



ERCOT Monthly Operational Overview (November 2017)

ERCOT Public
December 15, 2017

Grid Planning & Operations

Summary – November 2017

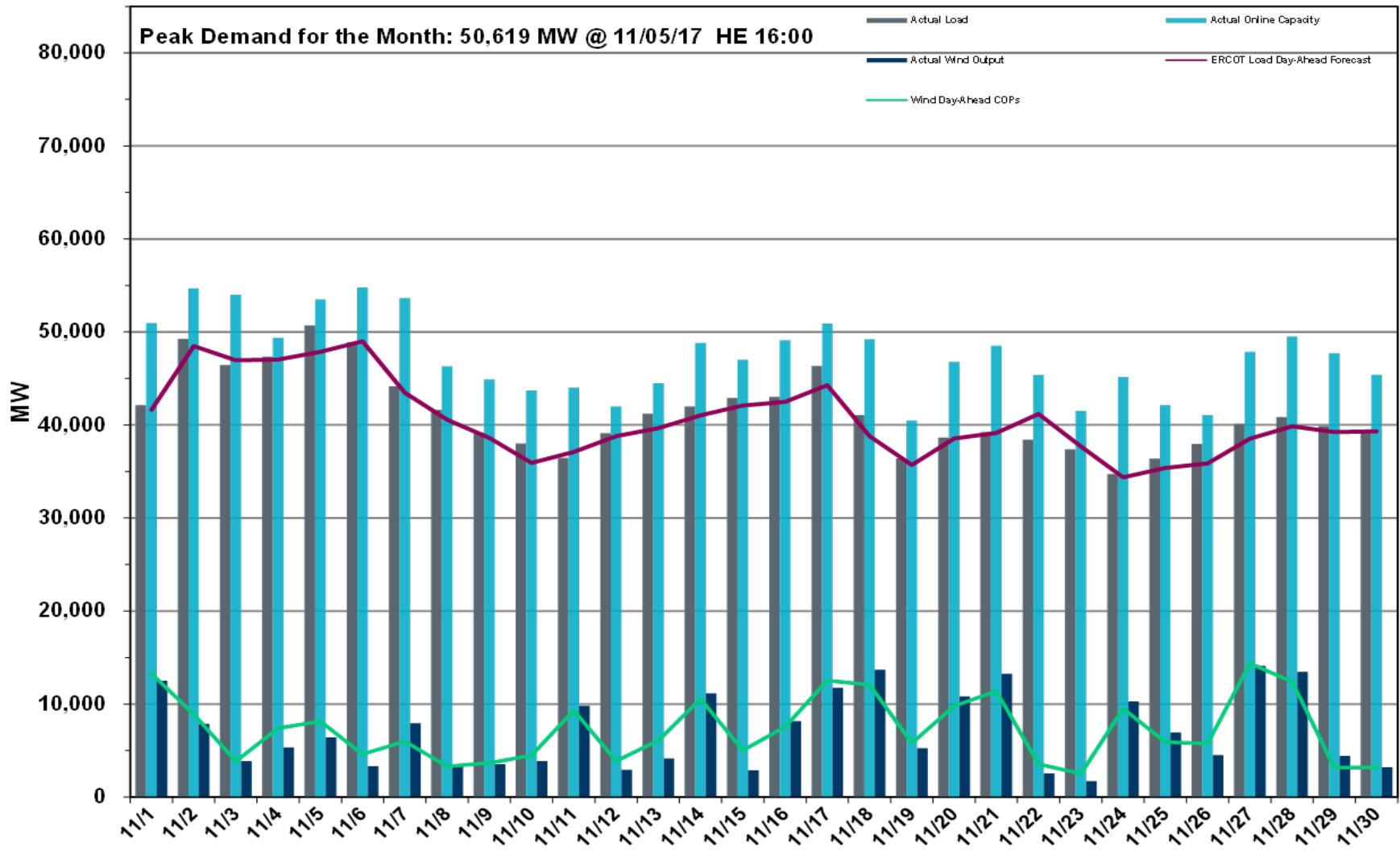
Operations

- The preliminary Settlements hourly peak demand of 50,619* MW on November 5 was higher than the day-ahead mid-term load forecast peak of 48,995 MW for November 6 at Hour Ending 16.
 - The operational instantaneous peak demand was 51,2017 MW (telemetry).
- Day-ahead load forecast error for November was 2.24%
- ERCOT issued 2 notifications:
 - Two Watches issued for the Eagle Pass DC Tie due to a forced extension of a planned outage

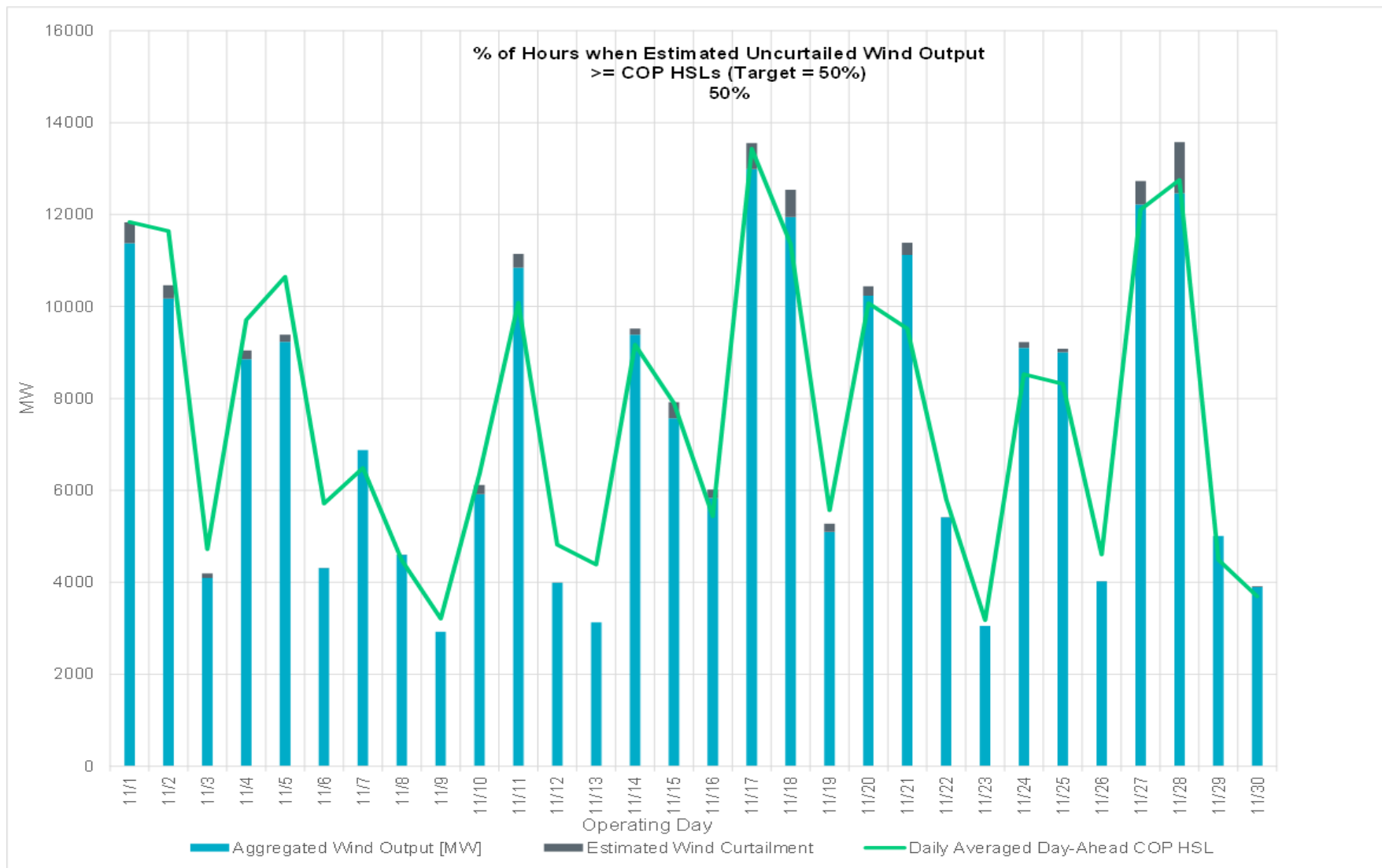
Planning Activities

- 340 active generation interconnection requests totaling 67,915 MW, including 29,411 MW of wind generation, as of November 30, 2017. One additional requests and a decrease of 1,105 MW from October 31, 2017.
- 20,103 MW wind capacity in commercial operations as of December 1, 2017.

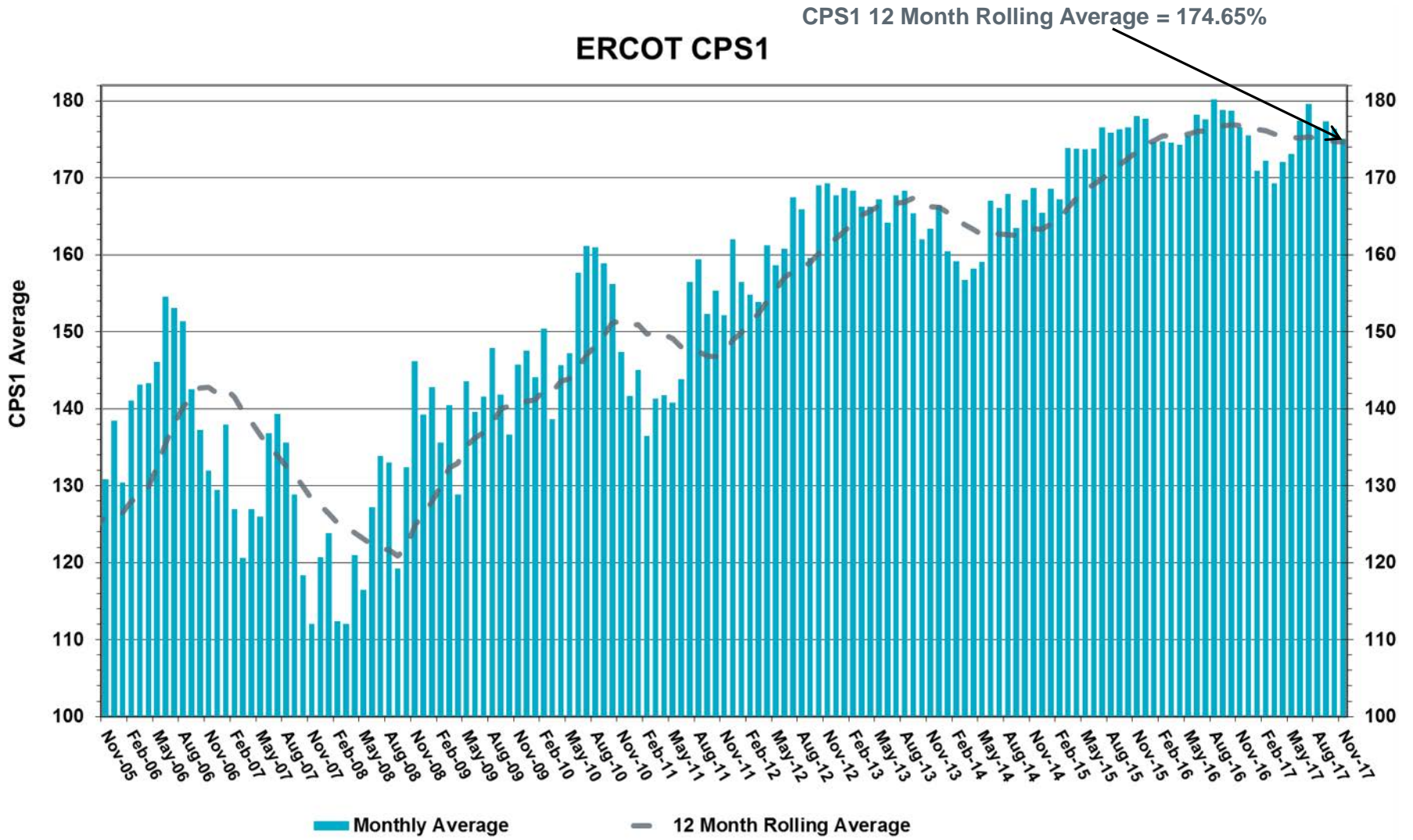
Daily Peak Demand: Hourly Average Actual vs. Forecast, Wind Day-Ahead COPs & On-Line Capacity at Peak – November 2017



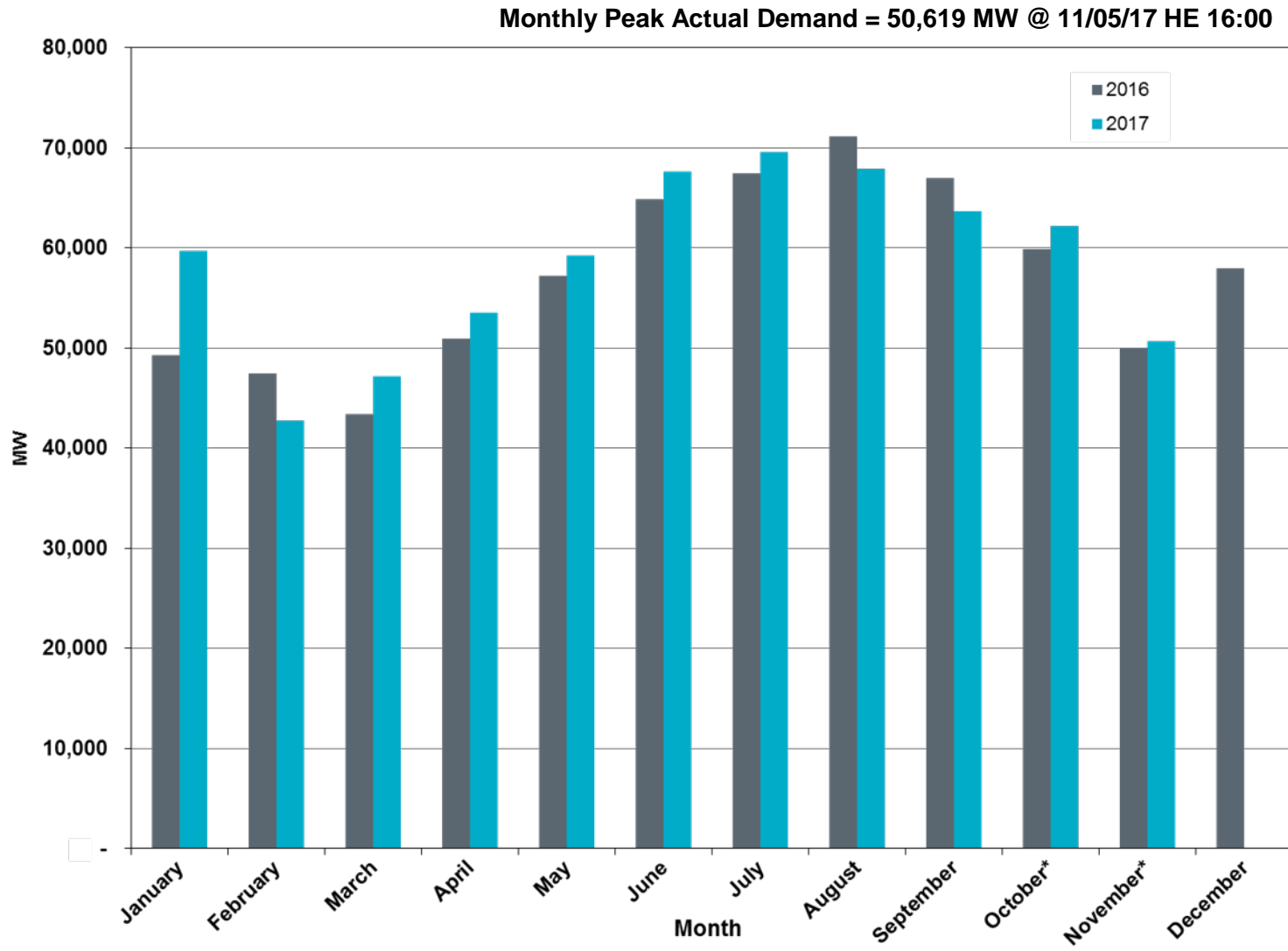
Actual Wind Output plus Curtailments vs. Wind Day-Ahead COPs for All Hours – November 2017



ERCOT's CPS1 Monthly Performance – November 2017



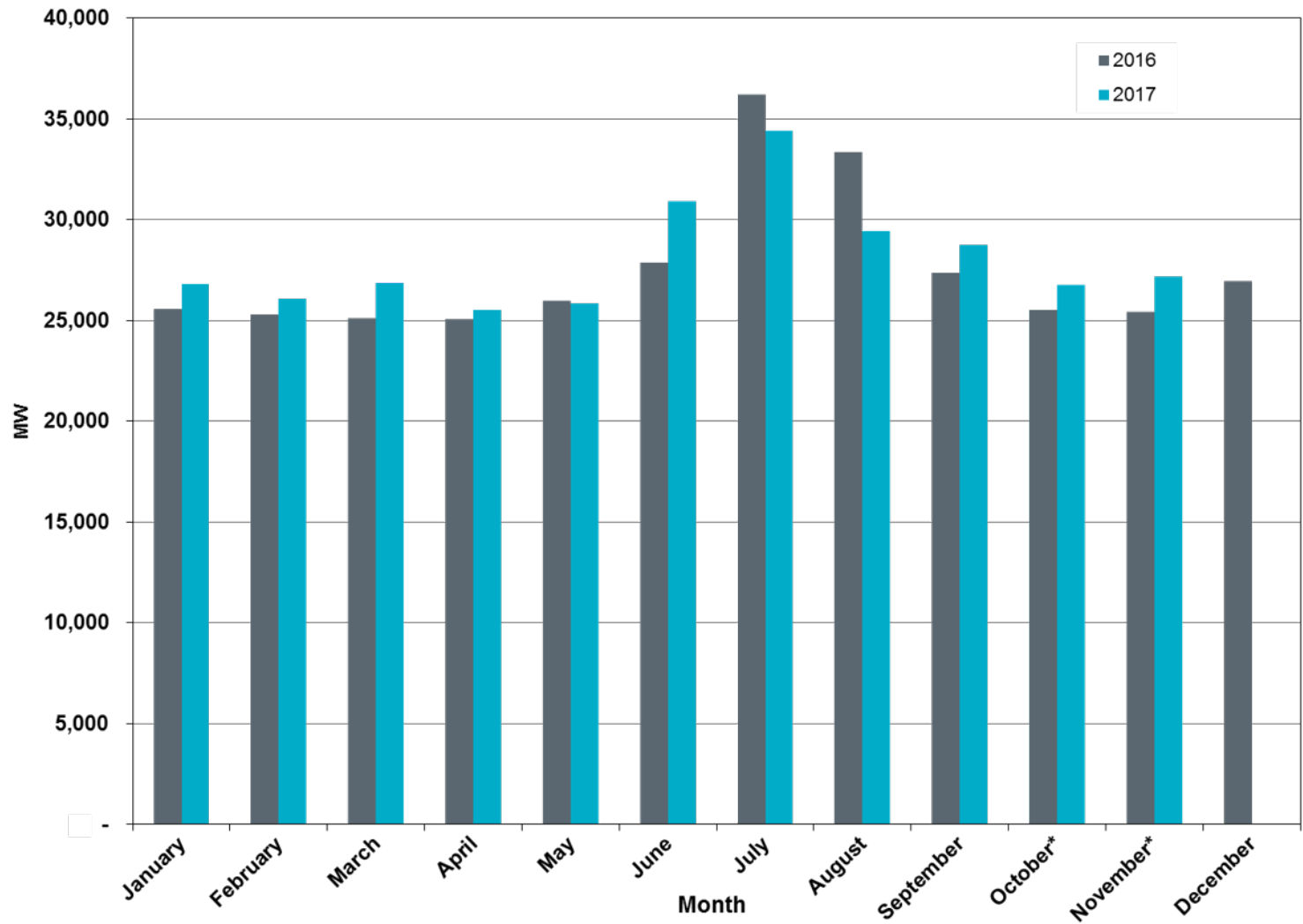
Monthly Peak Actual Demand – November 2017



*Preliminary for latest two months of the current year



Monthly Minimum Actual 15-Minute Demand – November 2017



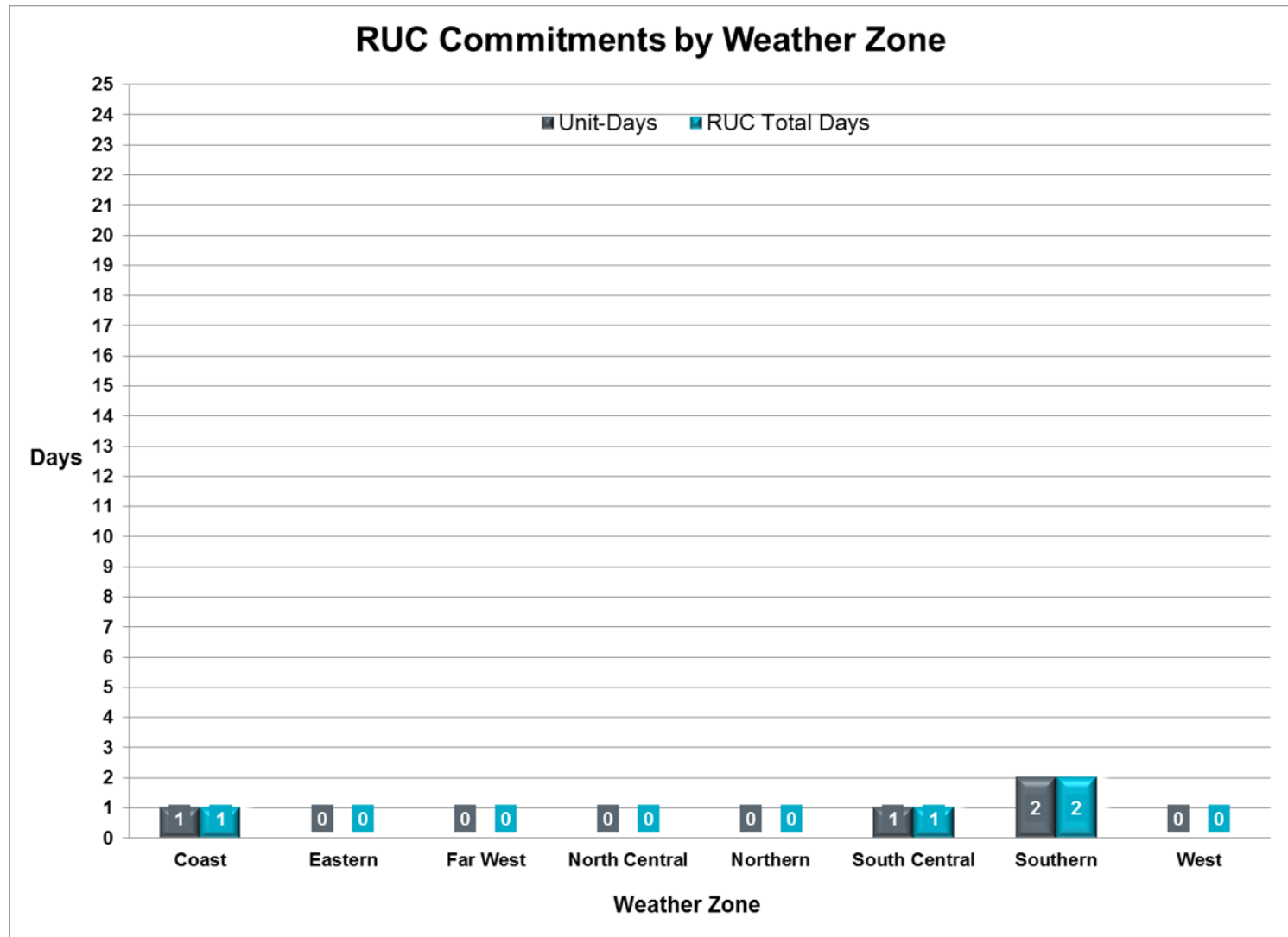
*Preliminary for latest two months of the current year

Day-Ahead Load Forecast Performance – November 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	November 2017 MAPE	
Average Annual MAPE	2.83	2.86	2.62	2.49	2.24	
Lowest Monthly MAPE	2.15	1.89	1.94	1.69	Lowest Daily MAPE	1.02 Nov 08
Highest Monthly MAPE	3.70	3.81	3.86	4.07	Highest Daily MAPE	4.28 Nov 26

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



Generic Transmission Constraints (GTCs) – November 2017

GTCs	Nov-16 Days GTCs	Sep-17 Days GTCs	Oct-17 Days GTCs	Nov-17 Days GTCs	Last 12 Months Total Days (Dec 16 – Nov 17)
North – Houston	0	0	2	2	8
Valley Import	0	0	2	0	9
Zorillo – Ajo*	0	0	2	0	11
Panhandle	20	18	29	25	265
Red Tap	0	0	0	0	0
North Edinburg – Lobo	-	0	1	0	1
Nelson Sharpe – Rio Hondo*	-	-	0	0	0
East Texas	-	-	-	16	16

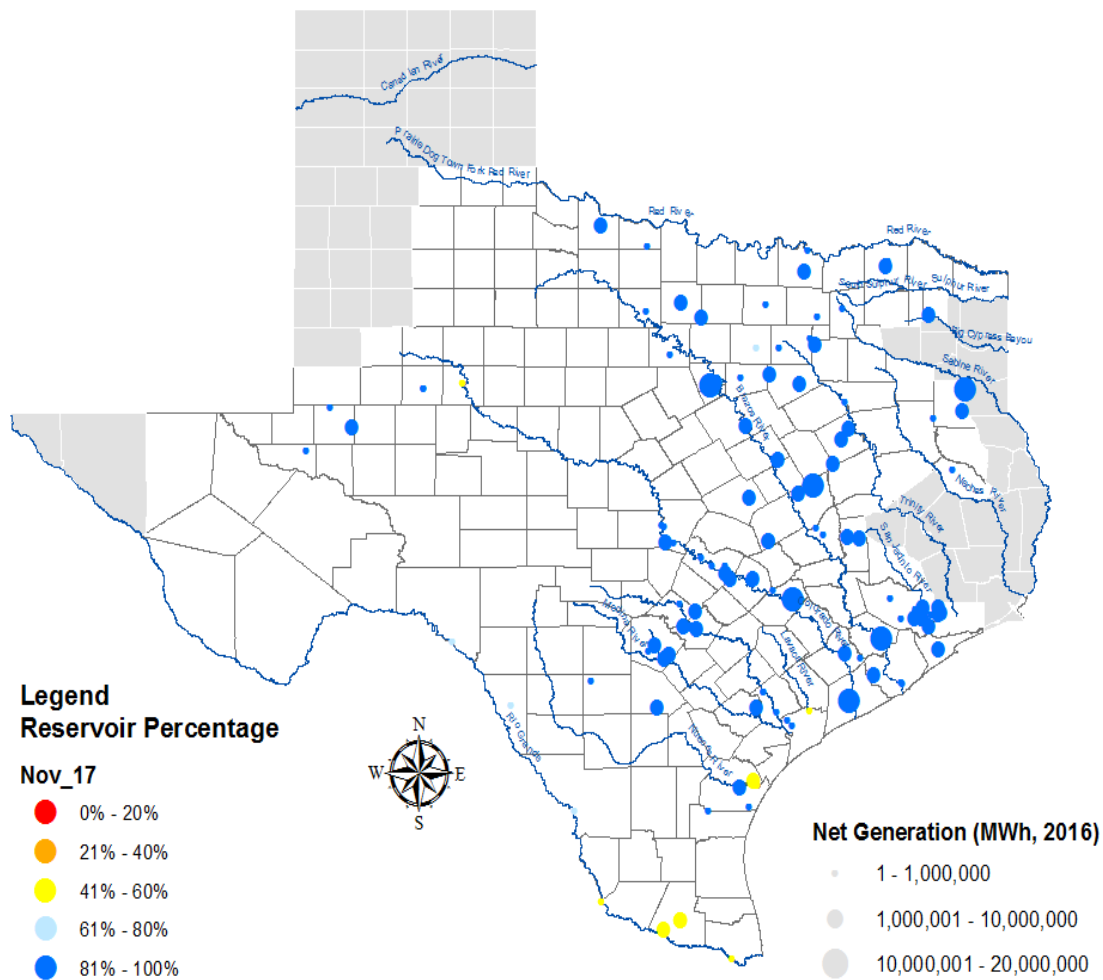
GTC: A transmission flow limit more constraining than a Transmission Element’s normal limit established to constrain flow between geographic areas of the ERCOT Transmission System that is used to enforce stability and voltage constraints that cannot be modeled directly in ERCOT’s transmission security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

Advisories and Watches – November 2017

- Two Watches issued for the Eagle Pass DC Tie due to a forced extension of a planned outage
 - Issued 11/06, 11/27

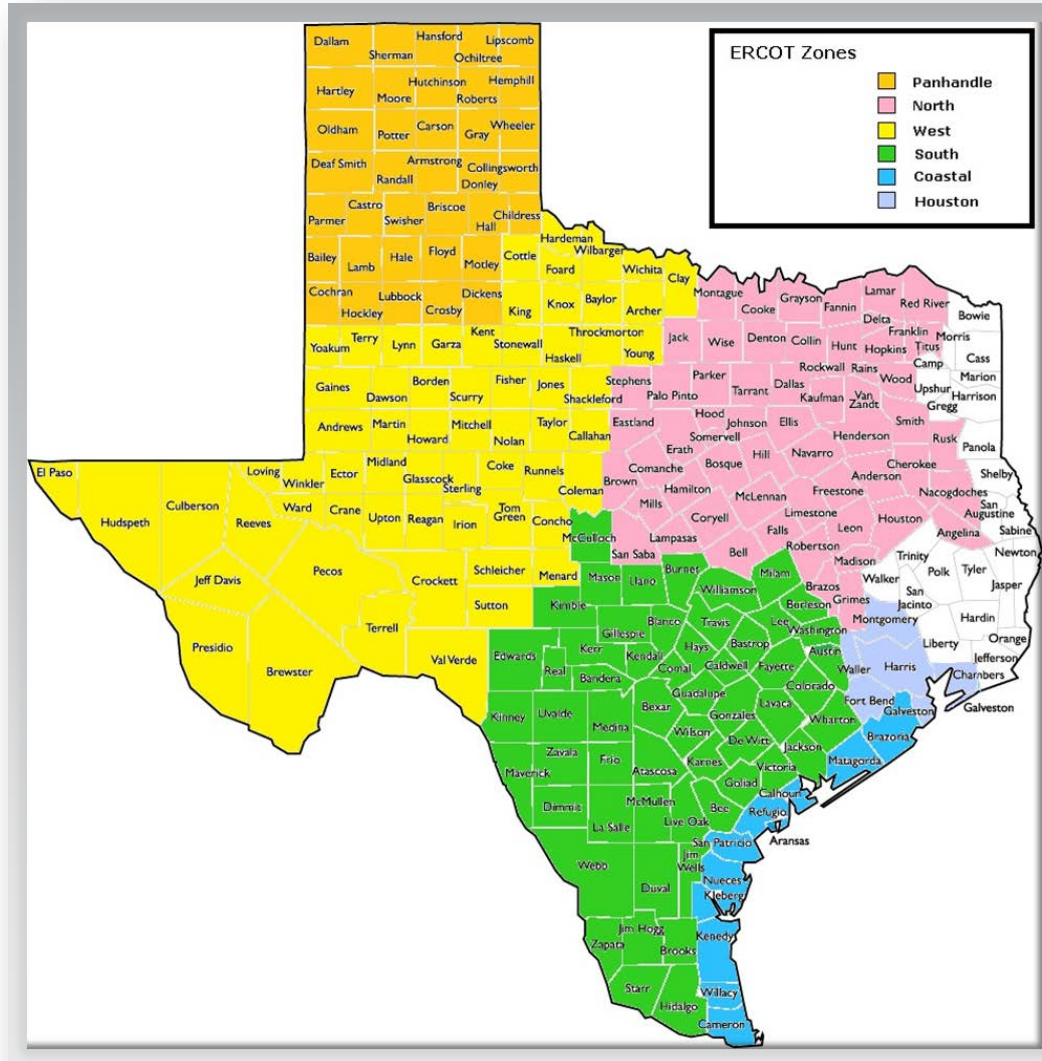
Lake Levels Update – December 1, 2017



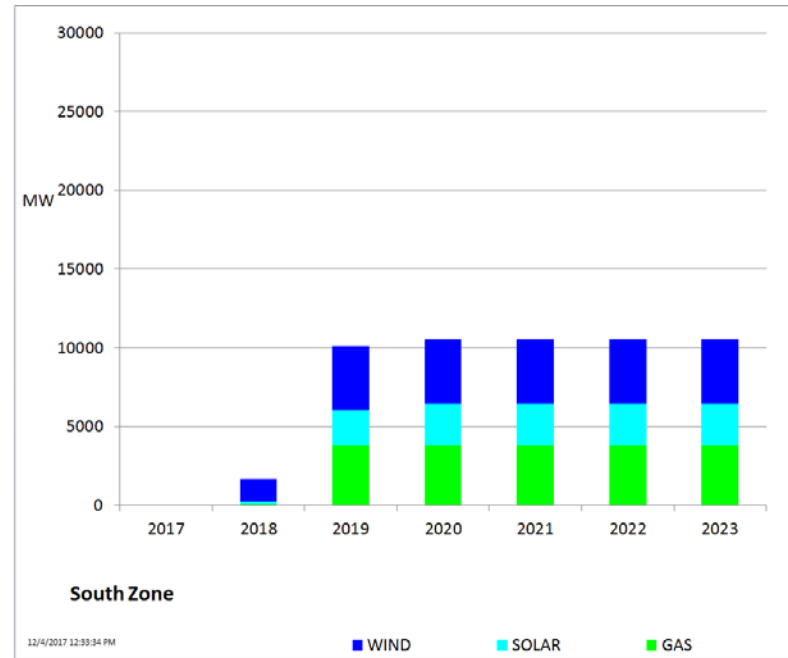
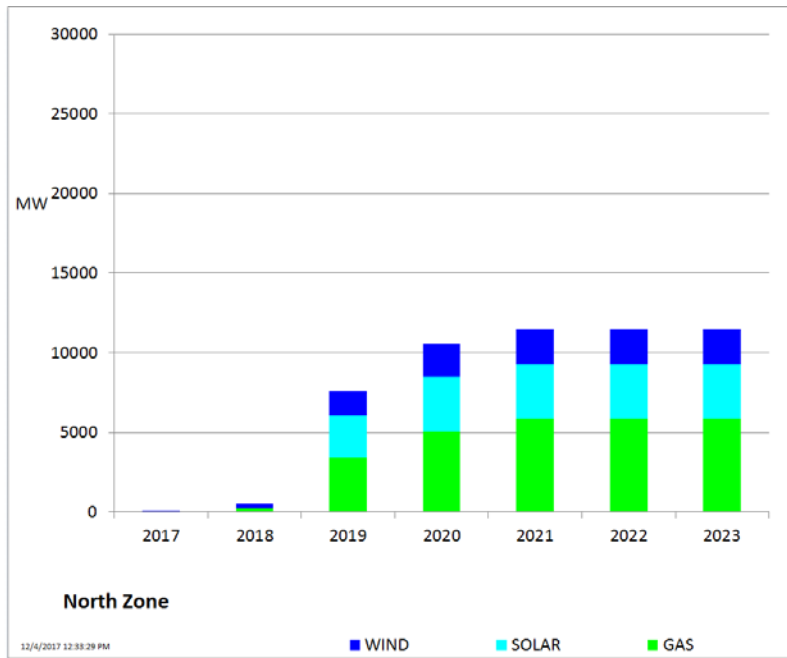
Planning Summary – November 2017

- ERCOT is currently tracking 340 active generation interconnection requests totaling 67,915 MW. This includes 29,411 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).

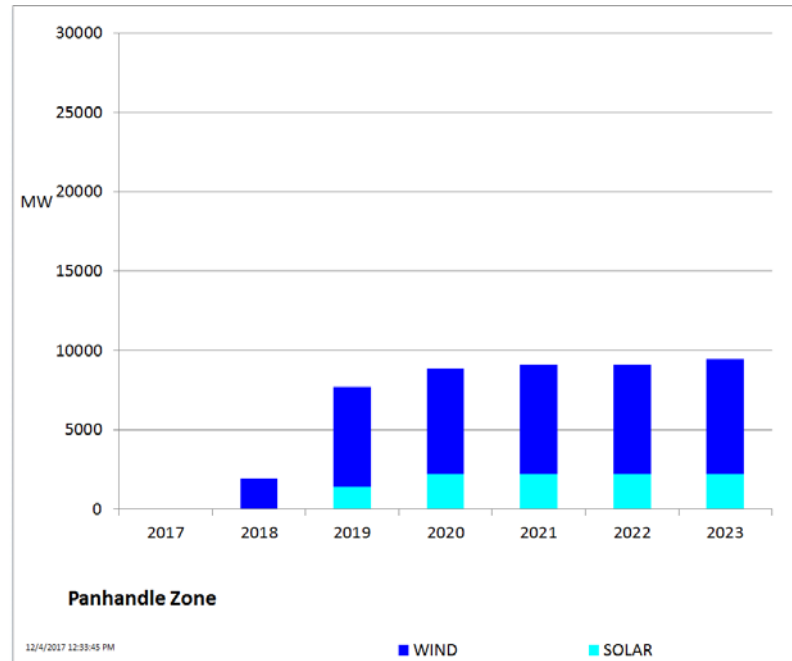
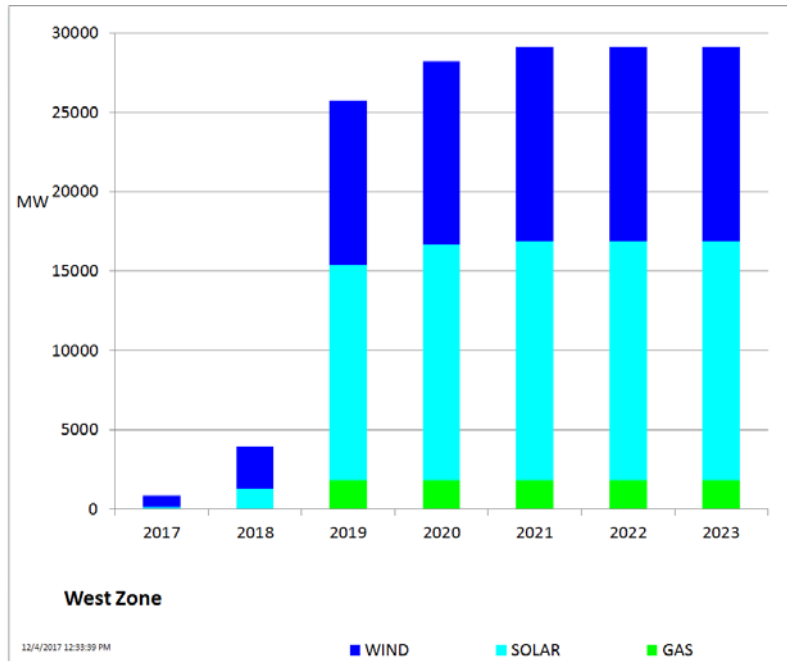
Mapping of Counties to ERCOT Zones – November 2017



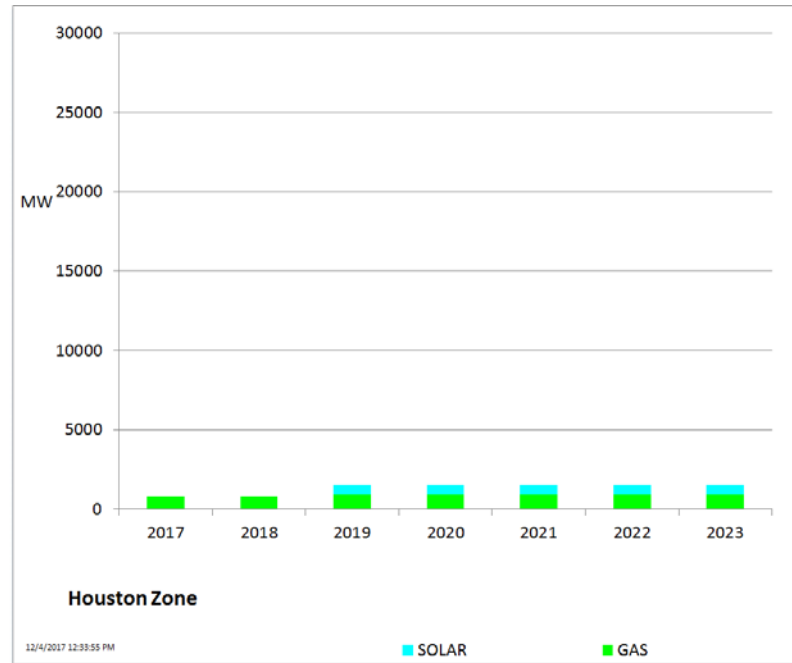
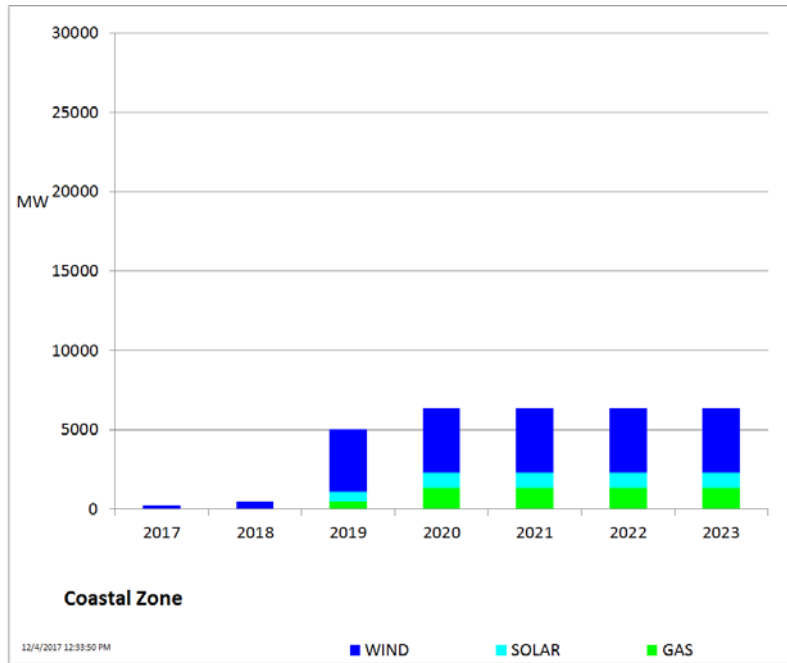
Cumulative MW Capacity of Interconnection Requests by Zone – November 2017



Cumulative MW Capacity of Interconnection Requests by Zone – November 2017

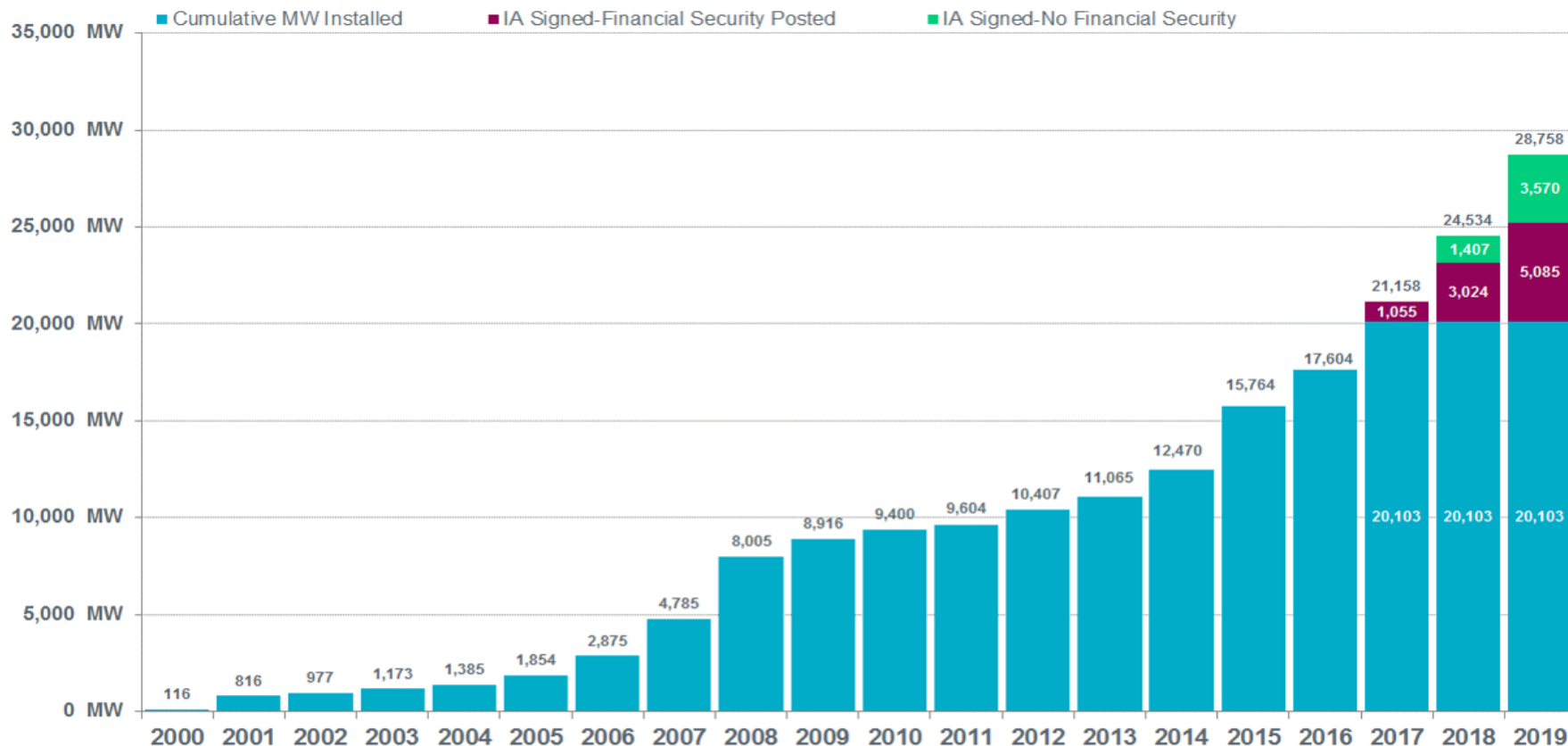


Cumulative MW Capacity of Interconnection Requests by Zone – November 2017



Wind Generation – November 2017

ERCOT Wind Additions by Year (as of November 30, 2017)



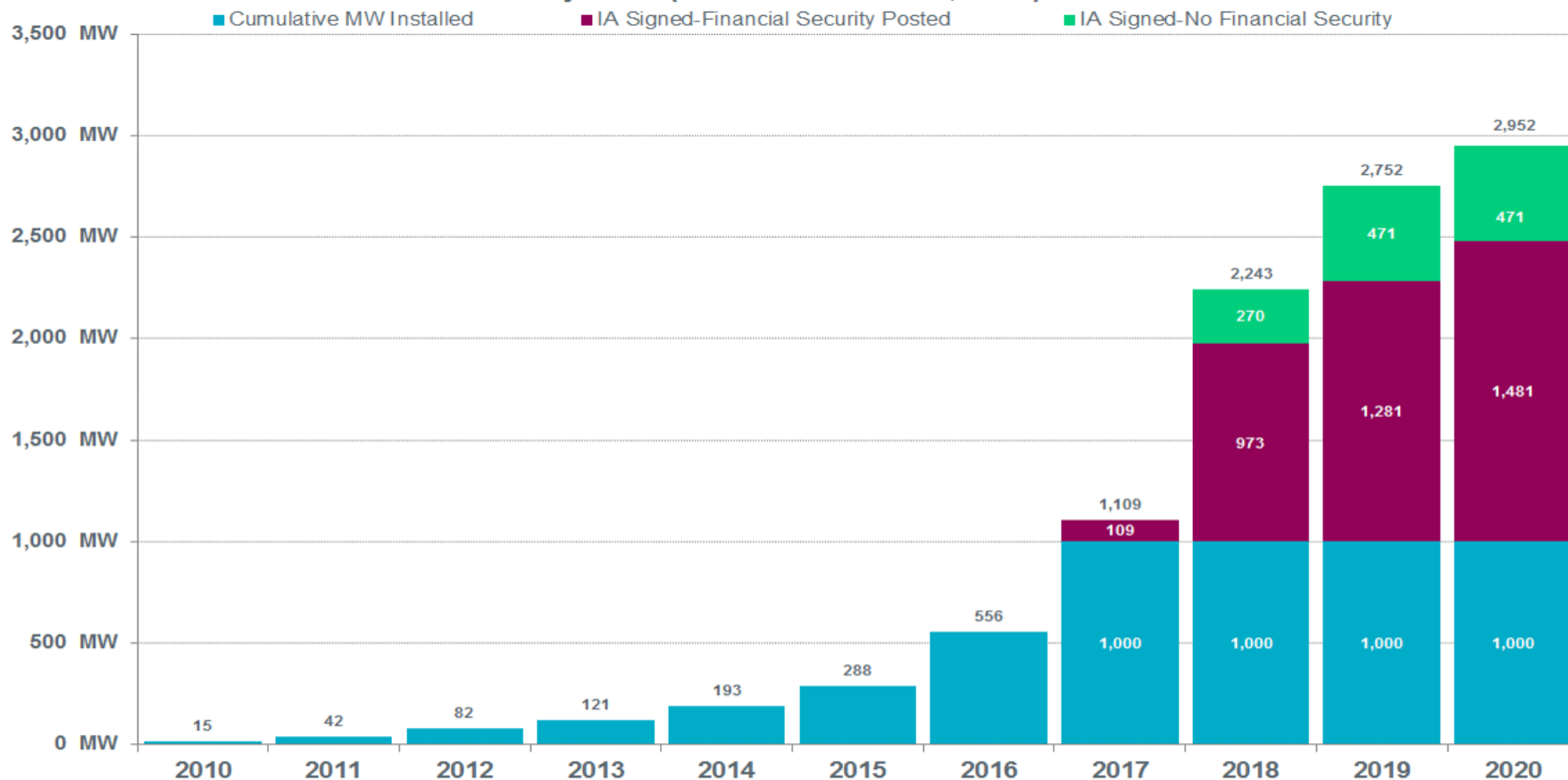
Notes:

- 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 – November 2017

ERCOT Solar Additions by Year (as of November 30, 2017)



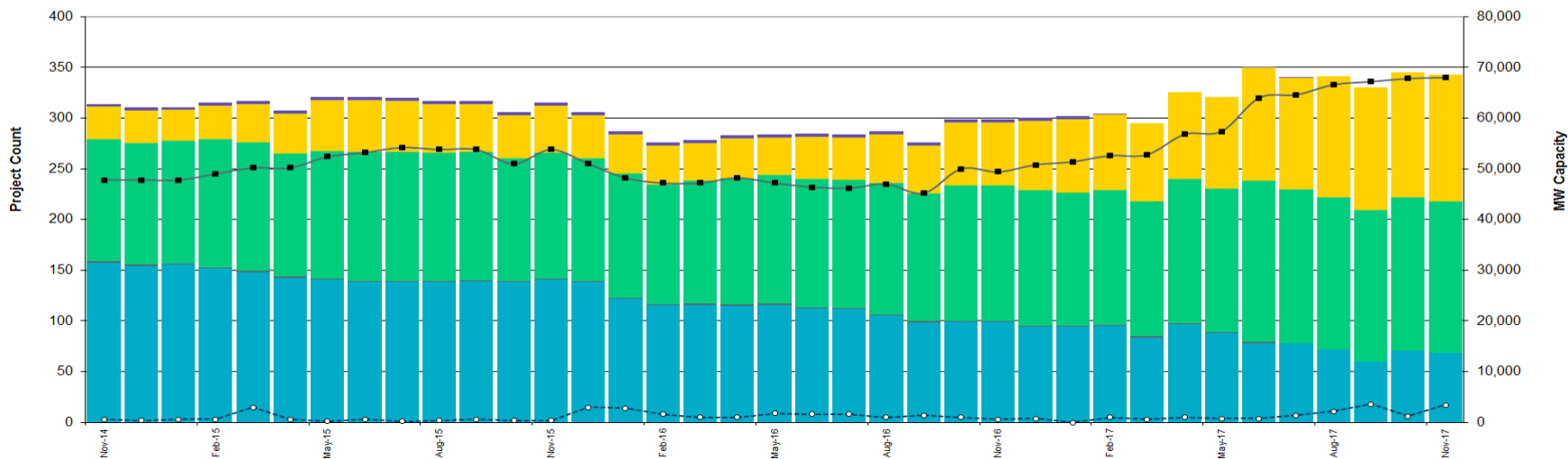
- Notes:
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 - This chart reports annual planned units with projected Commercial Operations Dates throughout the calendar year. In contrast, ERCOT's Capacity, Demand and Reserves (CDR) report shows planned capacity projected to be commercially available on or before the start of the Summer and Winter Peak Load seasons.



Generation Interconnection Activity by Fuel – November 2017

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

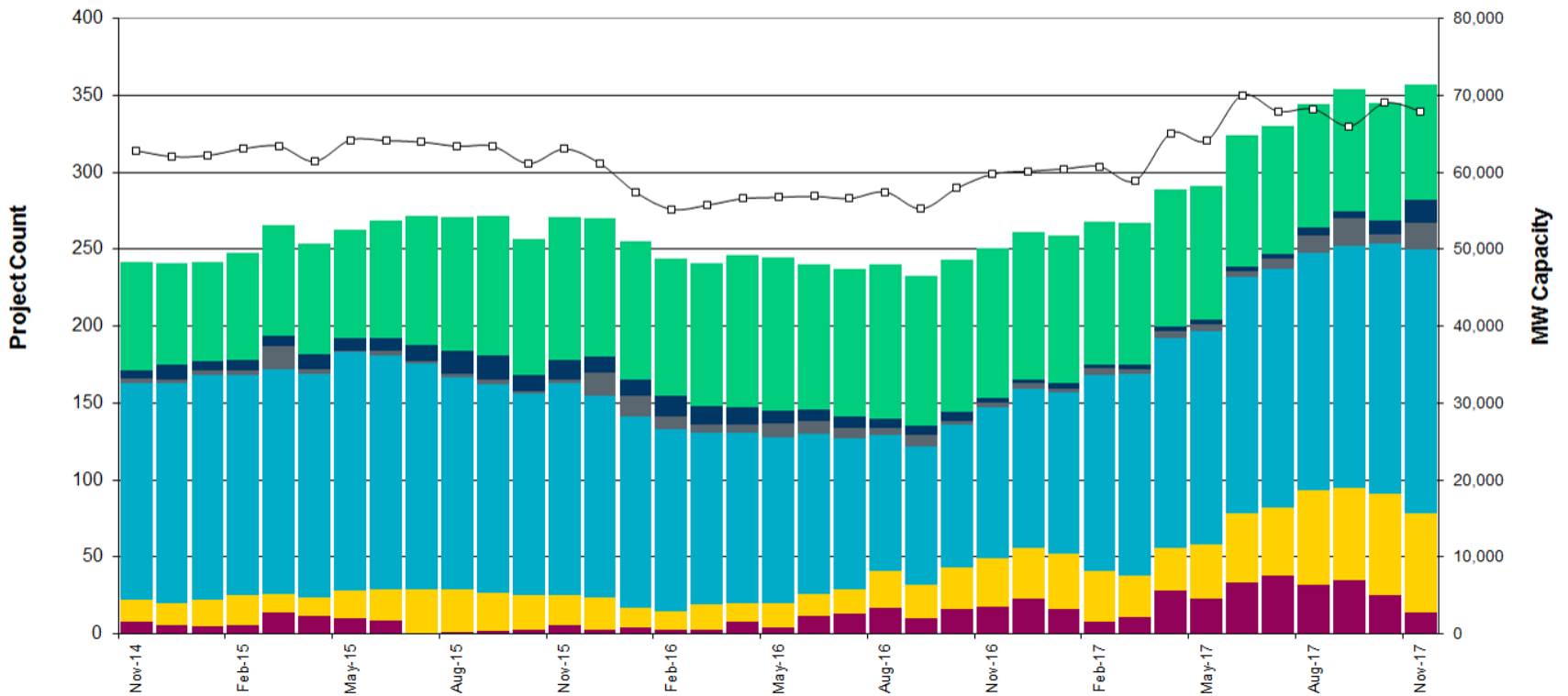
Projects in all phases of interconnection study are reflected in this graph



Generation Interconnection Activity by Project Phase – November 2017

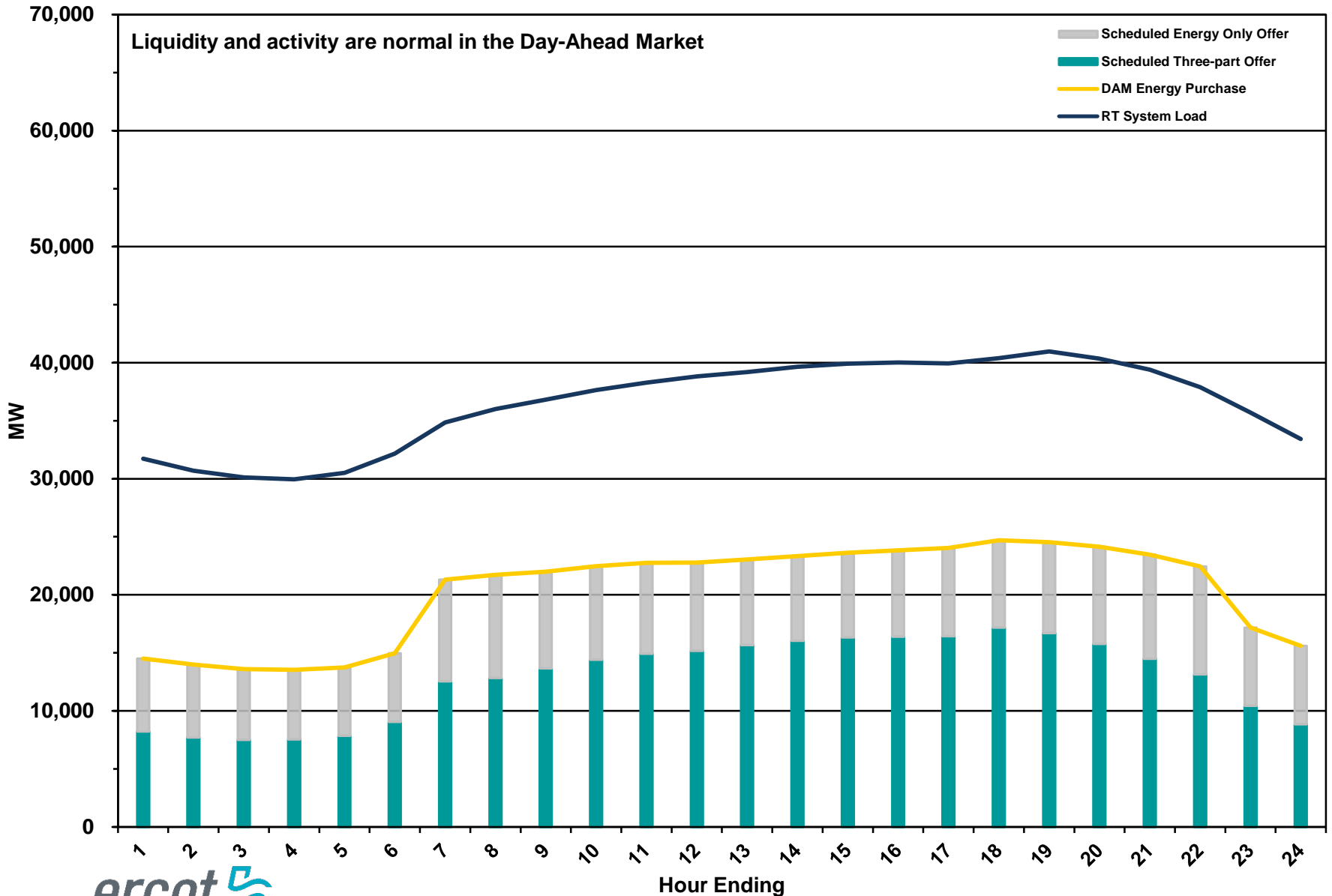
- # Signed Interconnect Agreement
- # Completed Full Study
- # Projects Cancelled
- # in Full Study
- # Screening Study Complete
- # Initial Screening Study
- MW Capacity Under Study *

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

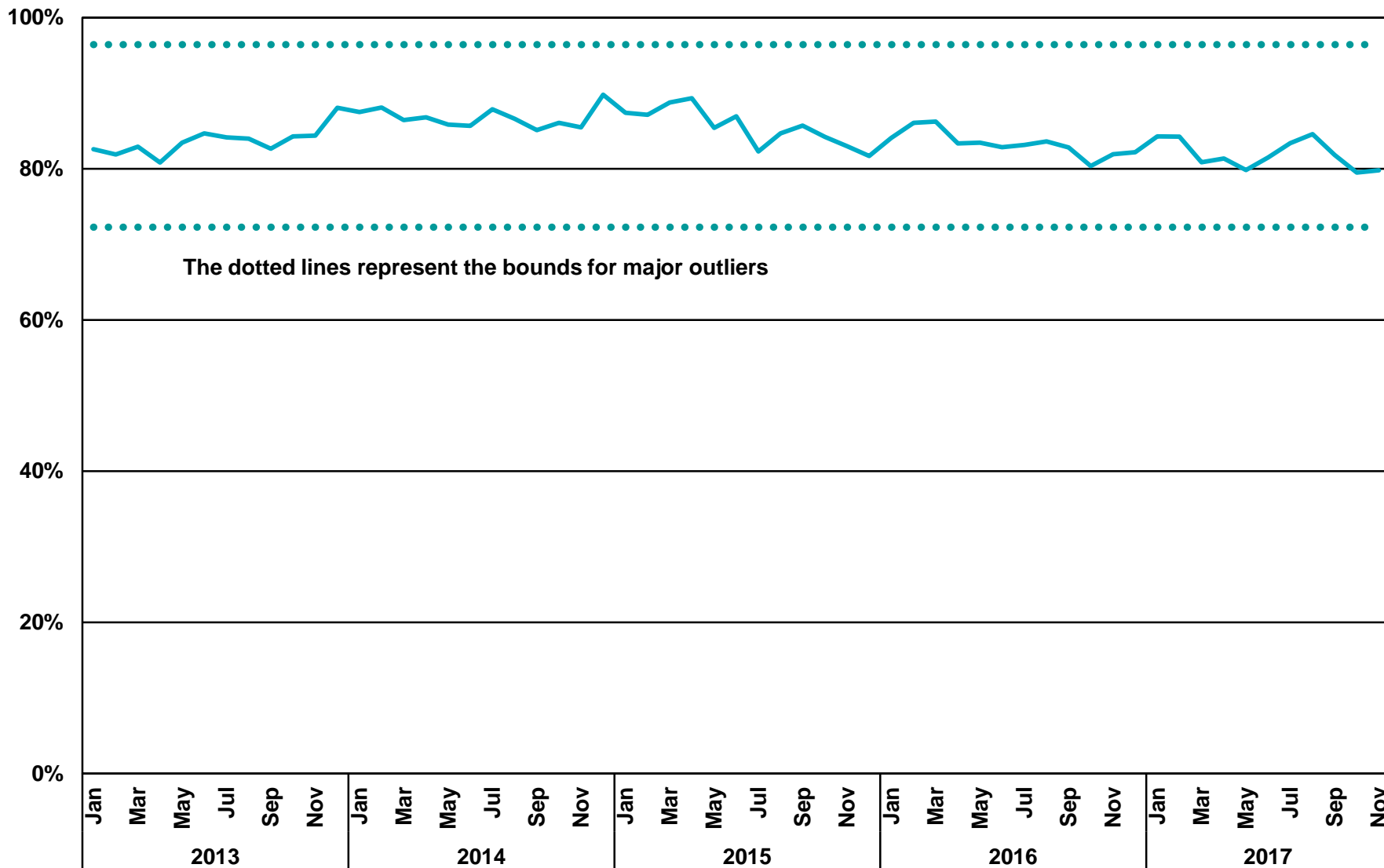


Market Operations

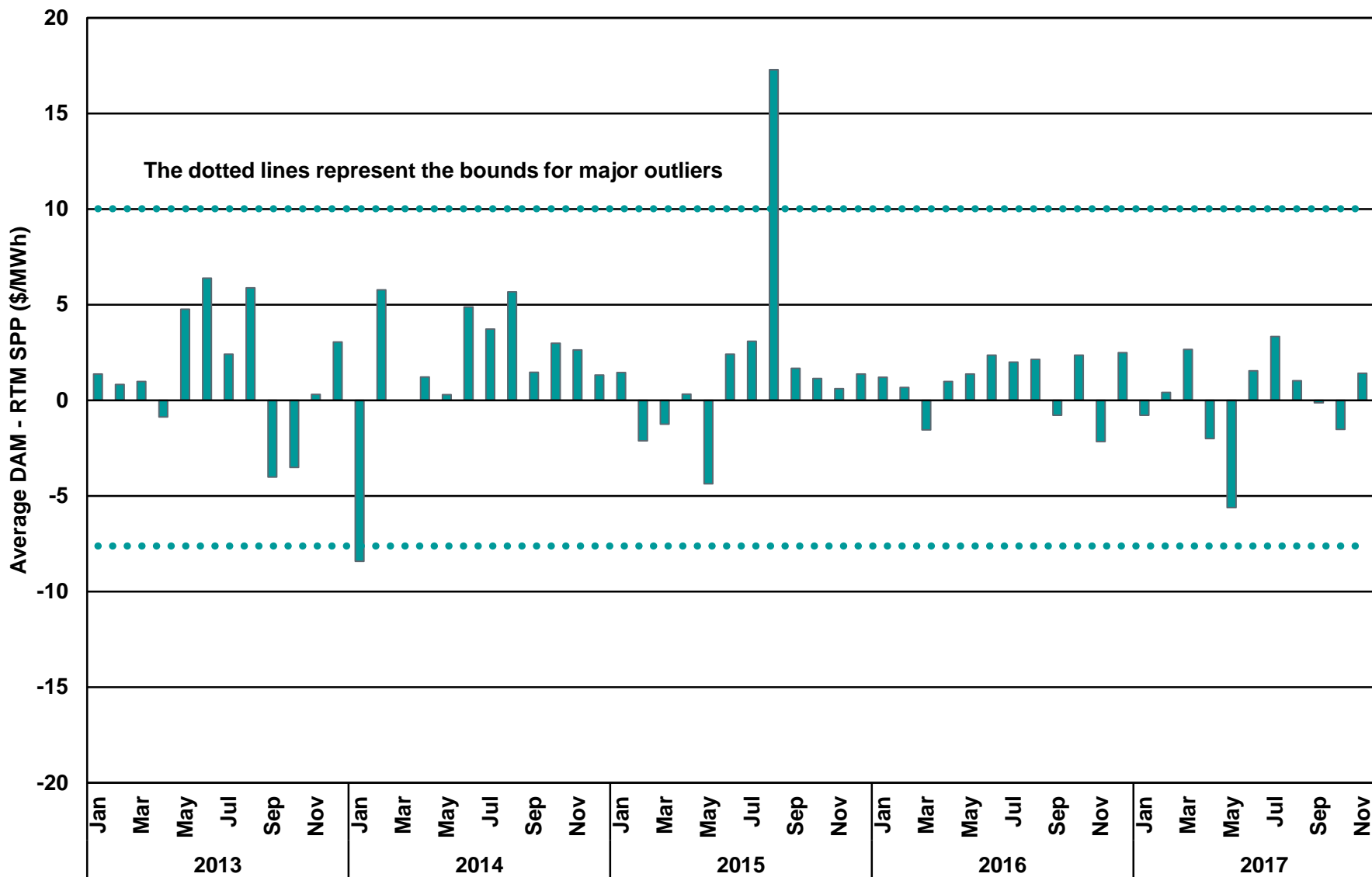
Day-Ahead Schedule (Hourly Average) – November 2017



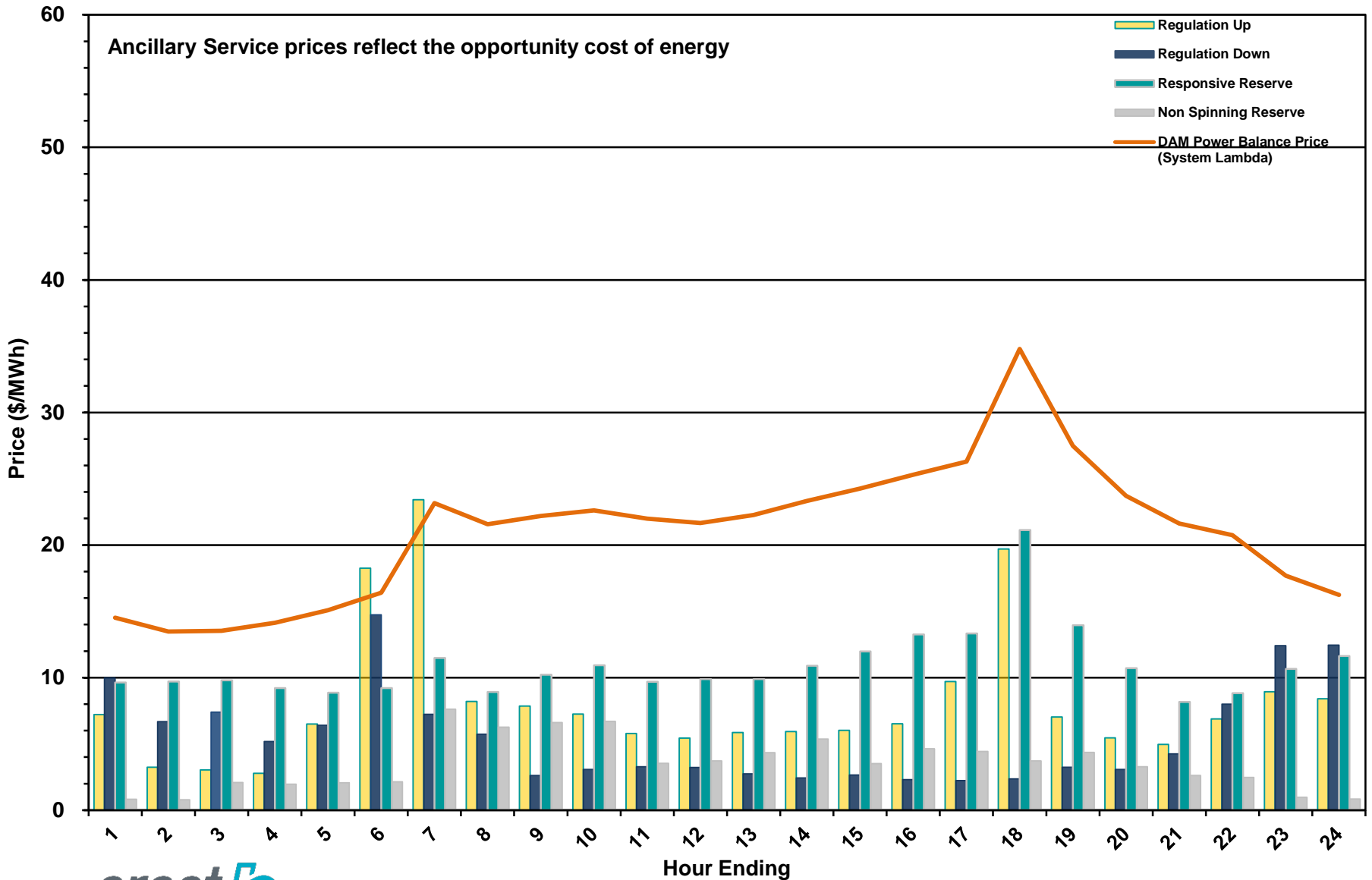
Percentage of Real-Time Load Transacted in the DAM – November 2017



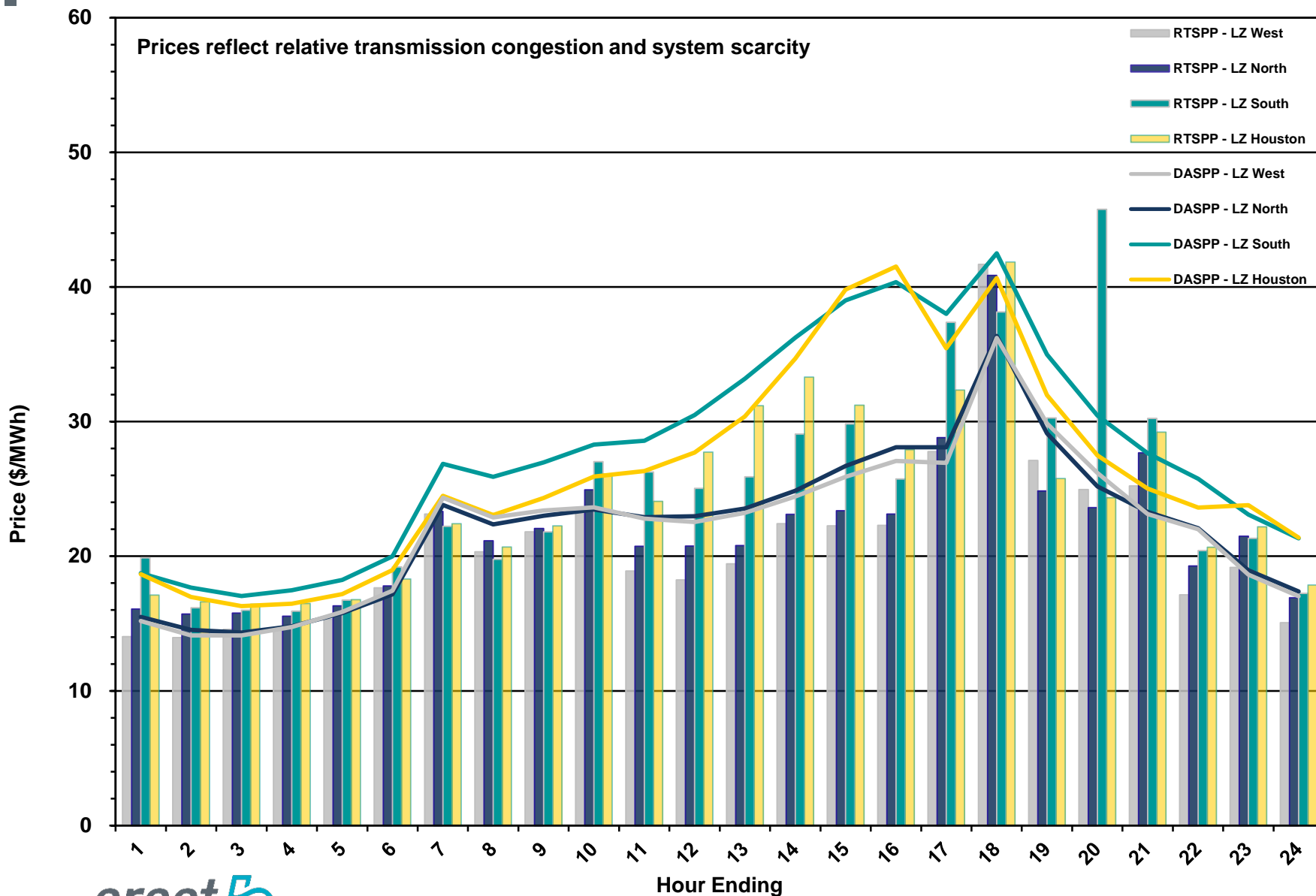
DAM and RTM Price Convergence – November 2017



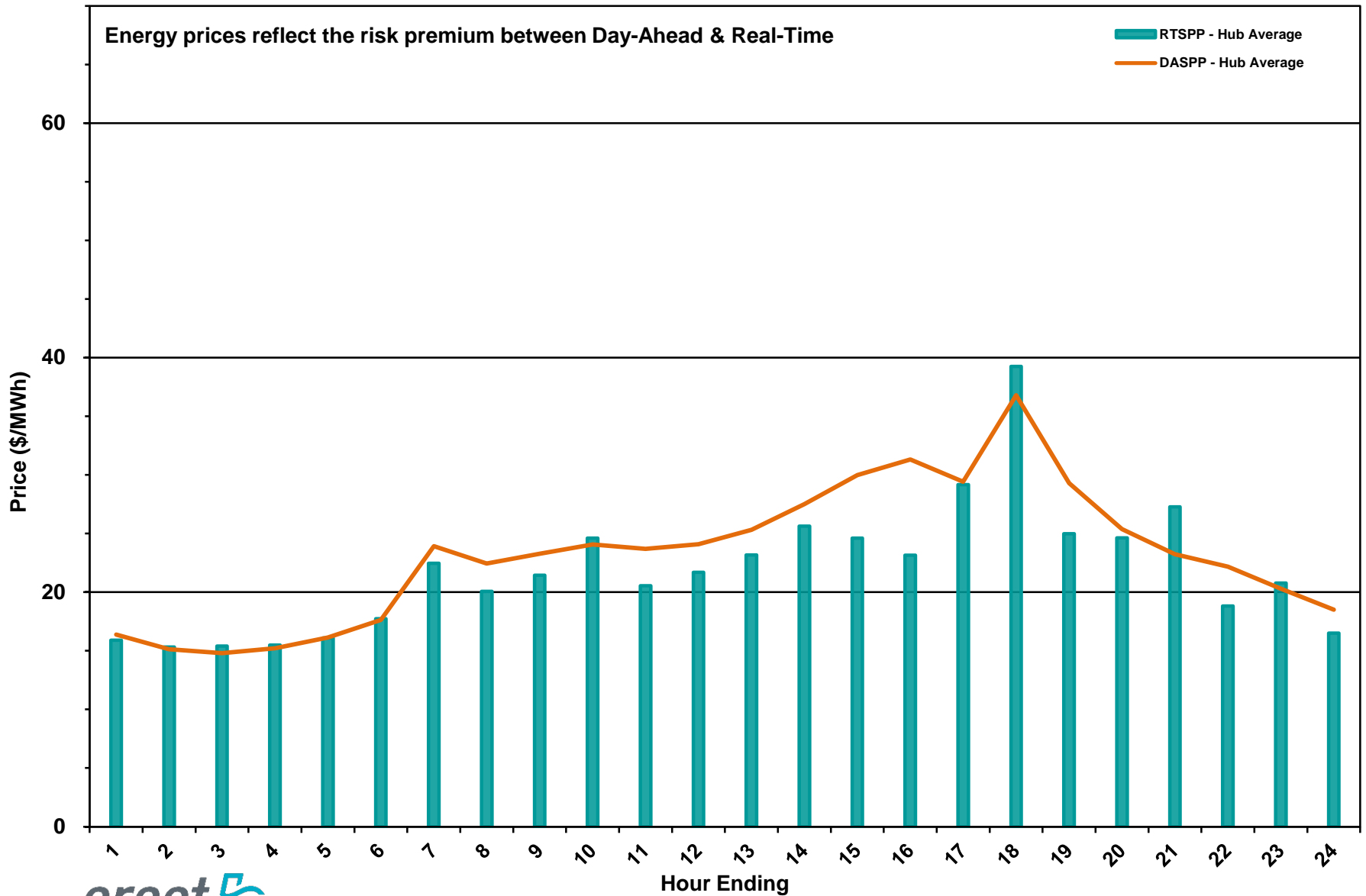
Day-Ahead Electricity and Ancillary Service Prices (Hourly Average) – November 2017



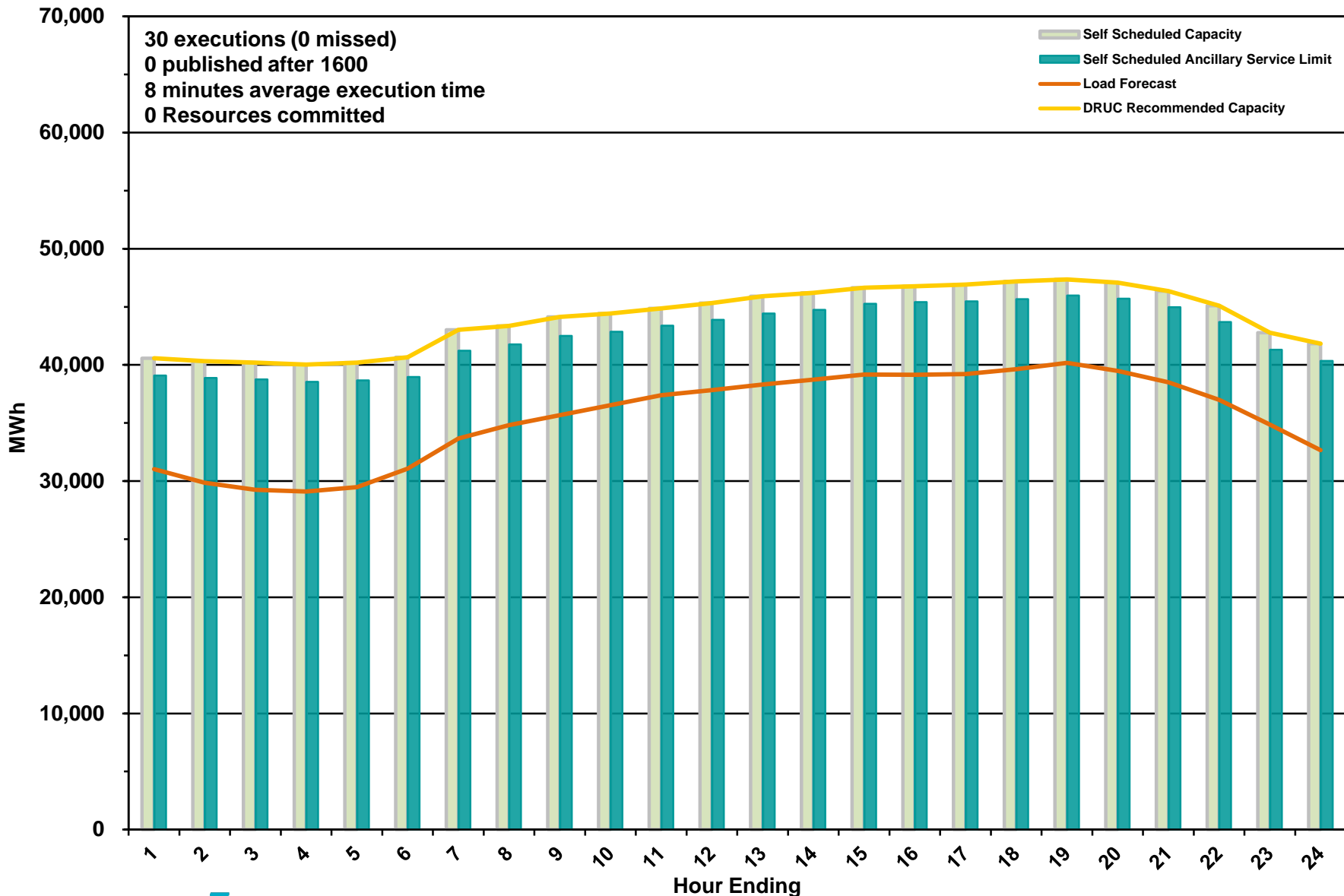
Day-Ahead vs Real-Time Load Zone SPP (Hourly Average) – November 2017



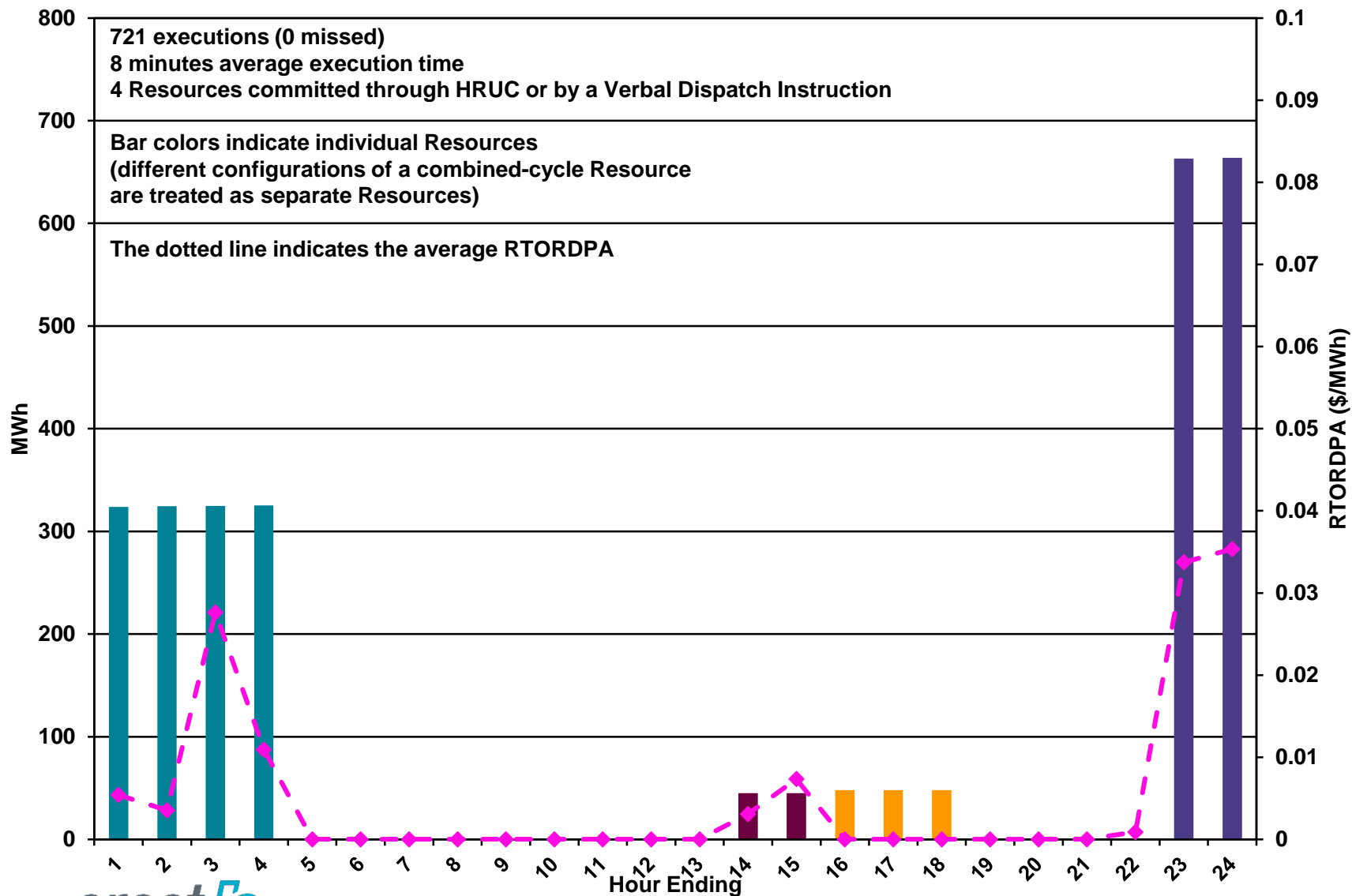
Day-Ahead vs Real-Time Hub Average SPP (Hourly Average) – November 2017



DRUC Monthly Summary (Hourly Average) – November 2017



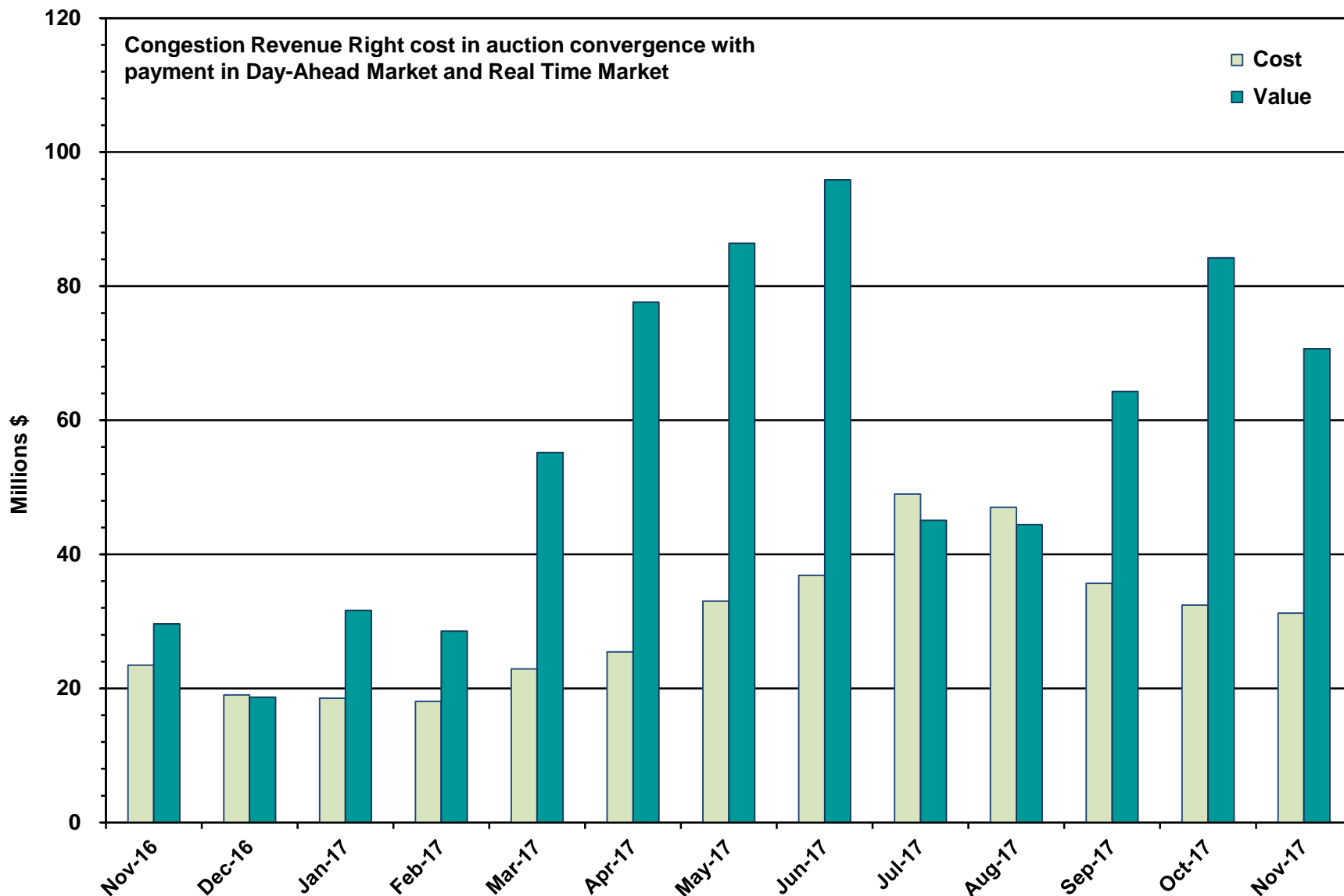
HRUC Monthly Summary and Real Time On-Line Reliability Deployment Price Adder (RTORDPA) (Hourly Average) – November 2017



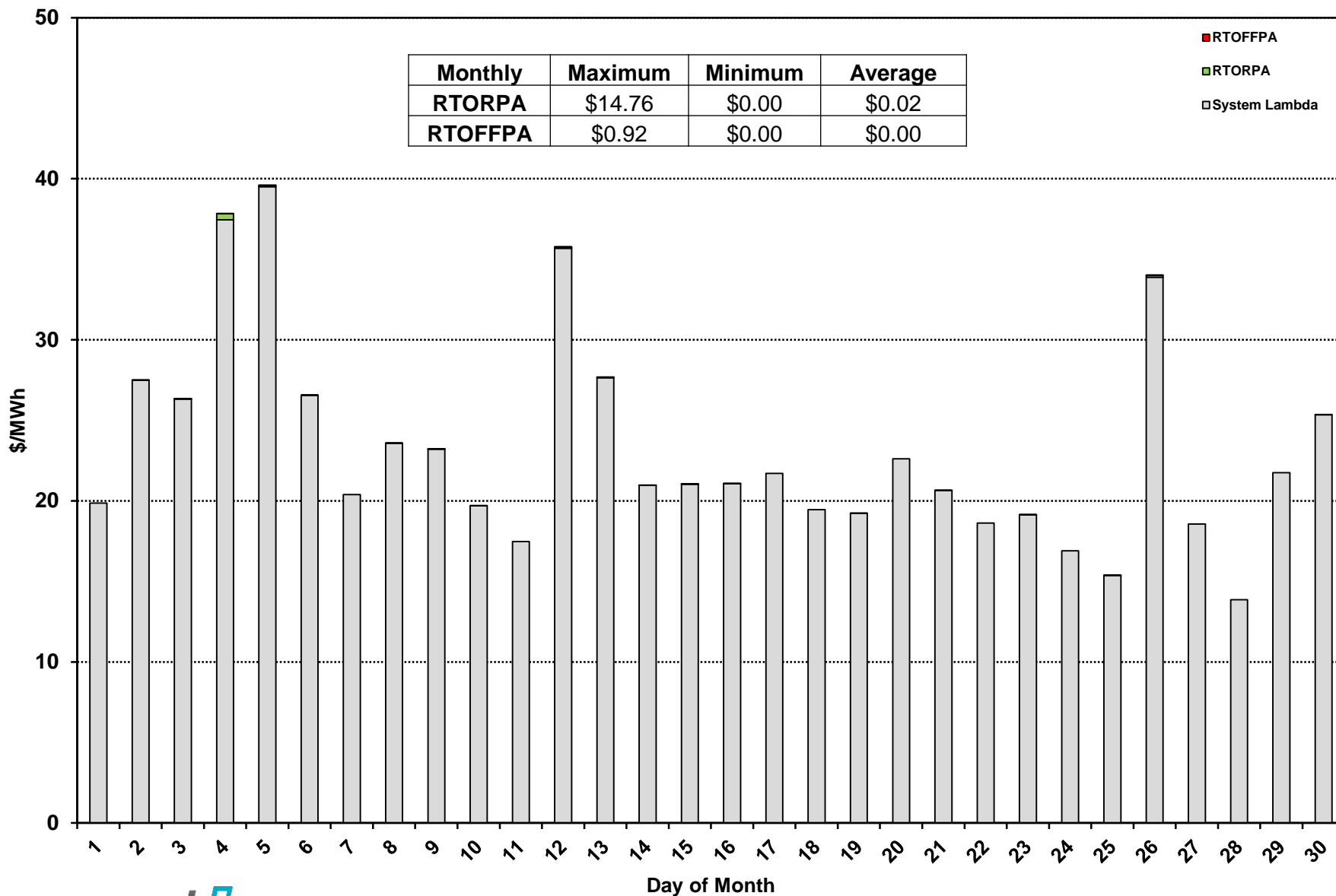
Non-Spinning Reserve Service Deployment – November 2017

Deployment Start Time	Deployment End Time	Deployment Duration (Hours)	Max Deployment (MW)	Reason
None				

CRR Price Convergence – November 2017



Daily Average System Lambda and ORDC Price Adders – November 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.

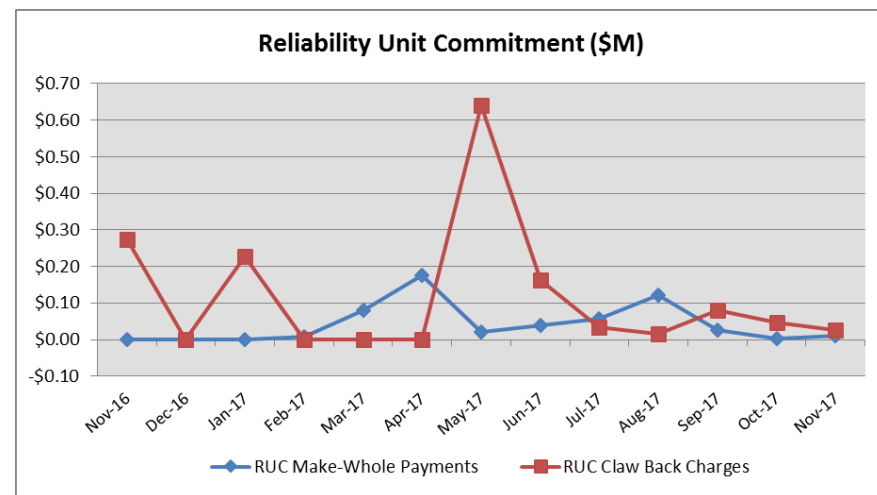
Time Period

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 – November 2017

Reliability Unit Commitment (RUC)	\$ in Millions
RUC Make-Whole Payments	(\$0.01)
RUC Clawback Charges	\$0.02
RUC Commitment Settlement	\$0.01
RUC Capacity Short Charges	\$0.01
RUC Make-Whole Uplift	\$0.00
RUC Commitment Cost Allocation	\$0.01
RUC Decommitment Payments	\$0.00



RUC Make-Whole Payments were \$0.01M in November 2017.
RUC Clawback Charges were \$0.02M.

There was \$0.02M allocated directly to load in November 2017, compared to:

- \$0.05M in October 2017
- \$0.27M in November 2016

Capacity Services – November 2017

Capacity Services	\$ in Millions
Regulation Up Service	\$1.87
Regulation Down Service	\$1.12
Responsive Reserve Service	\$16.33
Non-Spinning Reserve Service	\$4.51
Black Start Service	\$0.59
Voltage Services - Reactive Power	\$0.00
Voltage Services - Lost Opportunity	\$0.00
Total Charges	\$24.42

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

November 2017 cost was \$24.42M, compared to:

- A charge of \$30.05M in October 2017
- A charge of \$28.59M in November 2016

Energy Settlement – November 2017

Day-Ahead Market Energy Settlement	\$ in Millions
Energy Purchases	\$365.39
Point to Point Obligation Purchases	\$60.10
Energy Sales	(\$353.70)
Day-Ahead Congestion Rent	\$71.79
Day-Ahead Market Make-Whole Payments	(\$0.35)

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

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

Real-Time Market Energy Settlement	\$ in Millions
Energy Imbalance at a Resource Node	(\$300.04)
Energy Imbalance at a Load Zone	\$497.30
Energy Imbalance at a Hub	(\$142.58)
Real Time Congestion from Self Schedules	\$0.18
Block Load Transfers and DC Ties	(\$1.04)
Impact to Revenue Neutrality	\$53.82
Emergency Energy Payments	(\$0.34)
Base Point Deviation Charges	\$0.16
Real-Time Metered Generation (MWh in millions)	26.15

Congestion Revenue Rights (CRR) – November 2017

	\$ in Millions
Annual Auction	(\$18.30)
Monthly Auction	(\$12.94)
Total Auction Revenue	(\$31.24)
Day-Ahead CRR Settlement	(\$70.68)
Day-Ahead CRR Short-Charges	\$2.43
Day-Ahead CRR Short-Charges Refunded	(\$2.43)
Real-Time CRR Settlement	\$0.00
Real-Time CRR Short-Charges	\$0.00
Real-Time CRR Short-Charges Refunded	\$0.00
Total CRR Funding	(\$70.68)
Day-Ahead Point to Point Obligations Settlement	\$60.10
Real-Time Point to Point Obligation Settlement	(\$54.84)
Net Point to Point Obligation Settlement	\$5.26

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

Point to Point Obligations settled with a net charge of \$5.26M compared to a net credit of \$3.51M last month.

CRR Balancing Account Fund – November 2017

CRR Balancing Account Fund	\$ in Millions
Beginning Balance for the Month	\$10.00
CRR Balancing Account Credit Total	\$3.54
CRR PTP Option Award Charges	\$0.04
Day-Ahead CRR Short-Charges Refunded	(\$2.43)
Load Allocated CRR Amount	(\$1.15)
Total Fund Amount	\$10.00

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

As of November 2017, the CRR Balancing Account Fund was at \$10M and excess funds of \$1.15M were allocated to Load.

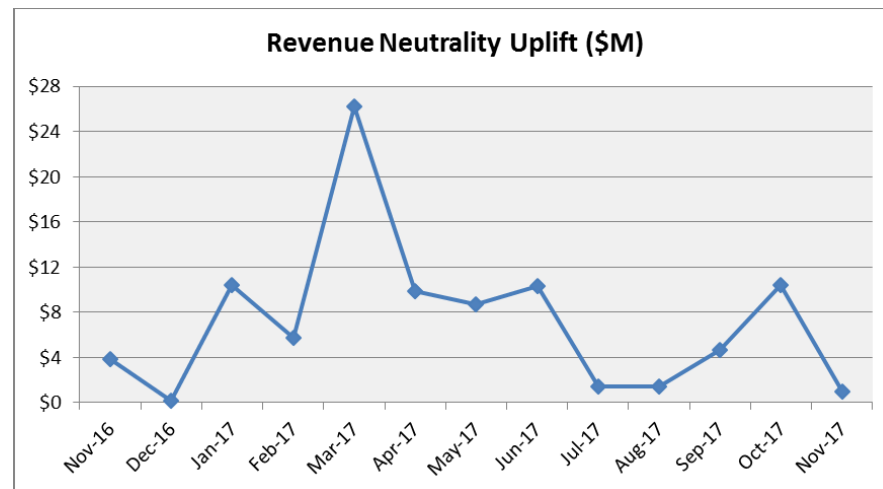
Revenue Neutrality – November 2017

Revenue Neutrality Settlement	\$ in Millions
Real-Time Point to Point Obligation Settlement	(\$54.84)
Real-Time Point to Point Options and Options with Refund Settlement	\$0.00
Real-Time Energy Imbalance Settlement	\$54.67
Real-Time Congestion from Self-Schedules Settlement	\$0.18
DC Tie & Block Load Transfer Settlement	(\$1.04)
Charge to Load	\$1.03

Revenue Neutrality charge to load decreased compared to last month and decreased compared to November 2016.

November 2017 was a charge of \$1.03M, compared to:

- \$10.45M charge in October 2017
- \$3.89M charge in November 2016



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

Real-Time Ancillary Service Imbalance	\$ in Thousands
Load Allocated AS Imbalance Revenue Neutrality Amount	\$20.28
Load Allocated Reliability Deployment AS Imbalance Revenue Neutrality Amount	\$25.51
Total Charges	\$45.79
Real-Time AS Imbalance Amount	(\$20.29)
Real-Time Reliability Deployment AS Imbalance Amount	(\$25.51)
Total Payments	(\$45.80)

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

November 2017 had a charge to load of \$46K, compared to:

- A charge of \$284K in October 2017
- A charge of \$8K in November 2016

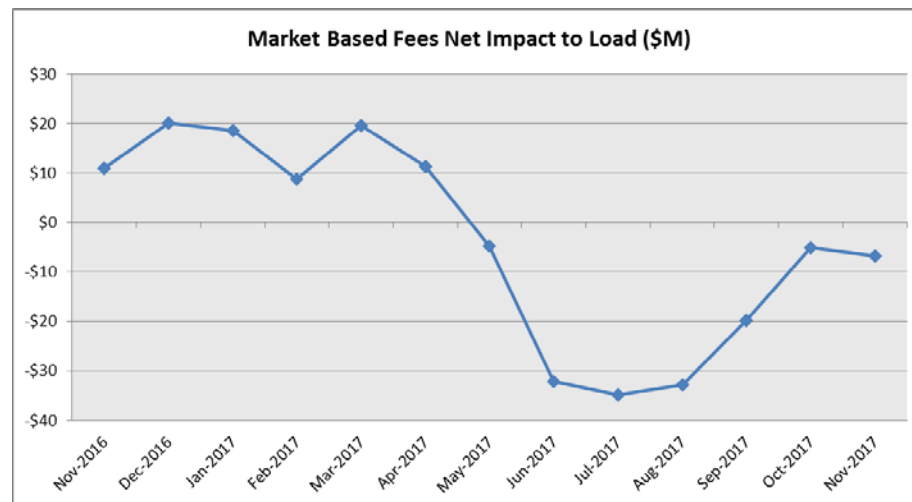
Net Allocation to Load – November 2017

Market-Based Allocation	\$ in Millions
CRR Auction Revenue Disbursement Settlement	(\$31.24)
Balancing Account Proceeds Settlement	(\$1.15)
Net Reliability Unit Commitment Settlement	(\$0.02)
Ancillary Services Settlement	\$24.42
Reliability Must Run Settlement (incl. RMR for Capacity)	\$0.00
Real-Time Revenue Neutrality Settlement	\$1.03
Emergency Energy Settlement	\$0.34
Base Point Deviation Settlement	(\$0.16)
ORDC Settlement	\$0.05
Total	(\$6.73)
Fee Allocation	
ERCOT Administrative Fee Settlement	\$14.57
Net Allocated to Load	\$7.84

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

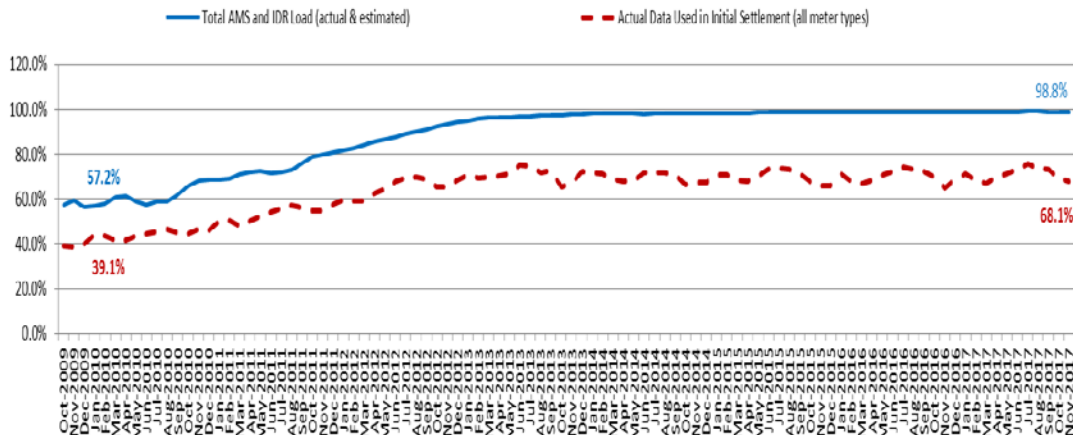
November 2017 was a charge of \$7.84M, compared to:

- A charge of \$11.13M in October 2017
- A charge of \$24.65M in November 2016



Advanced Meter Settlement Impacts – November 2017

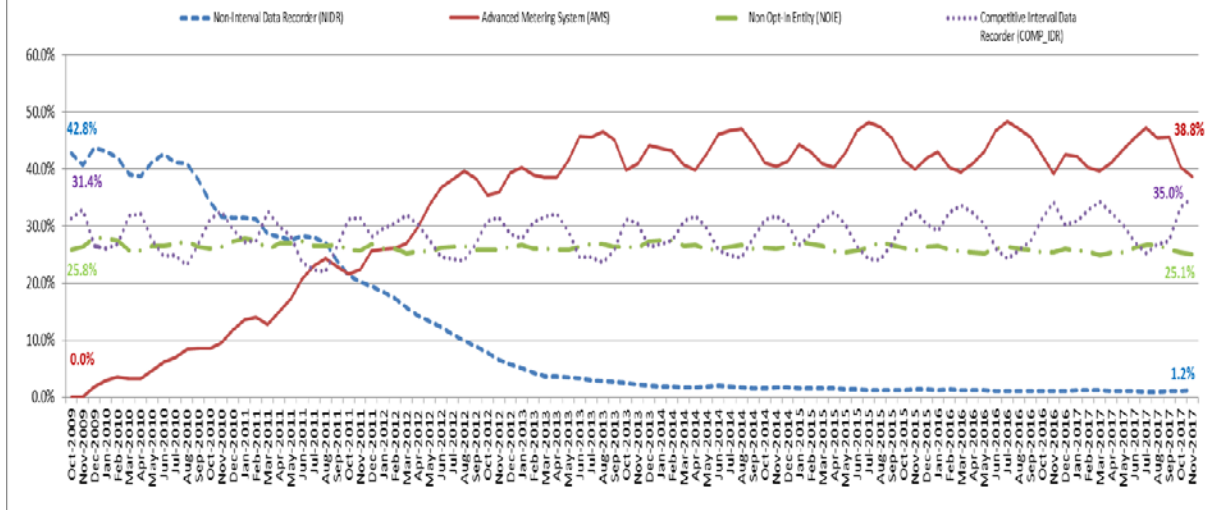
Percent Actual/Percent Interval Data Recorder (IDR)



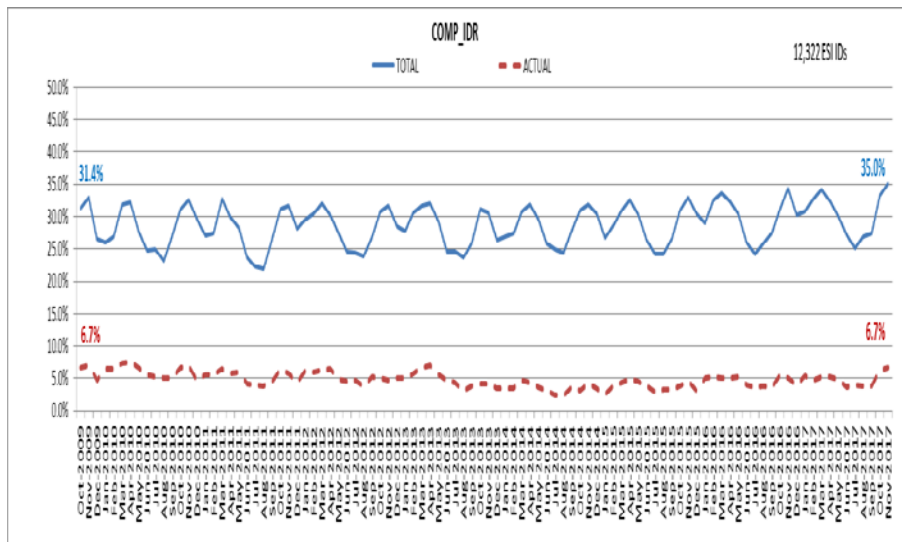
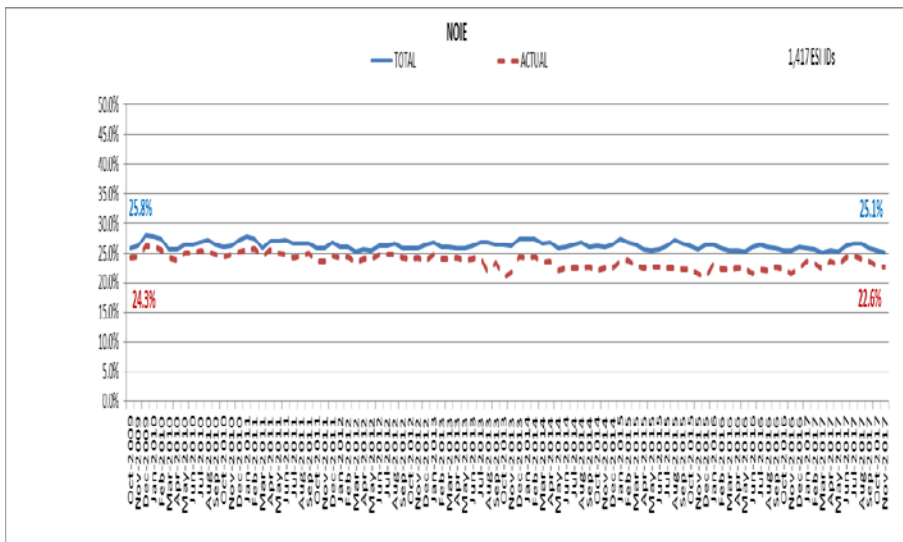
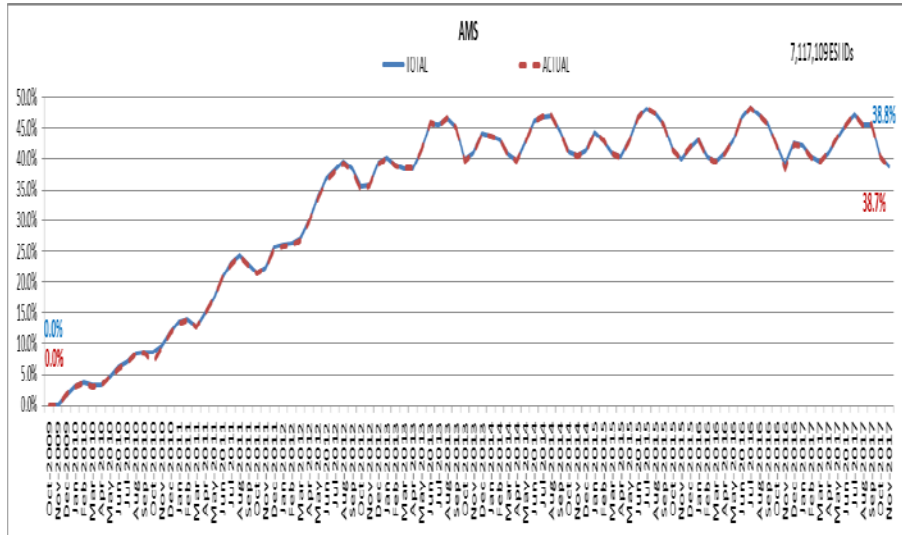
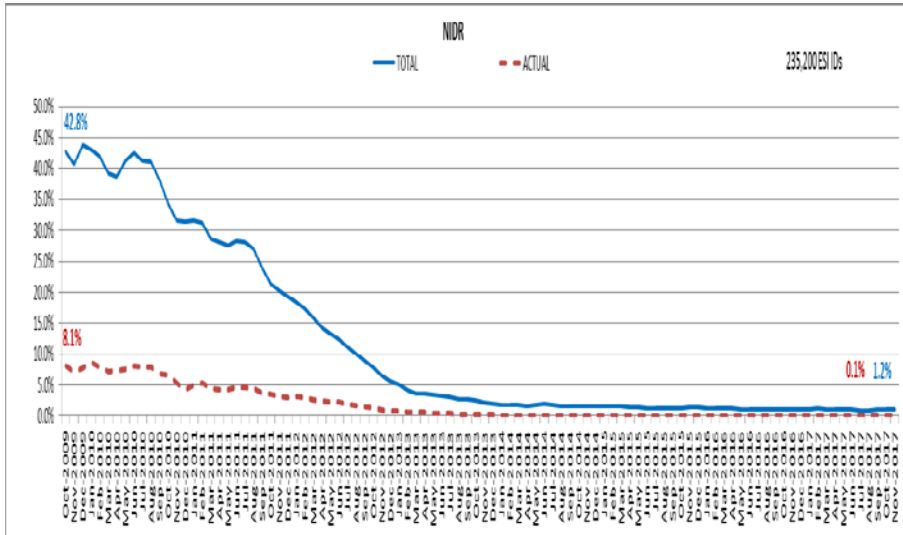
November 2017: At month end, settling 7.1M ESIDs using Advanced Meter data.

November 2017: 98.8% 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 – November 2017

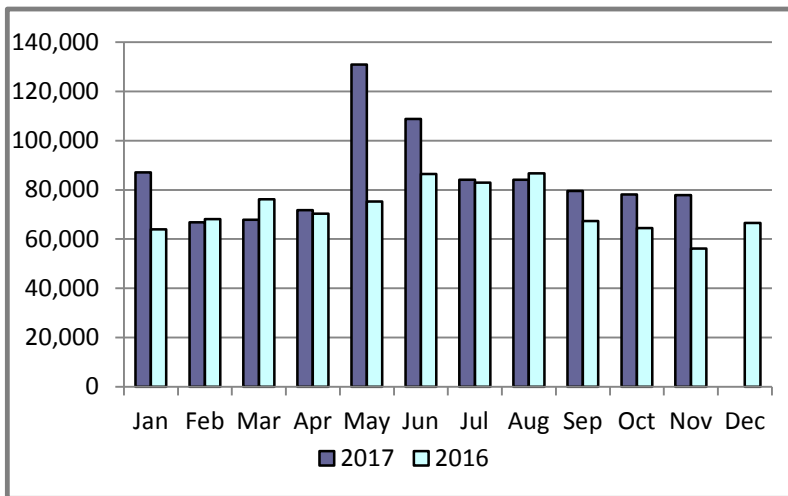


Retail Transaction Volumes – Summary – November 2017

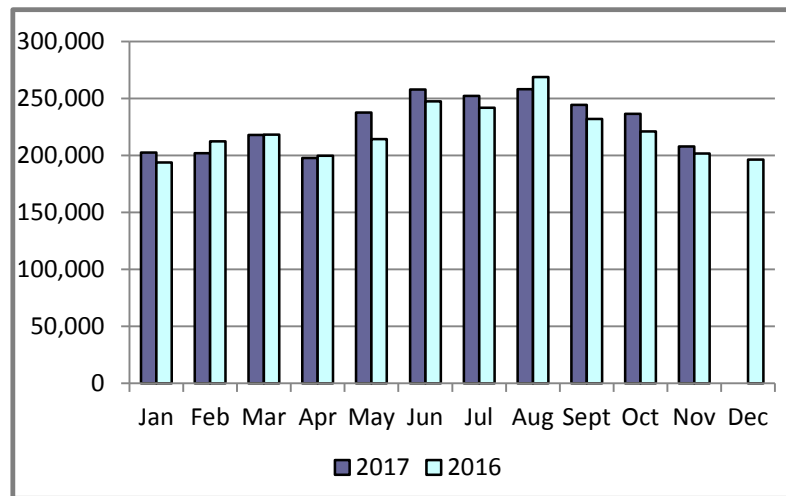
Transaction Type	Year-To-Date		Transactions Received	
	November 2017	November 2016	November 2017	November 2016
Switches	936,892	797,801	77,860	56,202
Acquisition	0	0	0	0
Move - Ins	2,515,028	2,451,399	207,921	201,714
Move - Outs	1,277,335	1,240,756	100,830	100,578
Continuous Service Agreements (CSA)	450,086	520,081	31,726	39,856
Mass Transitions	0	0	0	0
Total	5,179,341	5,010,037	418,337	398,350

Retail Transaction Volumes – Summary – November 2017

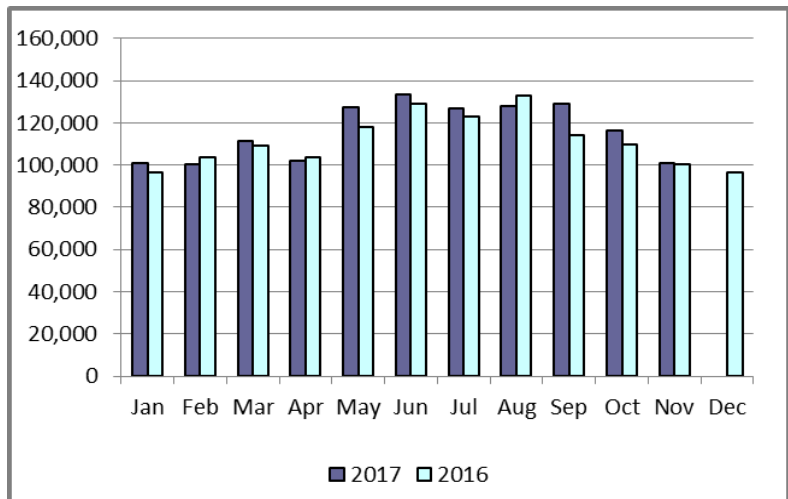
Switches/Acquisitions



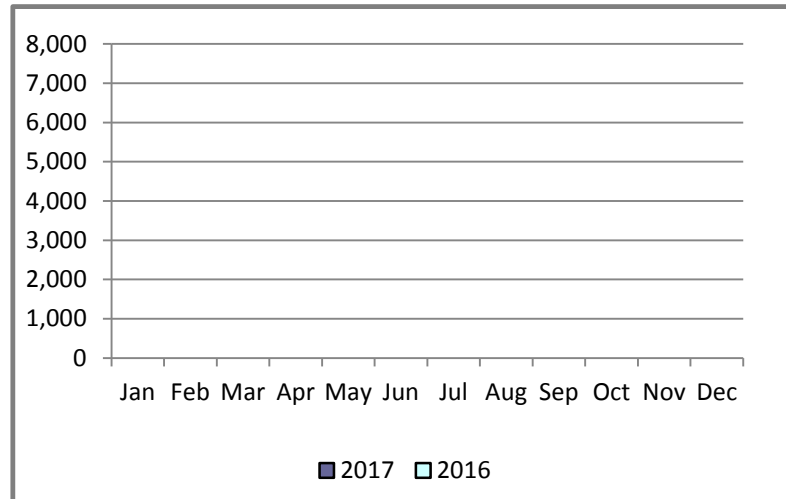
Move-Ins



Move-Outs

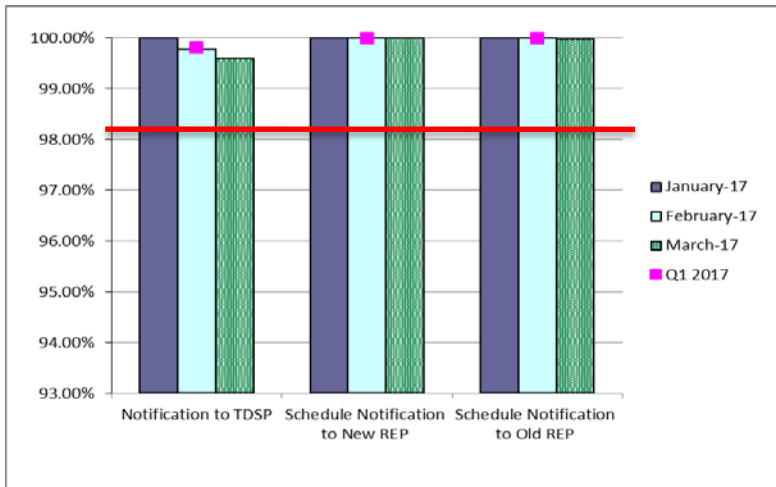


Mass Transition

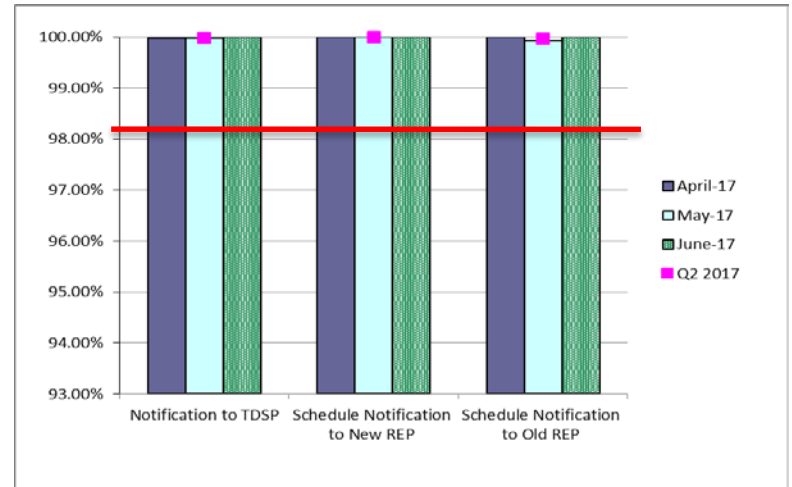


Retail Performance Measures – Switch – November 2017

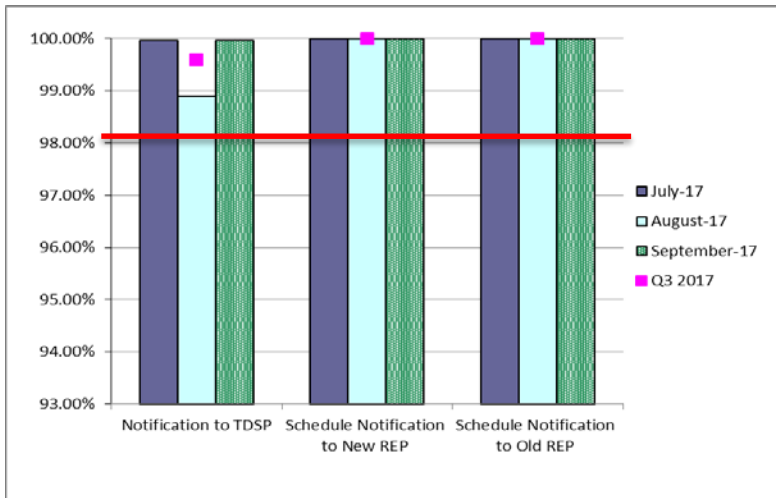
1st Quarter



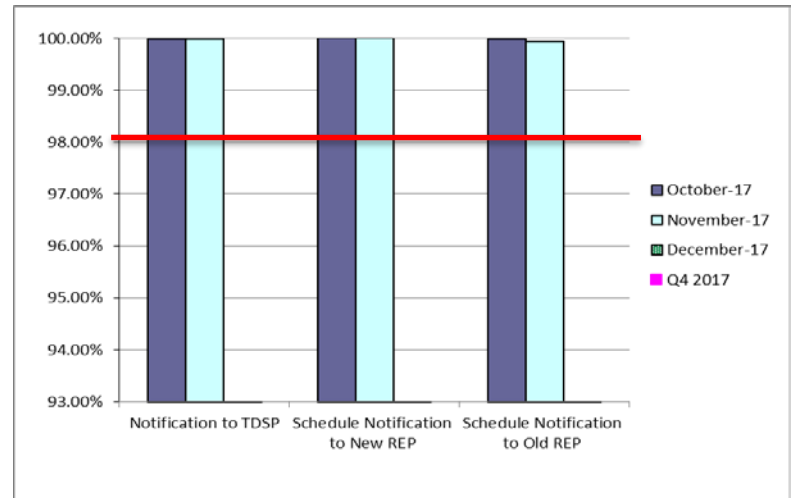
2nd Quarter



3rd Quarter

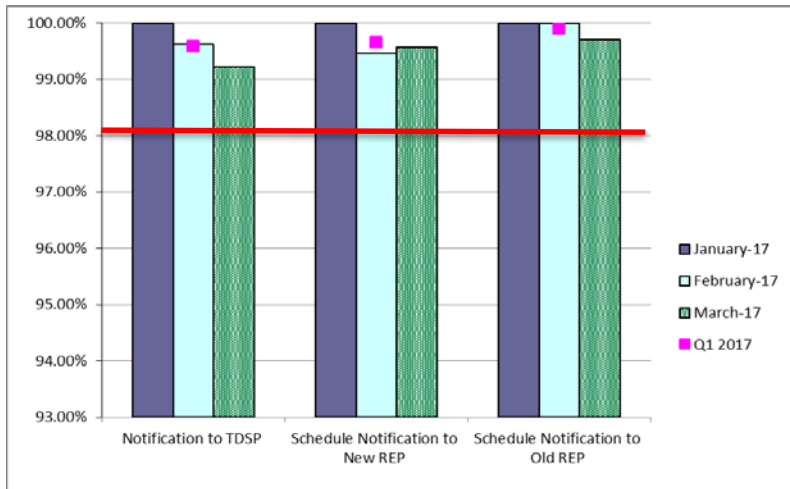


4th Quarter

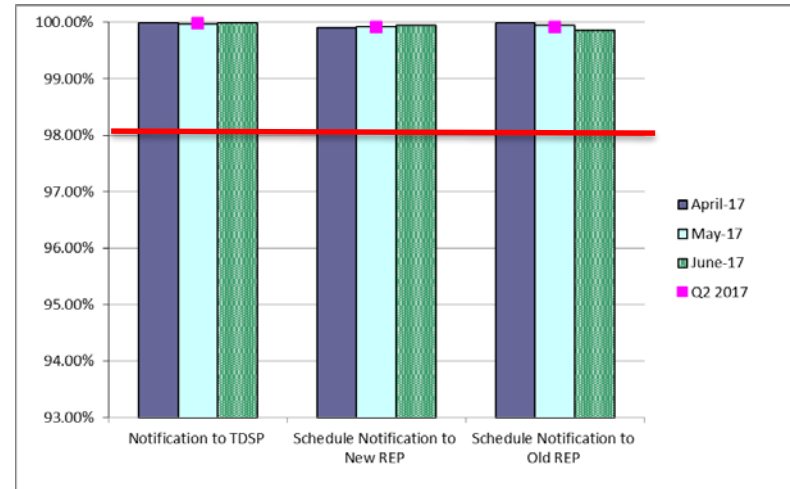


Retail Performance Measures – Same Day Move-In – November 2017

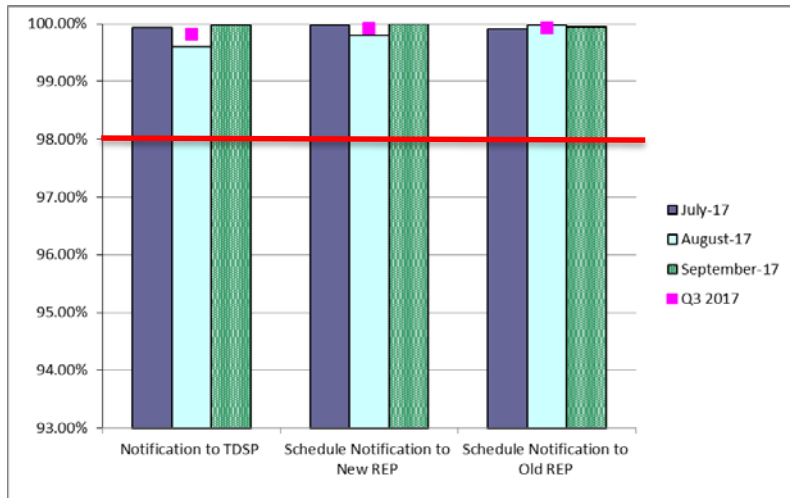
1st Quarter



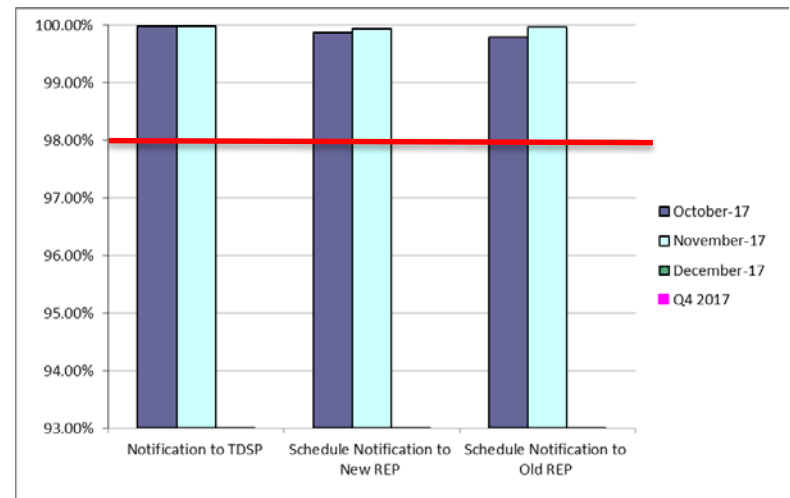
2nd Quarter



3rd Quarter

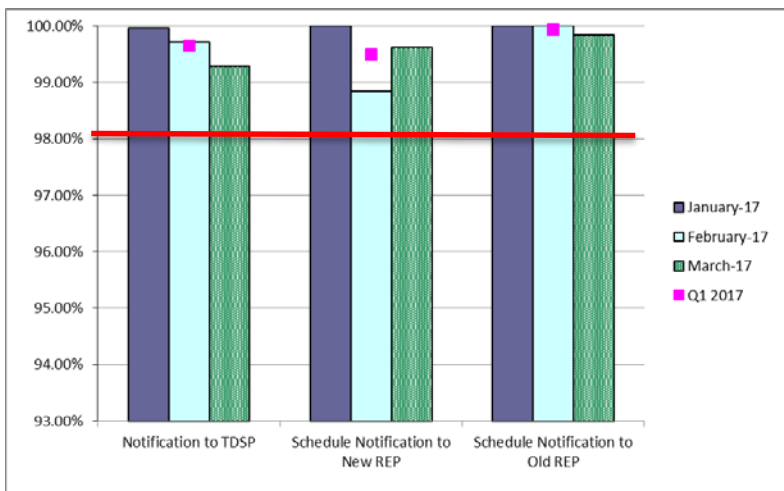


4th Quarter

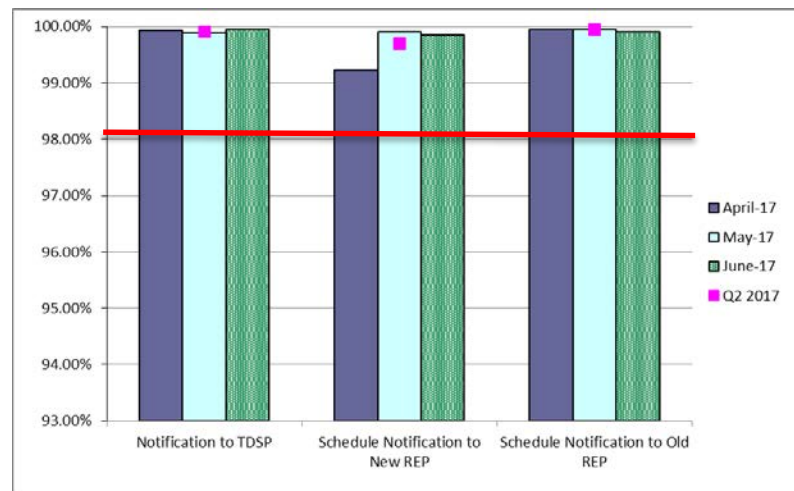


Retail Performance Measures – Standard Move-In – November 2017

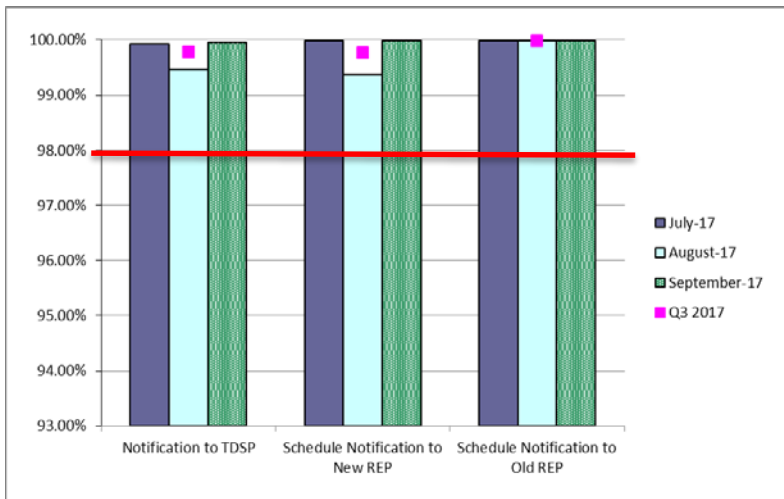
1st Quarter



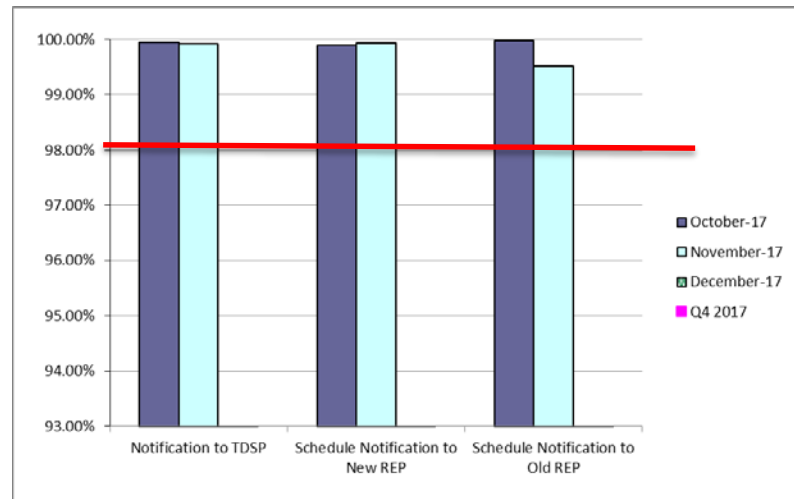
2nd Quarter



3rd Quarter



4th Quarter



Projects Report

ERCOT Portfolio Stoplight Report – November 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 = 75)		\$16,595,412
	Projects Not Yet Started (Count = 1)		\$ -
	Projects Completed (Count = 55)		\$ 6,222,697
	Spending Reductions Required to Maintain Capital Budget		\$ (1,318,109)
	TOTAL		\$21,500,000

Project Number	Projects in Initiation Phase (Count = 6)
271-01	Issue Tracking and Resolution Tool Assessment
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
245-01	2017 EPS Metering Enhancements

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

ERCOT Portfolio Stoplight Report – November 2017

Project Number	Projects in Planning Phase (Count = 18)	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 CMMNPRRs
193-01	PMU Tool Evaluation and Implementation	5/31/2017	7/26/2017	7/26/2017	TBD	12/13/2017	1	-250%		0%
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	12/6/2017	TBD	2/1/2018	1	-24%		25%
242-01	Portfolio Reporting Assessment	11/8/2017	12/19/2018	12/19/2018	TBD	12/19/2018		0%		7%
246-01	iTest Data Refresh	6/21/2017	10/25/2017	12/13/2017	TBD	12/13/2017		0%		15%
253-01	CIP Recovery Plan Project - Planning Phase 1	10/25/2017	1/31/2018	1/31/2018	TBD	1/31/2018		0%		12%
258-01	WD Kainos SMART Automation Testing Tool	11/29/2017	3/5/2018	3/5/2018	TBD	3/5/2018		0%		60%
260-01	Information Governance Assessment	10/18/2017	5/30/2018	5/30/2018	TBD	5/30/2018		0%		-3%
261-01	Generic Transmission Constraint Calculation	9/27/2017	12/22/2017	12/22/2017	TBD	12/22/2017		0%		52%
263-01	Market Simulator	11/29/2017	2/21/2018	2/21/2018	TBD	2/21/2018		0%		0%
265-01	Real-Time Assessment Continuity	10/25/2017	1/17/2018	1/17/2018	TBD	1/17/2018		0%		17%
266-01	Remote Email Access Enhancement	10/25/2017	12/6/2017	12/6/2017	TBD	12/13/2017	1	-16%		-4%
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 CMMNPRRs
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 CMMNPRRs
NPRR830	Revision of 4-Coincident Peak Methodology	10/25/2017	12/6/2017	12/6/2017	TBD	12/13/2017	1	-16%		48%
SCR781	RARF Replacement	3/29/2017	10/31/2017	10/31/2017	TBD	4/5/2018	1	-72%		2%
Project Number	Projects in Execution Phase (Count = 44)	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%		1%
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 CMMNPRRs
196-01	GINR Project Status Application Replacement	12/21/2016	9/14/2017	3/5/2018	3/5/2018	3/28/2018		0%		0%
198-02	Reactive Power Coordination PoC	9/6/2017	6/16/2018	6/16/2018	6/13/2018	6/13/2018		1%		22%
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%		9%
210-01	REC Technology Refresh	8/30/2017	3/18/2018	3/18/2018	3/18/2018	5/9/2018		0%		3%
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%		3%
230-01	SAS Technical Architecture Redesign	3/1/2017	12/13/2017	12/13/2017	12/13/2017	4/30/2018		0%		1%
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%		42%



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Project Number	Projects in Execution Phase (Count = 44)	Phase Start	Baseline Go-Live Date	Approved Go-Live Date	Scheduled Go-Live Date	Scheduled Phase Finish	Schedule Health		Budget Health	
241-01	AREA - Generation	10/11/2017	3/30/2018	3/30/2018	3/30/2018	4/19/2018		0%		0%
243-01	Training Facility	12/6/2017	12/12/2018	12/12/2018	12/12/2018	12/12/2018		0%		0%
244-01	Corporate Wireless	11/29/2017	3/28/2018	3/28/2018	3/28/2018	4/25/2018		0%		0%
249-01	Secondary Wind Forecasting Service	8/30/2017	2/28/2018	2/28/2018	2/28/2018	3/30/2018		0%		7%
254-01	Retail Windows Upgrade	10/11/2017	12/18/2017	12/18/2017	12/18/2017	1/17/2018		0%		16%
255-01	Settlements Architecture Enhancements	10/25/2017	1/11/2018	1/11/2018	1/11/2018	2/14/2018		0%		15%
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%		2%
259-01	DC SCADA and Metering Upgrade	10/25/2017	1/17/2018	1/17/2018	1/17/2018	1/17/2018		0%		10%
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%		0%
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	3/19/2018	3/19/2018	4/4/2018		0%		0%
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%		9%
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
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
NPRR833	Modify PTP Obligation Bid Clearing Change	11/8/2017	4/5/2018	4/5/2018	4/5/2018	5/3/2018		0%		14%
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



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Project Number	Projects in Stabilization (Count = 6)	Execution Phase Start	Baseline Go-Live Target	Approved Go-Live Target	Actual Go-Live Date	Scheduled Execution Phase Finish	Schedule Health		Budget Health	
185-01	Records Management and eDiscovery	12/15/2016	5/24/2017	8/29/2017	8/22/2017	1/31/2018		2%		0%
224-01	TelAlert Replacement	4/5/2017	6/27/2017	8/4/2017	8/4/2017	2/21/2018		0%		-1%
234-01	Reporting Solution Resiliency (RSR)	4/5/2017	8/23/2017	11/27/2017	11/27/2017	1/10/2018		0%		3%
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%		22%
NPRR808	Three Year CRR Auction	8/23/2017	9/18/2017	9/18/2017	9/18/2017	12/13/2017		0%		60%
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%		25%
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 = 55)	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%		4%
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%
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%		-3%
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%		0%
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 = 55)	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%		46%
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	9/1/2017	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%
235-01	Forecast Monitoring and HSL Tracking	2/8/2017	5/11/2017	6/29/2017	6/29/2017	9/27/2017		0%		6%
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%		38%
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%		30%
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	-15%
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%
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 = 55)	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
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