



ERCOT Monthly Operational Overview
(December 2017)

ERCOT Public
January 15, 2018

Grid Planning & Operations

Summary – December 2017

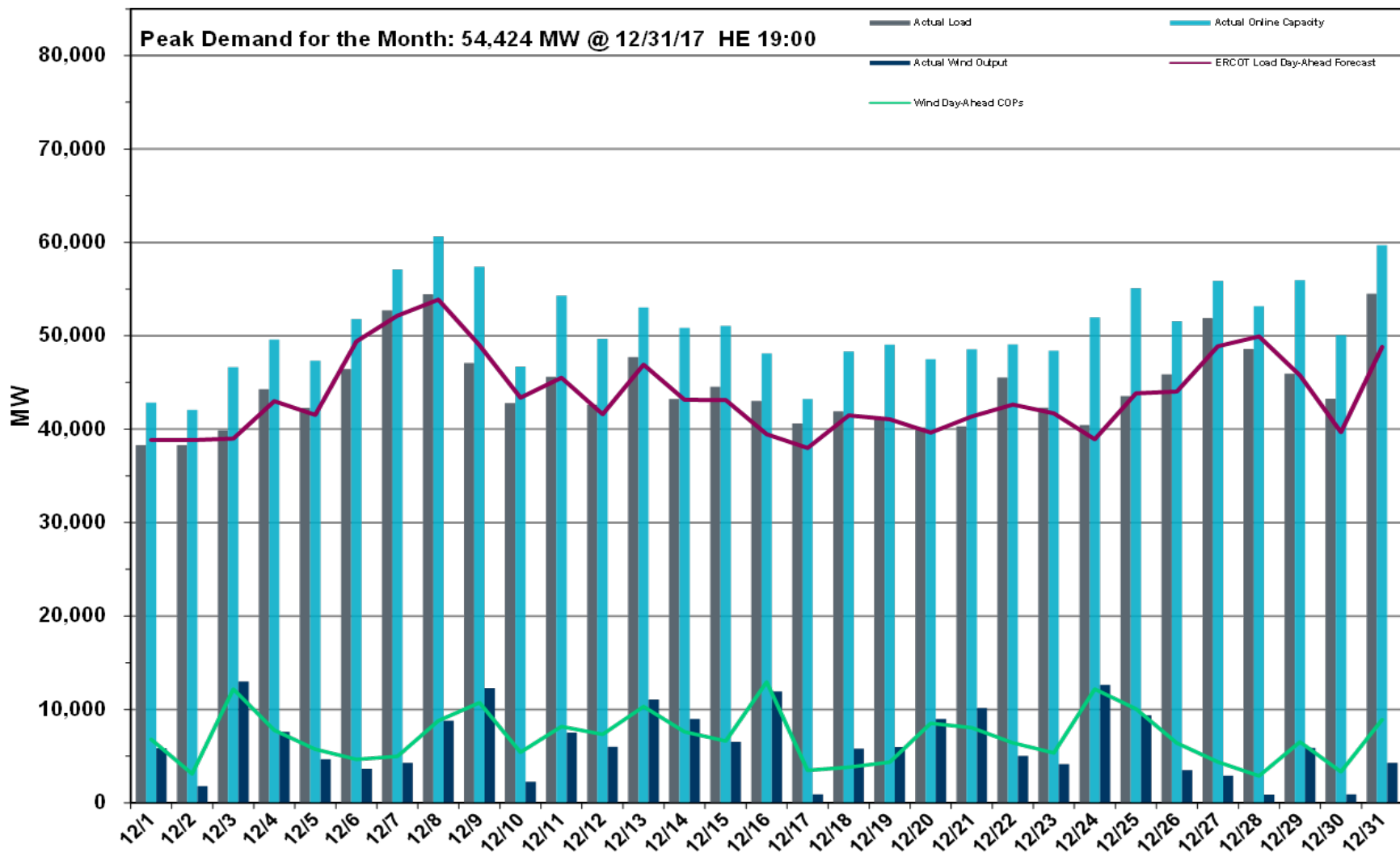
Operations

- The preliminary Settlements hourly peak demand of 54,424* MW on December 31 was higher than the day-ahead mid-term load forecast peak of 53,871 MW for December 8 at Hour Ending 8.
 - The operational instantaneous peak demand was 54,758 MW (telemetry).
- Day-ahead load forecast error for December was 3.12%
- ERCOT issued 7 notifications:
 - One OCN issued due to potential extreme cold weather system approaching ERCOT region
 - One Advisory issued due to potential extreme cold weather system approaching ERCOT region
 - One Watch issued for the Eagle Pass DC Tie due to a forced extension of a planned outage
 - One Watch issued for the Laredo DC Tie due to a forced extension of a planned outage
 - One Watch issued due to potential extreme cold weather system approaching ERCOT region
 - One Emergency issued for Far West Texas due to Voltage Stability
 - One Emergency issued due to expected cascading condition in the San Antonio Area

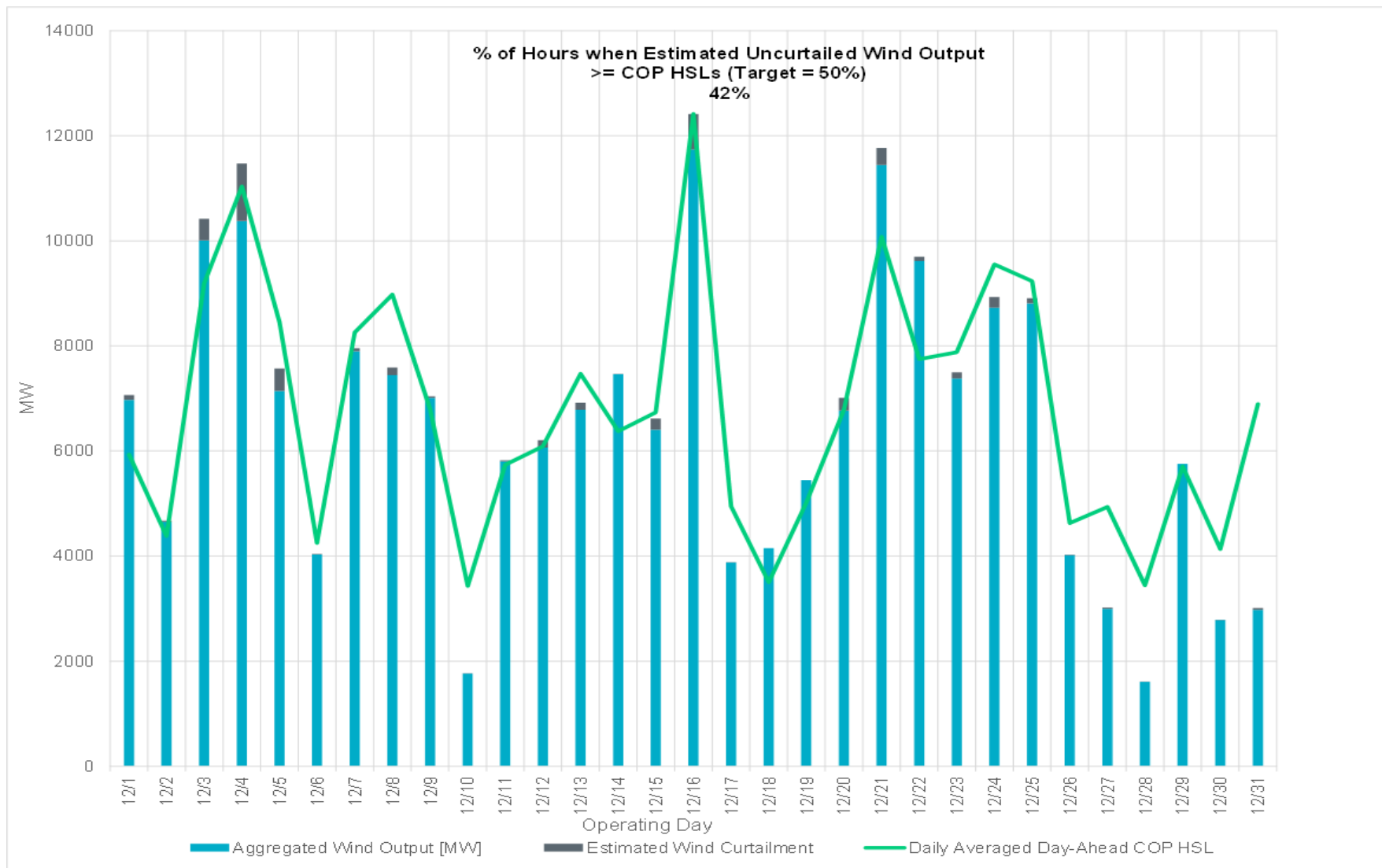
Planning Activities

- 337 active generation interconnection requests totaling 68,320 MW, including 30,198 MW of wind generation, as of December 31, 2017. Three fewer requests and an increase of 405 MW from November 30, 2017.
- 20,682 MW wind capacity in commercial operations as of January 1, 2018.

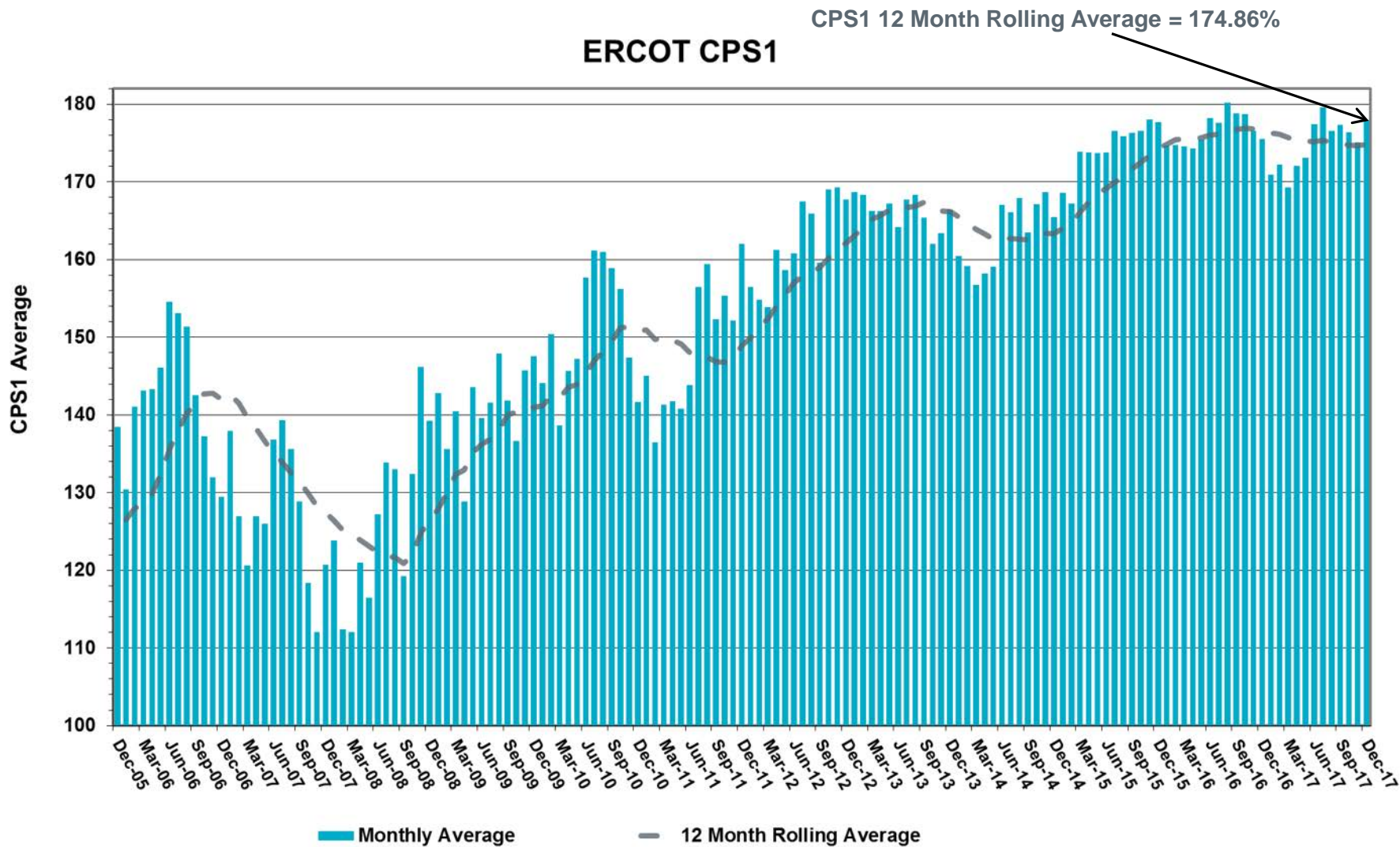
Daily Peak Demand: Hourly Average Actual vs. Forecast, Wind Day-Ahead COPs & On-Line Capacity at Peak – December 2017



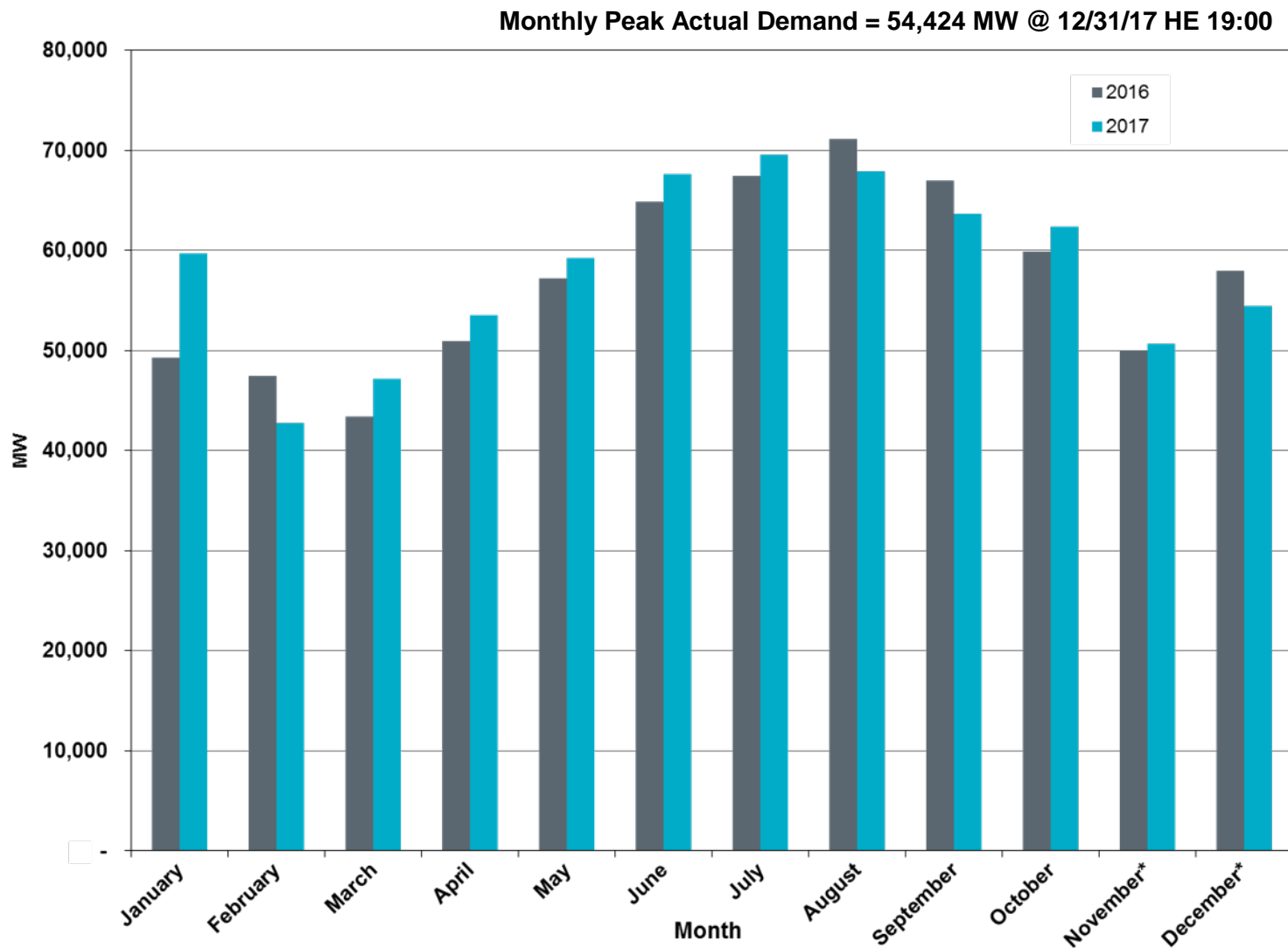
Actual Wind Output plus Curtailments vs. Wind Day-Ahead COPs for All Hours – December 2017



ERCOT's CPS1 Monthly Performance – December 2017



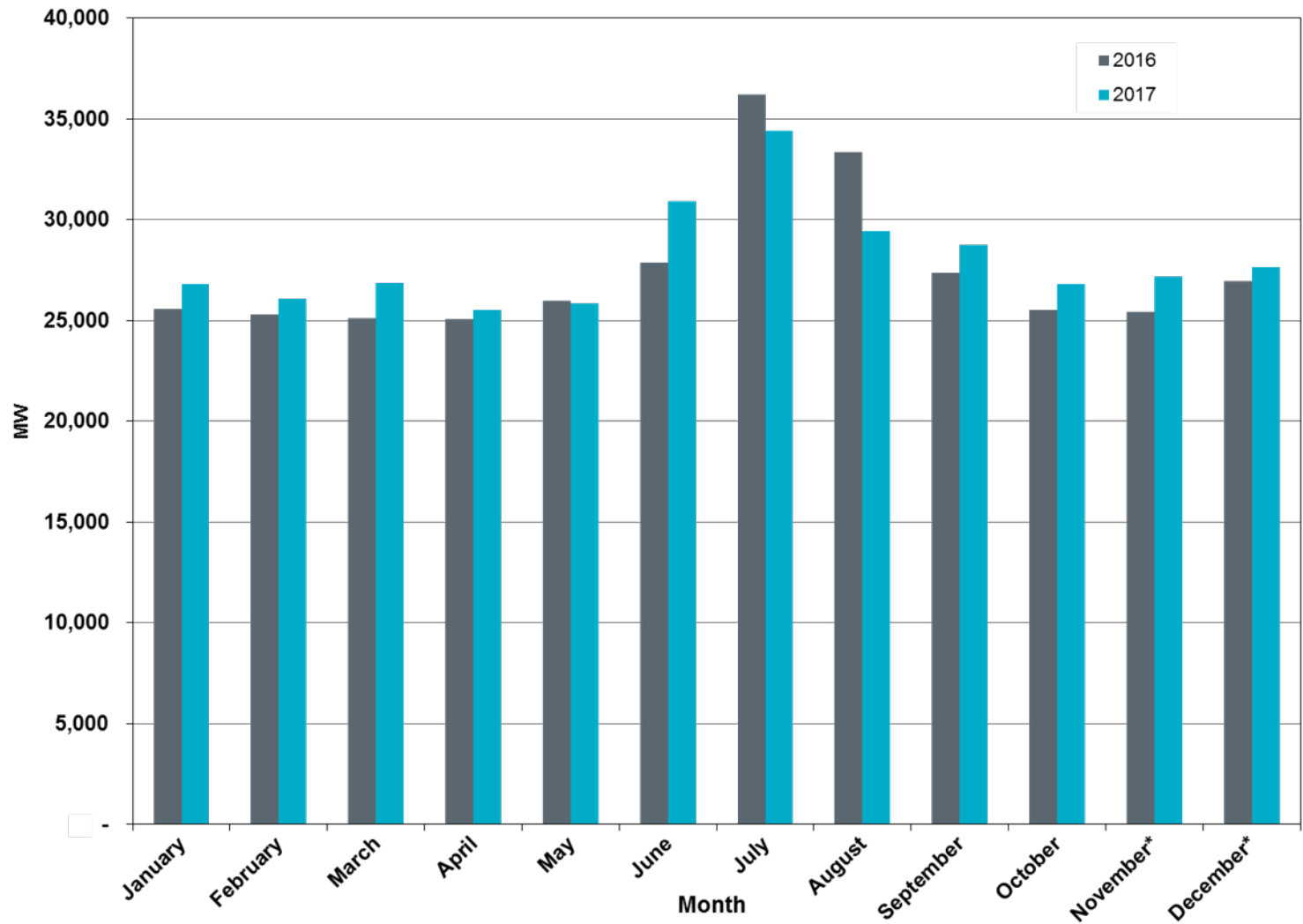
Monthly Peak Actual Demand – December 2017



*Preliminary for latest two months of the current year



Monthly Minimum Actual 15-Minute Demand – December 2017



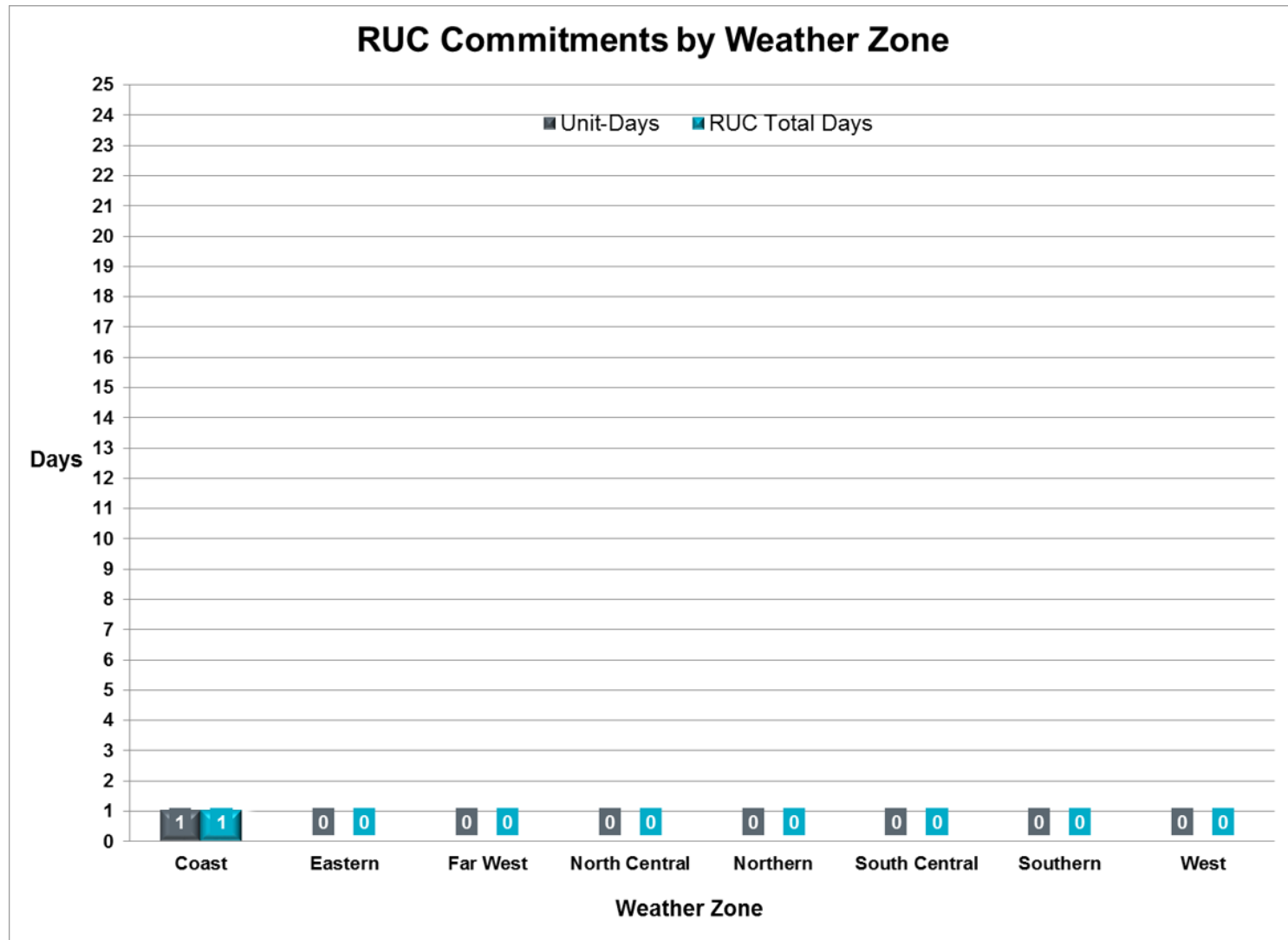
*Preliminary for latest two months of the current year

Day-Ahead Load Forecast Performance – December 2017

**Mean Absolute Percent Error (MAPE) for ERCOT Mid-Term Load Forecast (MTLF)
Run at 14:00 Day Ahead**

	2014 MAPE	2015 MAPE	2016 MAPE	2017 MAPE	December 2017 MAPE	
Average Annual MAPE	2.83	2.86	2.62	2.55	3.12	
Lowest Monthly MAPE	2.15	1.89	1.94	1.69	Lowest Daily MAPE	0.92 Dec 03
Highest Monthly MAPE	3.70	3.81	3.86	4.07	Highest Daily MAPE	8.29 Dec 31

Reliability Unit Commitment (RUC) Capacity by Weather Zone – December 2017



Generic Transmission Constraints (GTCs) – December 2017

GTCs	Dec-16 Days GTCs	Oct-17 Days GTCs	Nov-17 Days GTCs	Dec-17 Days GTCs	Last 12 Months Total Days (Jan 17 – Dec 17)
North – Houston	0	2	2	0	8
Valley Import	0	2	0	1	10
Zorillo – Ajo*	0	2	-	-	11
Panhandle	25	29	25	22	262
Red Tap	0	0	0	0	0
North Edinburg – Lobo	-	1	0	0	1
Nelson Sharpe – Rio Hondo*	-	0	0	11	11
East Texas	-	-	16	0	16

GTC: A transmission flow limit more constraining than a Transmission Element’s normal limit established to constrain flow between geographic areas of the ERCOT Transmission System that is used to enforce stability and voltage constraints that cannot be modeled directly in ERCOT’s transmission security analysis applications.

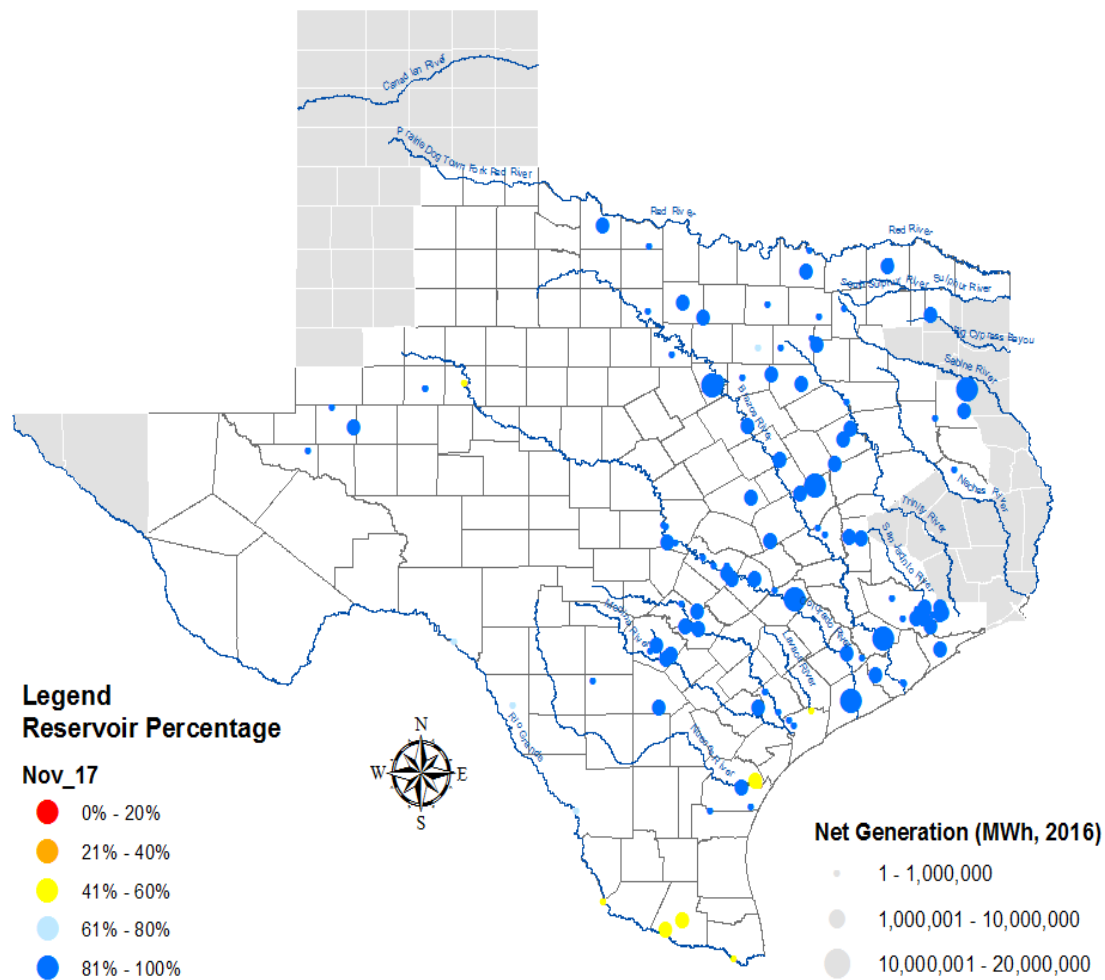
Note: This table lists how many times a constraint has been activated to avoid exceeding a GTC limit, it does not imply an exceedance of the GTC occurred.

*ERCOT replaced the Zorillo to Ajo GTC with a new GTC named “Nelson Sharpe – Rio Hondo.” ERCOT began enforcing the Nelson Sharpe – Rio Hondo GTC on October 30, 2017.

Advisories and Watches – December 2017

- One OCN issued due to potential extreme cold weather system approaching ERCOT region
 - Issued 12/28
- One Advisory issued due to potential extreme cold weather system approaching ERCOT region
 - Issued 12/29
- One Watch issued for the Eagle Pass DC Tie due to a forced extension of a planned outage
 - Issued 12/11
- One Watch issued for the Laredo DC Tie due to a forced extension of a planned outage
 - Issued 12/18
- One Watch issued due to potential extreme cold weather system approaching ERCOT region
 - Issued 12/31
- One Emergency issued for Far West Texas due to Voltage Stability
 - Issued 12/7
- One Emergency issued due to expected cascading condition in the San Antonio Area
 - Issued 12/7

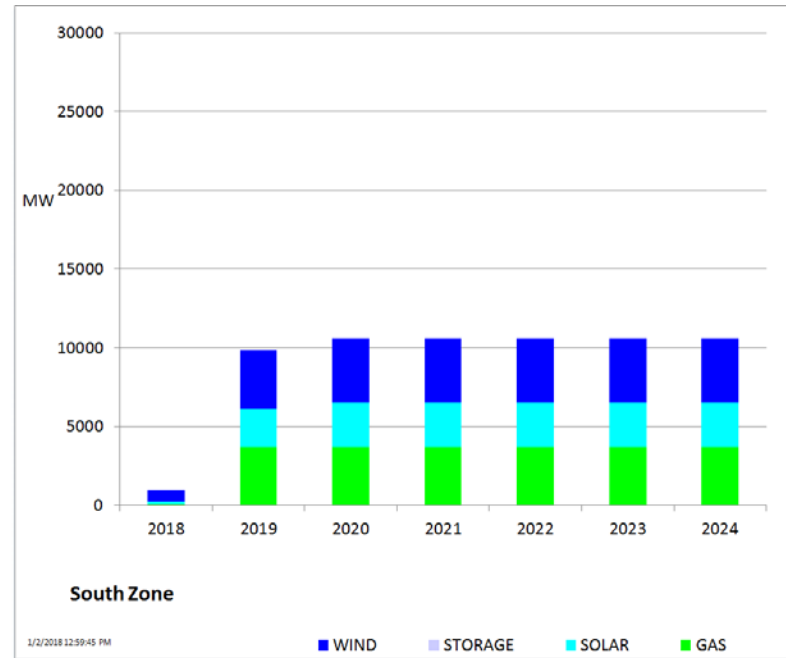
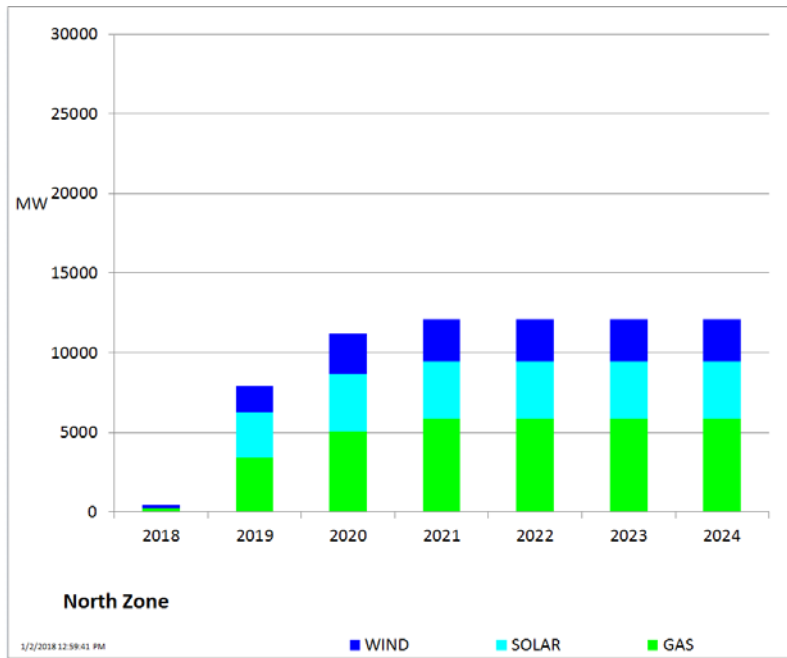
Lake Levels Update – January 1, 2017



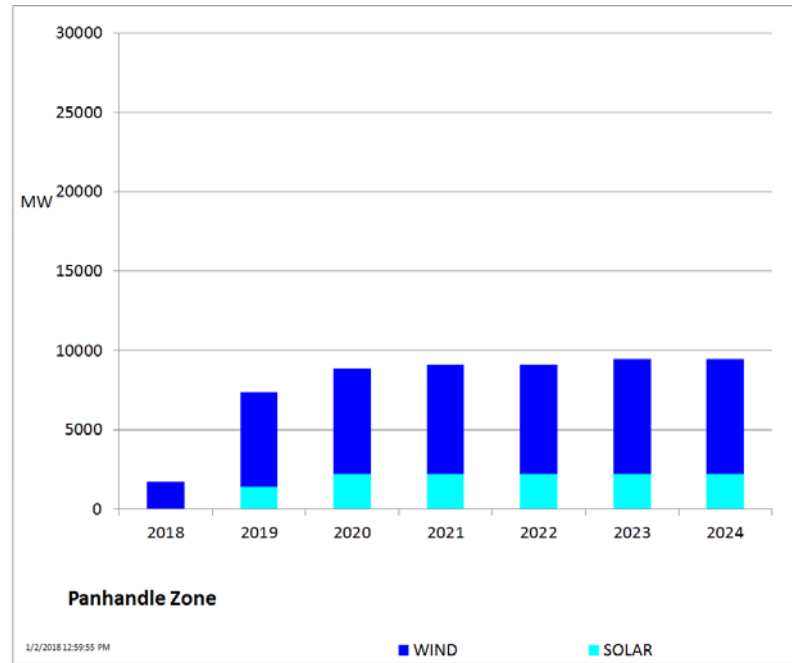
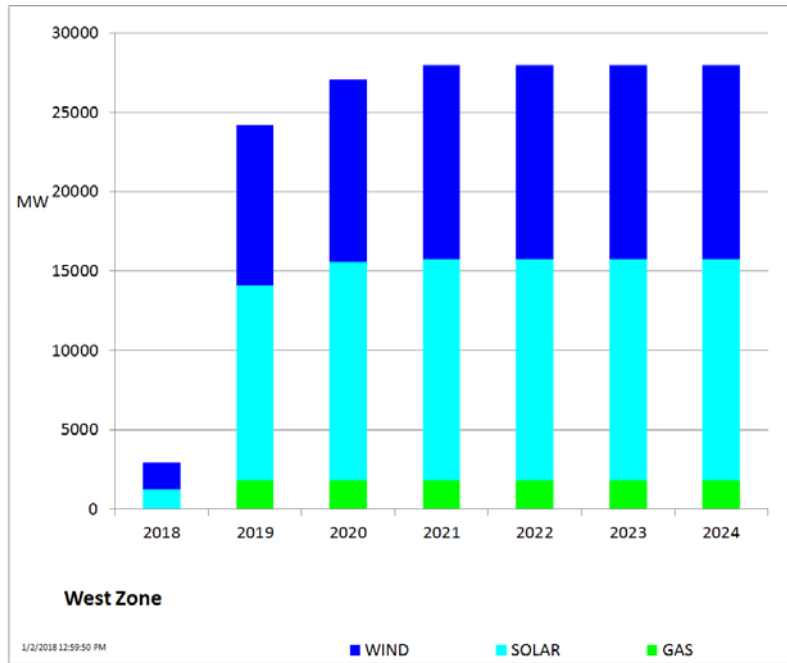
Planning Summary – December 2017

- ERCOT is currently tracking 337 active generation interconnection requests totaling 68,320 MW. This includes 30,198 MW of wind generation.
- ERCOT is currently reviewing proposed transmission improvements with a total cost of \$542.5 million.
- Transmission Projects endorsed in 2017 total \$643.3 million.
- All projects (in engineering, routing, licensing, and construction) total approximately \$7.07 billion (as of October 15, 2017).
- Transmission Projects energized in 2017 total about \$805.4 million (as of October 15, 2017).

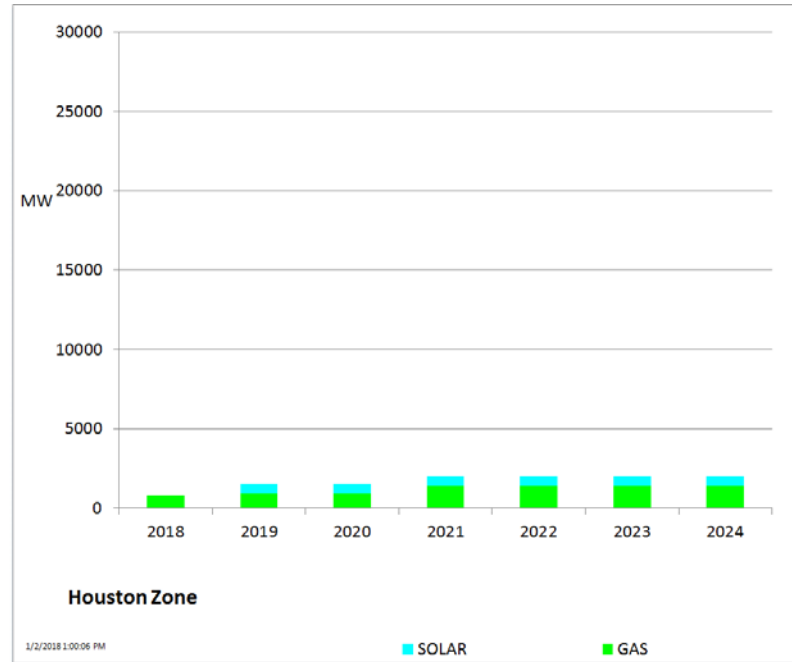
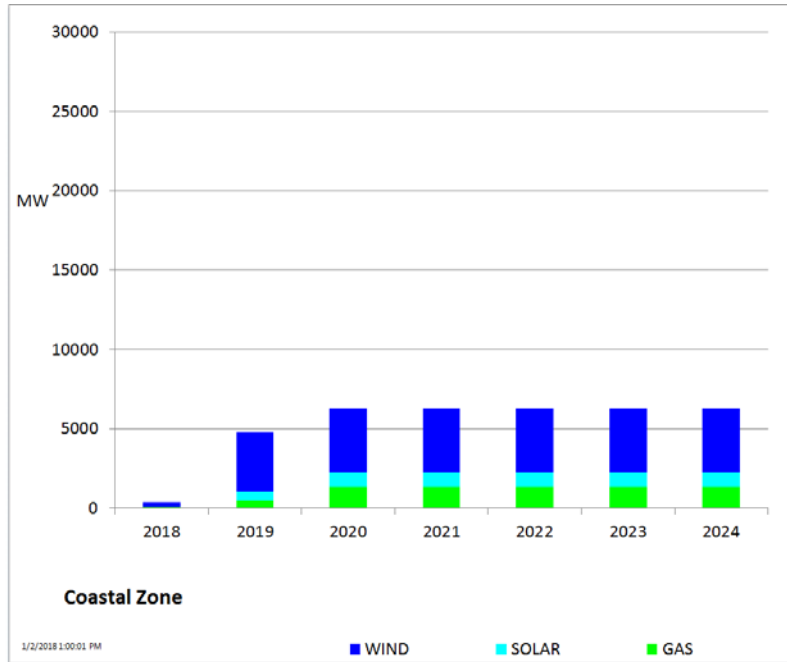
Cumulative MW Capacity of Interconnection Requests by Zone – December 2017



Cumulative MW Capacity of Interconnection Requests by Zone – December 2017

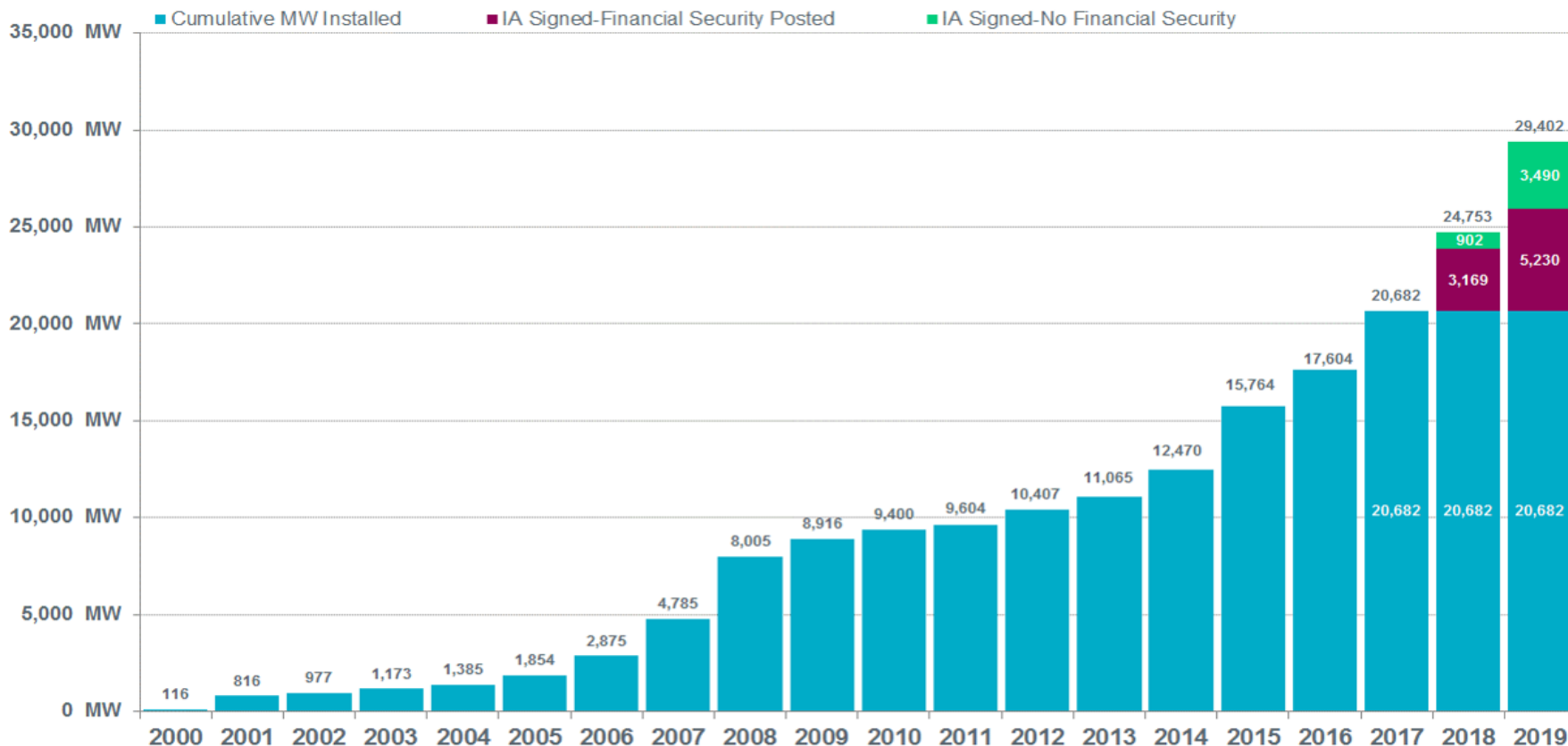


Cumulative MW Capacity of Interconnection Requests by Zone – December 2017



Wind Generation – December 2017

ERCOT Wind Additions by Year (as of 12/31/2017)

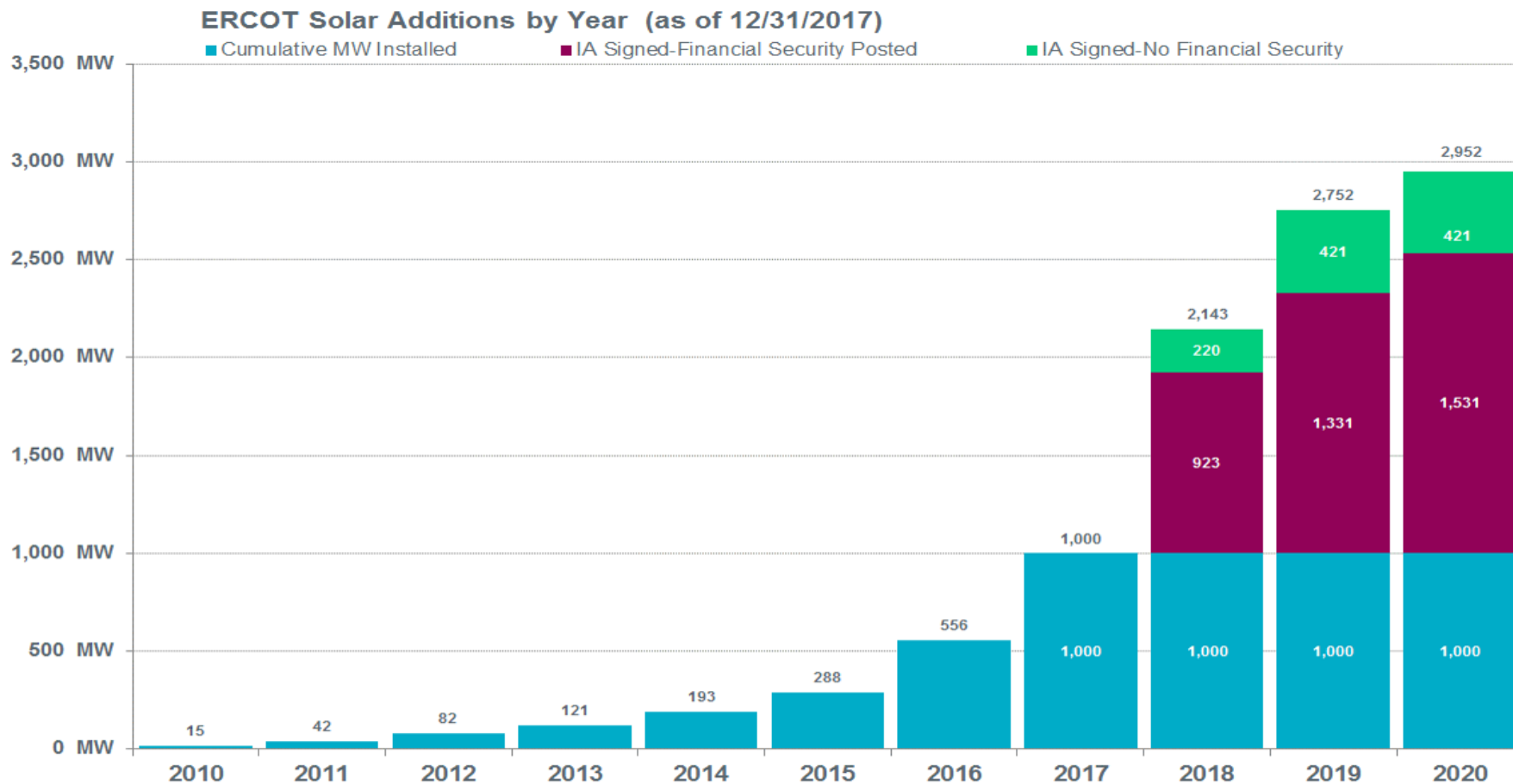


Notes:

- The data presented here is based upon the latest information provided to ERCOT by resource owners and developers and can change without notice.
- Installed capacities for the current year account for changes reported by the facility owners during the reporting month, and will be reflected in subsequent years' totals.
- Installed capacities include only wind facilities that have registered with ERCOT (Those larger than one megawatt and supply power to the ERCOT system.)
- This chart reports annual planned units with projected Commercial Operations Dates throughout the calendar year. In contrast, ERCOT's Capacity, Demand and Reserves (CDR) report shows planned capacity projected to be commercially available on or before the start of the Summer and Winter Peak Load seasons.
- Financial security posted for funding interconnection facilities does not include CREZ security deposits, which are refunded to the Interconnecting Entity when an IA is signed.



Solar Generation – December 2017



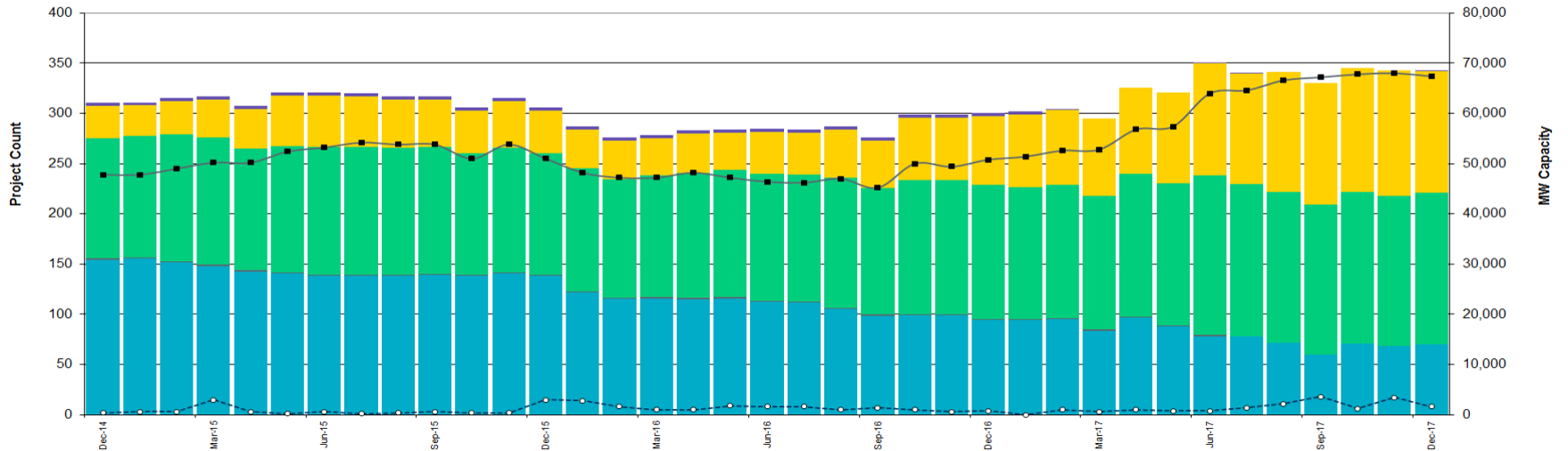
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Generation Interconnection Activity by Fuel – December 2017

■ MW Natural Gas
 ▨ MW Nuclear
 ■ MW Coal
 ■ MW Wind
 ■ MW Solar
 ■ MW Biomass
 ■ MW Other
 —■— Total # of Projects
 - - -○ - - - # of Cancelled Projects

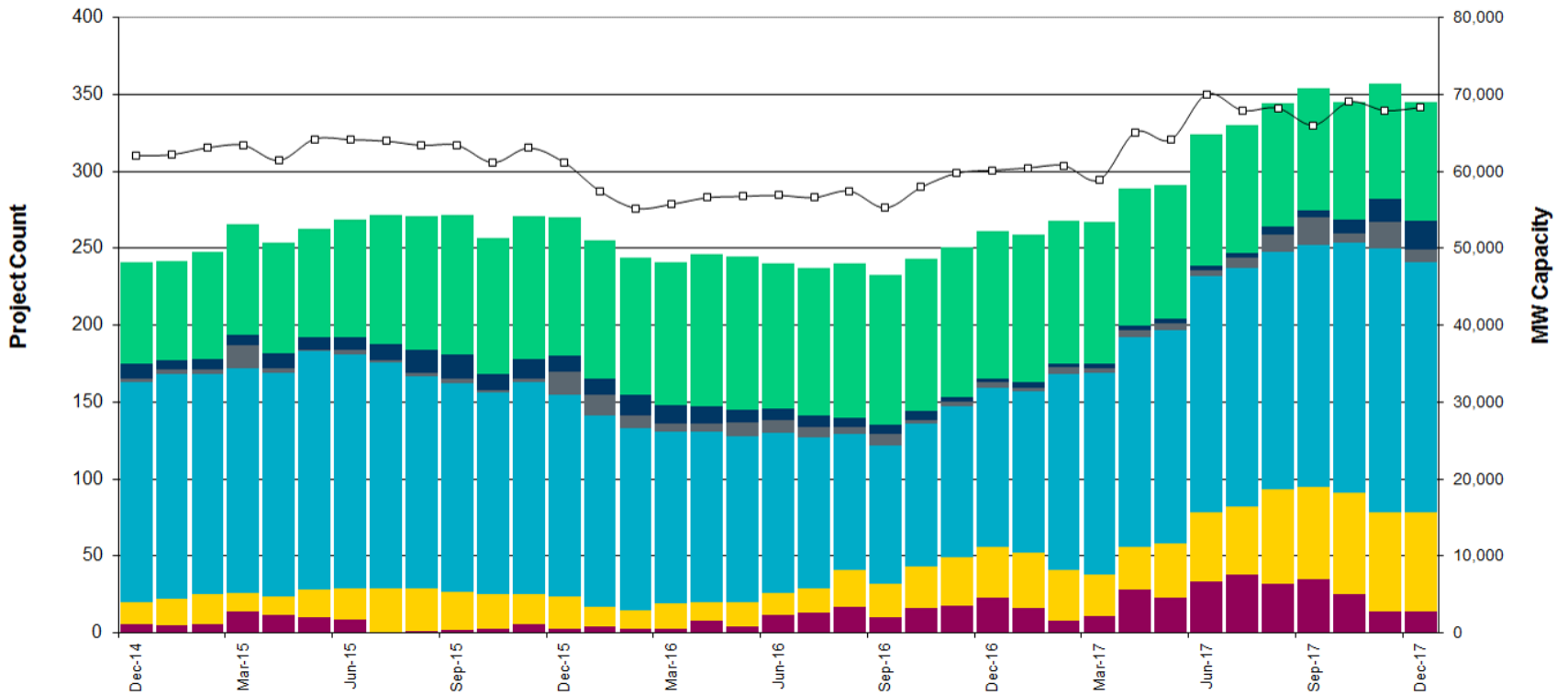
Projects in all phases of interconnection study are reflected in this graph



Generation Interconnection Activity by Project Phase – December 2017

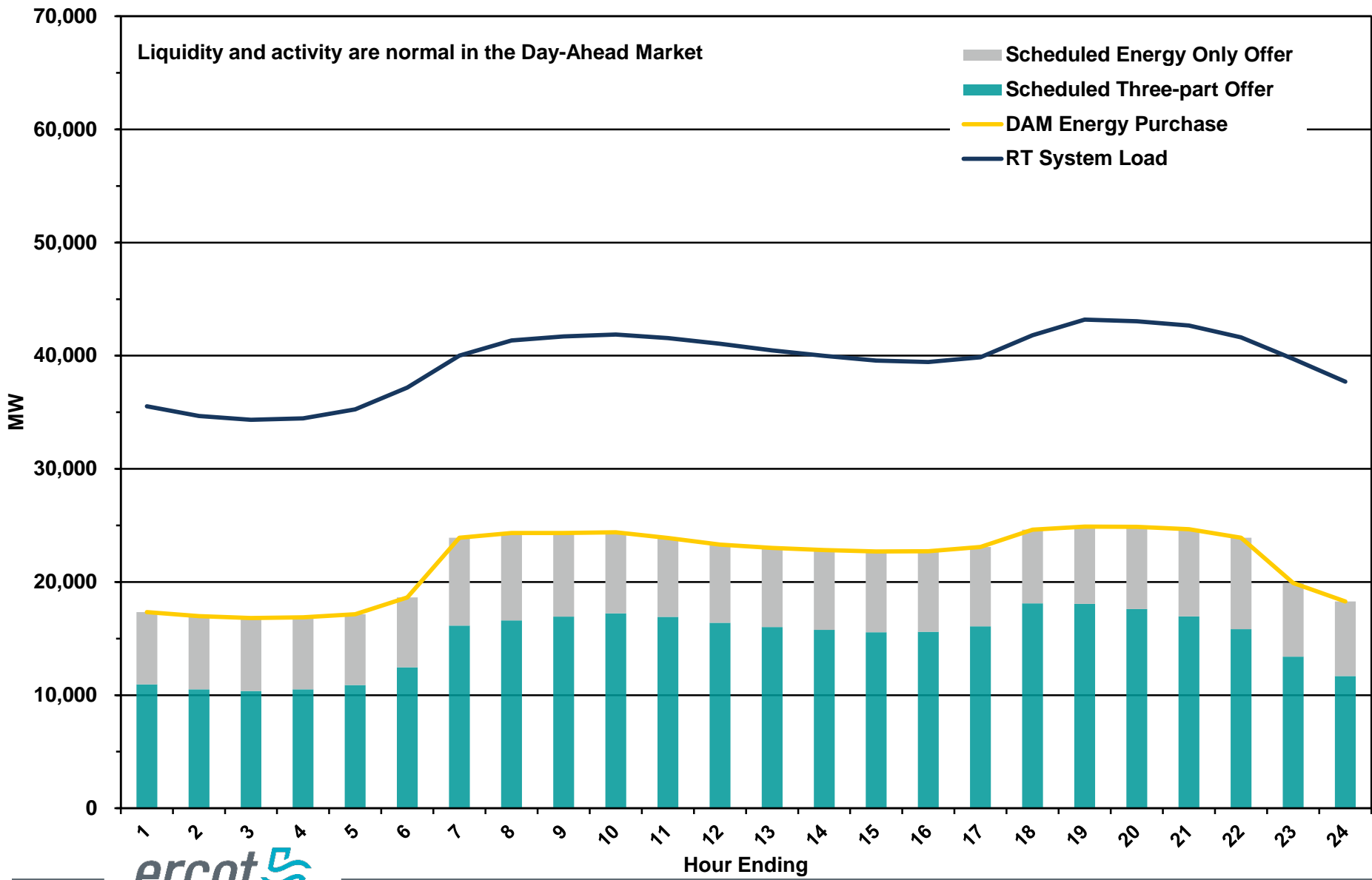
- # Signed Interconnect Agreement
- # Completed Full Study
- # Projects Cancelled
- # in Full Study
- # Screening Study Complete
- # Initial Screening Study
- MW Capacity Under Study *

* Nameplate capacity will change across time due to additional projects, cancellations, expirations, adjustments from study results, and projects being placed in service.

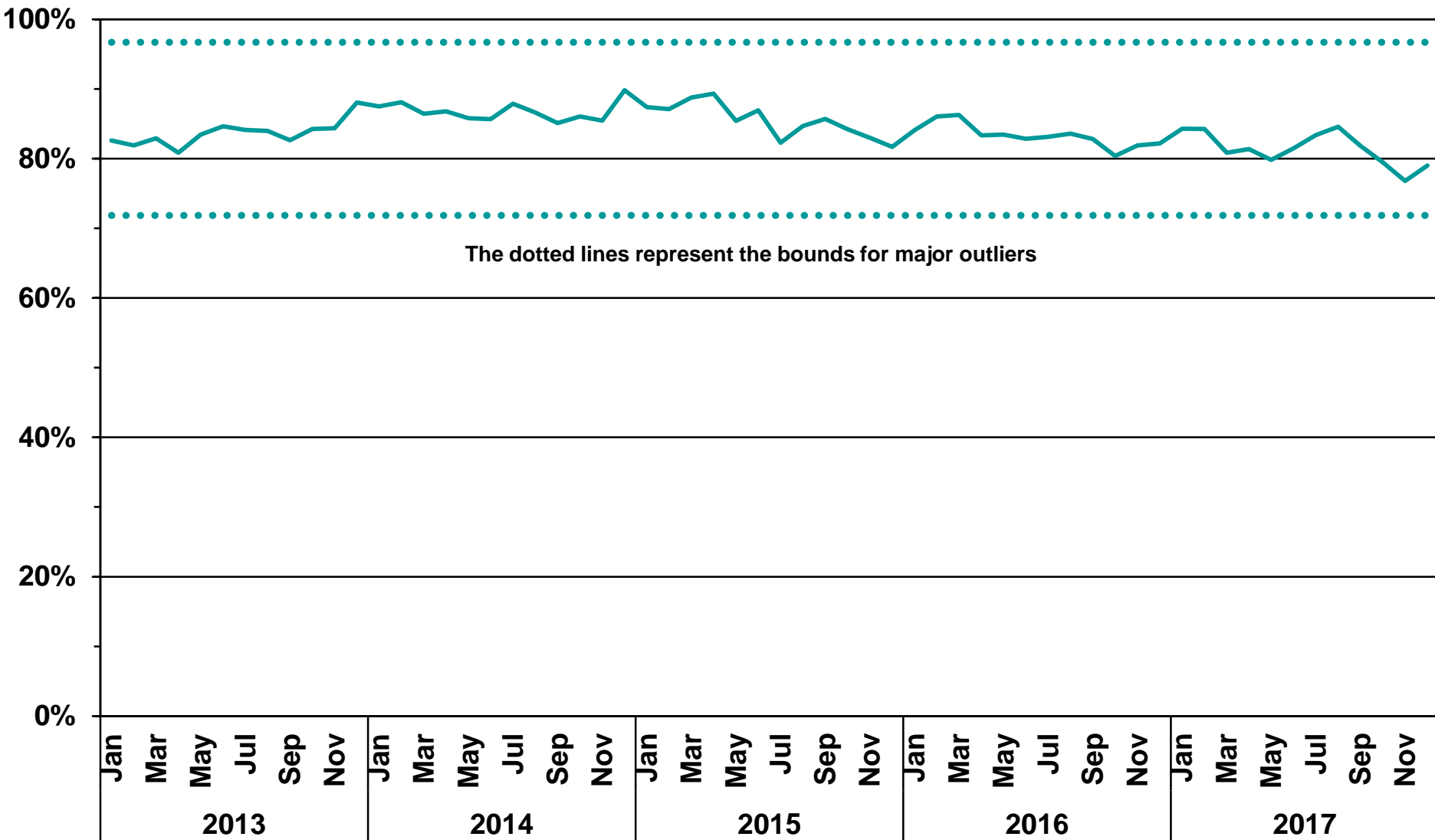


Market Operations

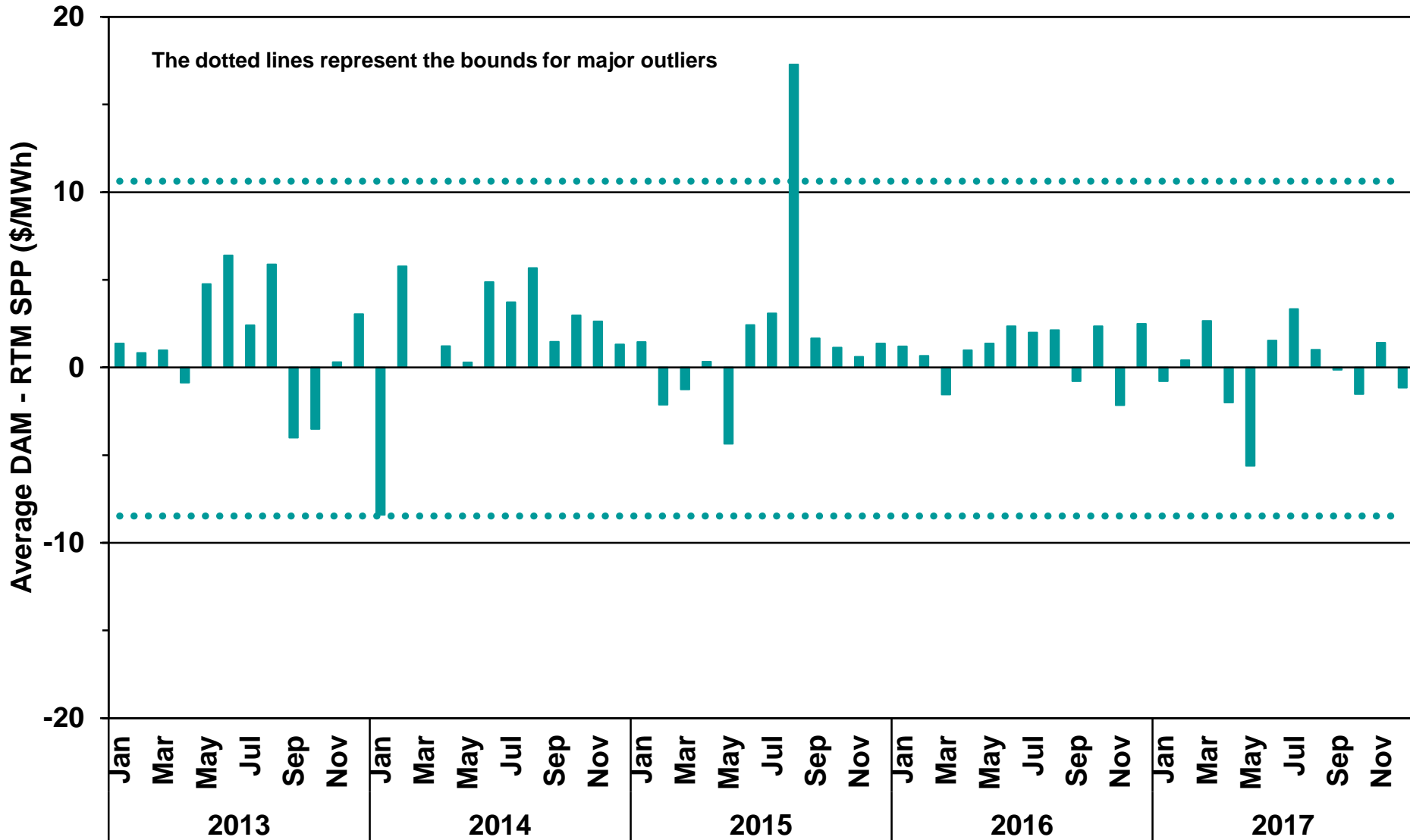
Day-Ahead Schedule (Hourly Average) – December 2017



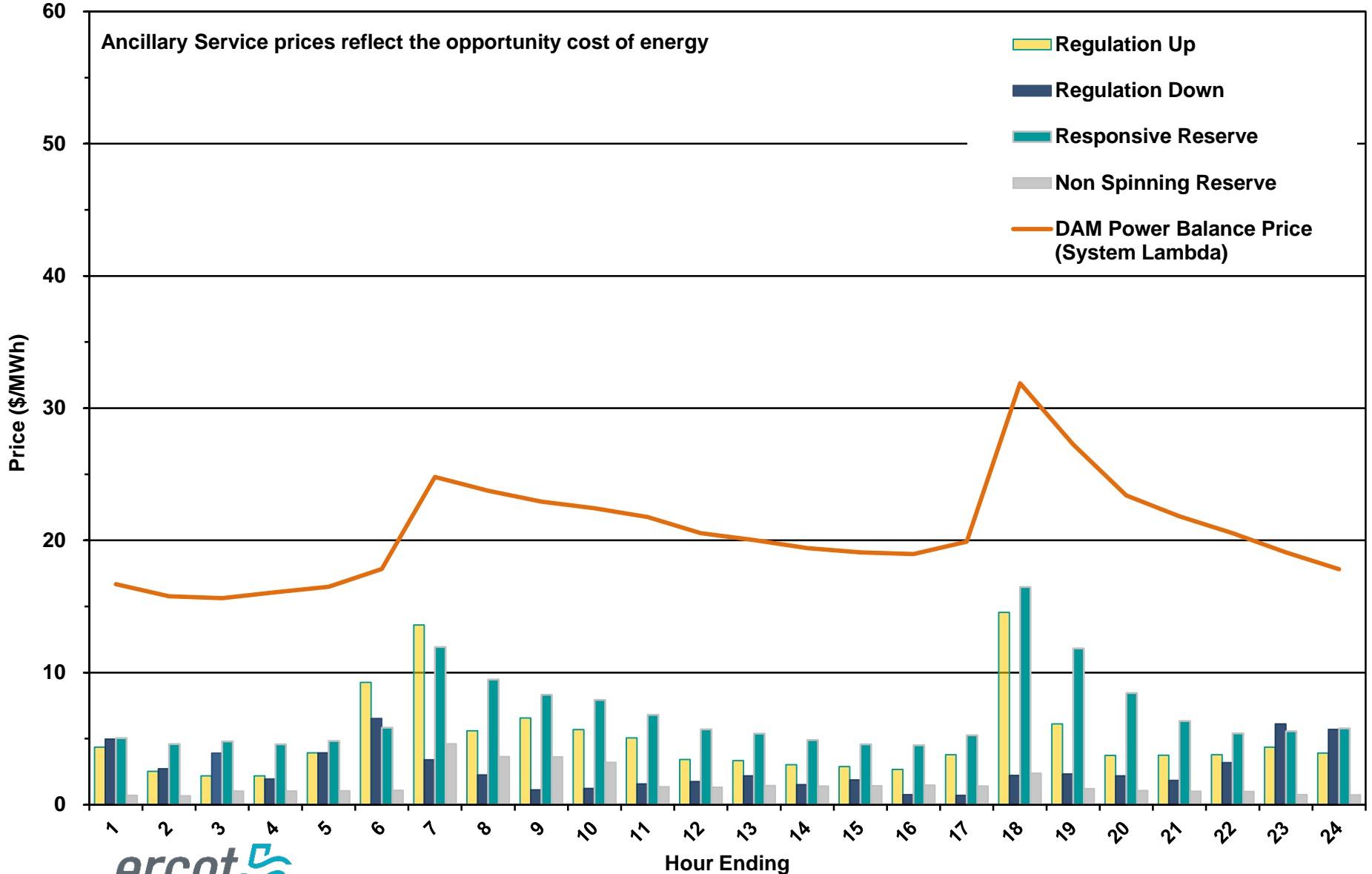
Percentage of Real-Time Load Transacted in the DAM – December 2017



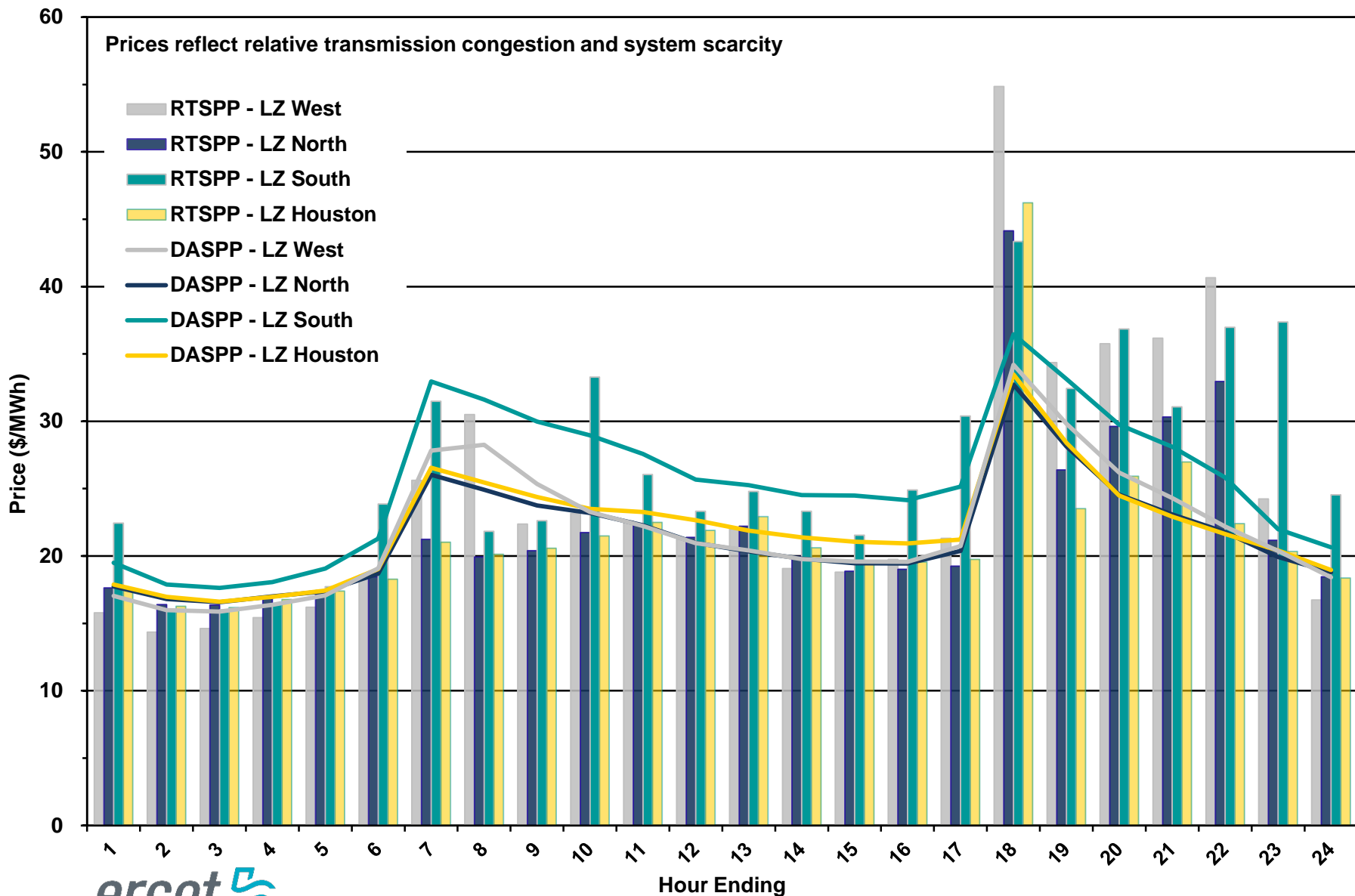
DAM and RTM Price Convergence – December 2017



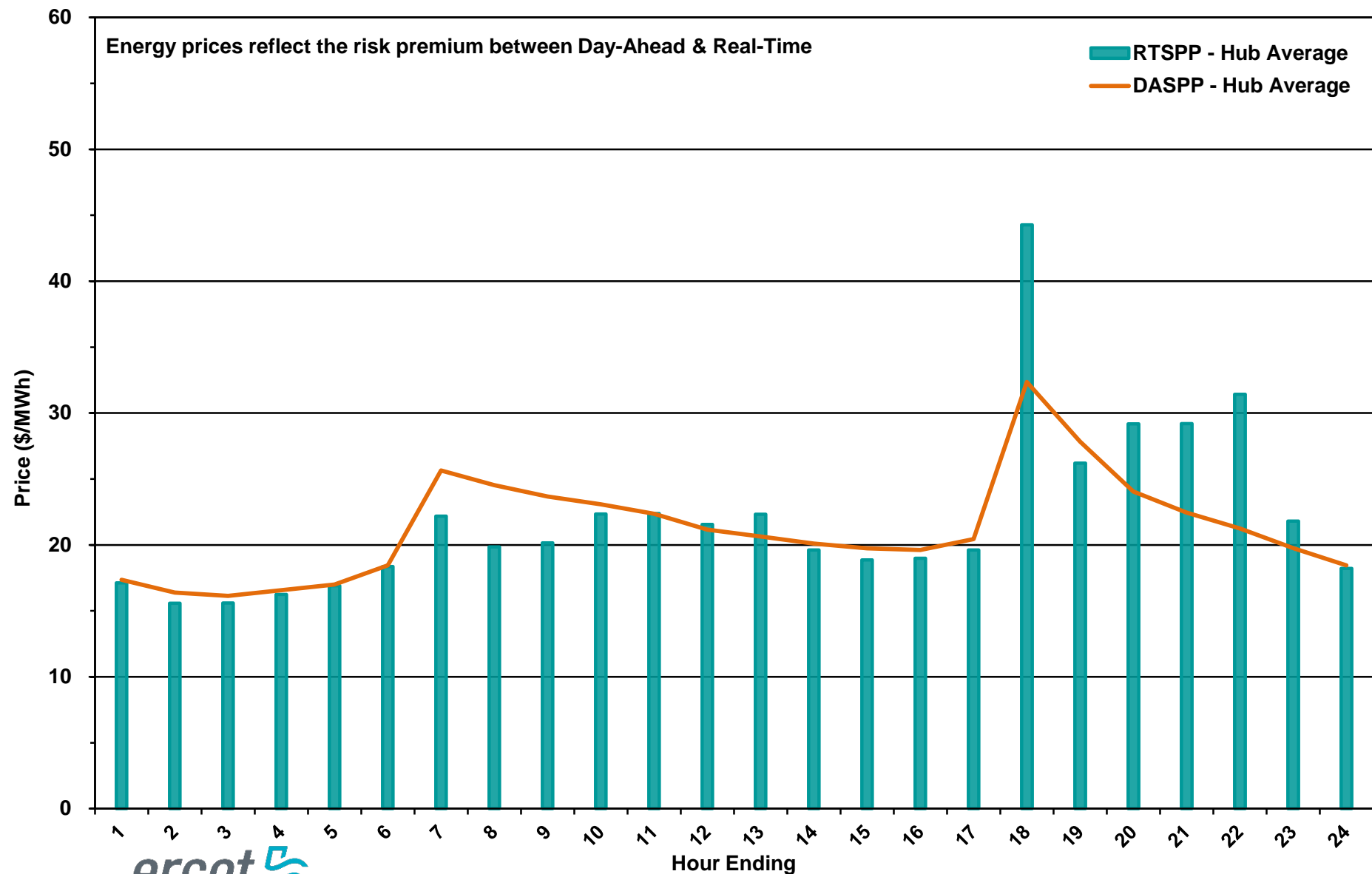
Day-Ahead Electricity and Ancillary Service Prices (Hourly Average) – December 2017



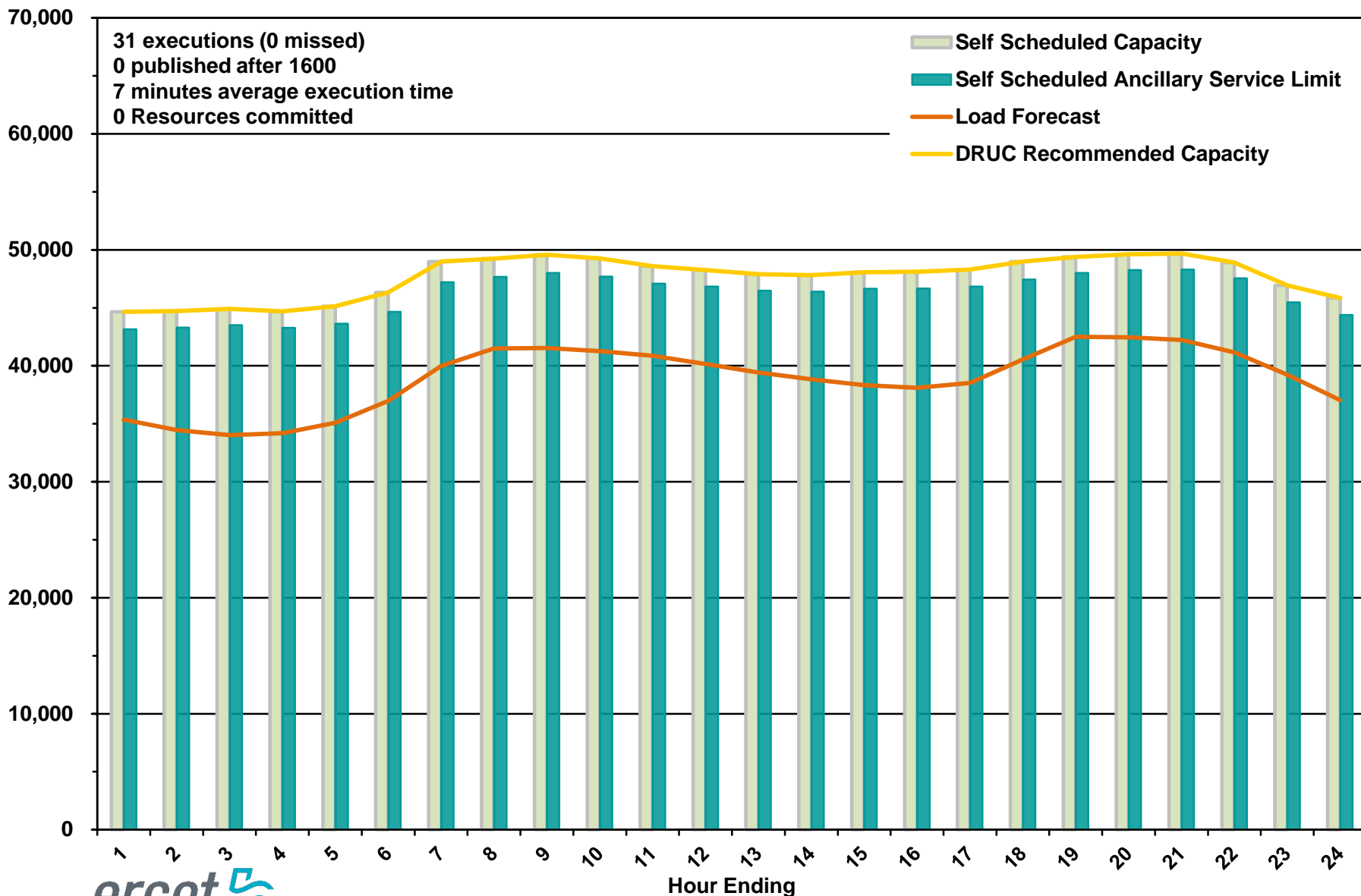
Day-Ahead vs Real-Time Load Zone SPP (Hourly Average) – December 2017



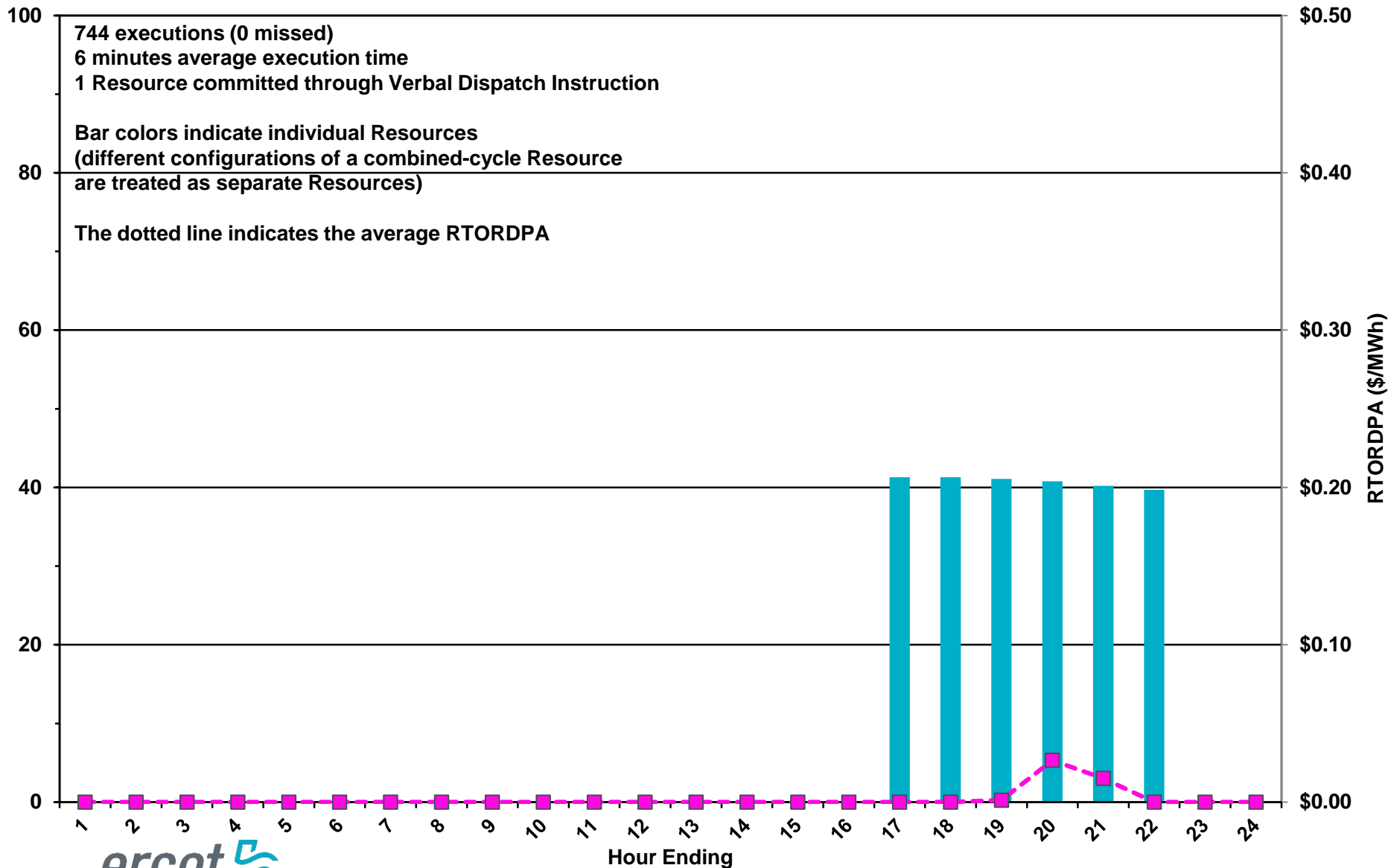
Day-Ahead vs Real-Time Hub Average SPP (Hourly Average) – December 2017



DRUC Monthly Summary (Hourly Average) – December 2017



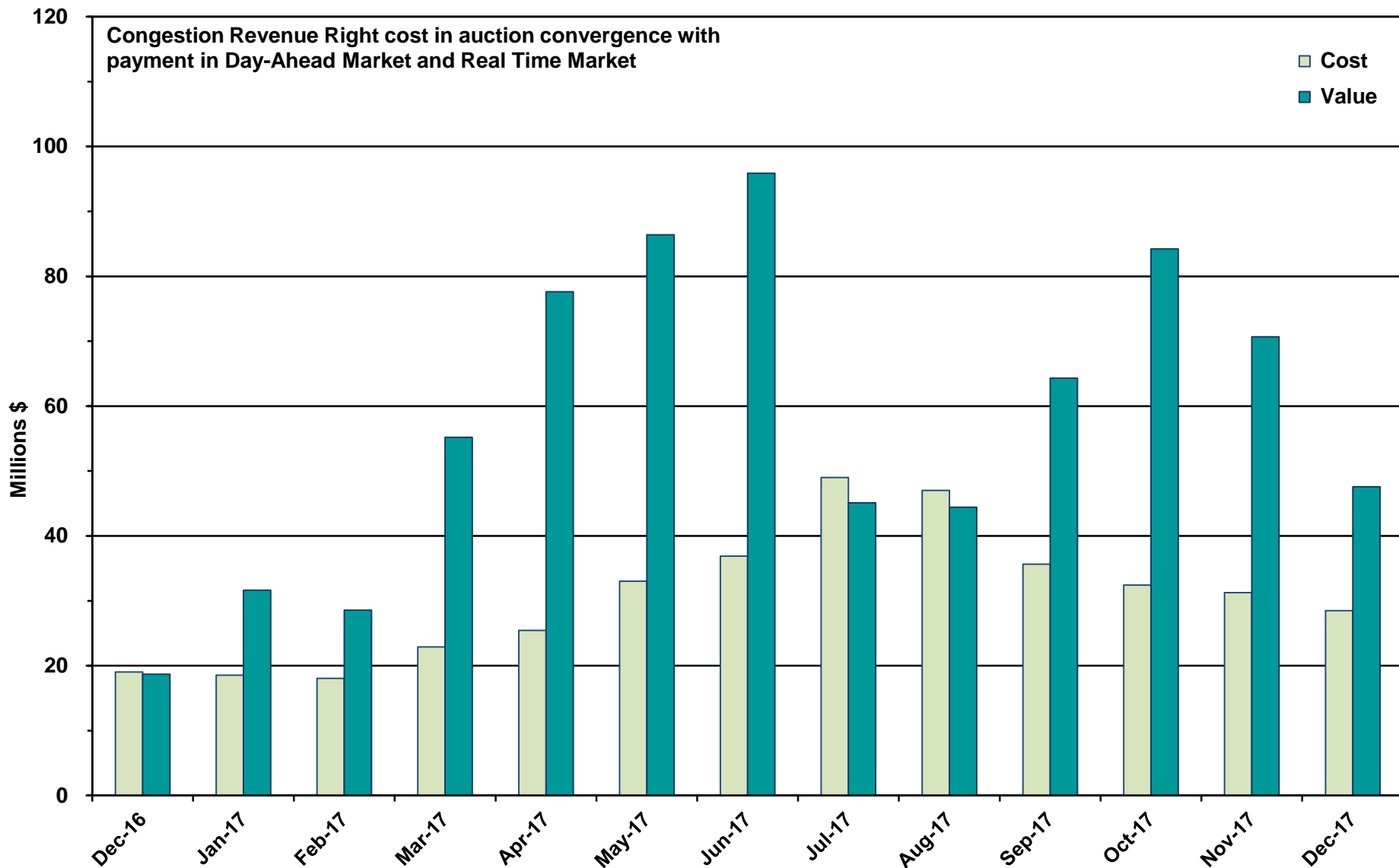
HRUC Monthly Summary and Real Time On-Line Reliability Deployment Price Adder (RTORDPA) (Hourly Average) – December 2017



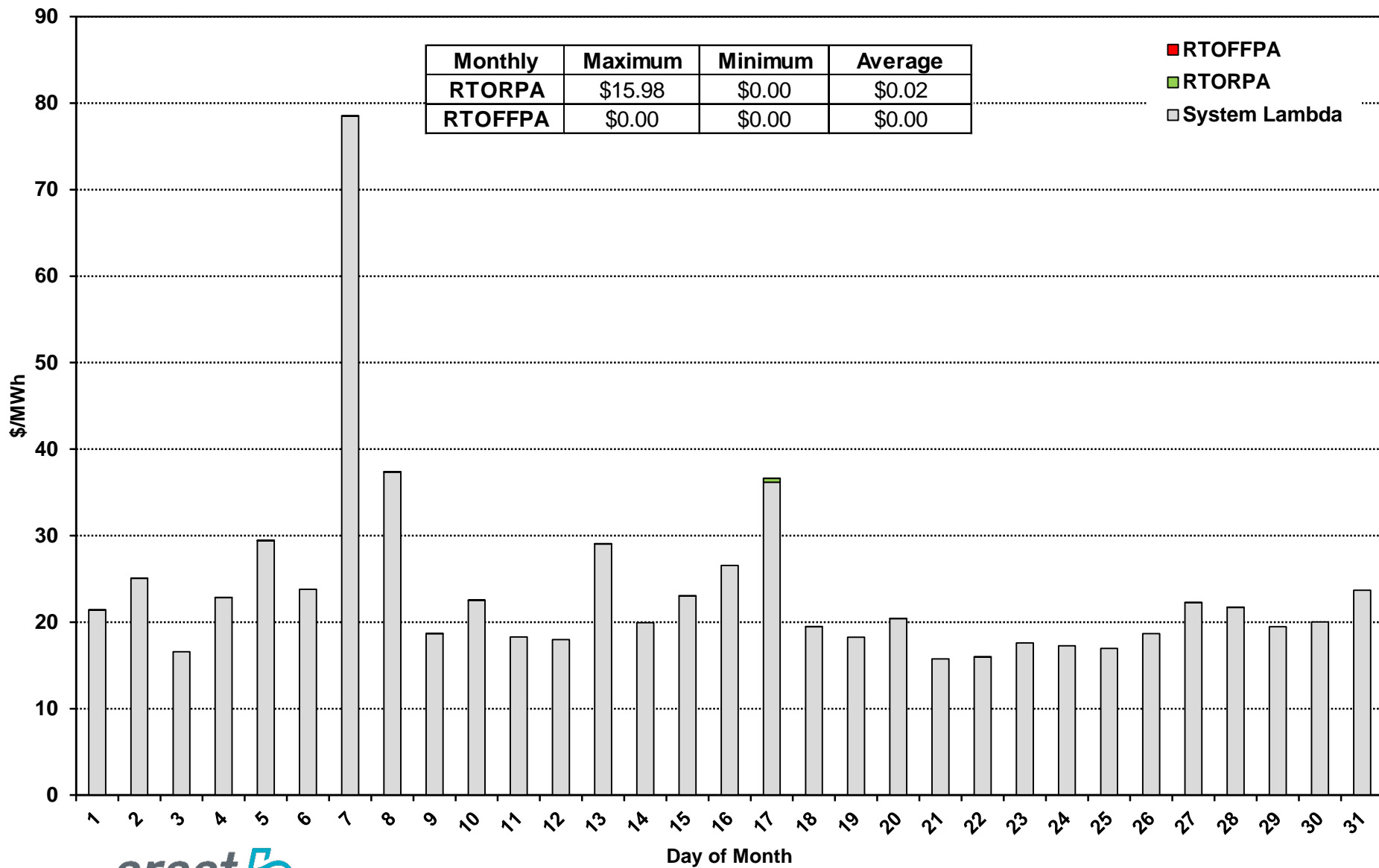
Non-Spinning Reserve Service Deployment – December 2017

Deployment Start Time	Deployment End Time	Deployment Duration (Hours)	Max Deployment (MW)	Reason
12/8/2017 11:54:38 AM	12/8/2017 1:46:20 PM	1.86	44.0	Local congestion

CRR Price Convergence – December 2017



Daily Average System Lambda and ORDC Price Adders – December 2017



ERS Procurement for October 2017 – January 2018

	TP1	TP2	TP3	TP4	TP5	TP6
Non Weather-Sensitive ERS-10 MW	203.909	215.019	212.619	207.967	203.656	193.926
Non Weather-Sensitive ERS-30 MW	631.590	676.206	659.791	652.997	628.695	561.303
Weather-Sensitive ERS-10 MW	0	0	0	0	0	0
Weather-Sensitive ERS-30 MW	5.300	0	3.700	5.300	0	0
Total MW Procured	840.799	891.225	876.110	866.264	832.351	755.229
Clearing Price	\$17.57	\$6.34	\$2.20	\$17.18	\$18.29	\$2.53

*Weather-Sensitive Time Periods for Oct17Jan18 are TP1, TP3 and TP4.

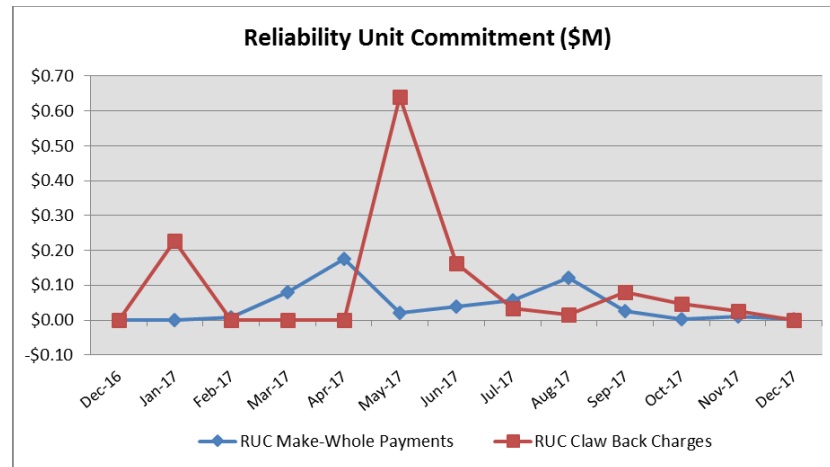
Time Period

Time Period Hours

- Time Period 1 Hours Ending 0600 - 0800 (5:00:00 a.m. to 8:00:00 a.m.) Monday through Friday except ERCOT Holidays.
- Time Period 2 Hours Ending 0900 - 1300 (8:00:00 a.m. to 1:00:00 p.m.) Monday through Friday except ERCOT Holidays.
- Time Period 3 Hours Ending 1400 - 1600 (1:00:00 p.m. to 4:00:00 p.m.) Monday through Friday except ERCOT Holidays.
- Time Period 4 Hours Ending 1700 - 1900 (4:00:00 p.m. to 7:00:00 p.m.) Monday through Friday except ERCOT Holidays.
- Time Period 5 Hours Ending 2000 - 2200 (7:00:00 p.m. to 10:00:00 p.m.) Monday through Friday except ERCOT Holidays.
- Time Period 6 All other hours

Reliability Services – December 2017

Reliability Unit Commitment (RUC)	\$ in Millions
RUC Make-Whole Payments	\$0.00
RUC Clawback Charges	\$0.00
RUC Commitment Settlement	\$0.00
RUC Capacity Short Charges	\$0.00
RUC Make-Whole Uplift	\$0.00
RUC Commitment Cost Allocation	\$0.00
RUC Decommitment Payments	\$0.00



RUC Make-Whole Payments were \$0.00M in December 2017.
RUC Clawback Charges were \$0.00M.

There was \$0.00M allocated directly to load in December 2017, compared to:

- \$0.02M in November 2017
- \$0.00M in December 2016

Capacity Services – December 2017

Capacity Services	\$ in Millions
Regulation Up Service	\$1.22
Regulation Down Service	\$0.59
Responsive Reserve Service	\$10.37
Non-Spinning Reserve Service	\$2.02
Black Start Service	\$0.62
Voltage Services - Reactive Power	\$0.00
Voltage Services - Lost Opportunity	\$0.00
Total Charges	\$14.82

Capacity Services costs decreased from last month and decreased from December 2016.

December 2017 cost was \$14.82M, compared to:

- A charge of \$24.42M in November 2017
- A charge of \$36.57M in December 2016

Energy Settlement – December 2017

Day-Ahead Market Energy Settlement	\$ in Millions
Energy Purchases	\$364.30
Point to Point Obligation Purchases	\$38.86
Energy Sales	(\$354.96)
Day-Ahead Congestion Rent	\$48.20
Day-Ahead Market Make-Whole Payments	(\$0.66)

Day-Ahead Market energy settlement activity increased from last month and decreased from December 2016.

Real-Time Market energy settlement activity increased from last month and decreased from December 2016.

Real-Time Market Energy Settlement	\$ in Millions
Energy Imbalance at a Resource Node	(\$338.81)
Energy Imbalance at a Load Zone	\$547.16
Energy Imbalance at a Hub	(\$167.57)
Real Time Congestion from Self Schedules	\$0.35
Block Load Transfers and DC Ties	(\$0.99)
Impact to Revenue Neutrality	\$40.12
Emergency Energy Payments	(\$0.19)
Base Point Deviation Charges	\$0.17
Real-Time Metered Generation (MWh in millions)	29.28

Congestion Revenue Rights (CRR) – December 2017

	\$ in Millions
Annual Auction	(\$16.22)
Monthly Auction	(\$12.26)
Total Auction Revenue	(\$28.48)
Day-Ahead CRR Settlement	(\$47.57)
Day-Ahead CRR Short-Charges	\$1.81
Day-Ahead CRR Short-Charges Refunded	(\$1.81)
Real-Time CRR Settlement	\$0.00
Real-Time CRR Short-Charges	\$0.00
Real-Time CRR Short-Charges Refunded	\$0.00
Total CRR Funding	(\$47.57)
Day-Ahead Point to Point Obligations Settlement	\$38.86
Real-Time Point to Point Obligation Settlement	(\$47.30)
Net Point to Point Obligation Settlement	(\$8.44)

Congestion Revenue Rights settlement payments were fully funded and excess funds were paid to load.

Point to Point Obligations settled with a net credit of \$8.44M compared to a net charge of \$5.26M last month.

CRR Balancing Account Fund – December 2017

CRR Balancing Account Fund	\$ in Millions
Beginning Balance for the Month	\$10.00
CRR Balancing Account Credit Total	\$2.43
CRR PTP Option Award Charges	\$0.04
Day-Ahead CRR Short-Charges Refunded	(\$1.81)
Load Allocated CRR Amount	(\$0.67)
Total Fund Amount	\$10.00

ERCOT implemented the rolling CRR Balancing Account Fund beginning with Operating Month December 2014.

As of December 2017, the CRR Balancing Account Fund was at \$10M and excess funds of \$0.67M were allocated to Load.

Revenue Neutrality – December 2017

Revenue Neutrality Settlement

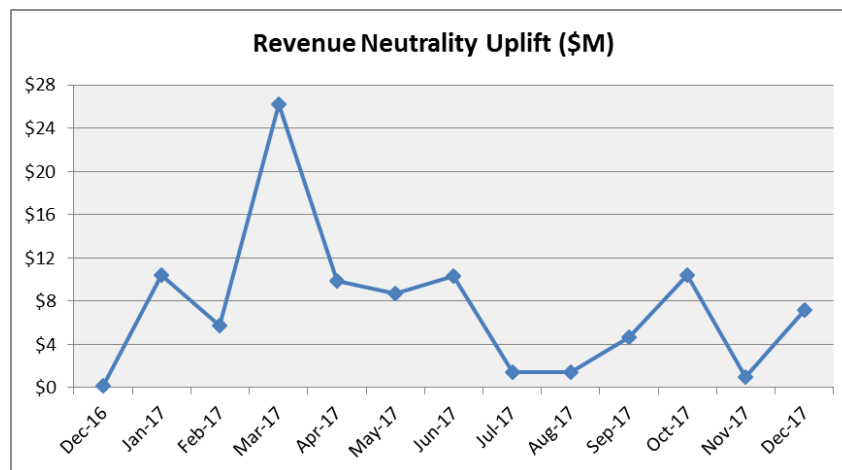
	\$ in Millions
Real-Time Point to Point Obligation Settlement	(\$47.30)
Real-Time Point to Point Options and Options with Refund Settlement	\$0.00
Real-Time Energy Imbalance Settlement	\$40.77
Real-Time Congestion from Self-Schedules Settlement	\$0.35
DC Tie & Block Load Transfer Settlement	(\$0.99)
Charge to Load	\$7.18

Revenue Neutrality charge to load increased compared to last month and increased compared to December 2016.

December 2017 was a charge of \$7.18M, compared to:

- \$1.03M charge in November 2017
- \$0.18M charge in December 2016

Revenue Neutrality Uplift (\$M)



Real-Time Ancillary Service Imbalance (ORDC) – December 2017

Real-Time Ancillary Service Imbalance	\$ in Thousands
Load Allocated AS Imbalance Revenue Neutrality Amount	\$16.98
Load Allocated Reliability Deployment AS Imbalance Revenue Neutrality Amount	\$4.48
Total Charges	\$21.46
Real-Time AS Imbalance Amount	(\$16.98)
Real-Time Reliability Deployment AS Imbalance Amount	(\$4.48)
Total Payments	(\$21.46)

The Real-Time Ancillary Service Imbalance charge to load decreased compared to last month and decreased compared to December 2016.

December 2017 had a charge to load of \$21K, compared to:

- A charge of \$46K in November 2017
- A charge of \$62K in December 2016

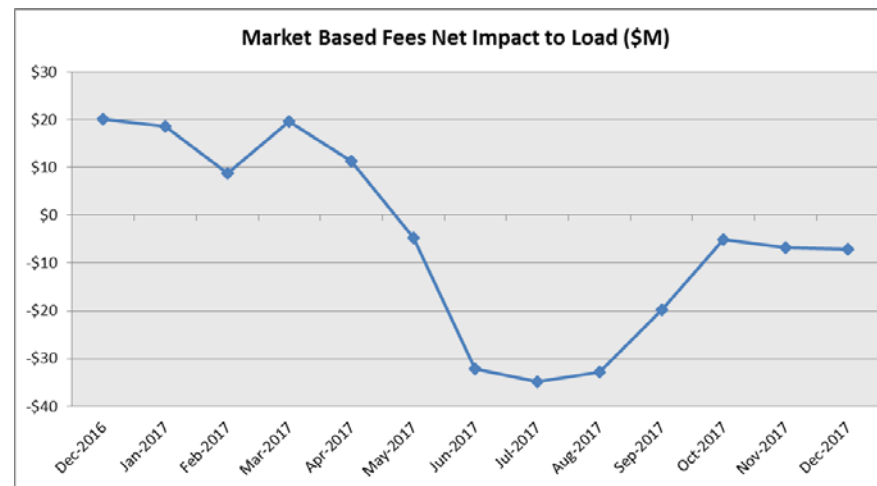
Net Allocation to Load – December 2017

Market-Based Allocation	\$ in Millions
CRR Auction Revenue Disbursement Settlement	(\$28.48)
Balancing Account Proceeds Settlement	(\$0.67)
Net Reliability Unit Commitment Settlement	\$0.00
Ancillary Services Settlement	\$14.82
Reliability Must Run Settlement (incl. RMR for Capacity)	\$0.00
Real-Time Revenue Neutrality Settlement	\$7.18
Emergency Energy Settlement	\$0.19
Base Point Deviation Settlement	(\$0.17)
ORDC Settlement	\$0.02
Total	(\$7.11)
Fee Allocation	
ERCOT Administrative Fee Settlement	\$16.30
Net Allocated to Load	\$9.19

The net allocation to Load increased from last month and decreased from December 2016.

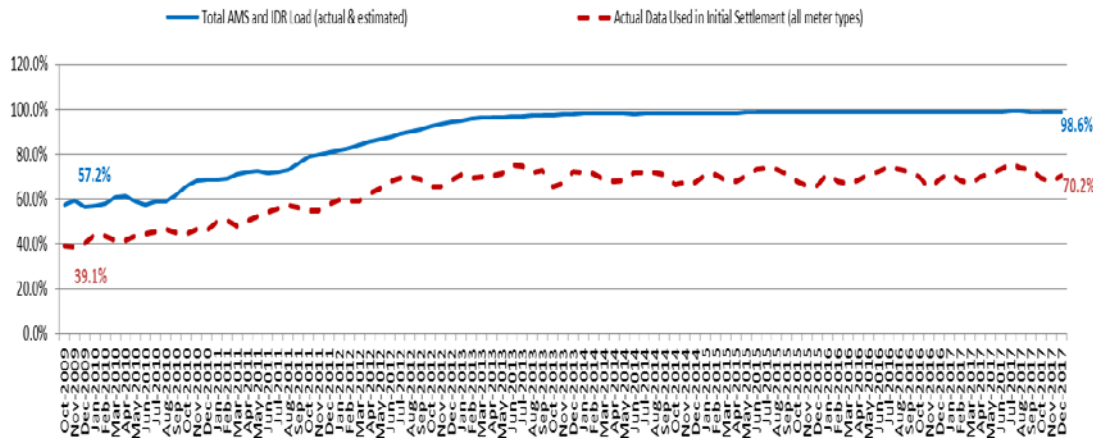
December 2017 was a charge of \$9.19M, compared to:

- A charge of \$7.84M in November 2017
- A charge of \$35.43M in December 2016



Advanced Meter Settlement Impacts – December 2017

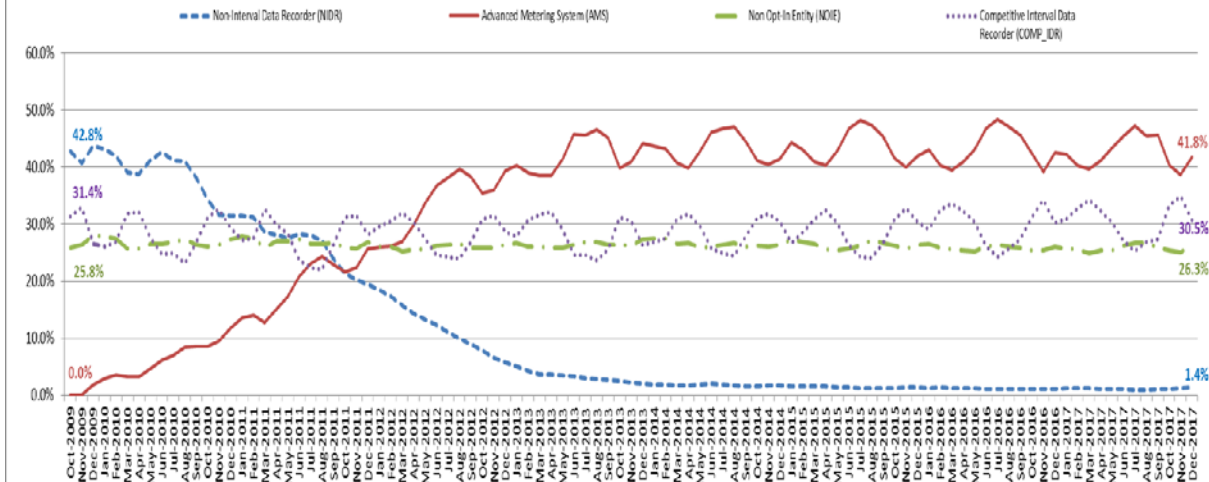
Percent Actual/Percent Interval Data Recorder (IDR)



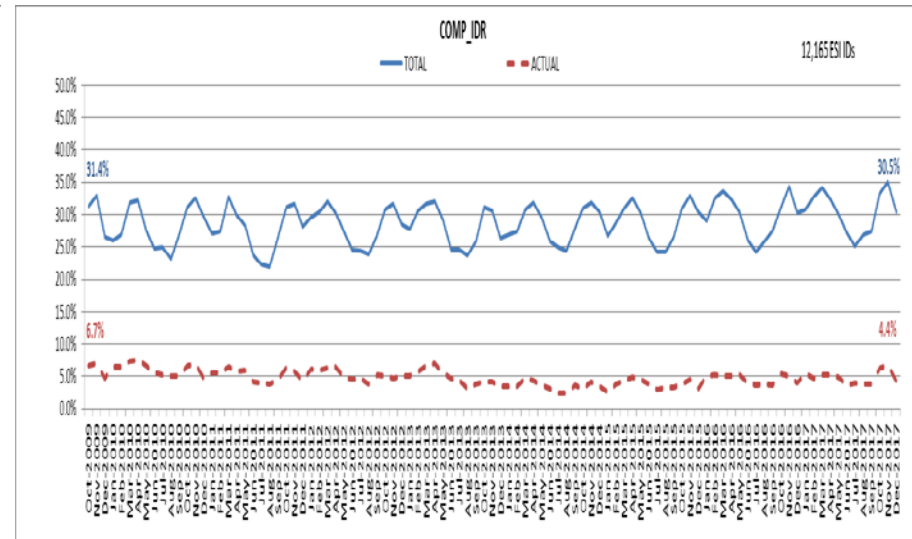
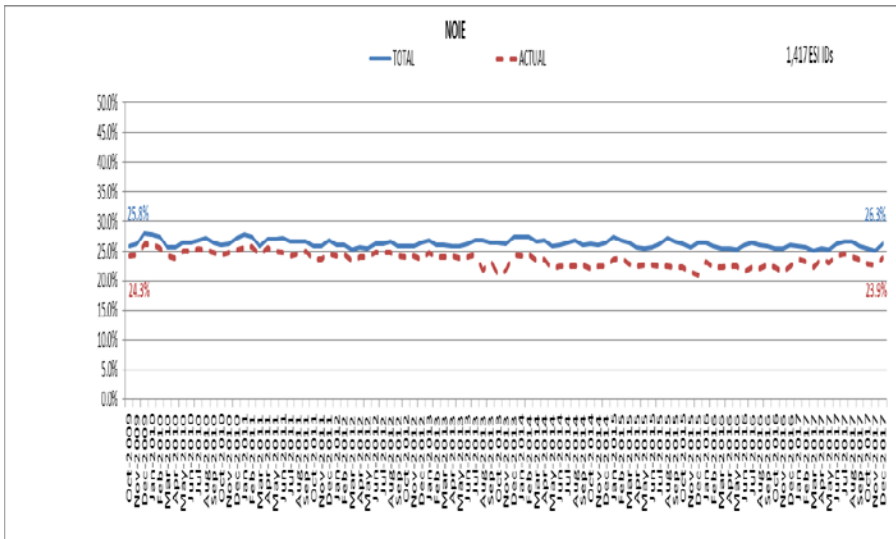
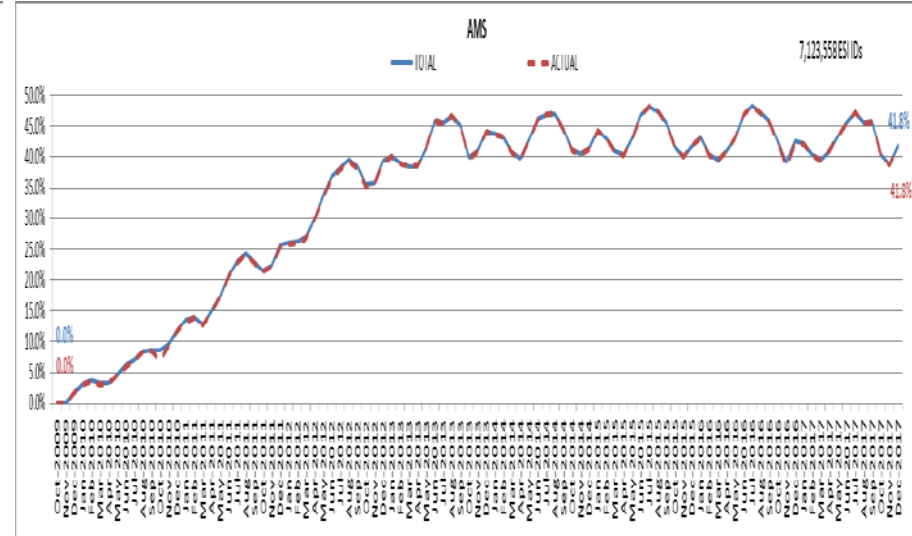
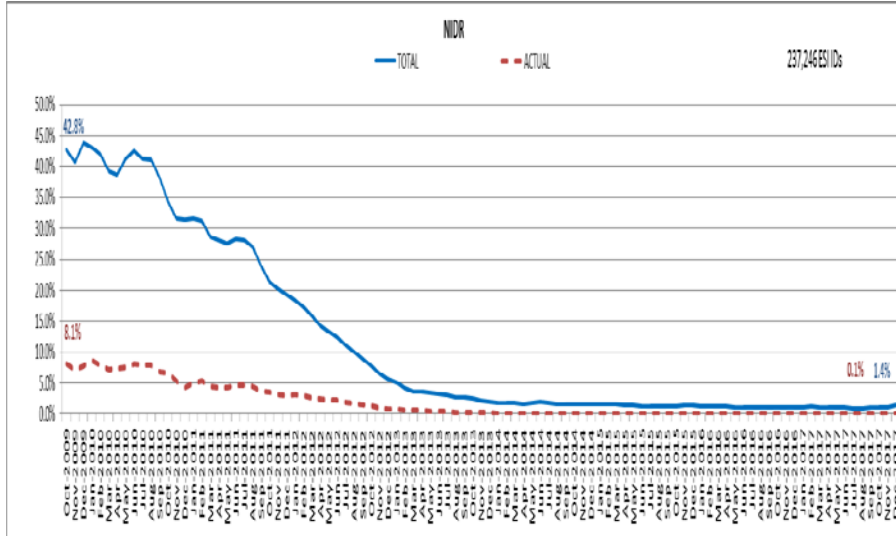
December 2017: At month end, settling 7.1M ESIDs using Advanced Meter data.

December 2017: 98.6% of the load in ERCOT is settled with 15-min interval data (AMS, Competitive IDR, and NOIE IDR).

Percent of Load by Meter Type



ERCOT Wide Load Volumes by Meter Type – INITIAL Settlement – December 2017

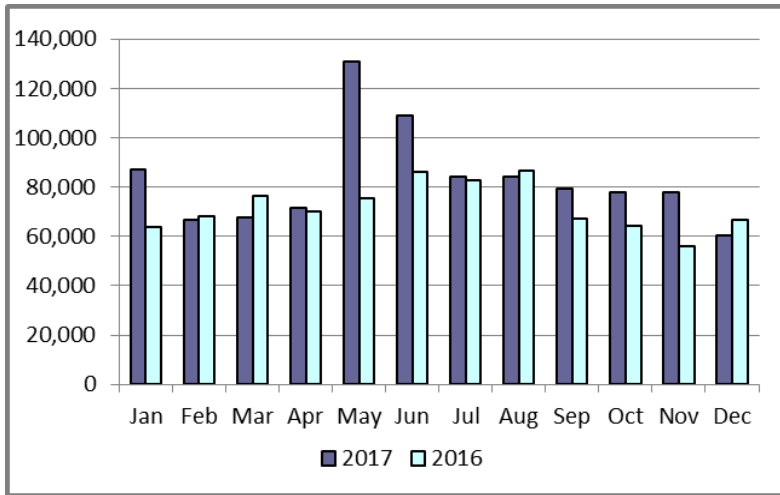


Retail Transaction Volumes – Summary – December 2017

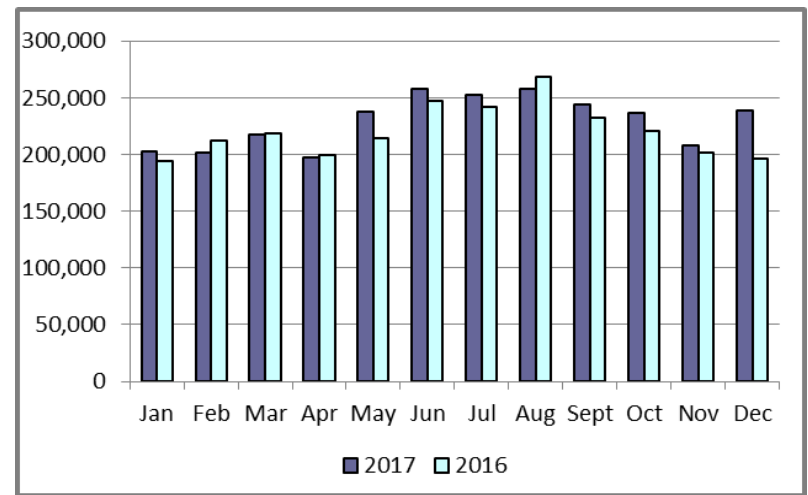
Transaction Type	Year-To-Date		Transactions Received	
	December 2017	December 2016	December 2017	December 2016
Switches	997,452	864,357	60,560	66,556
Acquisition	0	0	0	0
Move - Ins	2,753,368	2,647,635	238,340	196,236
Move - Outs	1,422,322	1,337,045	144,987	96,289
Continuous Service Agreements (CSA)	497,811	558,965	47,725	38,884
Mass Transitions	0	0	0	0
Total	5,670,953	5,408,002	491,612	397,965

Retail Transaction Volumes – Summary – December 2017

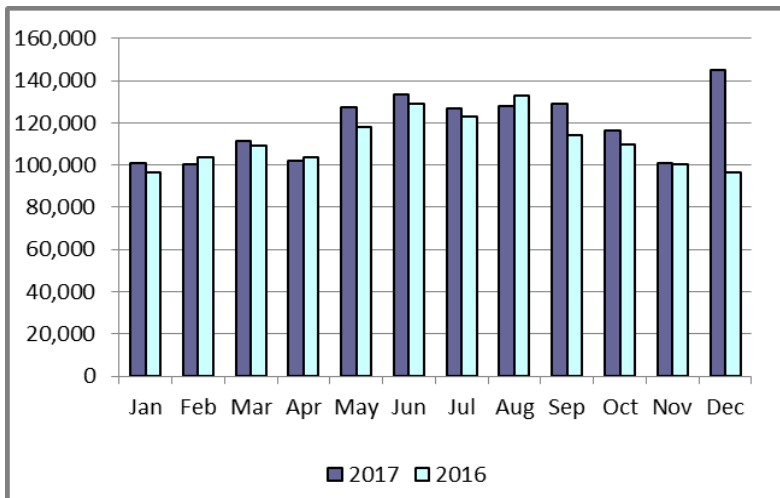
Switches/Acquisitions



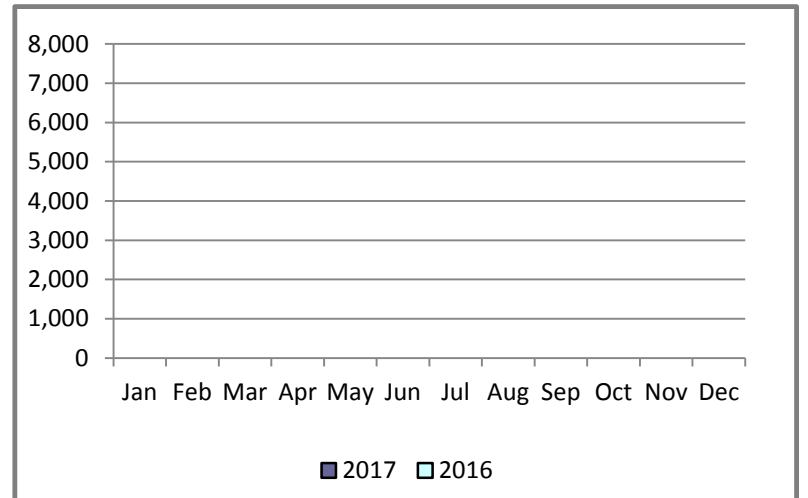
Move-Ins



Move-Outs

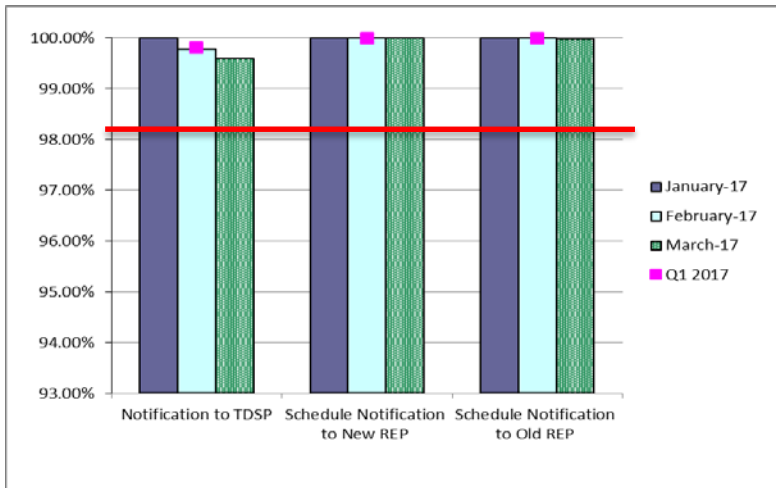


Mass Transition

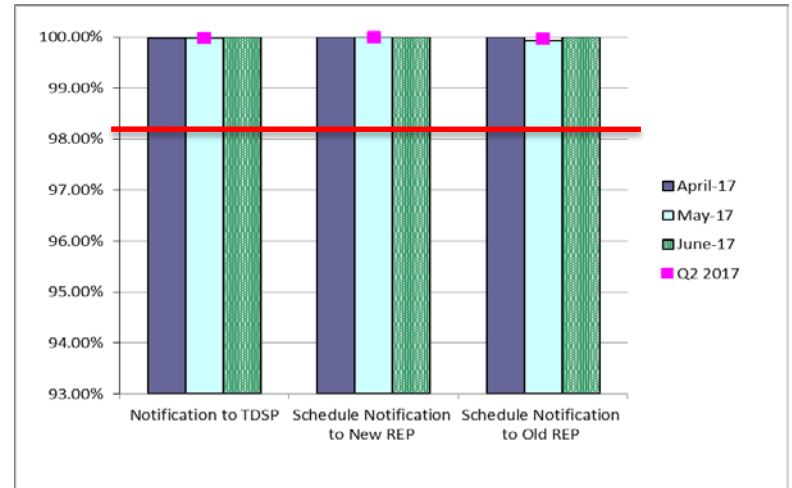


Retail Performance Measures – Switch – December 2017

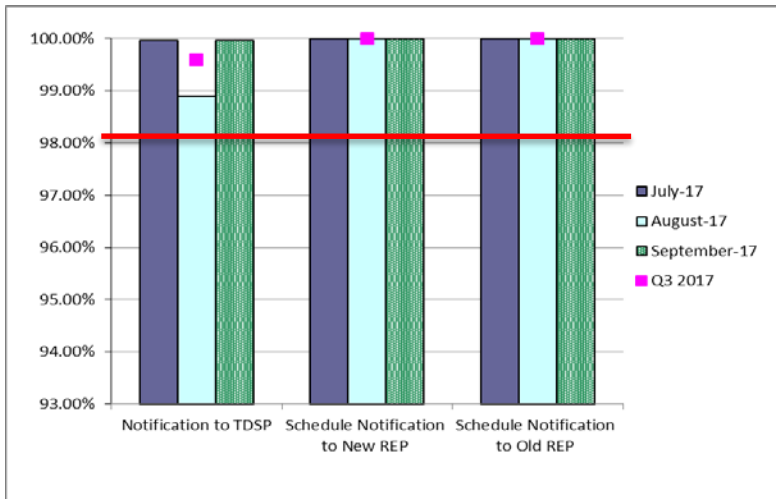
1st Quarter



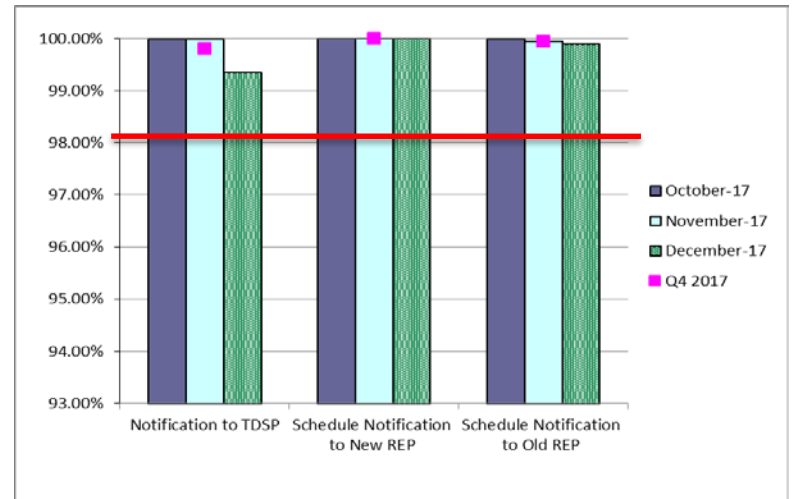
2nd Quarter



3rd Quarter

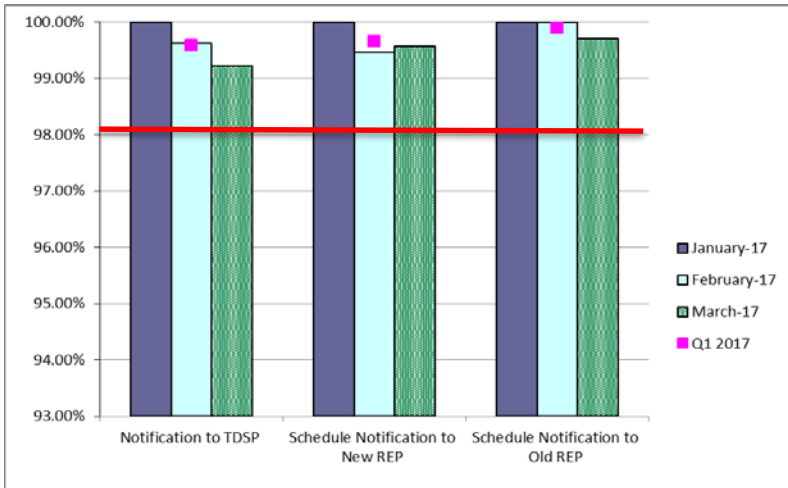


4th Quarter

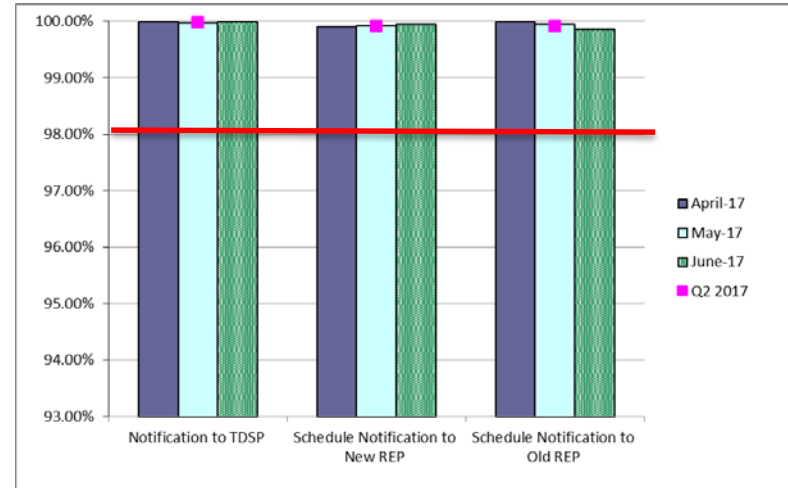


Retail Performance Measures – Same Day Move-In – December 2017

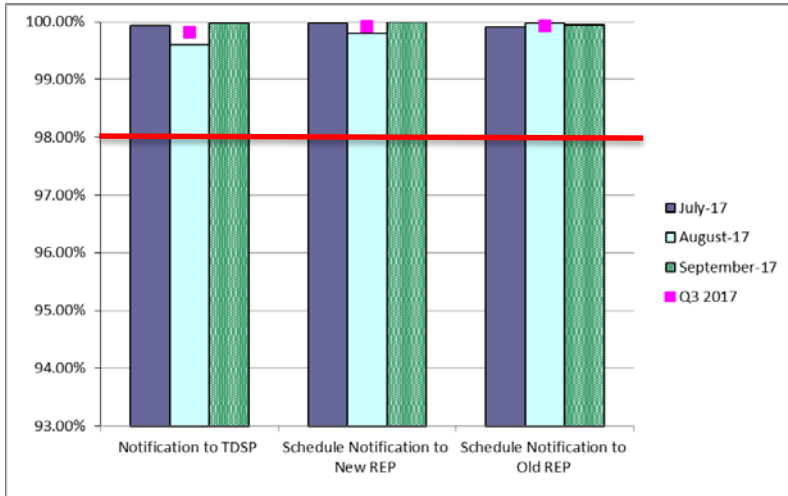
1st Quarter



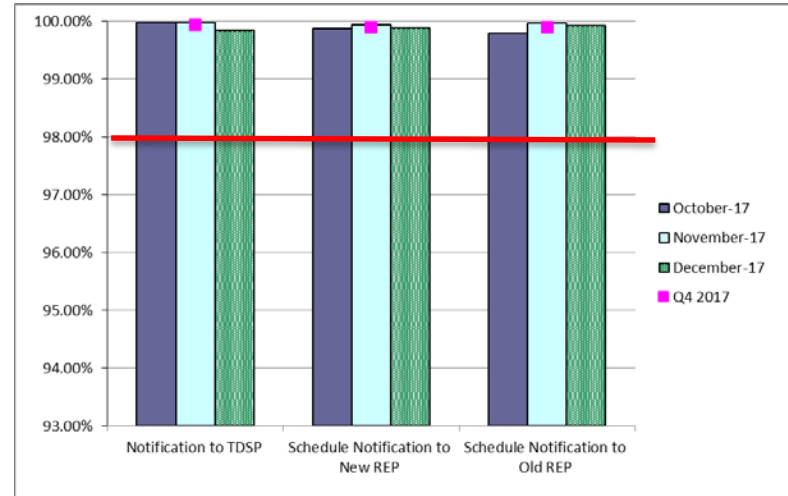
2nd Quarter



3rd Quarter

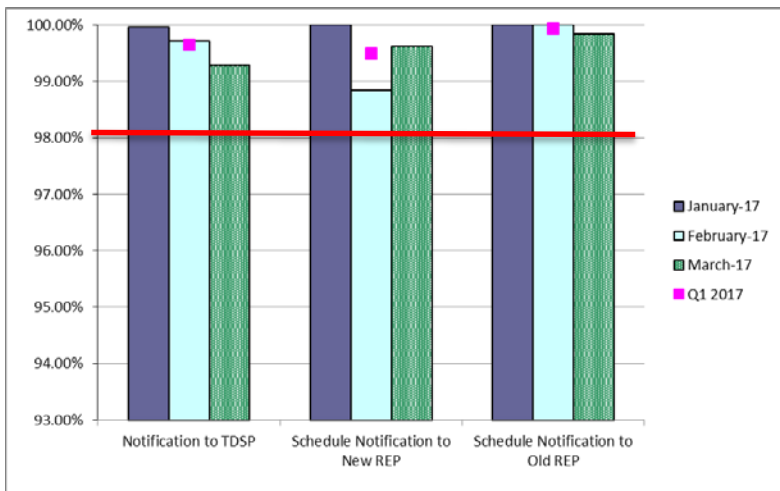


4th Quarter

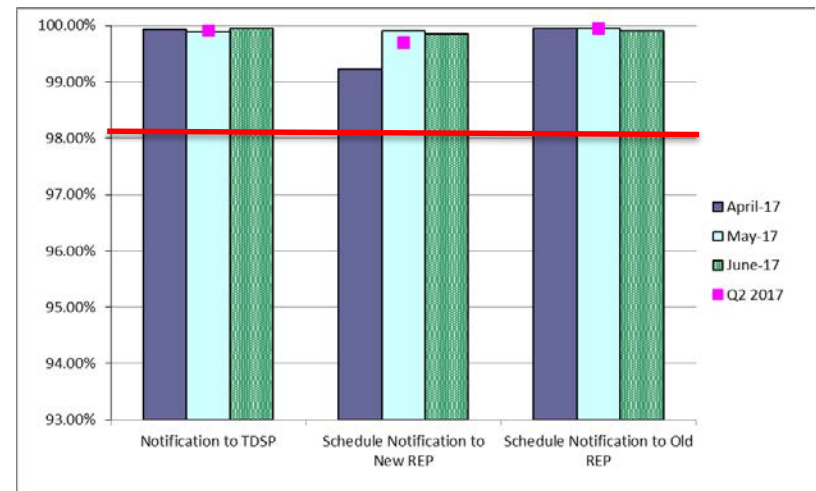


Retail Performance Measures – Standard Move-In – December 2017

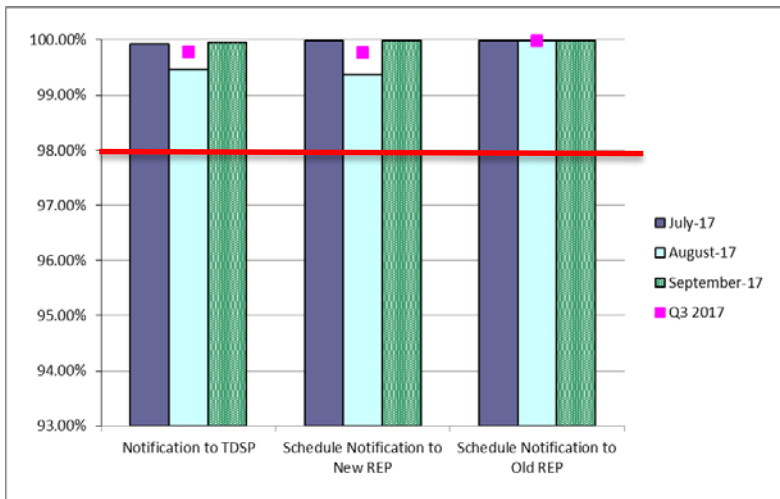
1st Quarter



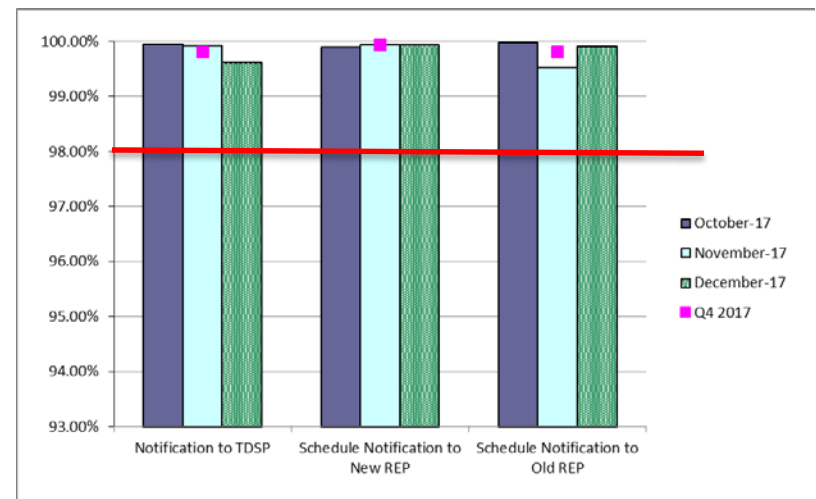
2nd Quarter



3rd Quarter



4th Quarter



Projects Report

ERCOT Portfolio Stoplight Report – December 2017

Impact Metric Tolerances	2017 Project Funding	\$21,500,000	2017 Portfolio Spending Estimate
Unfavorable variances are represented as negative numbers within the report. - Green = No more than 4.9% unfavorable variance - Yellow = Unfavorable variance between 4.9% and 9.9% - Red = Unfavorable variance more than 9.9%	Projects In Flight/On Hold (Count = 72)		\$14,923,496
	Projects Not Yet Started (Count = 1)		\$ -
	Projects Completed (Count = 59)		\$ 6,847,213
	Spending Reductions Required to Maintain Capital Budget		\$ (270,708)
	TOTAL		\$21,500,000

Project Number	Projects in Initiation Phase (Count = 5)
NPRR768	Revisions to Real-Time On-Line Reliability Deployment Price Adder Categories
SCR789	Update NMMS Topology Processor to PSSE 34 Capability
SCR792	Enhance Communications of BAAL Exceedances
274-01	Average Mid-Term Load Forecast
269-01	Document Repository Redesign and Governance Implementation - Phase 1

Footnotes

- 1 - One or more phases took longer than expected, resulting in additional time required
 - 2 - One or more phases required more labor than expected, resulting in additional funding and/or time required
 - 3 - Project placed on hold
- NA - Metric not calculated because:
- it is reported at the parent project level, or
 - it is an administrative project

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Project Number	Projects in Planning Phase (Count = 15)	Phase Start	Baseline Phase Finish	Approved Phase Finish	Scheduled Go-Live Date	Scheduled Phase Finish	Schedule Health		Budget Health	
170-06	ECAP - ECMS Implementation Phase 1	12/6/2017	2/21/2018	2/21/2018	TBD	2/21/2018		0%		0%
183-01	CMM-FT GUI Integration	12/16/2015	8/17/2016	TBD	TBD	TBD		0%	NA	See 2015 CMM NPRRs
239-01	Identity and Access Management	11/2/2017	5/2/2018	5/2/2018	TBD	5/2/2018		0%		-3%
240-01	EDI Translator and Mapping Replacement Assessment	4/19/2017	9/27/2017	2/28/2018	TBD	2/28/2018		0%		4%
242-01	Portfolio Reporting Assessment	11/8/2017	12/19/2018	12/19/2018	TBD	12/19/2018		0%		7%
245-01	2017 EPS Metering Enhancements	12/13/2017	5/30/2018	5/30/2018	TBD	5/30/2018		0%		45%
253-01	CIP Recovery Plan Project - Planning Phase 1	10/25/2017	1/31/2018	1/31/2018	TBD	1/31/2018		0%		7%
258-01	WD Kainos SMART Automation Testing Tool	11/29/2017	3/7/2018	3/7/2018	TBD	3/7/2018		0%		26%
260-01	Information Governance Assessment	10/18/2017	5/30/2018	5/30/2018	TBD	5/30/2018		0%		5%
261-01	Generic Transmission Constraint Calculation	9/27/2017	12/22/2017	12/22/2017	TBD	1/10/2018	1	-22%		25%
263-01	Market Simulator	11/29/2017	2/21/2018	2/21/2018	TBD	2/21/2018		0%		3%
265-01	Real-Time Assessment Continuity	10/25/2017	1/17/2018	1/17/2018	TBD	1/17/2018		0%		21%
271-01	Issue Tracking and Resolution Tool Assessment	12/13/2017	4/25/2018	4/25/2018	TBD	4/25/2018		0%		17%
NPRR484	Revisions to Congestion Revenue Rights Credit Calculations and Payments - Phase 1b / 2	12/16/2015	8/17/2016	TBD	TBD	TBD		0%	NA	See 2015 CMM NPRRs
NPRR702	Flexible Accounts, Payment of Invoices, and Disposition of Interest on Cash Collateral	12/16/2015	8/17/2016	TBD	TBD	TBD		0%	NA	See 2015 CMM NPRRs
Project Number	Projects in Execution Phase (Count = 46)	Phase Start	Baseline Go-Live Date	Approved Go-Live Date	Scheduled Go-Live Date	Scheduled Phase Finish	Schedule Health		Budget Health	
170-01	Enterprise Content Alignment Program	8/26/2015	11/15/2017	8/31/2018	8/31/2018	8/31/2018		0%		5%
173-02	ERCOT Flight Certification Website	11/15/2017	2/28/2019	2/28/2019	2/28/2019	5/31/2019		0%		1%
181-01	CRR Framework Upgrade	10/26/2016	10/2/2017	1/22/2018	1/22/2018	3/16/2018		0%		2%
183-01	CMM Tech Refresh	3/15/2017	5/19/2018	5/19/2018	5/19/2018	12/31/2018		0%	NA	See 2015 CMM NPRRs
193-01	PMU Tool Evaluation and Implementation	12/13/2017	8/9/2018	8/9/2018	8/9/2018	10/3/2018		0%		0%
196-01	GINR Project Status Application Replacement	12/21/2016	9/14/2017	3/5/2018	3/5/2018	3/28/2018		0%		-4%
198-02	Reactive Power Coordination PoC	9/6/2017	6/16/2018	6/16/2018	6/13/2018	6/13/2018		1%		28%
209-01	Multi Station Breaker to Breaker One Lines	2/8/2017	3/9/2018	3/9/2018	3/9/2018	5/1/2018		0%		19%
210-01	REC Technology Refresh	8/30/2017	3/18/2018	3/18/2018	3/18/2018	5/9/2018		0%		5%
229-01	IT Change and Configuration Management Phase 2	8/2/2017	6/19/2018	6/19/2018	6/19/2018	9/5/2018		0%		0%
233-00	Capital Efficiencies and Enhancements - 2017	1/1/2017	12/31/2017	12/31/2017	12/31/2017	12/31/2017		0%		0%
233-24	Job Description Repository	1/1/2017	12/31/2017	12/31/2017	1/31/2018	1/31/2018	1	-8%		See 233-00
238-01	Application Authentication Tech Refresh	9/6/2017	3/19/2018	3/19/2018	3/19/2018	5/16/2018		0%		50%
241-01	AREA - Generation	10/11/2017	3/30/2018	3/30/2018	3/30/2018	4/19/2018		0%		-2%
243-01	Training Facility	12/6/2017	12/12/2018	12/12/2018	12/12/2018	12/12/2018		0%		2%
244-01	Corporate Wireless	11/29/2017	3/28/2018	3/28/2018	3/28/2018	4/25/2018		0%		5%



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Project Number	Projects in Execution Phase (Count = 46)	Phase Start	Baseline Go-Live Date	Approved Go-Live Date	Scheduled Go-Live Date	Scheduled Phase Finish	Schedule Health		Budget Health	
246-01	iTest Data Refresh	12/13/2017	1/2/2019	1/2/2019	1/2/2019	1/2/2019		0%		12%
249-01	Secondary Wind Forecasting Service	8/30/2017	2/28/2018	4/5/2018	4/5/2018	6/27/2018		0%		17%
254-01	Retail Windows Upgrade	10/11/2017	12/18/2017	12/18/2017	1/19/2018	2/14/2018	1	-47%		17%
255-01	Settlements Architecture Enhancements	10/25/2017	1/11/2018	1/11/2018	1/11/2018	2/14/2018		0%		22%
257-01	Security Constrained Optimal Powerflow in Study Network Analysis	12/6/2017	10/25/2018	10/25/2018	10/25/2018	12/5/2018		0%		6%
259-01	DC SCADA and Metering Upgrade	10/25/2017	1/17/2018	5/11/2018	5/11/2018	6/27/2018		0%		2%
266-01	Remote Email Access Enhancement	12/13/2017	3/7/2018	3/7/2018	3/7/2018	3/7/2018		0%		4%
272-01	Operator Training Simulator Black Start GE Effort	12/6/2017	4/25/2018	4/25/2018	4/25/2018	4/25/2018		0%		1%
Various	2015 CMM NPRRs									0%
NPRR519	Exemption of ERS-Only QSEs from Collateral and Capitalization Requirements	3/15/2017	5/19/2018	5/19/2018	5/19/2018	12/31/2018		0%	NA	See 2015 CMM NPRRs
NPRR620	Collateral Requirements for Counter-Parties with No Load or Generation	3/15/2017	5/19/2018	5/19/2018	5/19/2018	12/31/2018		0%	NA	See 2015 CMM NPRRs
NPRR648	Remove References to Flowgate Rights	3/15/2017	5/19/2018	5/19/2018	3/18/2018	12/31/2018		14%	NA	See 2015 CMM NPRRs
NPRR660	Remove CRR State Change Adder	3/15/2017	5/19/2018	5/19/2018	5/19/2018	12/31/2018		0%	NA	See 2015 CMM NPRRs
NPRR683	Revision to Available Credit Limit Calculation	3/15/2017	5/19/2018	5/19/2018	3/18/2018	12/31/2018		14%	NA	See 2015 CMM NPRRs
NPRR741	Clarifications to TPE and EAL Credit Exposure Calculations	3/15/2017	5/19/2018	5/19/2018	5/19/2018	12/31/2018		0%	NA	See 2015 CMM NPRRs
NPRR743	Revision to MCE to Have a Floor For Load Exposure	3/15/2017	5/19/2018	5/19/2018	3/18/2018	12/31/2018		14%	NA	See 2015 CMM NPRRs
NPRR749	Option Cost for Outstanding CRRs	3/15/2017	5/19/2018	5/19/2018	3/18/2018	12/31/2018		14%	NA	See 2015 CMM NPRRs
NPRR755	Data Agent-Only QSE Registration	3/15/2017	5/19/2018	5/19/2018	5/19/2018	12/31/2018		0%	NA	See 2015 CMM NPRRs
NPRR760	Calculation of Exposure Variables For Days With No Activity	3/15/2017	5/19/2018	5/19/2018	3/18/2018	12/31/2018		14%	NA	See 2015 CMM NPRRs
NPRR776	Voltage Set Point Communication	9/20/2017	3/19/2018	4/5/2018	4/5/2018	6/27/2018		0%		0%
NPRR800	Revisions to Credit Exposure Calculations to Use Electricity Futures Market Prices	3/15/2017	5/19/2018	5/19/2018	3/18/2018	12/31/2018		14%	NA	See 2015 CMM NPRRs
NPRR809	GTC or GTL for New Generation Interconnection	6/15/2017	3/31/2018	3/31/2018	3/31/2018	3/31/2018		0%	NA	See #233-00
NPRR810	Applicability of RMR Incentive Factor on Reservation and Transportation Costs Associated with Firm Fuel Supplies	7/17/2017	11/12/2017	3/31/2018	3/31/2018	3/31/2018		0%	NA	See #233-00
NPRR830	Revision of 4-Coincident Peak Methodology	12/13/2017	2/6/2018	2/6/2018	2/6/2018	3/14/2018		0%		10%
NPRR833	Modify PTP Obligation Bid Clearing Change	11/8/2017	4/5/2018	4/5/2018	4/5/2018	5/3/2018		0%		13%
PGRR052	Stability Assessment for Interconnecting Generation	6/15/2017	3/31/2018	3/31/2018	3/31/2018	3/31/2018		0%	NA	See #233-00
PGRR054	Stability Limits in the Full Interconnect Study	6/15/2017	3/31/2018	3/31/2018	3/31/2018	3/31/2018		0%	NA	See #233-00
PGRR057	Responsibilities for Performing Geomagnetic Disturbance (GMD) Vulnerability	6/15/2017	7/1/2019	7/1/2019	7/1/2019	7/1/2019		0%	NA	See #233-00
SCR777	Bilateral CRR Interface Enhancement	10/26/2016	10/2/2017	1/22/2018	1/22/2018	3/16/2018		0%	NA	See #181-01
SCR781	RARF Replacement	12/20/2017	4/25/2018	4/25/2018	4/25/2018	4/25/2018		0%		4%



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Project Number	Projects in Stabilization (Count = 5)	Execution Phase Start	Baseline Go-Live Target	Approved Go-Live Target	Actual Go-Live Date	Scheduled Execution Phase Finish	Schedule Health		Budget Health	
224-01	TelAlert Replacement	4/5/2017	6/27/2017	8/4/2017	8/4/2017	3/21/2018		0%	2	-12%
230-01	SAS Technical Architecture Redesign	3/1/2017	12/13/2017	12/13/2017	12/13/2017	4/30/2018		0%		3%
NPRR778	Modifications to Date Change and Cancellation Evaluation Window	7/19/2017	10/29/2017	12/11/2017	12/11/2017	1/17/2018		0%		15%
NPRR808	Three Year CRR Auction	8/23/2017	9/18/2017	9/18/2017	9/18/2017	1/17/2018		0%		4%
NPRR831	Inclusion of Private Use Networks in Load Zone Price Calculations	8/2/2017	11/2/2017	11/2/2017	11/2/2017	1/31/2018		0%		22%
Project Number	Projects On Hold (Count = 1)	Forecast Start Date	Baseline Phase Finish	Approved Go-Live Target	Scheduled Go-Live Date	Scheduled Phase Finish	Schedule Health		Budget Health	
228-01	Enterprise Database Upgrade									20%
Project Number	Projects Completed (Count = 59)	Baseline Execution Phase Start	Baseline Go-Live Target	Approved Go-Live Target	Actual Go-Live Date	Actual Execution Phase Finish	Schedule Health		Budget Health	
065-01	NMMS Upgrade	12/17/2014	9/22/2016	5/1/2017	5/8/2017	9/27/2017		0%		3%
158-01	Load Forecast Enhancements	9/28/2016	5/21/2017	5/21/2017	6/27/2017	11/1/2017	1	-15%		0%
170-03	ECAP - Enterprise Content Management System (Proof of Concept)	11/16/2016	3/15/2017	3/15/2017	4/11/2017	4/12/2017	1	-22%		24%
170-04	ECAP - ERCOT Information Governance and Taxonomy	11/16/2016	1/19/2017	2/17/2017	2/17/2017	2/22/2017		0%		6%
172-01	Physical Security Project #2	6/30/2016	2/13/2017	6/30/2017	6/23/2017	9/6/2017		1%		2%
173-01	Serena Software (MarkeTrak) Upgrade	10/5/2016	1/29/2017	3/26/2017	3/26/2017	6/7/2017		0%		0%
177-01	Cyber Security Project #19	4/6/2016	7/13/2016	7/24/2017	4/28/2017	8/2/2017		18%		15%
185-01	Records Management and eDiscovery	12/15/2016	5/24/2017	8/29/2017	8/22/2017	12/13/2017		2%		0%
188-01	Mass Transition/Acquisition Enhancements (MTAQ)	5/25/2016	4/2/2017	6/22/2017	6/4/2017	8/23/2017		4%		2%
189-01	Enterprise Resource Planning	4/13/2016	9/27/2016	9/27/2016	9/27/2016	4/12/2017		0%		59%
190-01	Collaboration Software Governance	4/27/2016	7/20/2016	12/14/2016	TBD	4/12/2017	1	-51%		4%
197-01	AREA - Demand and Energy Report	9/14/2016	5/4/2017	6/29/2017	6/29/2017	7/12/2017		0%		-4%
198-01	Reactive Power Coordination Assessment	7/13/2016	10/12/2016	1/11/2017	1/18/2017	1/18/2017		-3%		10%
202-01	Email Gateway Replacement	11/9/2016	1/31/2017	1/31/2017	1/31/2017	5/17/2017		0%		62%
203-01	DW Replication Upgrade	10/26/2016	12/10/2016	2/17/2017	2/17/2017	3/1/2017		0%		1%
205-01	TIBCO BusinessWorks Application Upgrade	1/11/2017	6/26/2017	8/1/2017	8/1/2017	9/13/2017		0%		1%
211-01	Identity & Access Management Evaluation	10/5/2016	2/22/2017	2/22/2017	2/22/2017	3/1/2017		0%		10%
212-01	Test Data and Environment Enhancements Initiative (TDEE)	10/5/2016	11/2/2016	8/2/2017	TBD	8/2/2017		0%		0%

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Project Number	Projects Completed (Count = 59)	Baseline Execution Phase Start	Baseline Go-Live Target	Approved Go-Live Target	Actual Go-Live Date	Actual Execution Phase Finish	Schedule Health		Budget Health	
216-01	CAT & RRS Tools for Control Room Project	11/30/2016	9/15/2017	11/2/2017	11/2/2017	11/29/2017		0%		50%
216-01	Capacity Availability Tool (CAT)	11/30/2016	9/15/2017	11/2/2017	11/2/2017	11/29/2017		0%	NA	See CAT & RRS Tools for Cntl Rm
216-01	Responsive Reserve Service Sufficiency Analysis	11/30/2016	9/15/2017	8/31/2017	8/31/2017	11/29/2017		0%	NA	See CAT & RRS Tools for Cntl Rm
217-01	Cyber Security Project #20	5/17/2017	6/22/2017	6/22/2017	6/22/2017	12/6/2017		0%		2%
218-01	Cyber Security Project #21	5/24/2017	6/23/2017	6/23/2017	6/23/2017	8/16/2017		0%		9%
222-01	Physical Security Project #3	2/8/2017	5/31/2017	7/28/2017	7/24/2017	8/16/2017		2%		12%
223-01	Control Room Video Support and Upgrade	11/16/2016	2/17/2017	2/17/2017	2/3/2017	7/12/2017		15%		0%
227-01	Engineer Workstations and Other Equipment	11/30/2016	3/1/2017	3/1/2017	2/28/2017	3/8/2017		1%		5%
234-01	Reporting Solution Resiliency (RSR)	4/5/2017	8/23/2017	11/27/2017	11/27/2017	1/10/2018		0%		7%
235-01	Forecast Monitoring and HSL Tracking	2/8/2017	5/11/2017	6/29/2017	6/29/2017	9/27/2017		0%		7%
Various	Implementation of NPRR573 & NPRR801	3/29/2017	6/29/2017	6/29/2017	6/29/2017	7/26/2017		0%		20%
Various	2016 RARF Enhancements	11/16/2016	2/17/2017	5/15/2017	5/15/2017	6/14/2017		0%		26%
Various	NPRR797 & NPRR789 Load Forecast Enhancements	3/8/2017	6/29/2017	6/29/2017	6/29/2017	7/19/2017		0%		32%
NOGRR147	Reactive Power Testing Requirements	9/14/2016	12/8/2016	12/8/2016	12/8/2016	1/11/2017		0%	NA	See NOGRR147 & SCR787
NPRR272	Definition and Participation of Quick Start Generation Resources	8/3/2016	2/9/2017	3/9/2017	3/9/2017	4/5/2017		0%		35%
NPRR573	Alignment of PRC Calculation	3/29/2017	6/29/2017	6/29/2017	6/29/2017	7/26/2017		0%	NA	See Implementation of NPRR573 & 801
NPRR649	Addressing Issues Surrounding High Dispatch Limit (HDL) Overrides	11/9/2016	3/19/2017	3/9/2017	3/9/2017	3/29/2017		0%		39%
NPRR744	RUC Trigger for the Reliability Deployment Price Adder and Alignment with RUC Settlement	2/8/2017	6/29/2017	6/29/2017	6/1/2017	7/19/2017		19%		27%
NPRR746	Adjustments Due to Negative Load	1/25/2017	5/11/2017	5/11/2017	5/8/2017	7/12/2017		2%		28%
NPRR754	Revise Load Distribution Factors Report Posting Frequency	10/12/2016	12/11/2016	12/11/2016	12/12/2016	1/11/2017		-1%		47%
NPRR758	Improved Transparency for Outages Potentially Having a High Economic Impact	1/11/2017	7/13/2017	9/13/2017	9/13/2017	10/11/2017		0%	2	-13%
NPRR764	QSE Capacity Short Calculations Based on an 80% Probability of Exceedance (P80)	11/16/2016	3/9/2017	3/9/2017	3/9/2017	6/7/2017		0%		25%
NPRR782	Settlement of Infeasible Ancillary Services Due to Transmission Constraints	5/24/2017	8/31/2017	11/2/2017	11/2/2017	1/10/2018		0%		18%
NPRR785	Synchronizing WGR and PVGR COPs with the Short Term Wind and PhotoVoltaic Forecasts	11/30/2016	3/9/2017	3/9/2017	3/9/2017	3/9/2017		0%		See #187-00
NPRR789	Publish All Mid-Term Load Forecast Results	3/8/2017	6/29/2017	6/29/2017	6/29/2017	7/19/2017		0%	NA	See NPRR797 & NPRR789 Load Forecast Enhancements



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Project Number	Projects Completed (Count = 59)	Baseline Execution Phase Start	Baseline Go-Live Target	Approved Go-Live Target	Actual Go-Live Date	Actual Execution Phase Finish	Schedule Health		Budget Health	
NPRR792	Changing Special Protection System (SPS) to Remedial Action Scheme (RAS)	11/30/2016	5/21/2017	5/21/2017	5/11/2017	6/14/2017		5%		See #187-00
NPRR797	Actual Load by Forecast Zone Report and Display	3/8/2017	6/29/2017	6/29/2017	6/29/2017	7/19/2017		0%	NA	See NPRR797 & NPRR789 Load Forecast Enhancements
NPRR801	Non-Controllable Load Resource MW in PRC	3/29/2017	6/29/2017	6/29/2017	6/29/2017	7/26/2017		0%	NA	See Implementation of NPRR573 & 801
NPRR812	Alignment of Currently-Published Reports	7/17/2017	11/12/2017	12/11/2017	12/11/2017	12/11/2017		0%	NA	See #233-00
RMGRR127	Efficiencies for Acquisition Transfer	5/25/2016	4/2/2017	6/22/2017	6/4/2017	8/23/2017		4%	NA	See #188-01
RMGRR134	Allow AMS Data Submittal Process for TDSP-Read Non-Modeled Generators	12/14/2016	3/9/2017	3/9/2017	3/9/2017	6/7/2017		0%		24%
RMGRR140	Efficiencies for Acquisition Transfer Process	5/25/2016	4/2/2017	6/22/2017	6/4/2017	8/23/2017		4%	NA	See #188-01
RRGRR003	Modifications to Improve Wind Forecasting	11/16/2016	2/17/2017	5/15/2017	5/15/2017	6/14/2017		0%	NA	See 2016 RARF Enh.
RRGRR006	Clarification of Descriptions and Alignment with Resource Asset Registration Forms	11/16/2016	2/17/2017	5/15/2017	5/15/2017	6/14/2017		0%	NA	See 2016 RARF Enh.
RRGRR007	Adding Solar Resource Registration Inputs	11/16/2016	2/17/2017	5/15/2017	5/15/2017	6/14/2017		0%	NA	See 2016 RARF Enh.
RRGRR009	Adding Voltage Limit Sets, Relay Loadability, MLSE, and GMD Data	11/16/2016	2/17/2017	5/15/2017	5/15/2017	6/14/2017		0%	NA	See 2016 RARF Enh.
SCR786	Retail Market Test Environment	6/22/2016	12/12/2016	12/12/2016	12/12/2016	2/15/2017		0%		34%
SCR787	Maintain NDCRC Data For Generator Transfer Between Resource Entities	9/14/2016	12/8/2016	12/8/2016	12/8/2016	1/11/2017		0%	NA	See NOGRR147 & SCR787
SCR788	Addition of Integral ACE Feedback to GTBD Calculation	10/5/2016	12/8/2016	12/8/2016	12/8/2016	12/16/2016		0%		53%
SCR790	Wind Resource Power Production and Forecast Transparency	1/11/2017	5/11/2017	5/11/2017	5/11/2017	5/11/2017		0%		5%
Various	NOGRR147 and SCR787 NDCRC Enhancement	9/14/2016	12/8/2016	12/8/2016	12/8/2016	1/11/2017		0%		5%

Project Number	2017 Projects Not Yet Started (Count = 0)	Forecast Start Date