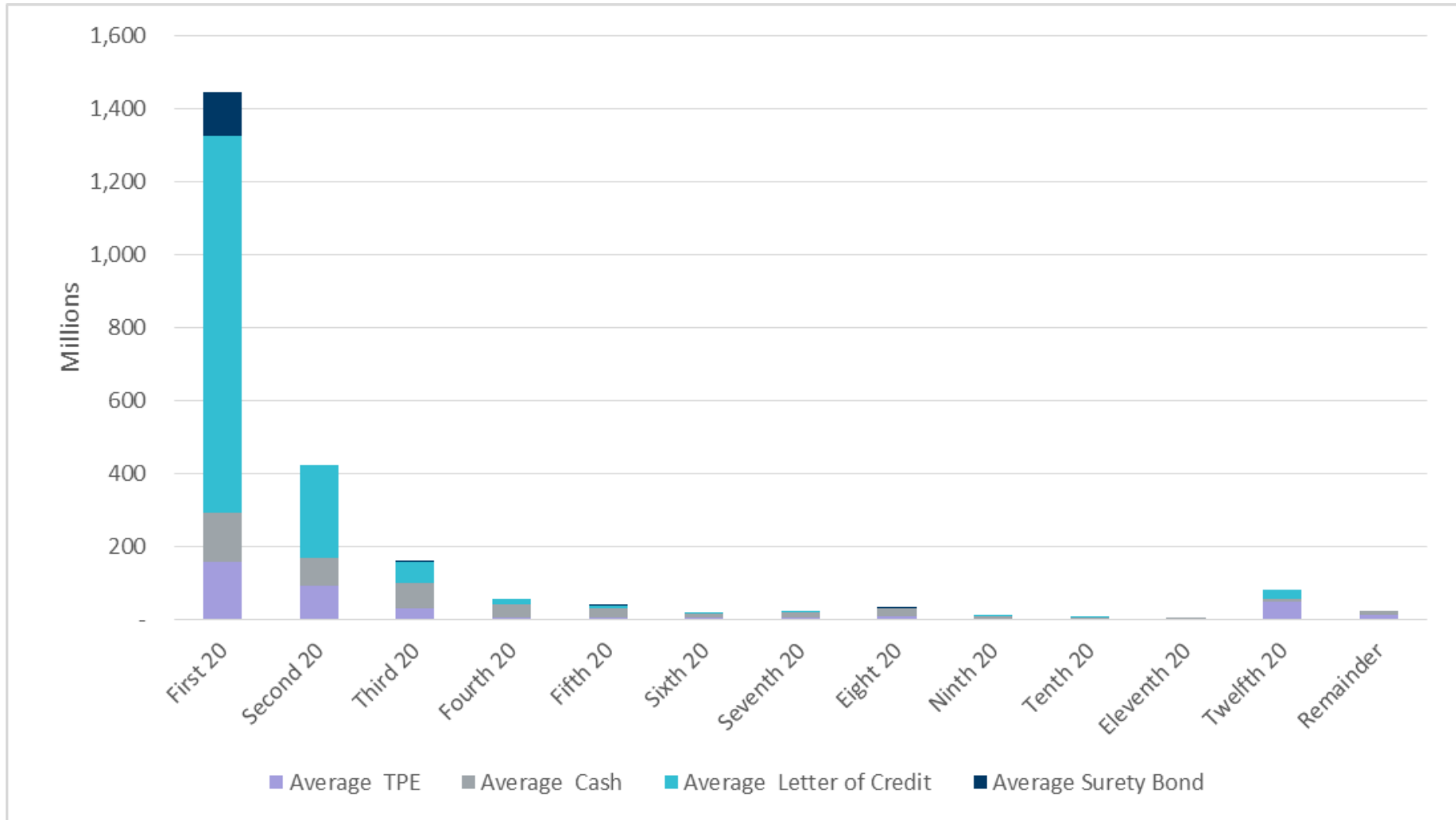


■ TPE ■ DAM CREDIT EXPOSURE ■ CRR LOCKED ACL ■ DISCRETIONARY COLLATERAL ■ Total CPs



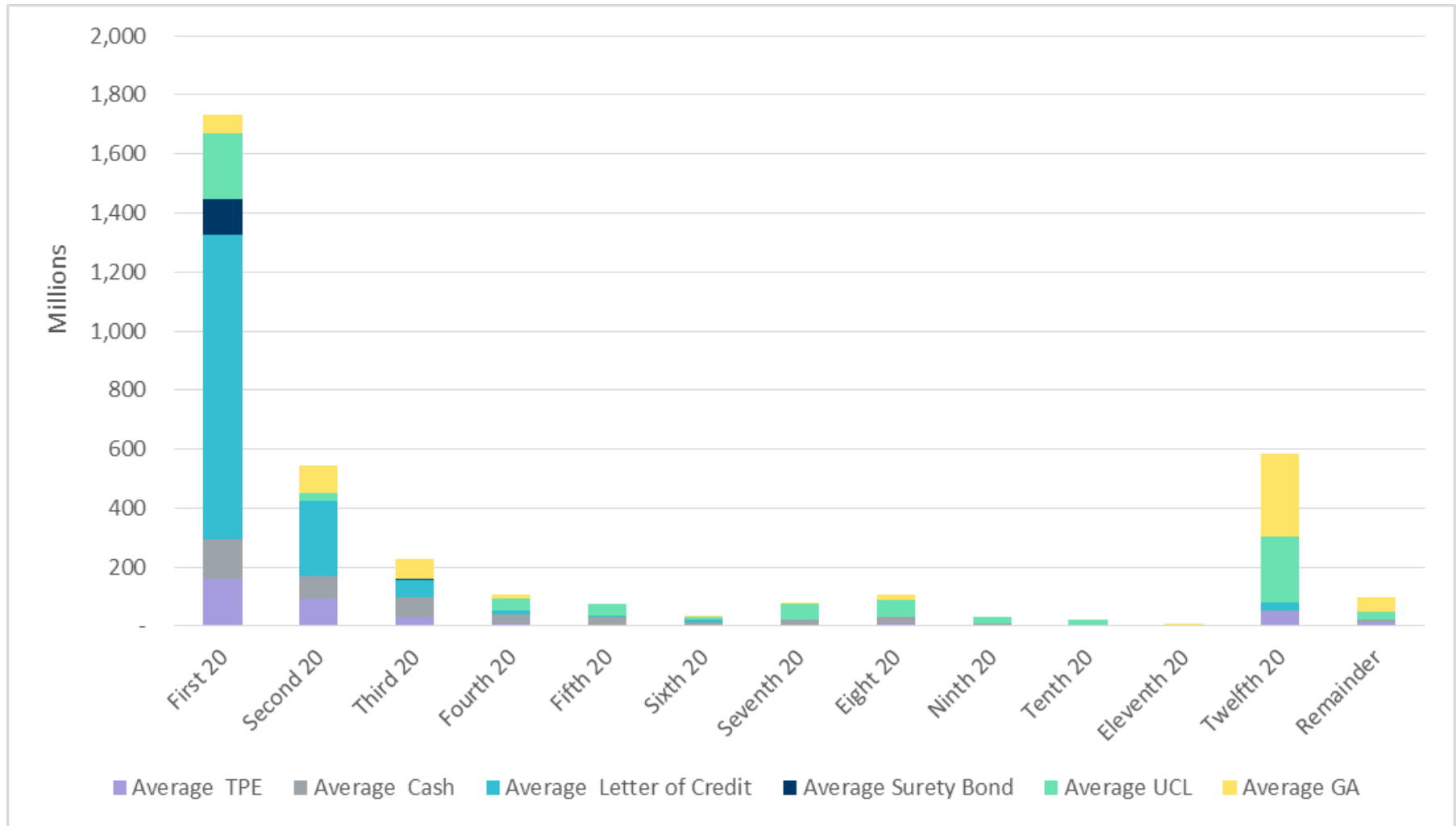
Secured collateral distribution / TPE - June 2019

Posting of discretionary collateral is relatively concentrated.

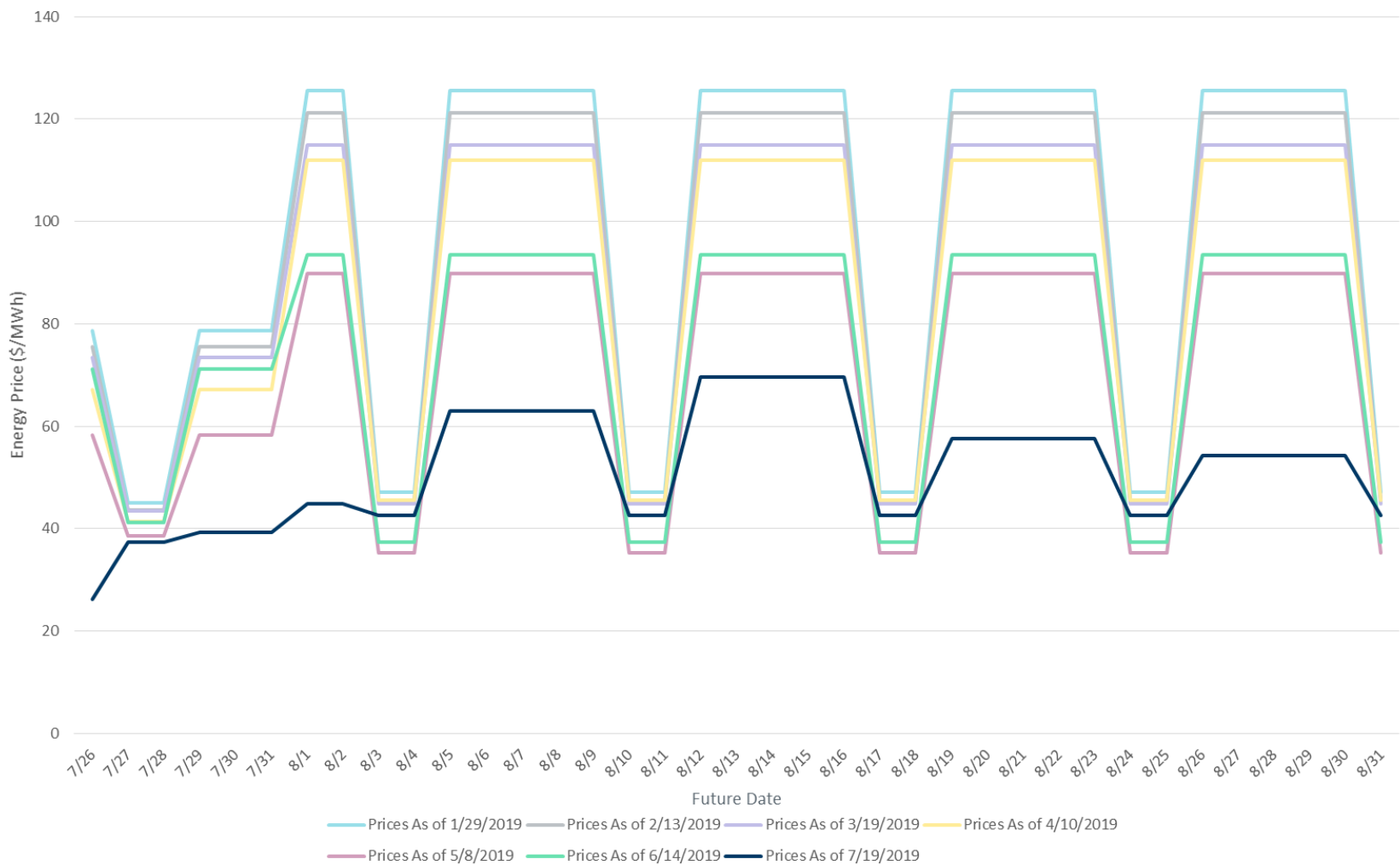


Secured collateral and Unsecured Credit Limit (UCL) / TPE - June 2019

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



ICE Daily Average Prices July 2019 - 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) (June 2019 implementation date)
 - Phase 2 – Implement user improvements and NPRRs (484-1B, 829, 867, 907) (TBD)

The following NPRRs were implemented on June 2, 2019

NPRR 519 – Exemption of ERS- Only QSEs from Collateral and Capitalization Requirements

NPRR 620 – Collateral Requirements for Counter-Parties with No Load or Generation

NPRR 660 – Remove CRR State Change Adder

NPRR 741 – Clarification to TPE and EAL Credit Exposure Calculations

NPRR 755 – Data Agent Only QSE Registration – was implemented on June 15, 2019

Other CWG Topics for Discussion

- Extensive discussion of the PJM GreenHat FTR default and the resulting recommendations of the Independent Consultant engaged by the PJM Board of Managers and PJM's response to those recommendations has taken place over the past several months.

A summary of those findings is included in a separate presentation to the Finance and Audit Committee.

- A discussion of potentially increasing the Surety Bond limit of \$10 million per market participant per issuer and accompanying changes to the Surety Bond standard agreement was held with further discussion planned at the August CWG/MCWG meeting.
- ERCOT issued a Request for Proposal on July 12th to engage an outside consultant to review ERCOT's credit practices and procedures. The submission process closes on August 9th.

Questions?