



ERCOT Monthly Operational Overview
(September 2016)

ERCOT Public
October 15, 2016

Grid Planning & Operations

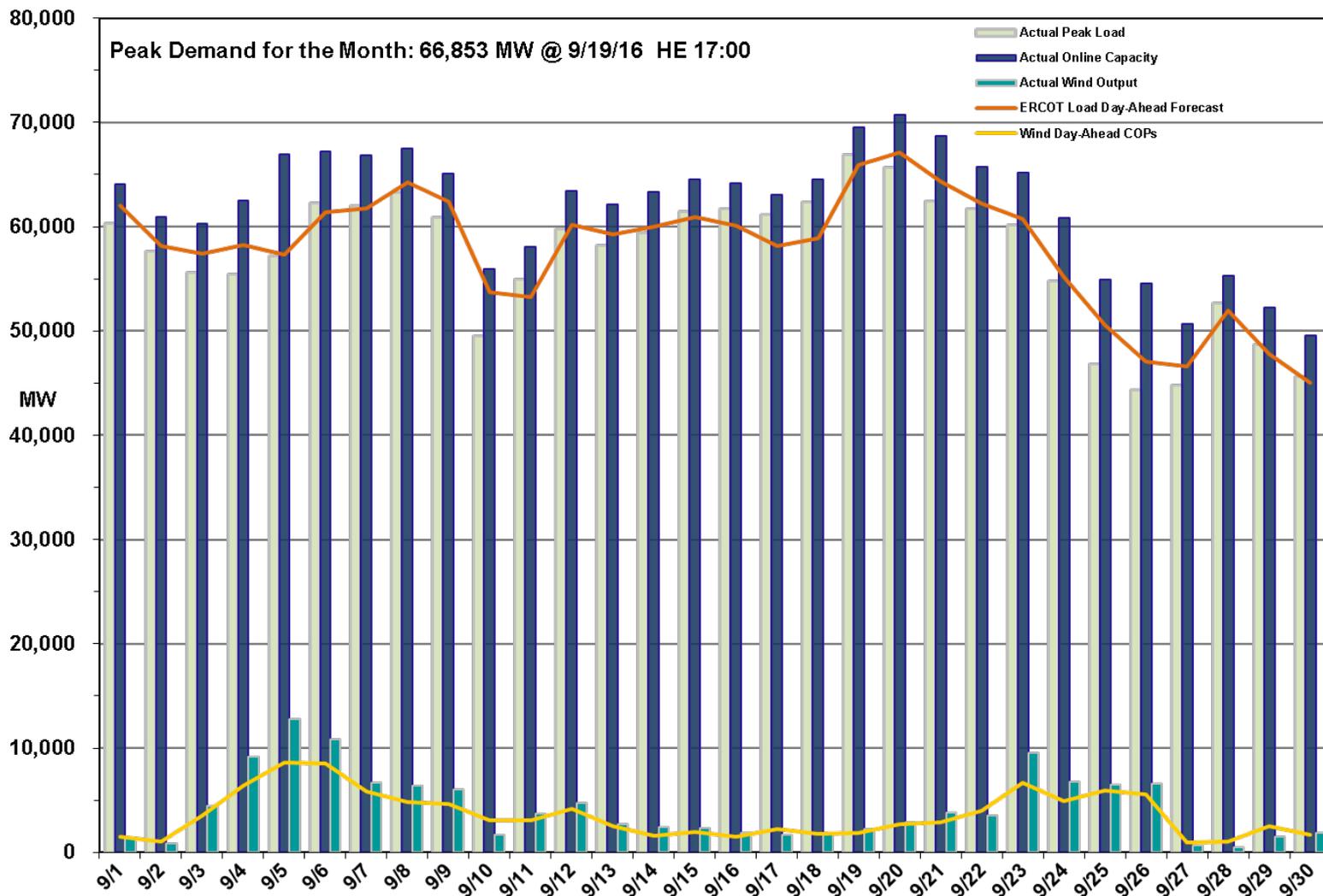
Operations

- The preliminary Settlements hourly peak demand of 66,853 MW on September 19th, was less than the day-ahead mid-term load forecast peak of 66,887 MW for the same operating hour.
 - The operational instantaneous peak demand was 67,118 MW (telemetry).
- Day-ahead load forecast error for September was 2.16%
- ERCOT issued nine notifications:
 - One OCN issued due to projected capacity shortage.
 - Six Advisories issued due to Physical Responsive Capability being less than 3,000 MW.
 - One Watch due to a SCED failure

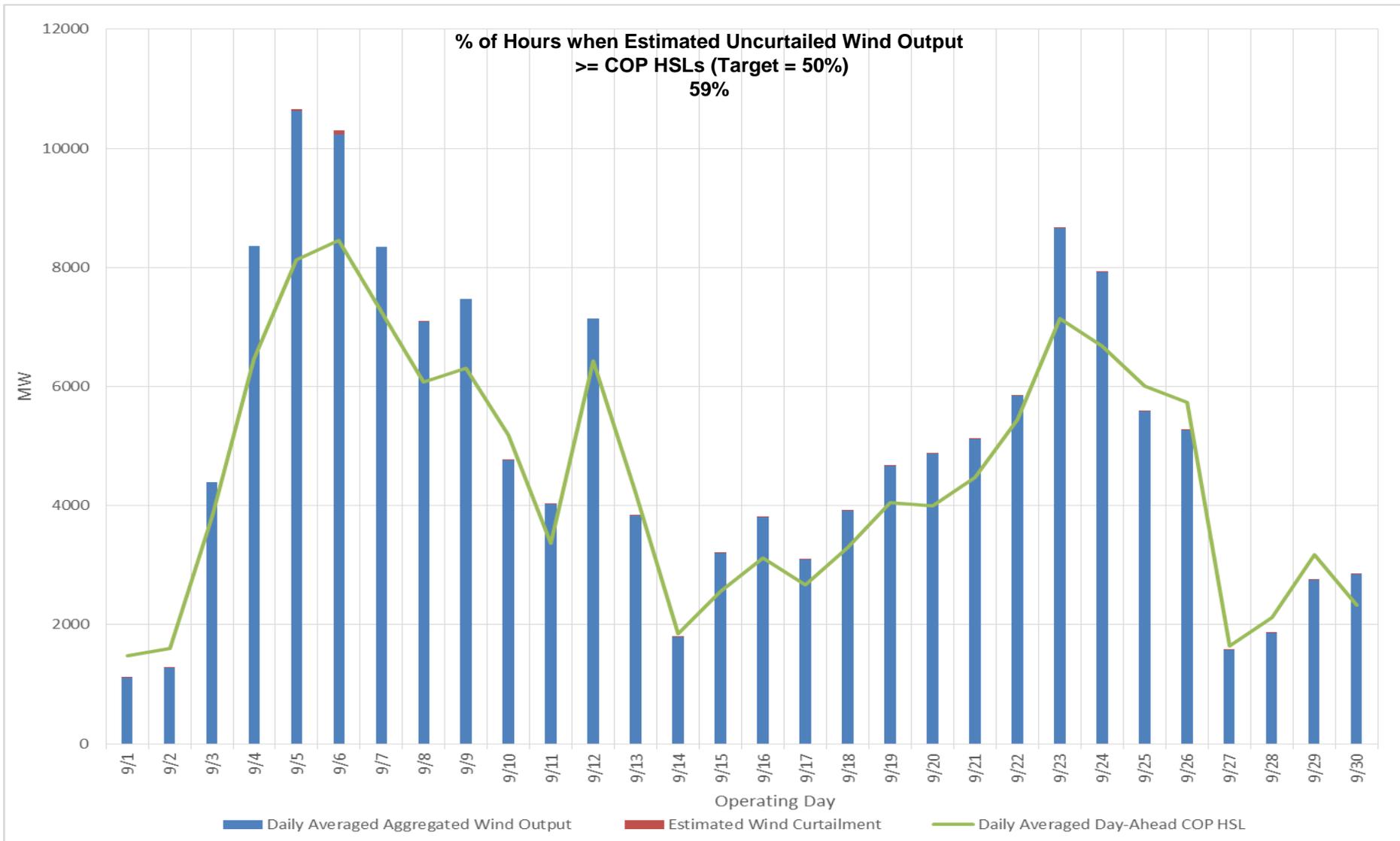
Planning Activities

- 226 active generation interconnection requests totaling 55,010 MW, including 25,254 MW of wind generation, as of September 30, 2016. Ten fewer requests and a decrease of 784 MW from August 31, 2016.
- 16,861 MW wind capacity in commercial operations on September 30, 2016.

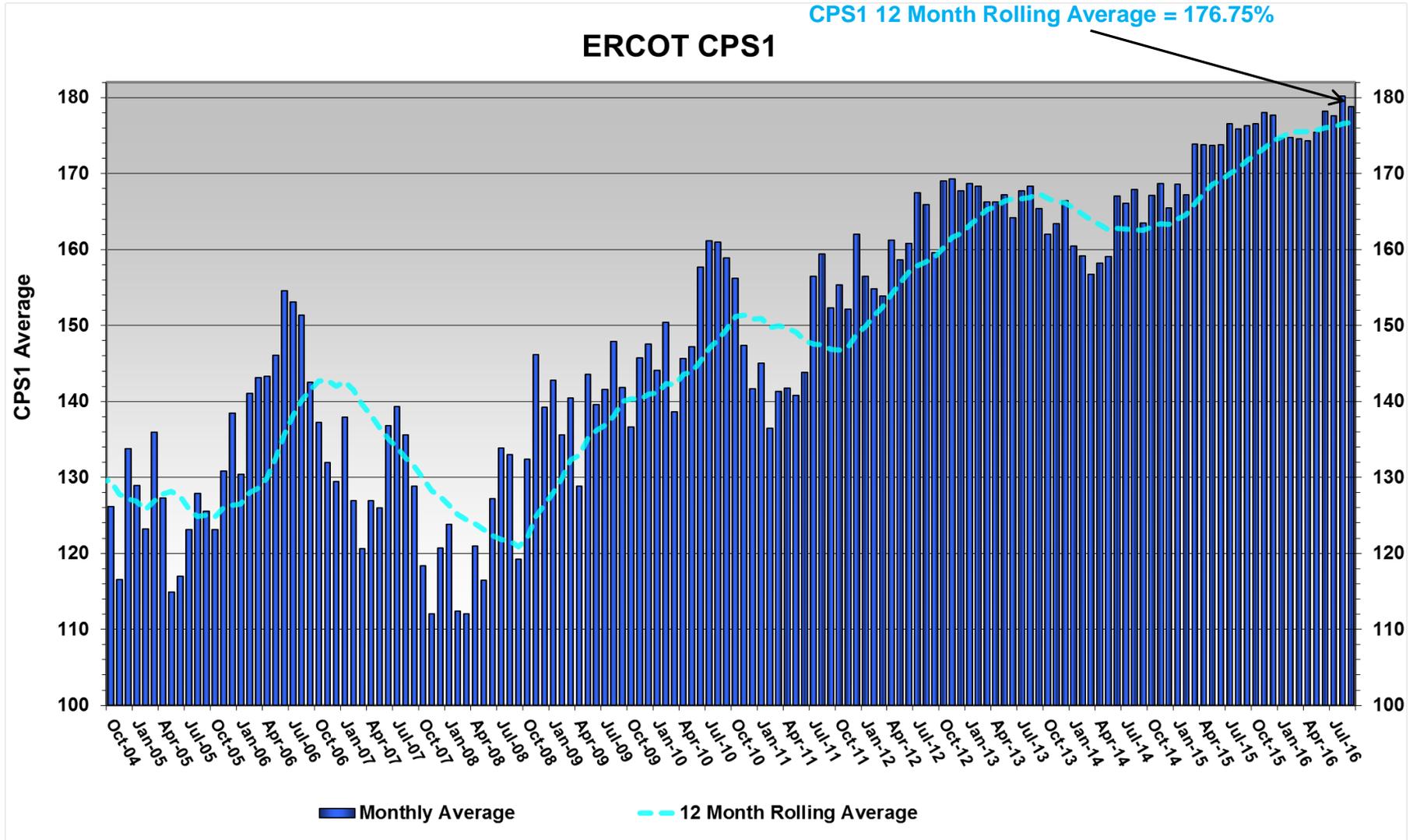
Daily Peak Demand: Hourly Average Actual vs. Forecast, Wind Day-Ahead COPs, & On-Line Capacity at Peak – September 2016



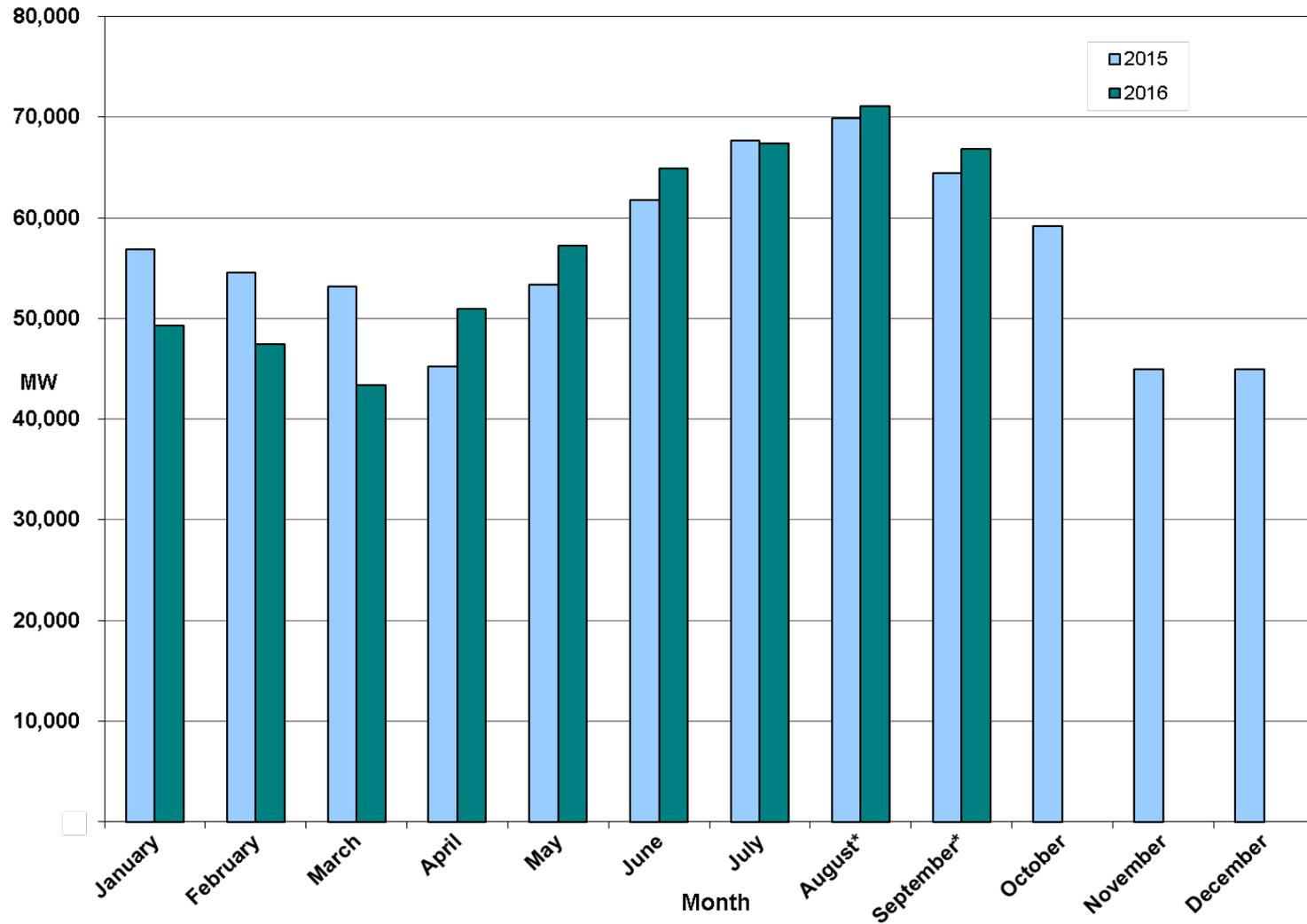
Actual Wind Output plus Curtailments vs. Wind Day-Ahead COPs for All Hours – September 2016



ERCOT's CPS1 Monthly Performance – September 2016

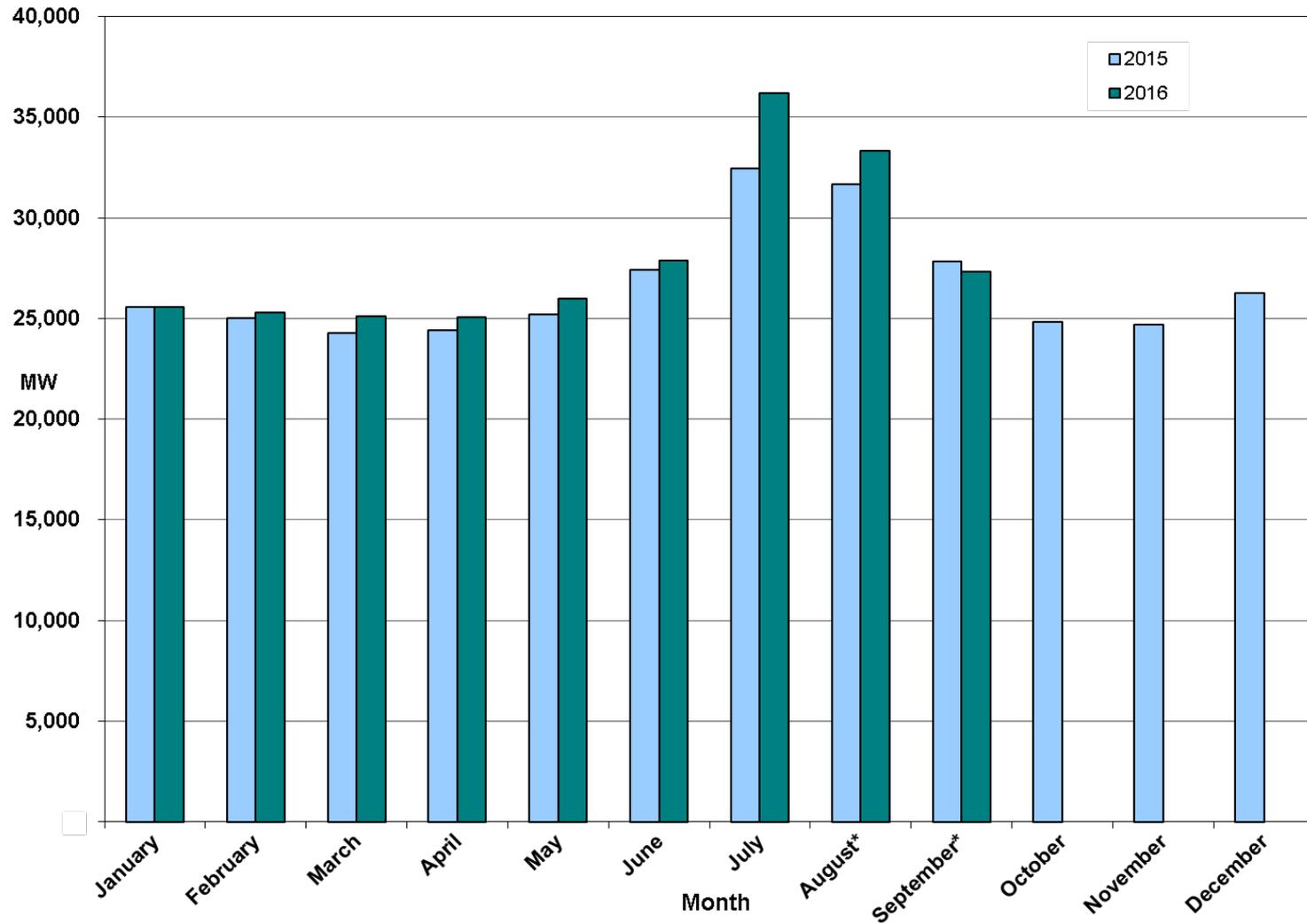


Monthly Peak Actual Demand – September 2016



*Preliminary for latest two months of the current year

Monthly Minimum Actual 15-Minute Demand – September 2016

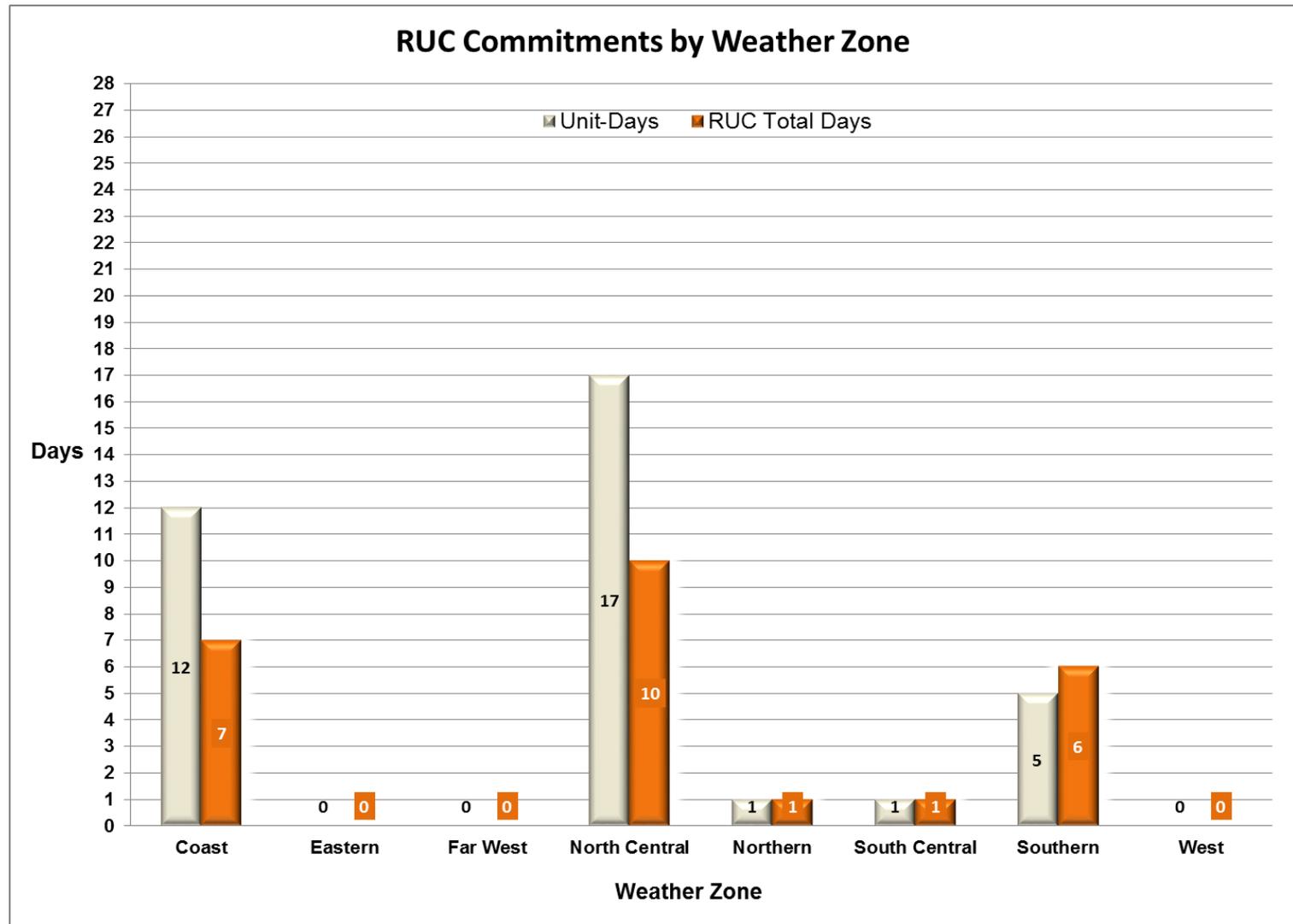


Day-Ahead Load Forecast Performance – September 2016

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

	2013 MAPE	2014 MAPE	2015 MAPE	2016 MAPE	September 2016 MAPE	
Average Annual MAPE	2.86	2.83	2.86	2.63	2.16	
Lowest Monthly MAPE	2.07	2.15	1.89	1.94	Lowest Daily MAPE	0.81 September 13
Highest Monthly MAPE	3.50	3.70	3.81	3.86	Highest Daily MAPE	4.69 September 25

Reliability Unit Commitment (RUC) Capacity by Weather Zone September 2016



Generic Transmission Constraints (GTCs) – September 2016

GTCs	Sept-15	Jul-16	Aug-16	Sept-16	Last 12 Months Total Days (Oct 15 – Sept 16)
	Days GTCs	Days GTCs	Days GTCs	Days GTCs	
North – Houston	0	0	0	0	2
Valley Import	0	0	0	1	8
Zorillo - Ajo	4	21	4	1	93
Panhandle	0	16	2	13	87
Laredo	2	0	4	7	14
Liston	-	29	25	19	217
Red Tap	-	-	0	0	0

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.

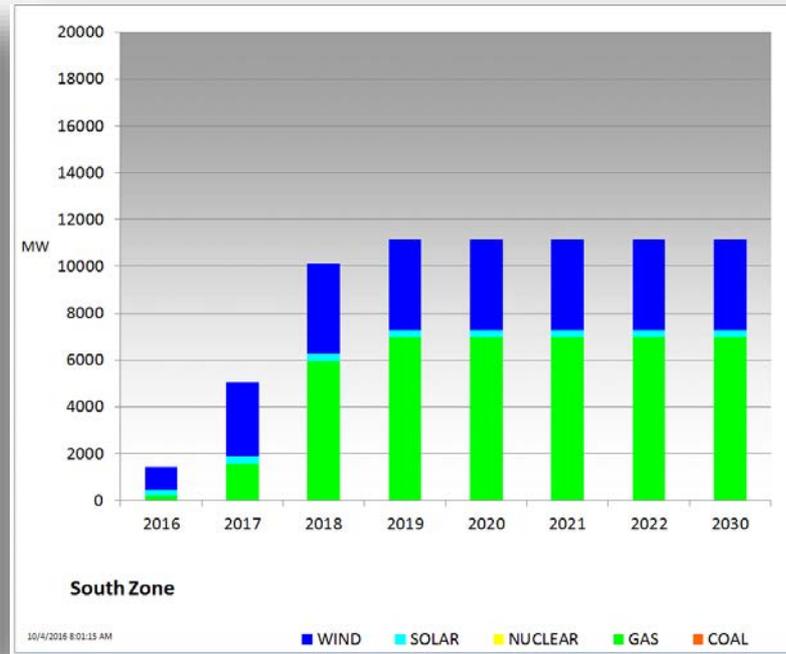
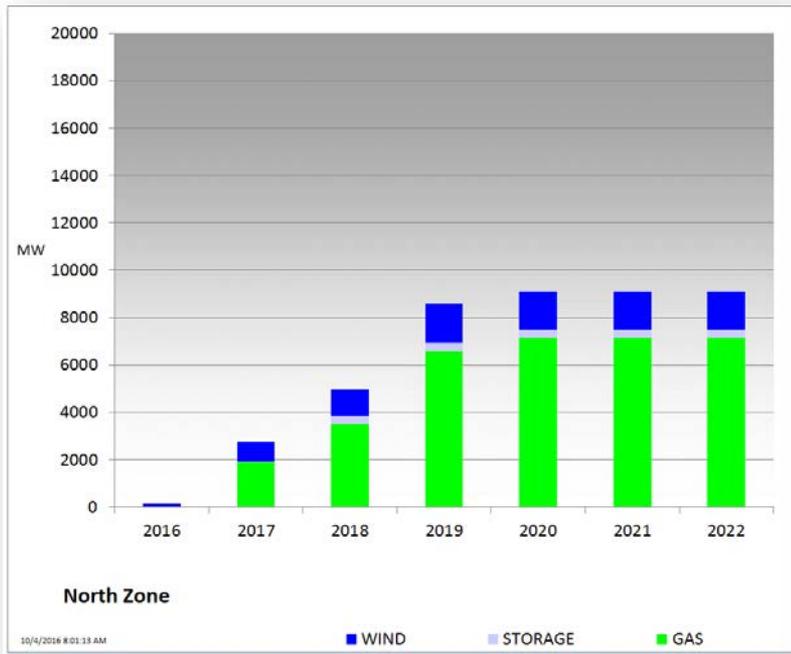
Advisories and Watches – September 2016

- One OCN issued due to projected capacity shortage
 - Issued on 9/16
- Six Advisories issued due to Physical Responsive Capability being less than 3,000 MW.
 - Issued on 9/3, 9/15, 9/17, 9/18, 9/19, 9/28
- One Watch due to a SCED failure
 - Issued 9/8

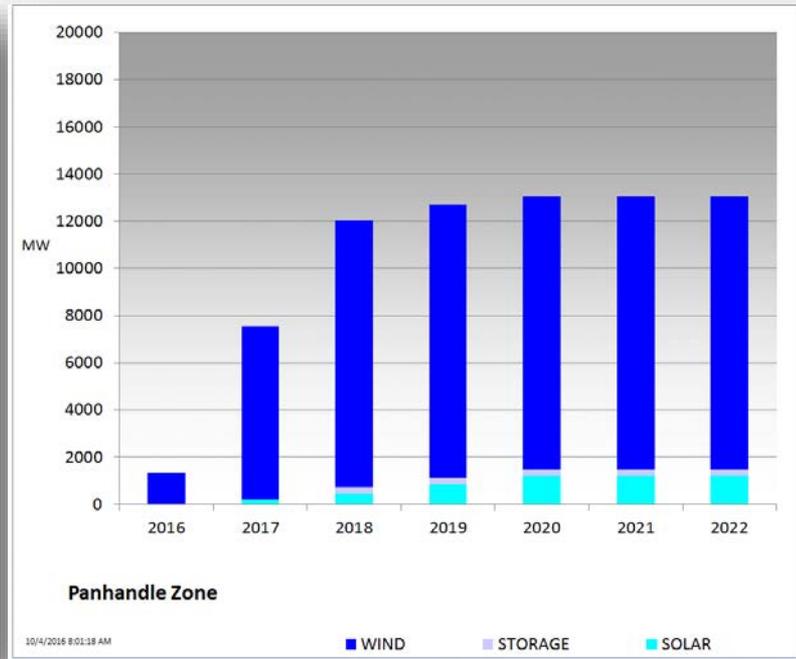
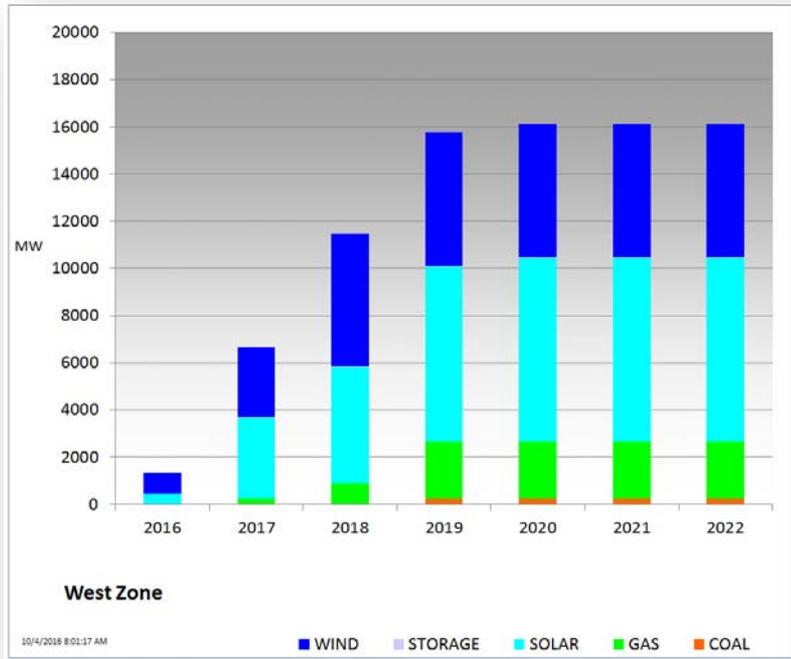
Planning Summary – September 2016

- ERCOT is currently tracking 226 active generation interconnection requests totaling 55,010 MW. This includes 25,254 MW of wind generation.
- ERCOT is currently reviewing proposed transmission improvements with a total cost of \$747 Million.
- Transmission Projects endorsed in 2016 total \$271 Million.
- All projects (in engineering, routing, licensing, and construction) total approximately \$6.61 Billion (as of June 1, 2016).
- Transmission Projects energized in 2016 total about \$1.26 Billion (as of June 1, 2016).

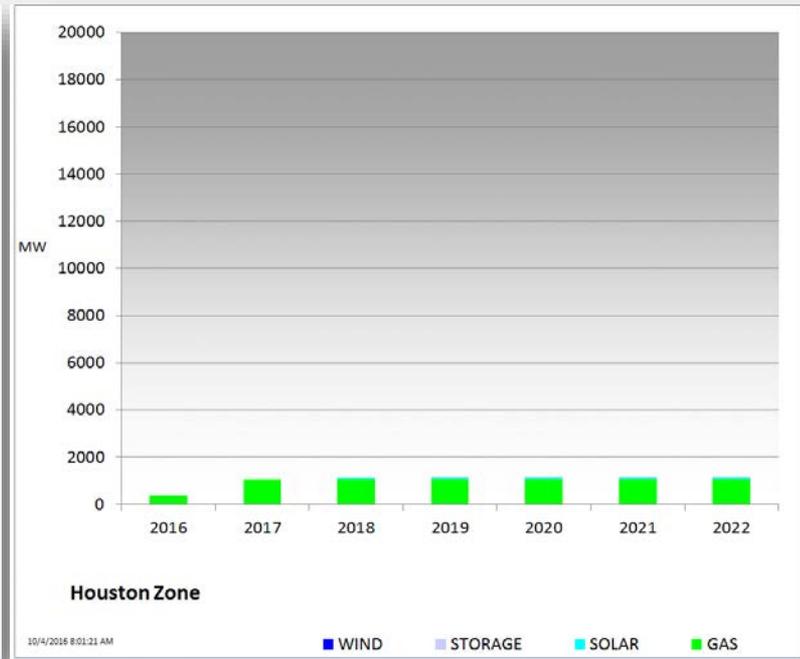
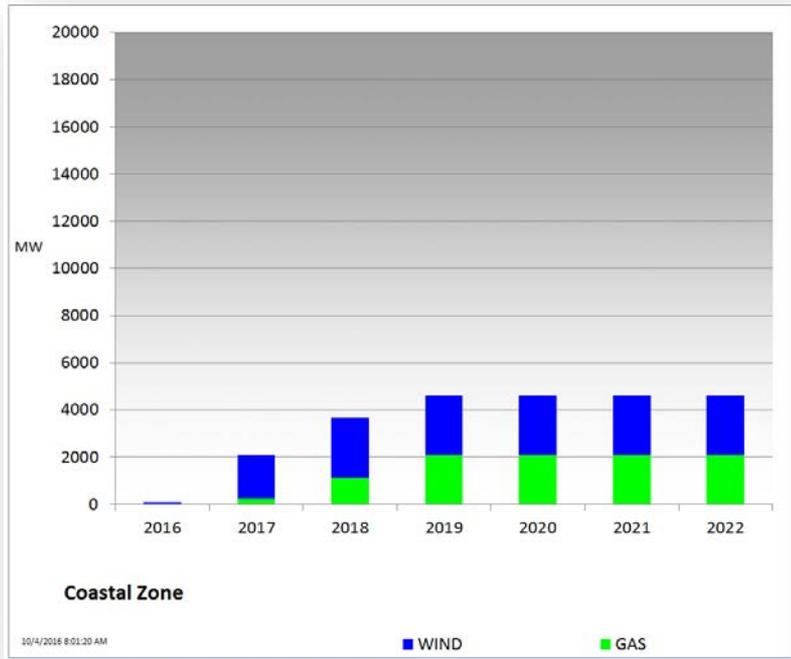
Cumulative MW Capacity of Interconnection Requests by Zone September 2016



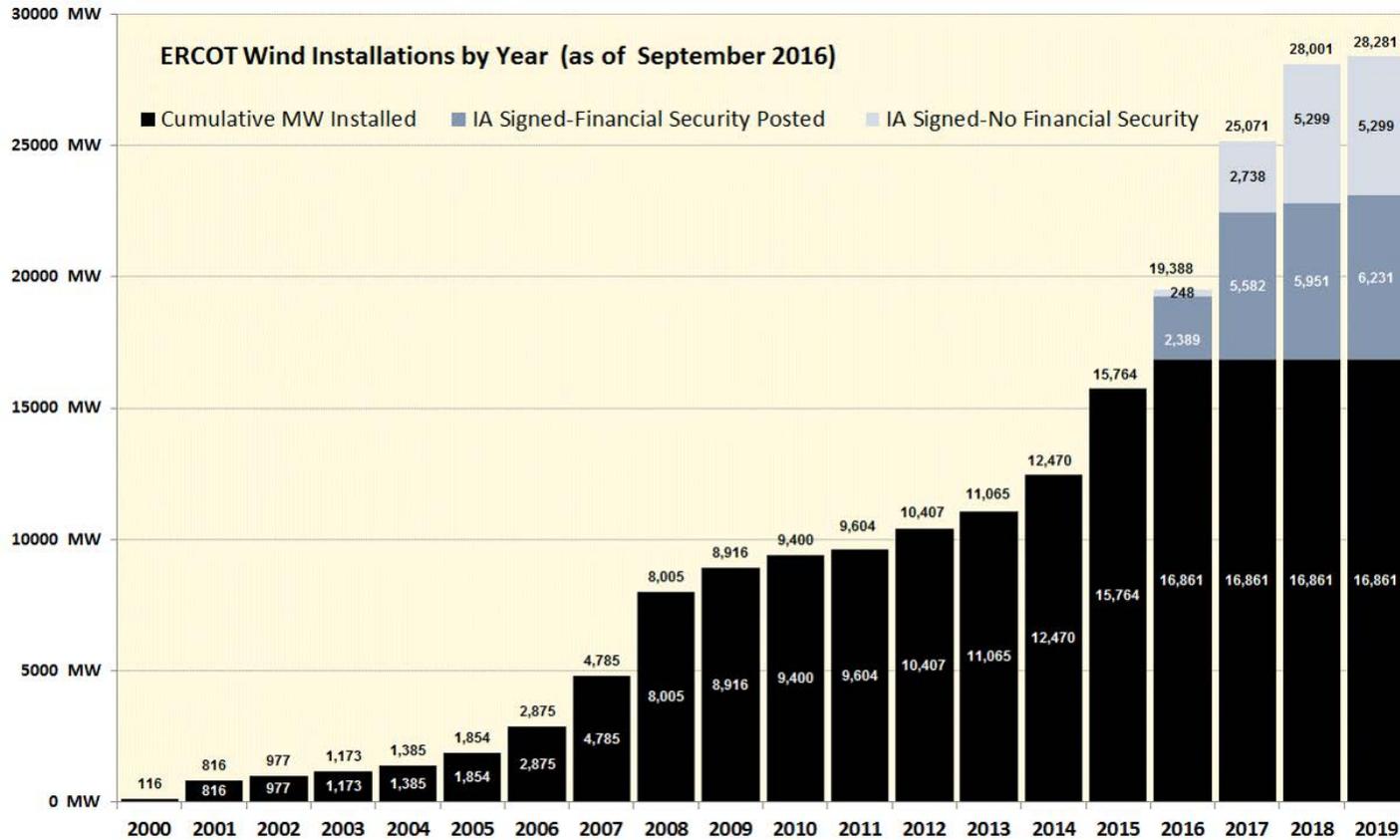
Cumulative MW Capacity of Interconnection Requests by Zone September 2016



Cumulative MW Capacity of Interconnection Requests by Zone September 2016



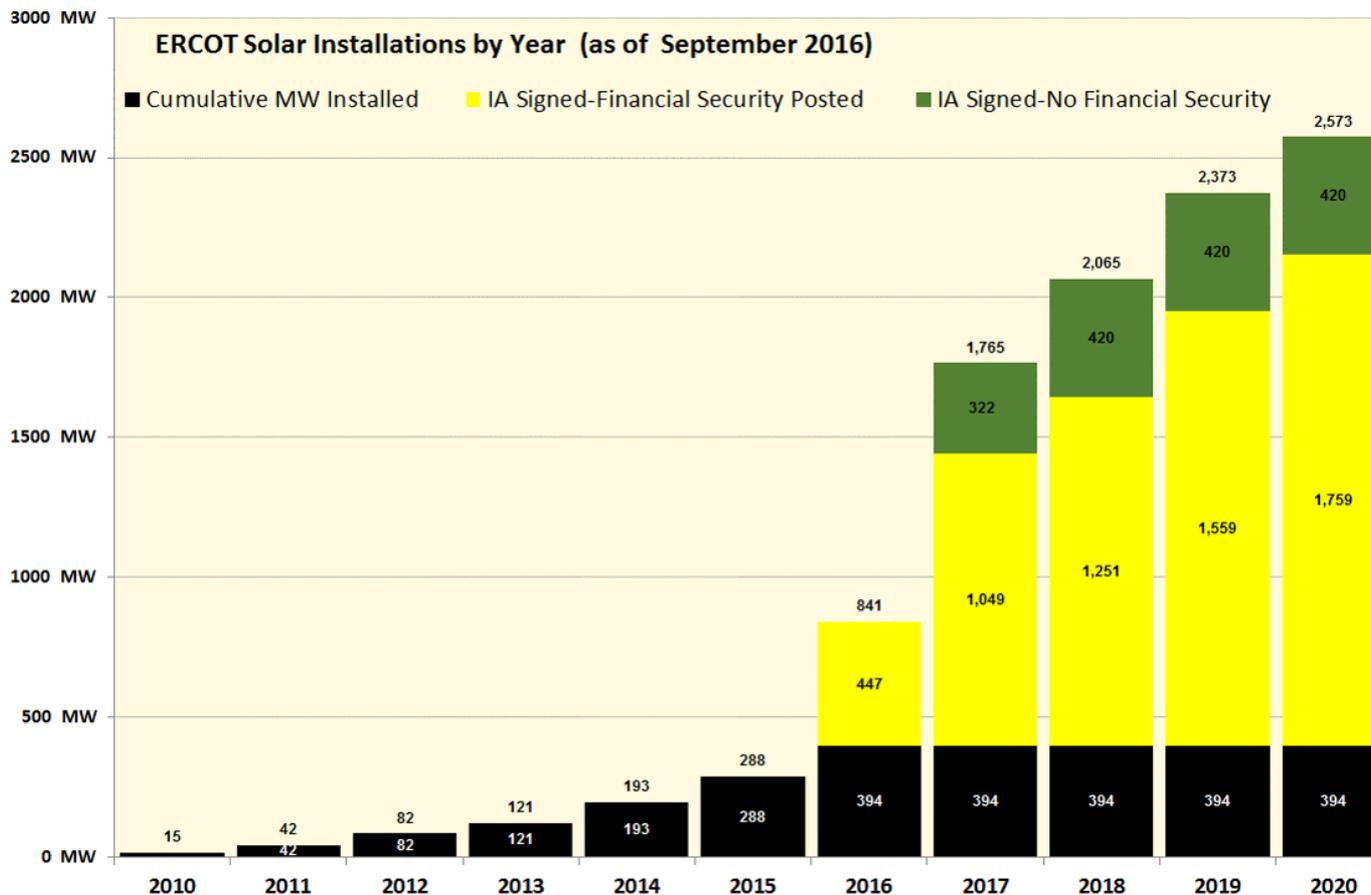
Wind Generation – September 2016



The data presented here is based upon the latest registration data provided to ERCOT by the resource owners and can change without notice. Any capacity changes will be reflected in current and subsequent years' totals. Scheduling delays will also be reflected in the planned projects as that information is received. This chart reflects planned units in the calendar year of submission rather than installations by peak of year shown.

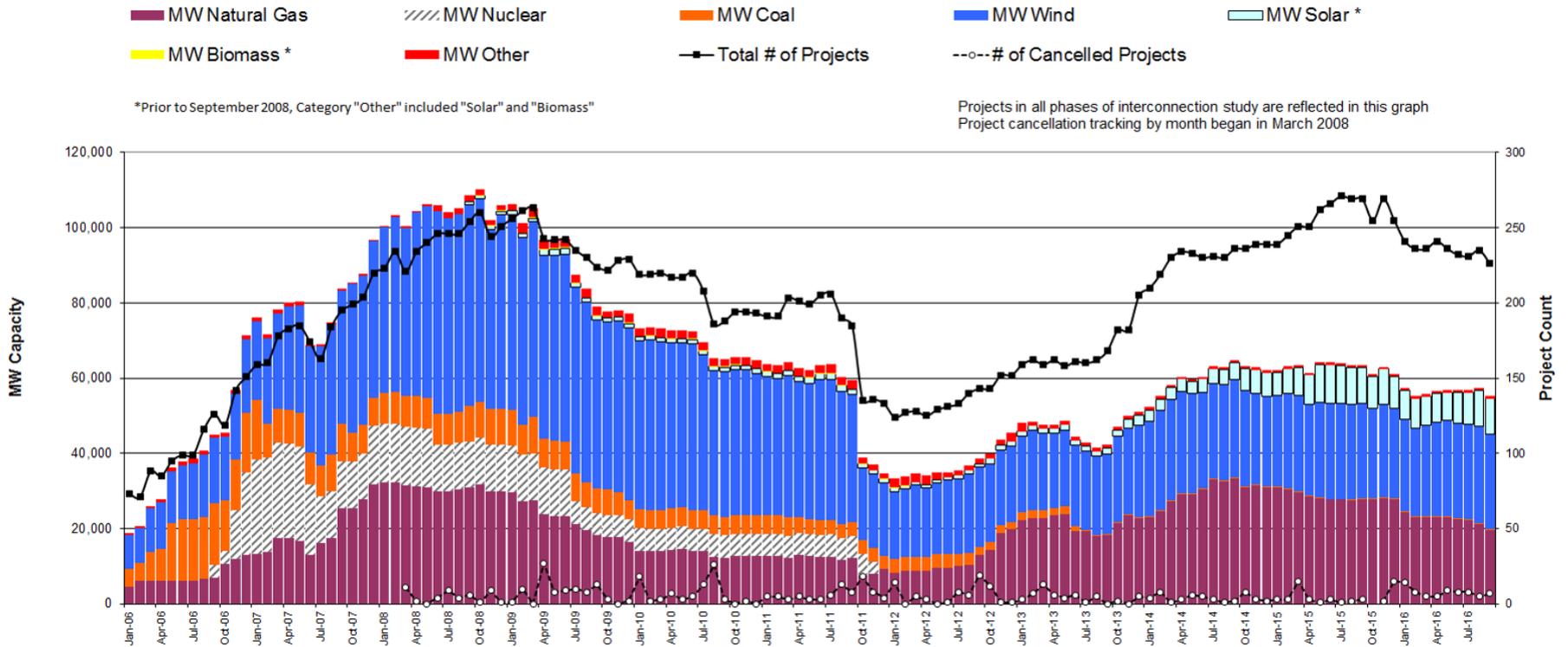
Financial security posted for funding interconnection facilities does not include CREZ security deposits, which are refunded to the Interconnecting Entity when an IA is signed.

Solar Generation – September 2016

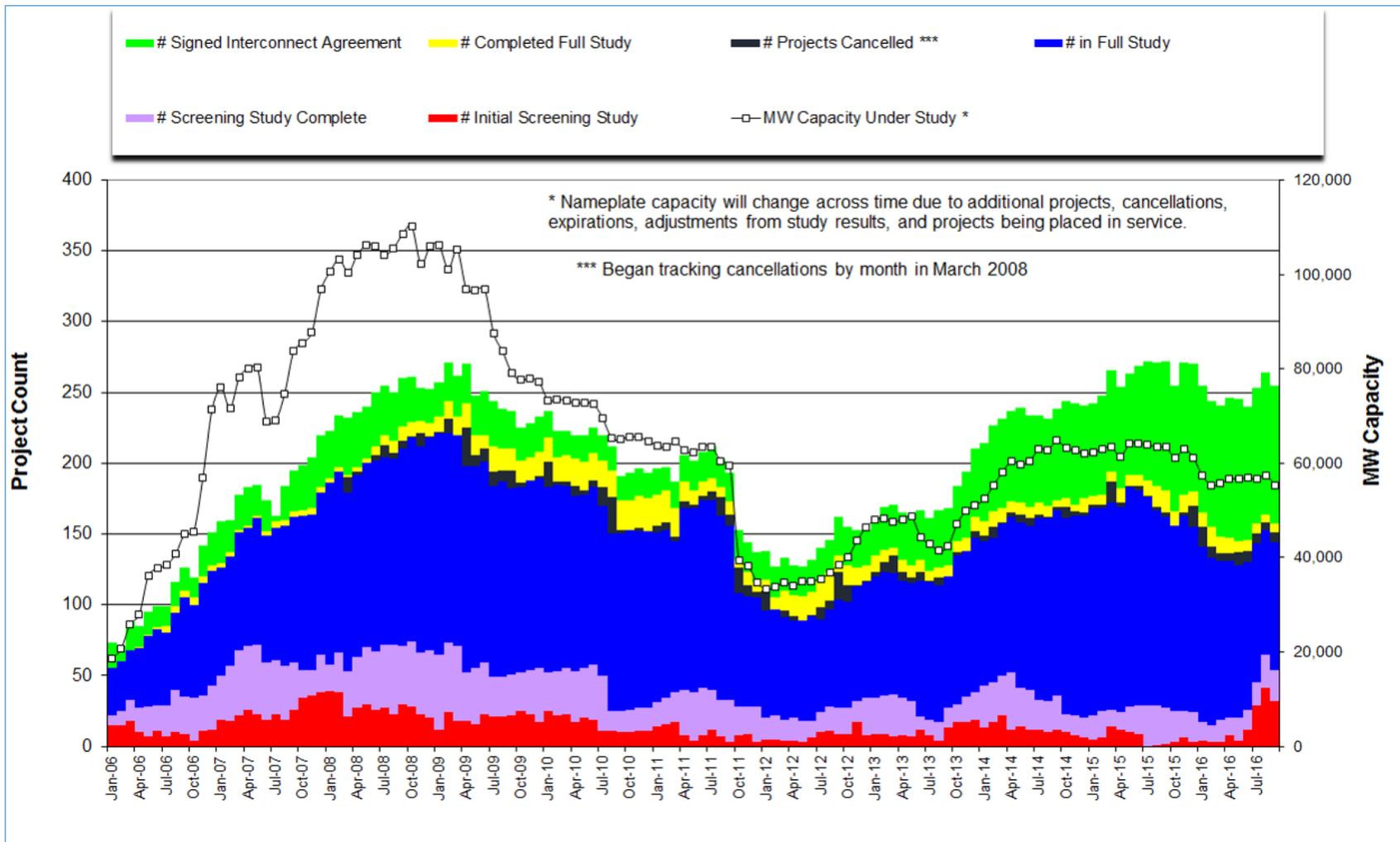


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Generation Interconnection Activity by Fuel – September 2016

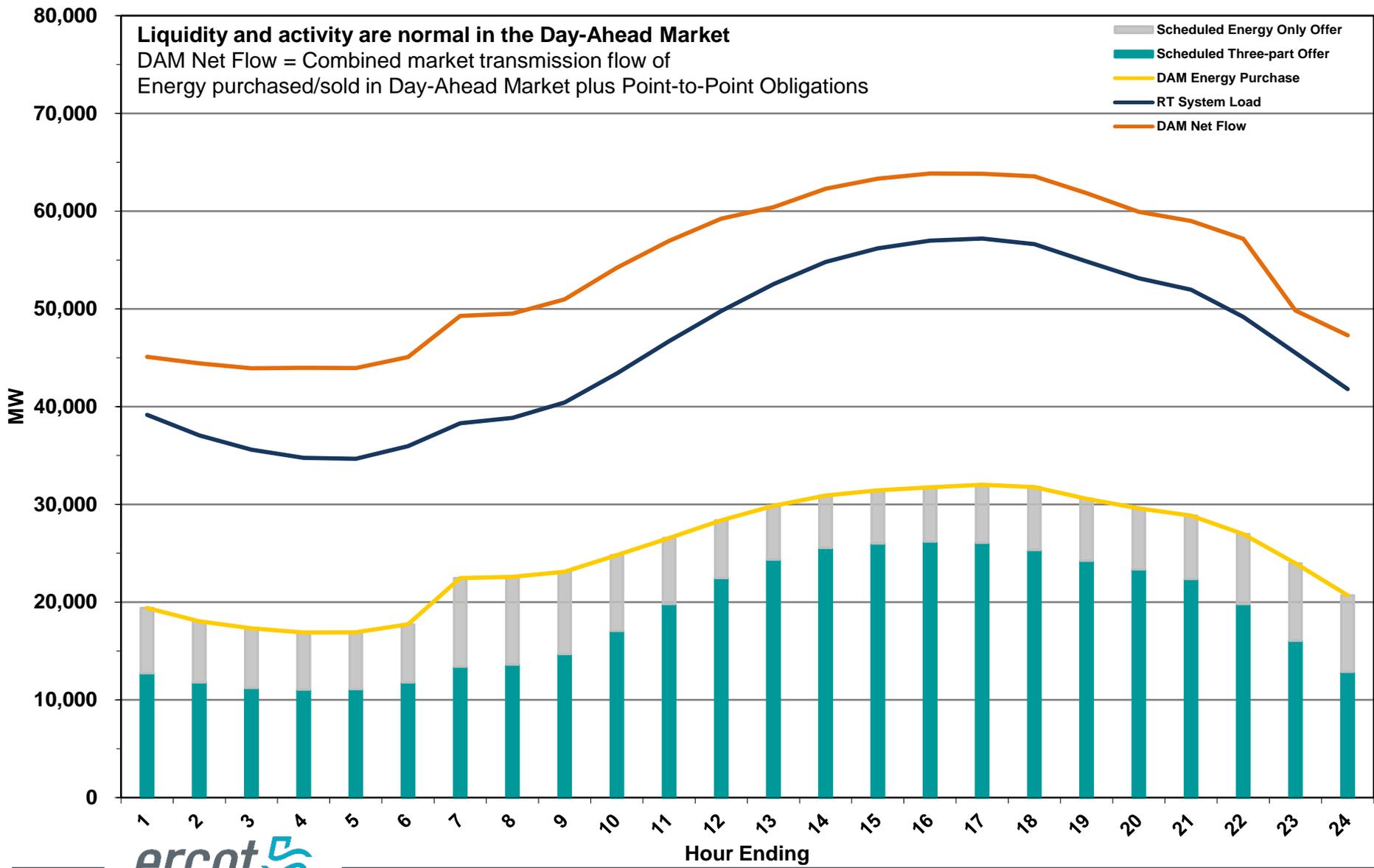


Generation Interconnection Activity by Project Phase – September 2016

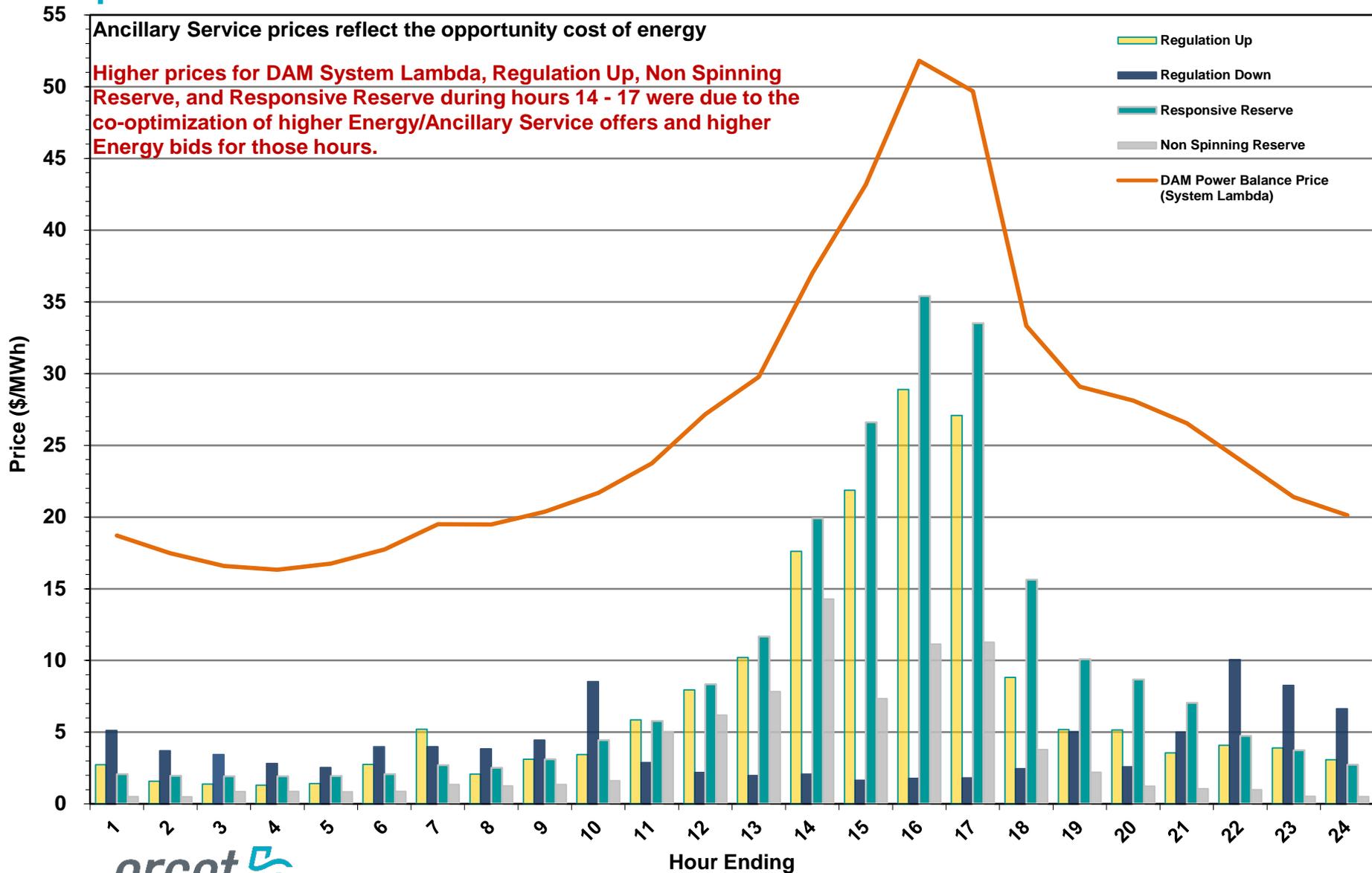


Market Operations

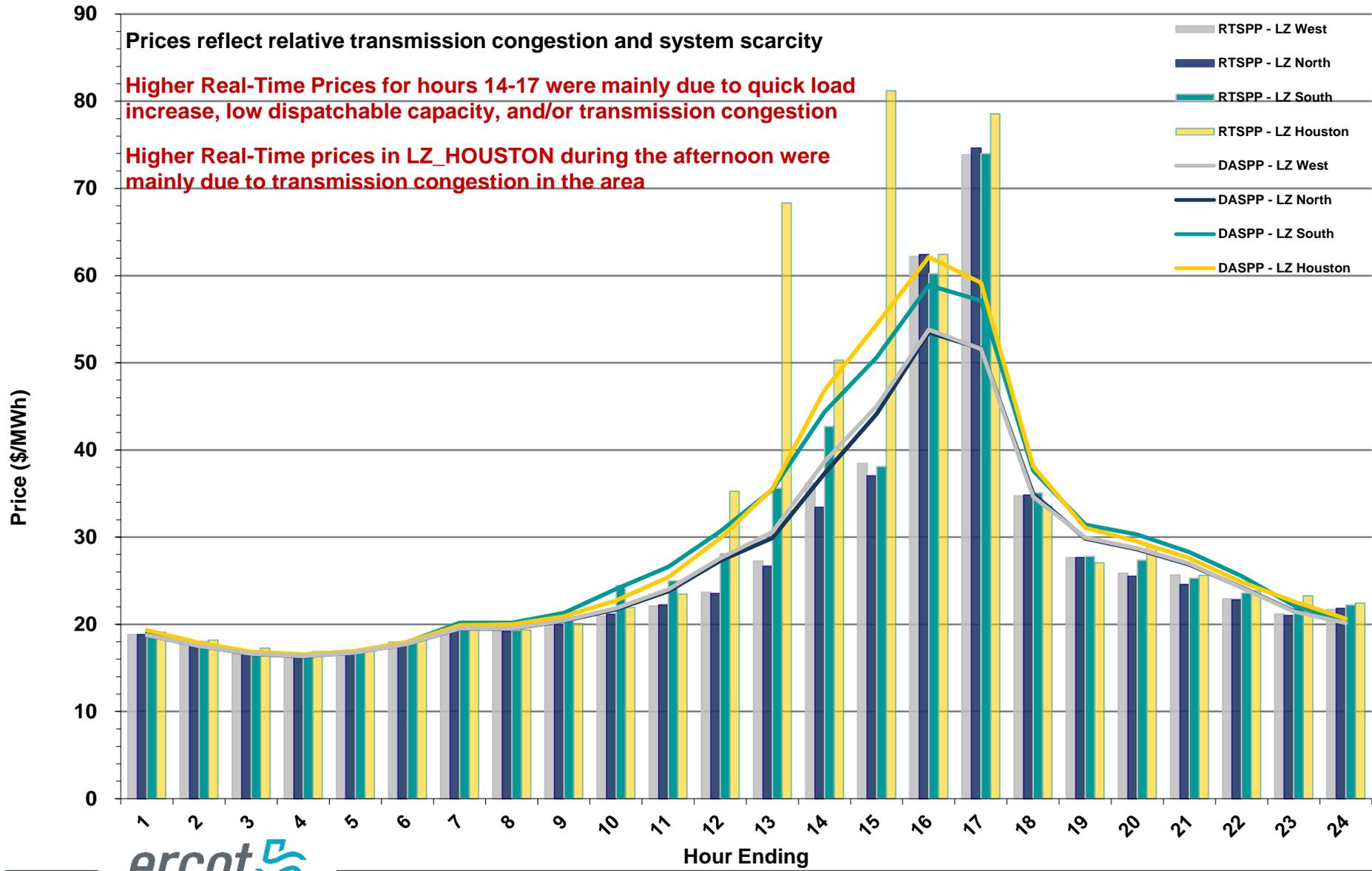
Day-Ahead Schedule (Hourly Average) – September 2016



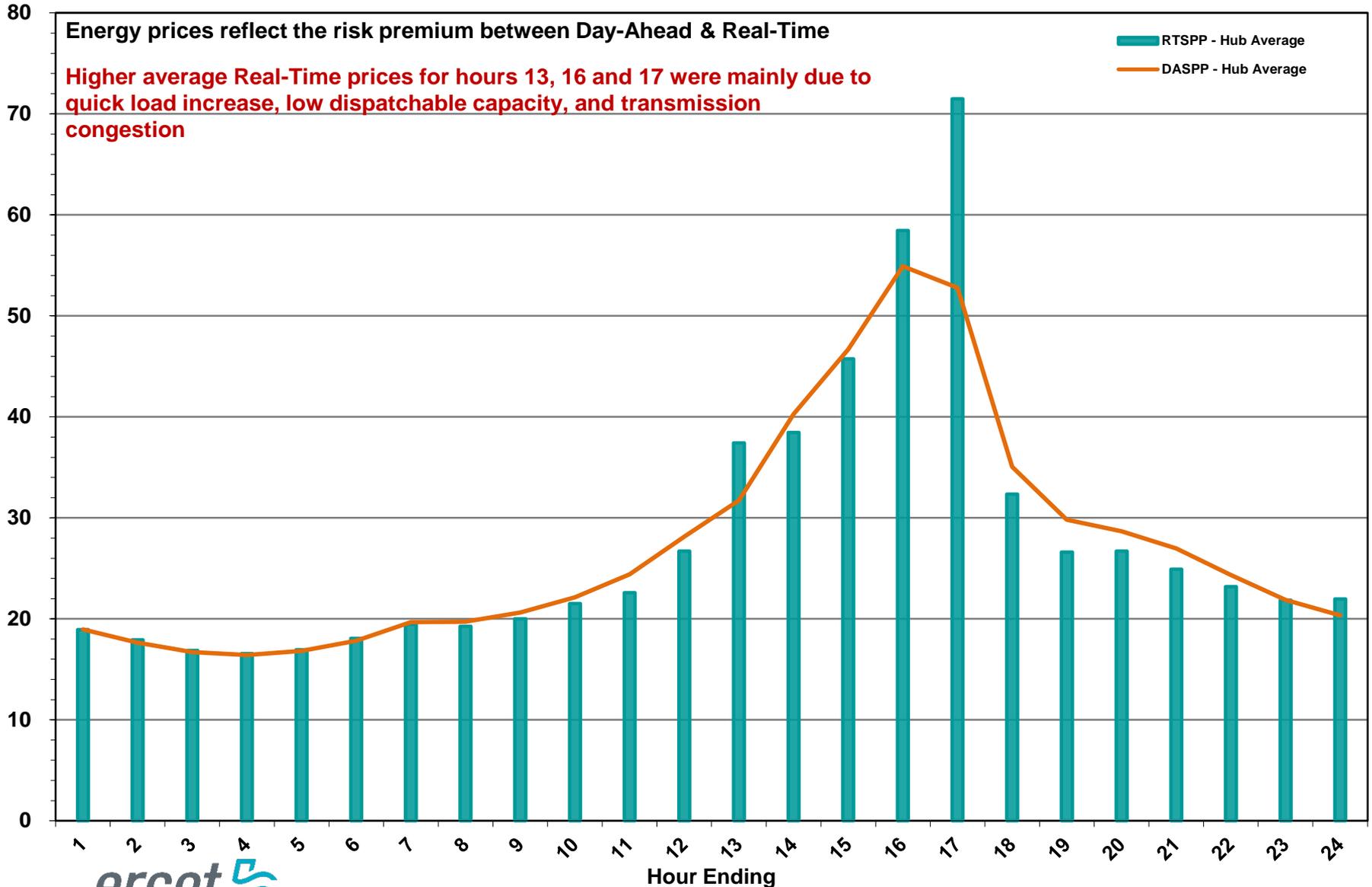
Day-Ahead Electricity and Ancillary Service Prices (Hourly Average) – September 2016



Day-Ahead vs Real-Time Load Zone SPP (Hourly Average) – September 2016



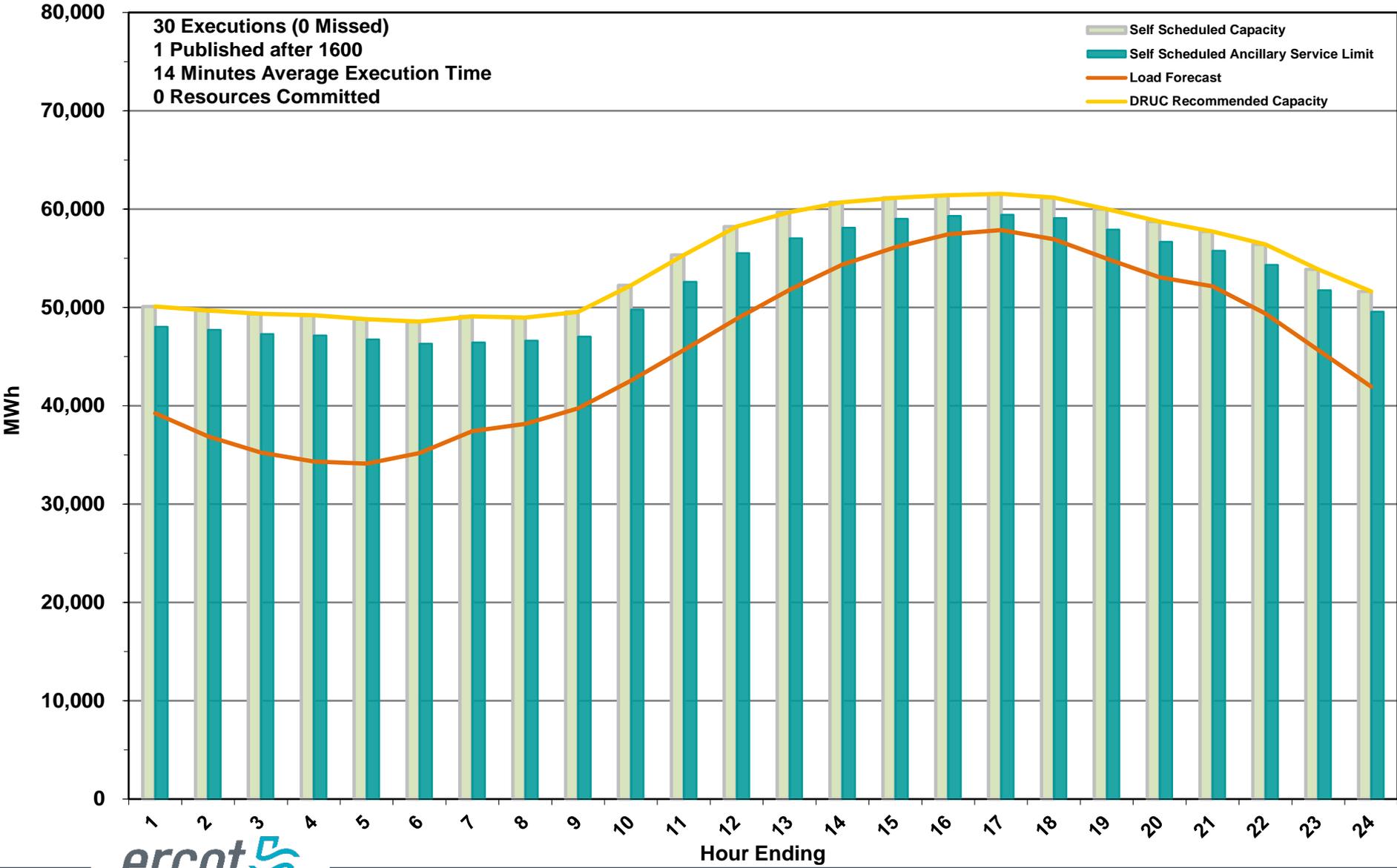
Day-Ahead vs Real-Time Hub Average SPP (Hourly Average) – September 2016



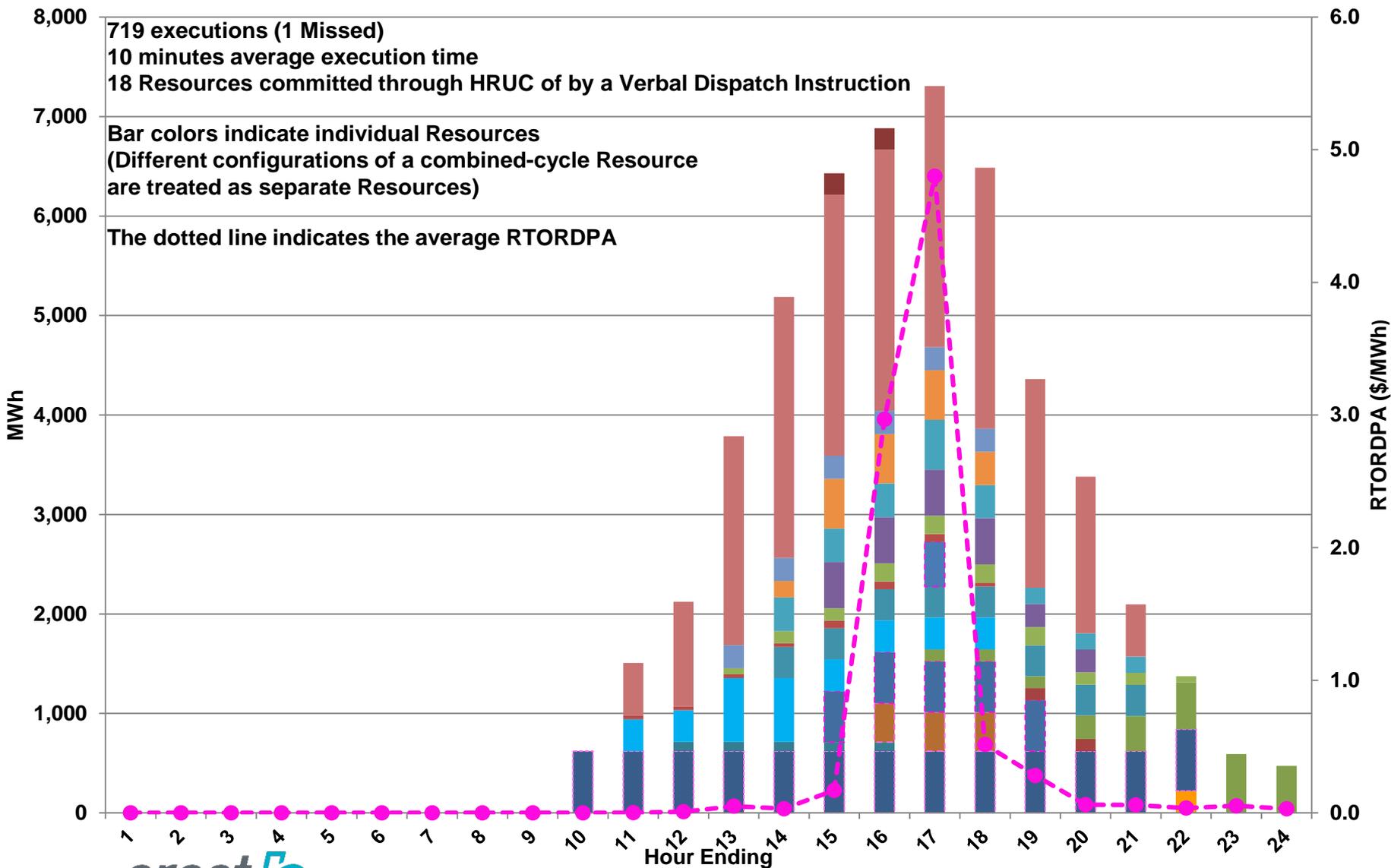
DRUC Monthly Summary (Hourly Average) – September 2016

30 Executions (0 Missed)
1 Published after 1600
14 Minutes Average Execution Time
0 Resources Committed

■ Self Scheduled Capacity
■ Self Scheduled Ancillary Service Limit
— Load Forecast
— DRUC Recommended Capacity



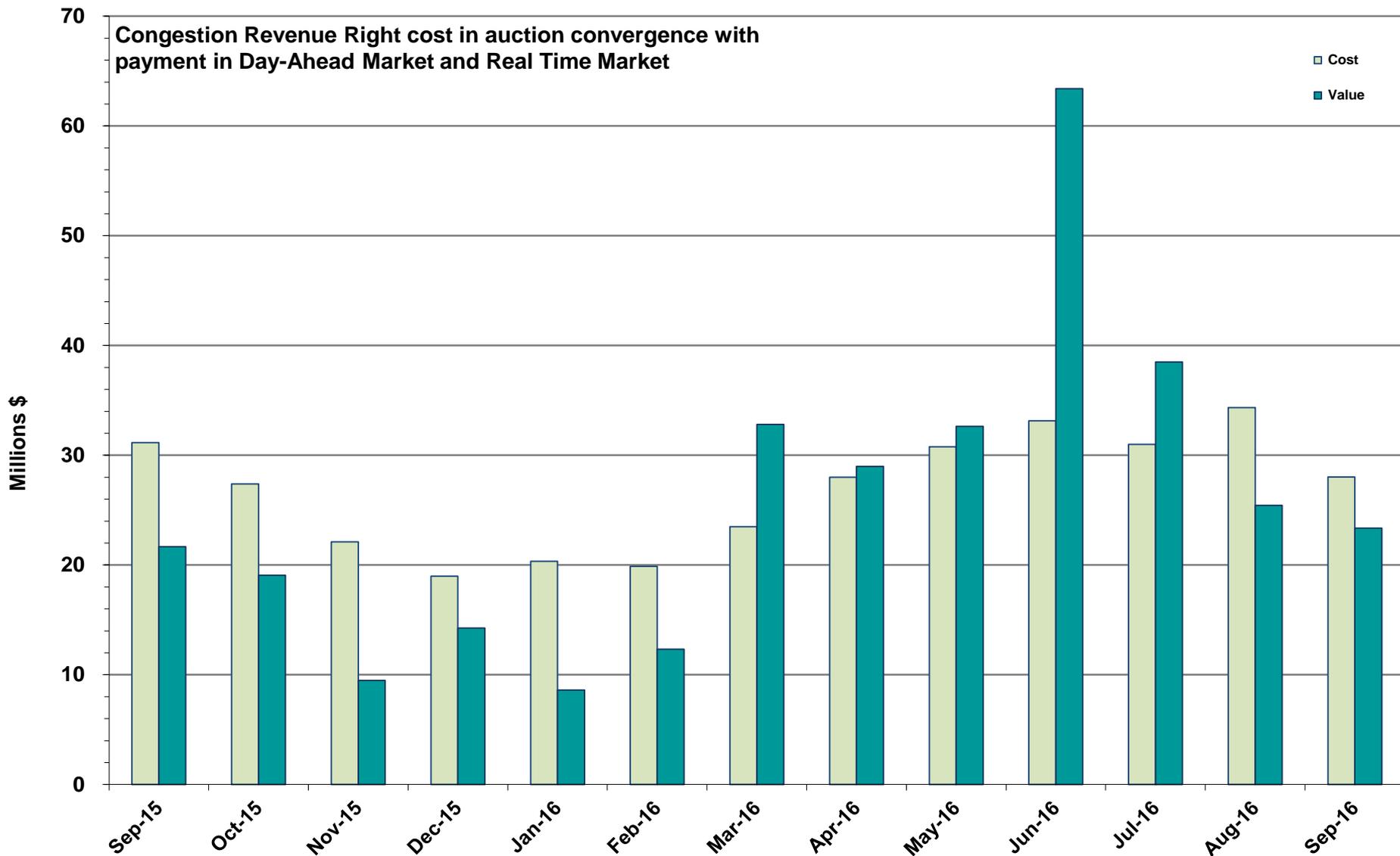
HRUC Monthly Summary and Real-Time On-Line Reliability Deployment Price Adder (RTORDPA) (Hourly Average) – September 2016



Non-Spinning Reserve Service Deployment – September 2016

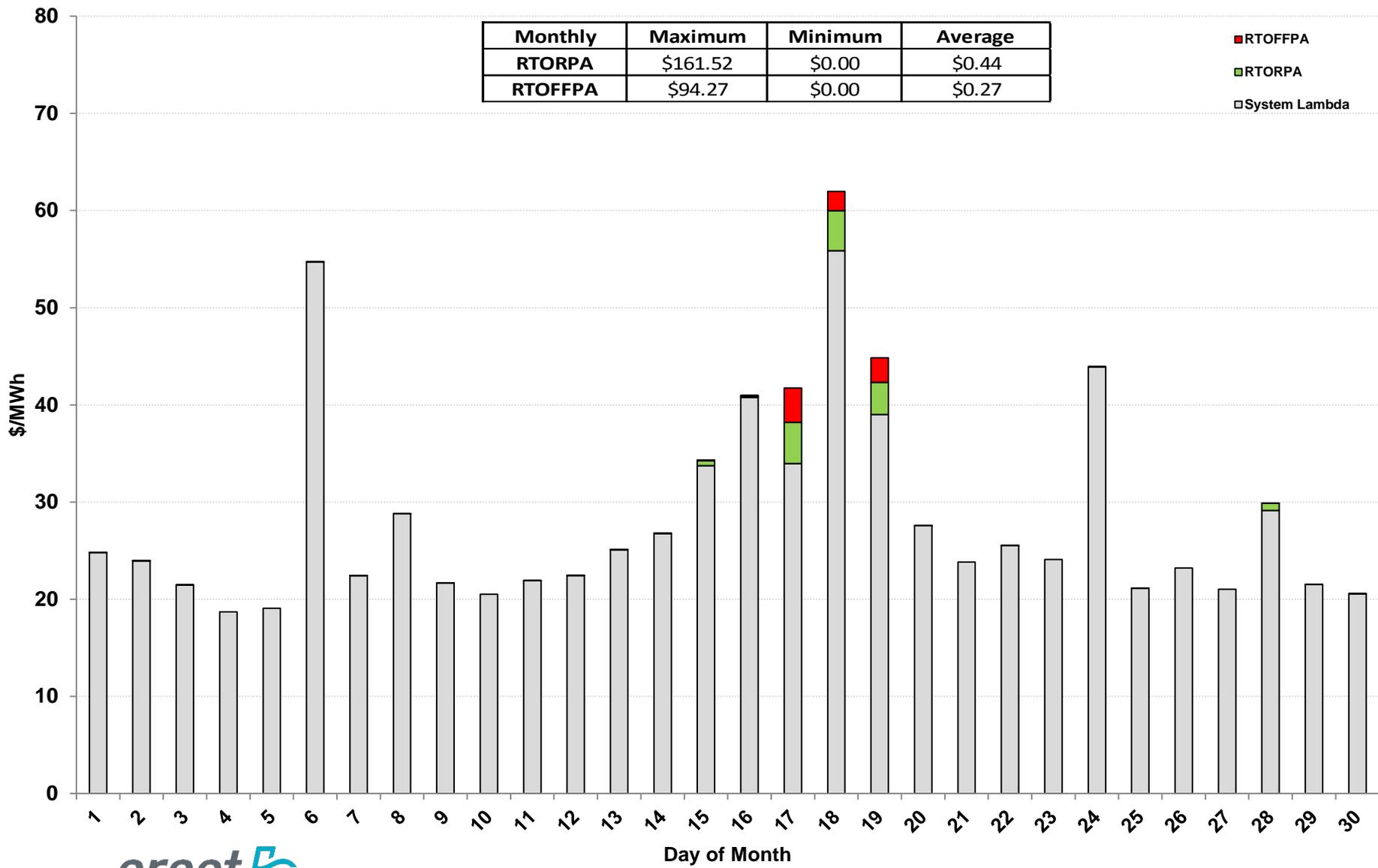
Deployment Start Time	Deployment End Time	Deployment Duration (Hours)	Max Deployment (MW)	Reason
None				

CRR Price Convergence – September 2016



Daily Average System Lambda and ORDC Price Adders – September 2016

Monthly	Maximum	Minimum	Average
RTORPA	\$161.52	\$0.00	\$0.44
RTOFFPA	\$94.27	\$0.00	\$0.27



ERS Procurement for – June 2016 – September 2016

	TP1	TP2	TP3	TP4	TP5	TP6
Non Weather-Sensitive ERS-10 MW	312.034	319.429	284.399	276.074	310.019	296.224
Non Weather-Sensitive ERS-30 MW	525.101	584.825	551.572	524.872	541.422	474.169
Weather-Sensitive ERS-10 MW	0	0	0	0	0	0
Weather-Sensitive ERS-30 MW	0	0	22.533	22.533	0	0
Total MW Procured	837.135	904.254	858.504	823.479	851.441	770.393
Clearing Price	\$2.12	\$1.98	\$21.21	\$22.32	\$2.08	\$2.36

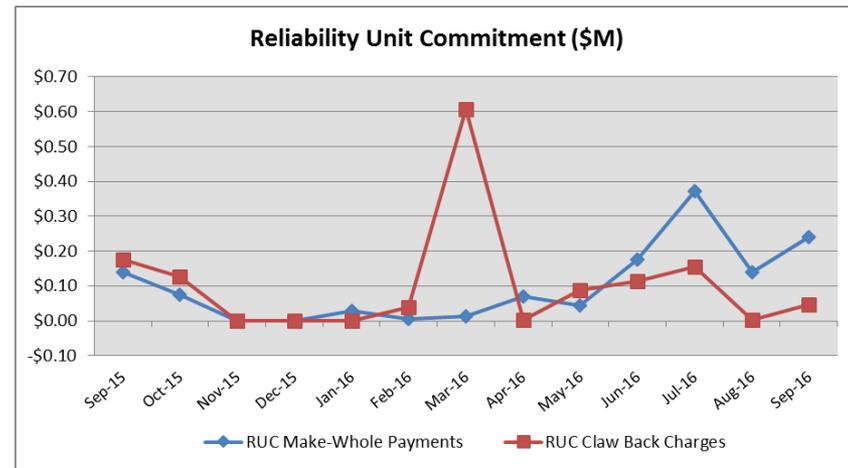
*Weather-Sensitive Time Periods are TP3 and TP4.

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 – September 2016

Reliability Unit Commitment (RUC)	\$ in Millions
RUC Make-Whole Payments	(\$0.24)
RUC Clawback Charges	\$0.05
RUC Commitment Settlement	(\$0.19)
RUC Capacity Short Charges	\$0.24
RUC Make-Whole Uplift	\$0.00
RUC Commitment Cost Allocation	\$0.24
RUC Decommitment Payments	\$0.00



RUC Make-Whole Payments were \$0.24M in September 2016.
RUC Clawback Charges were \$0.05M.

There was \$0.05M allocated directly to load in September 2016, compared to:

- \$0.00M in August 2016
- \$0.17M in September 2015

Capacity Services – September 2016

Capacity Services	\$ in Millions
Regulation Up Service	\$1.77
Regulation Down Service	\$1.05
Responsive Reserve Service	\$14.76
Non-Spinning Reserve Service	\$4.22
Black Start Service	\$0.61
Voltage Services - Reactive Power	\$0.00
Voltage Services - Lost Opportunity	\$0.00
Total Charges	\$22.41

Capacity Services costs decreased from last month and increased from September 2015.

September 2016 cost was \$22.41M, compared to:

- A charge of \$32.16M in August 2016
- A charge of \$19.16M in September 2015

Energy Settlement – September 2016

Day-Ahead Market Energy Settlement	\$ in Millions
Energy Purchases	\$535.21
Point to Point Obligation Purchases	\$25.94
RMR Day-Ahead Revenue	\$0.00
Energy Sales	(\$533.07)
Day-Ahead Congestion Rent	\$28.08
Day-Ahead Market Make-Whole Payments	(\$0.43)

Day-Ahead Market energy settlement decreased from last month and increased from September 2015.

Real-Time Market energy settlement activity decreased from last month and increased from September 2015.

Real-Time Market Energy Settlement	\$ in Millions
Energy Imbalance at a Resource Node	(\$514.71)
Energy Imbalance at a Load Zone	\$833.10
Energy Imbalance at a Hub	(\$266.92)
Real Time Congestion from Self Schedules	\$0.10
Block Load Transfers and DC Ties	(\$2.73)
Impact to Revenue Neutrality	\$48.84
Emergency Energy Payments	(\$0.05)
Base Point Deviation Charges	\$0.23
Real-Time Metered Generation (MWh in millions)	33.06

Congestion Revenue Rights (CRR) – September 2016

	\$ in Millions
Annual Auction	(\$22.55)
Monthly Auction	(\$5.47)
Total Auction Revenue	(\$28.02)
Day-Ahead CRR Settlement	(\$23.36)
Day-Ahead CRR Short-Charges	\$0.10
Day-Ahead CRR Short-Charges Refunded	(\$0.10)
Real-Time CRR Settlement	\$0.00
Real-Time CRR Short-Charges	\$0.00
Real-Time CRR Short-Charges Refunded	\$0.00
Total CRR Funding	(\$23.36)
Day-Ahead Point to Point Obligations Settlement	\$25.94
Real-Time Point to Point Obligation Settlement	(\$47.87)
Net Point to Point Obligation Settlement	\$21.93

Congestion Revenue Rights settlement payments were fully funded and excess funds were allocated to Load.

Point to Point Obligations settled with a net charge of \$21.93M compared to a net charge of \$17.44M last month.

CRR Balancing Account Fund – September 2016

CRR Balancing Account Fund	\$ in Millions
Beginning Balance for the Month	\$10.00
CRR Balancing Account Credit Total	\$4.82
CRR PTP Option Award Charges	\$0.04
Day-Ahead CRR Short-Charges Refunded	(\$0.10)
Load Allocated CRR Amount	(\$4.76)
Total Fund Amount	\$10.00

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

In the month of September 2016, the fund cap remained at \$10M and excess funds of \$4.76M were allocated to Load.

Revenue Neutrality – September 2016

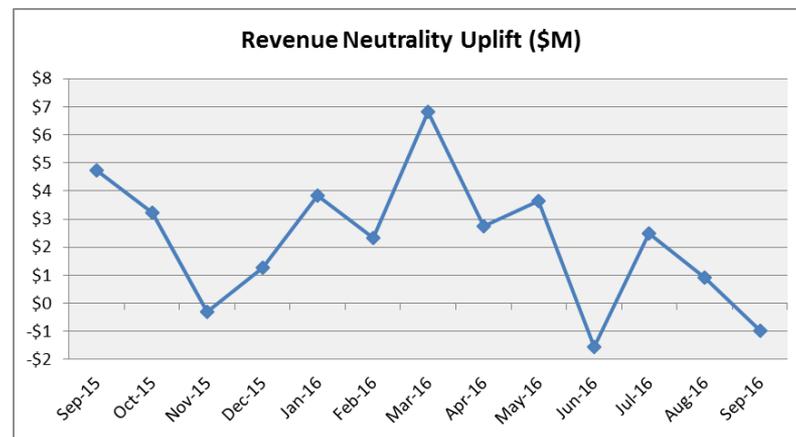
Revenue Neutrality Settlement

	\$ in Millions
Real-Time Point to Point Obligation Settlement	(\$47.87)
Real-Time Point to Point Options and Options with Refund Settlement	\$0.00
Real-Time Energy Imbalance Settlement	\$51.47
Real-Time Congestion from Self-Schedules Settlement	\$0.10
DC Tie & Block Load Transfer Settlement	(\$2.73)
Charge to Load	(\$0.97)

Revenue Neutrality charges to load decreased compared to last month and decreased compared to September 2015.

September 2016 was a credit of \$0.97M, compared to:

- \$0.92M charge in August 2016
- \$4.74M charge in September 2015



Real-Time Ancillary Service Imbalance (ORDC) – September 2016

Real-Time Ancillary Service Imbalance	\$ in Thousands
Real-Time AS Imbalance Payment Amount	(\$345.84)
Load Allocated AS Imbalance Revenue Neutrality Amount	\$345.84
Total Charges	\$345.84

In September 2016, total credits to QSEs w/an Ancillary Service Imbalance were \$345,837, while total credits in August 2016 were \$ 351,548.

10 of the 30 days in September had settlement dollars equal to \$0 for the day.

All days in September with settlement greater than \$0 were settled as a net credit to QSEs w/ an Ancillary Service Imbalance and as a charge to QSEs representing load.

The highest payment to QSEs w/an Ancillary Service Imbalance occurred on September 17th in the amount of \$119,126.

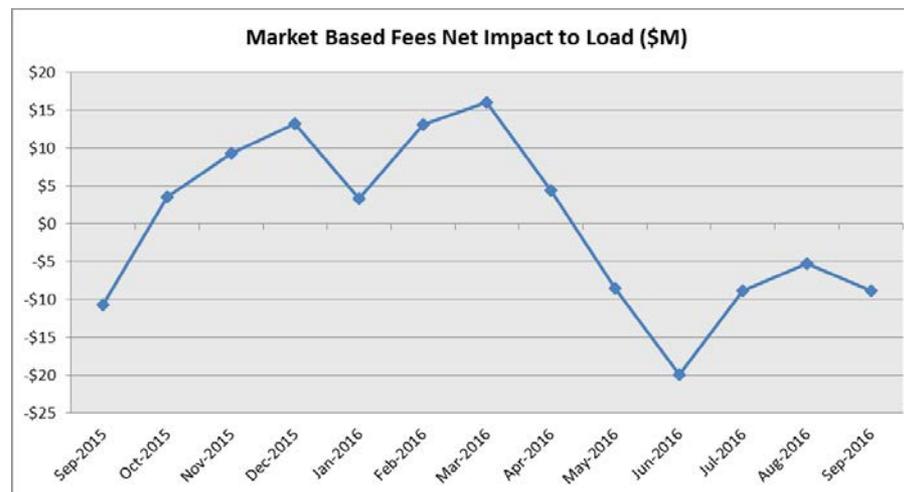
Net Allocation to Load – September 2016

Market-Based Allocation	\$ in Millions
CRR Auction Revenue Disbursement Settlement	(\$28.02)
Balancing Account Proceeds Settlement	(\$4.76)
Net Reliability Unit Commitment Settlement	(\$0.05)
Ancillary Services Settlement	\$22.41
Reliability Must Run Settlement (incl. RMR for Capacity)	\$2.29
Real-Time Revenue Neutrality Settlement	(\$0.97)
Emergency Energy Settlement	\$0.05
Base Point Deviation Settlement	(\$0.23)
ORDC Settlement	\$0.35
Total	(\$8.93)
Fee Allocation	
ERCOT Administrative Fee Settlement	\$18.41
Net Allocated to Load	\$9.48

The charge for the net allocation to Load decreased from last month and increased from September 2015.

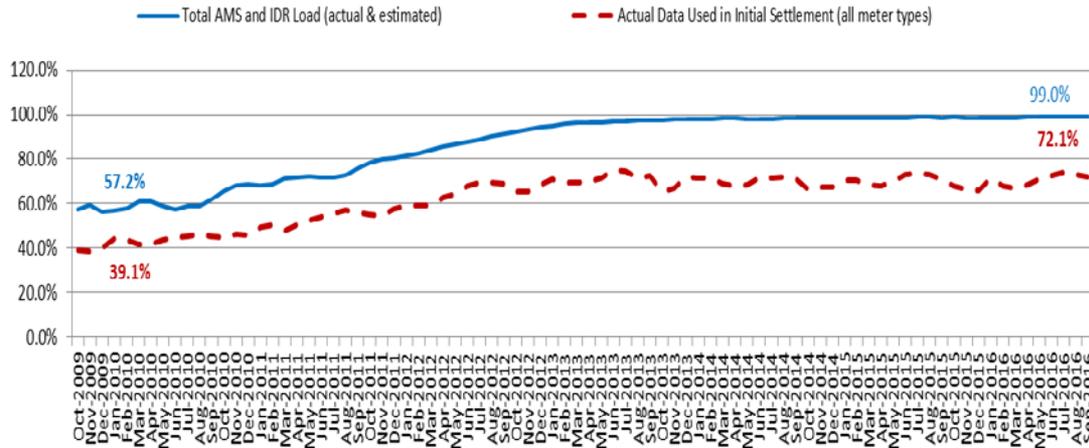
September 2016 was a charge of \$9.48M, compared to:

- A charge of \$15.04M in August 2016
- A charge of \$4.18M in September 2015



Advanced Meter Settlement Impacts – September 2016

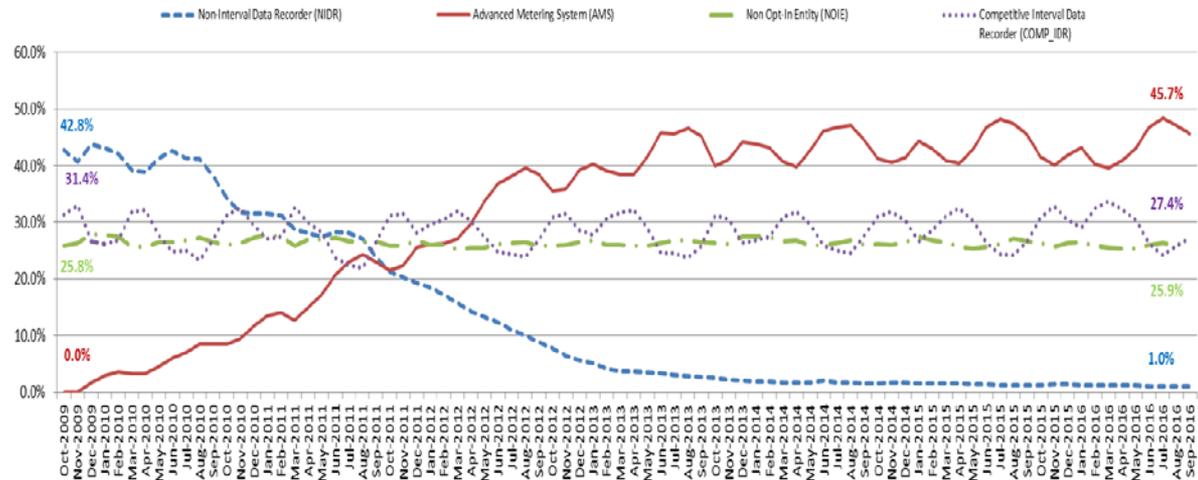
Percent Actual/Percent Interval Data Recorder (IDR)



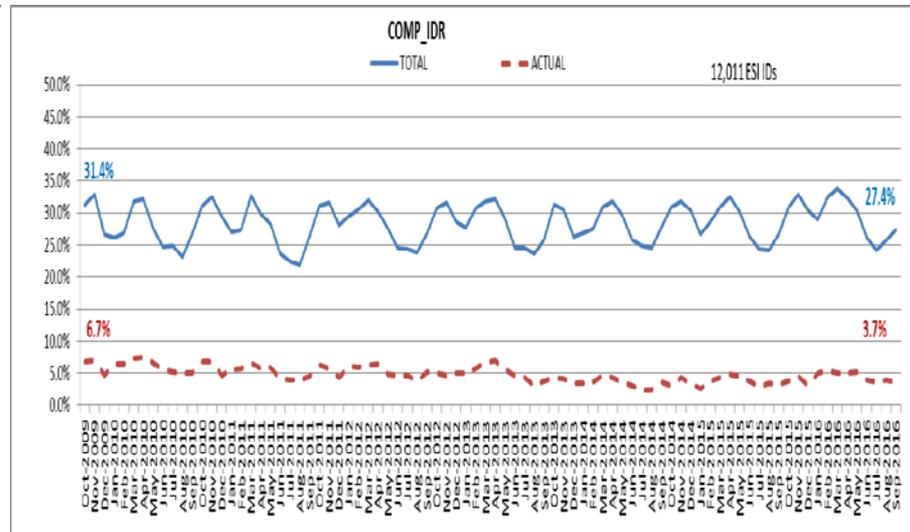
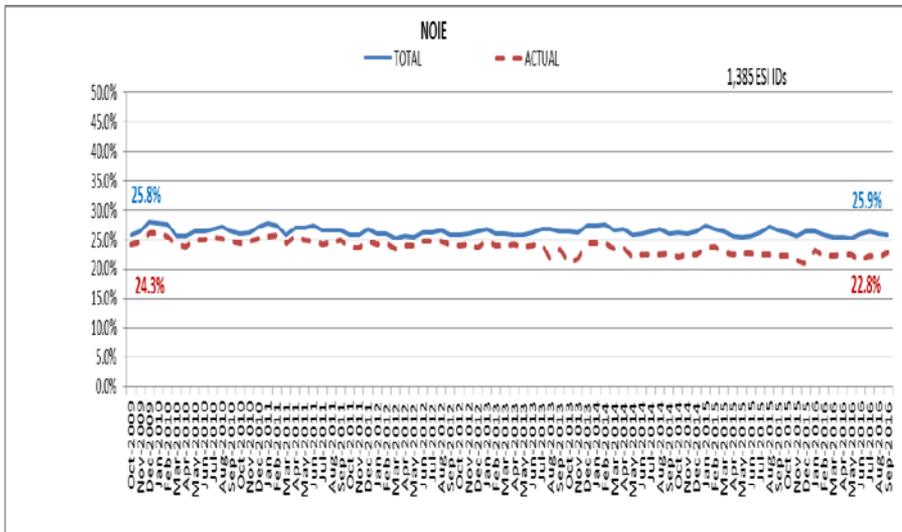
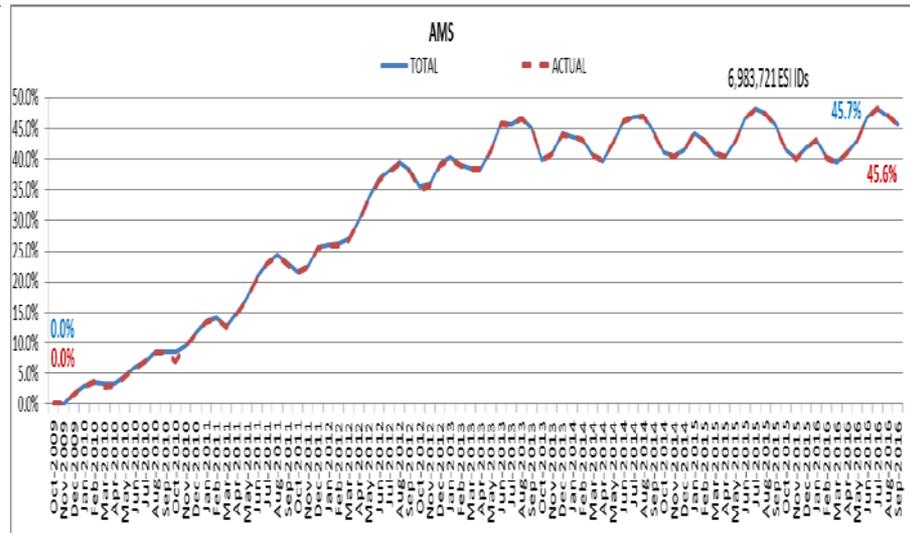
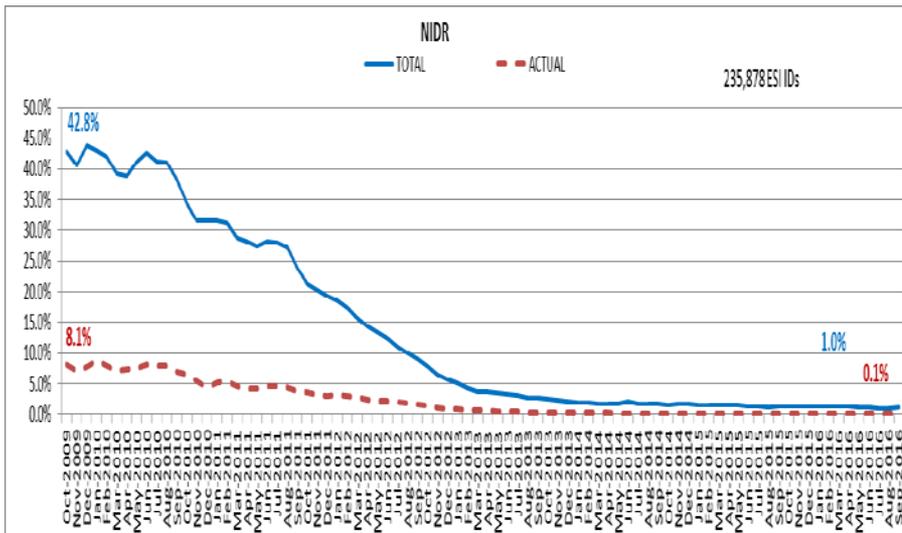
September 2016: At month end, settling 6.9M ESIIDs using Advanced Meter data.

September 2016: 99.0% 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 – September 2016

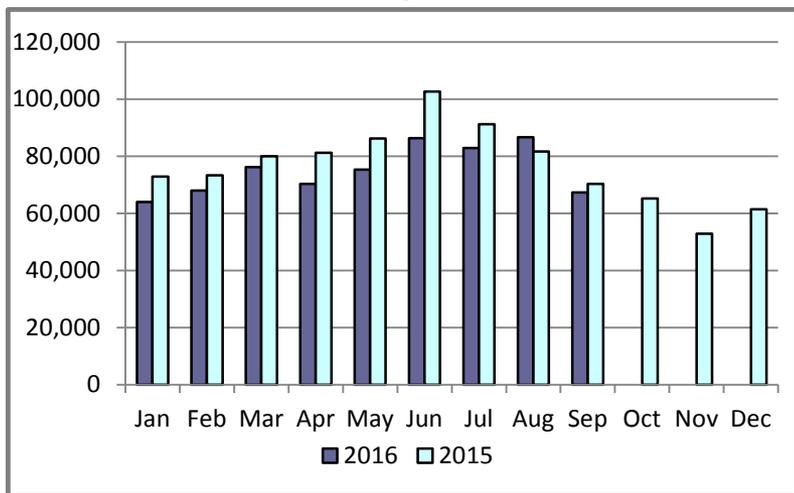


Retail Transaction Volumes – Summary – September 2016

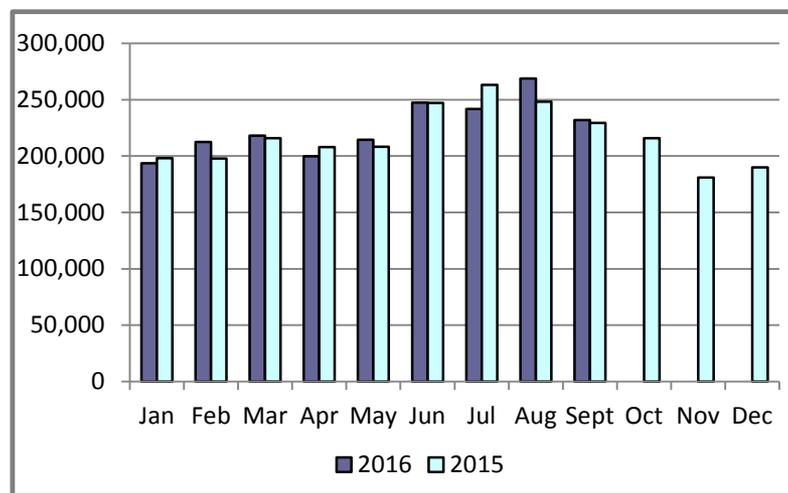
Transaction Type	Year-To-Date		Transactions Received	
	September 2016	September 2015	September 2016	September 2015
Switches	677,147	739,648	67,323	70,342
Acquisition	0	0	0	0
Move - Ins	2,028,727	2,015,689	231,999	229,405
Move - Outs	1,030,685	1,034,509	114,094	117,949
Continuous Service Agreements (CSA)	448,439	402,869	33,061	54,677
Mass Transitions	0	0	0	0
Total	4,184,998	4,192,715	446,477	472,373

Retail Transaction Volumes – Summary – September 2016

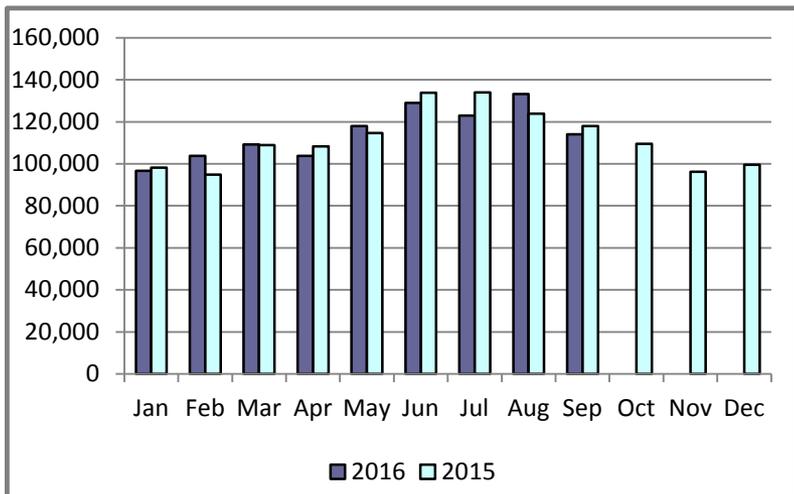
Switches/Acquisitions



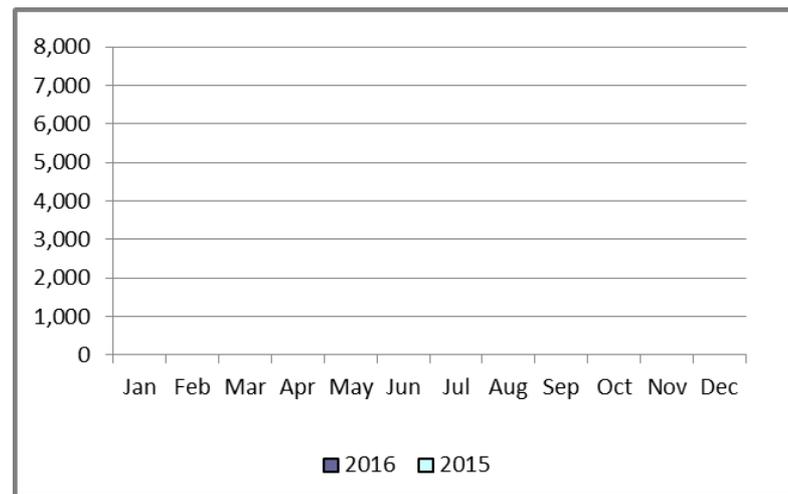
Move-Ins



Move-Outs

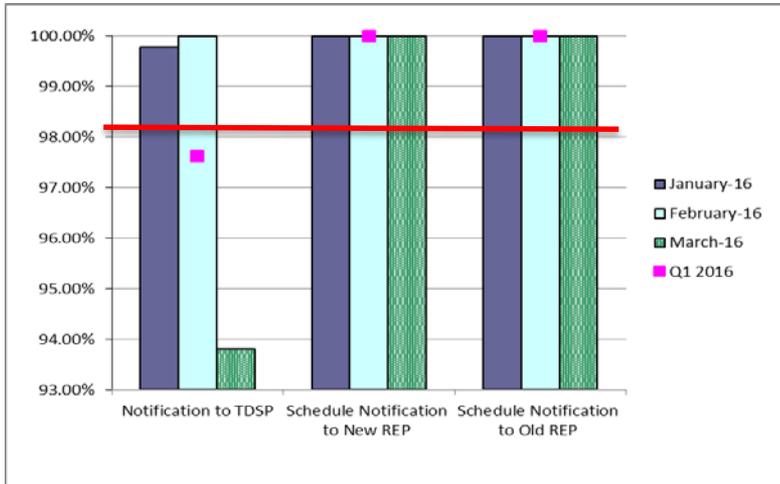


Mass Transition

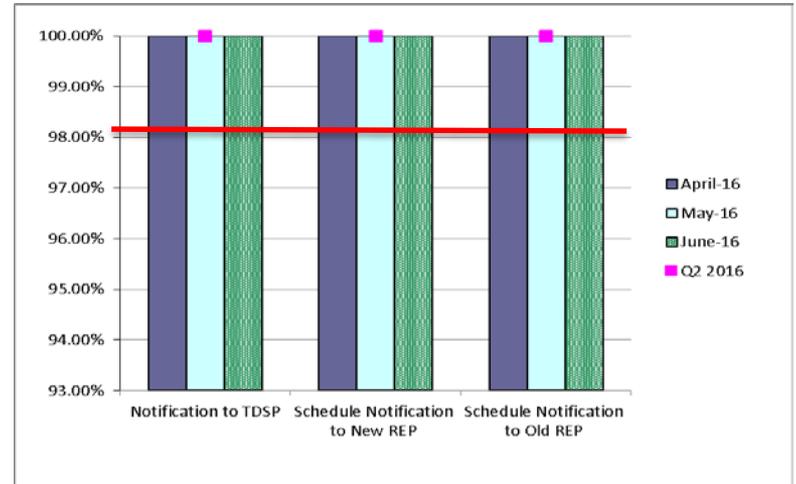


Retail Performance Measures – Switch – September 2016

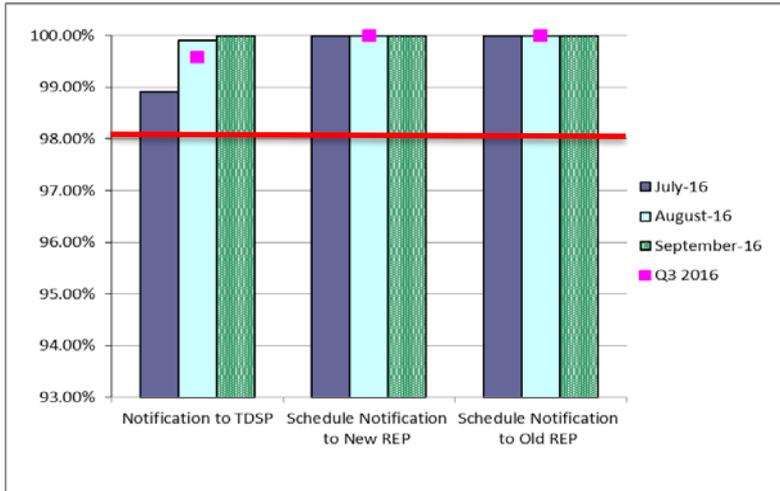
1st Quarter



2nd Quarter



3rd Quarter

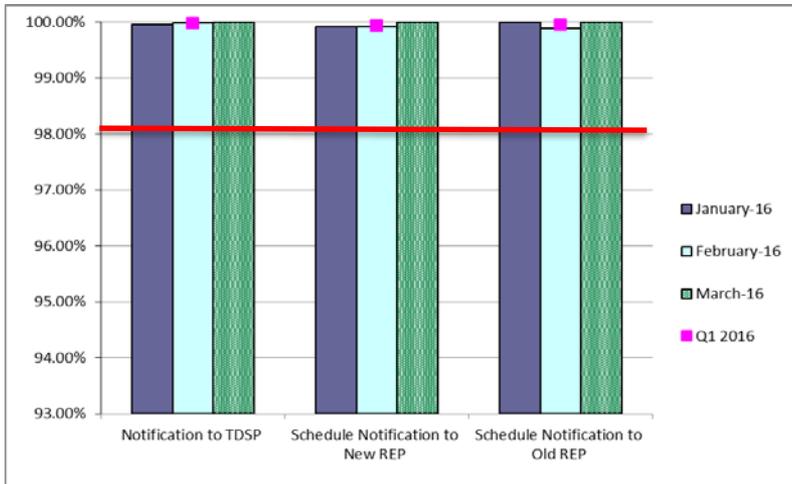


4th Quarter

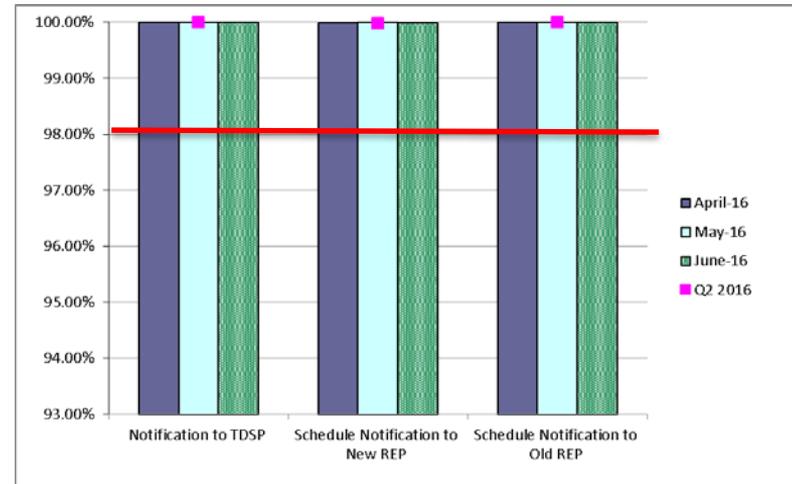


Retail Performance Measures – Same Day Move-In – September 2016

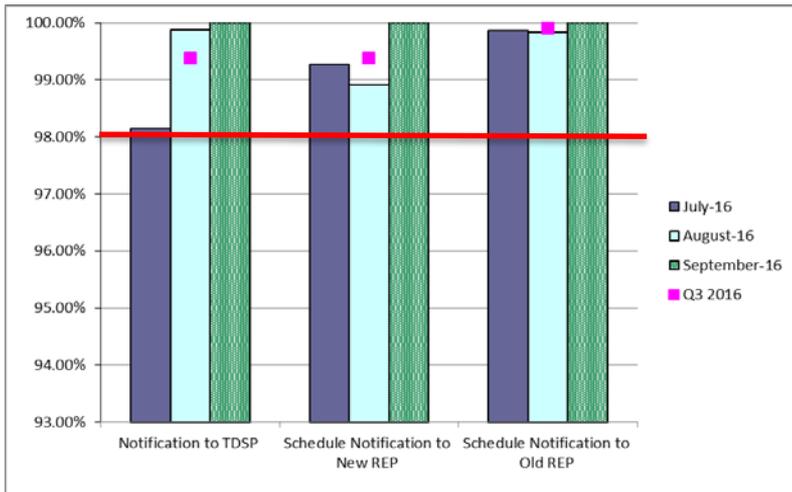
1st Quarter



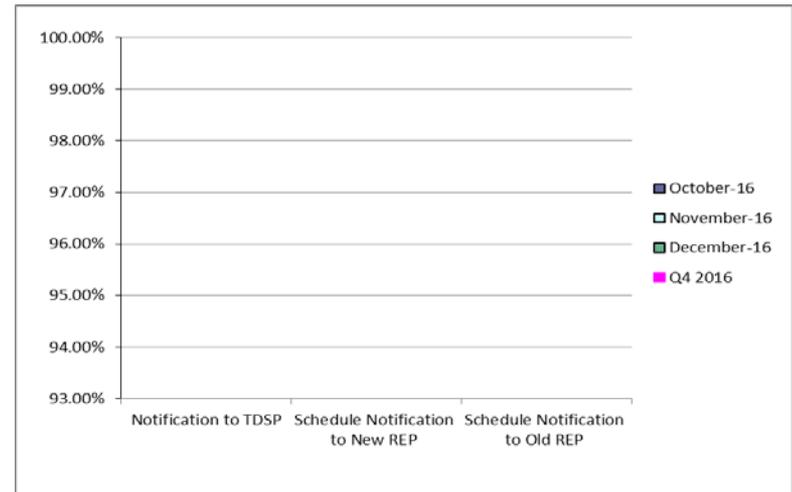
2nd Quarter



3rd Quarter

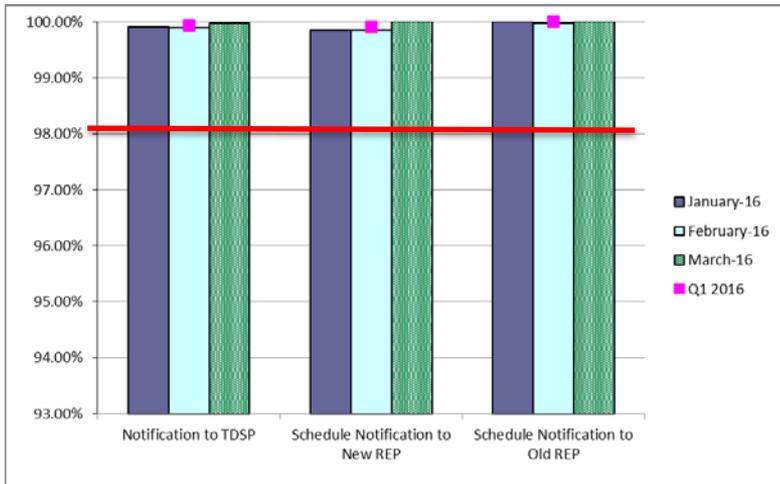


4th Quarter

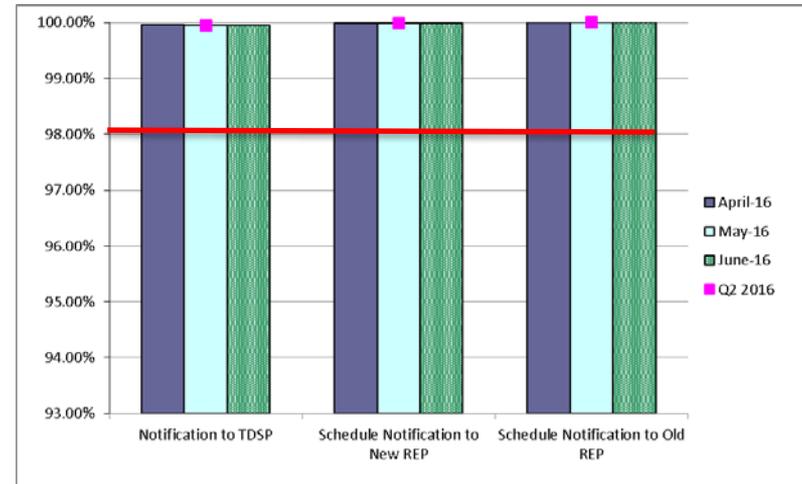


Retail Performance Measures – Standard Move-In – September 2016

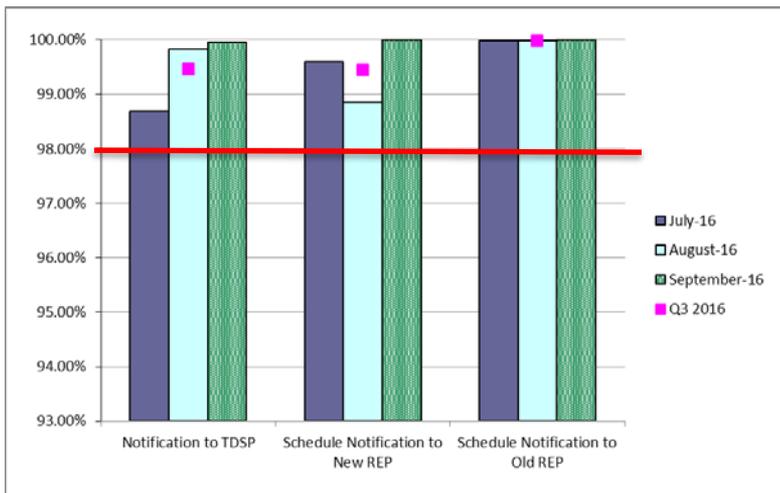
1st Quarter



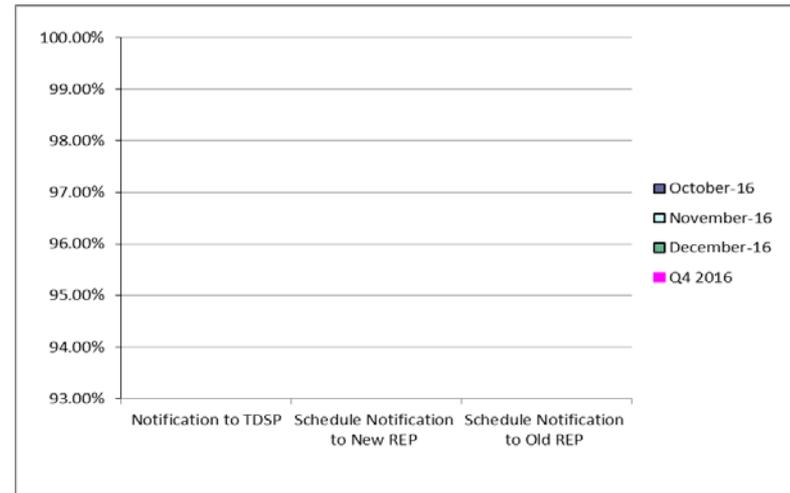
2nd Quarter



3rd Quarter



4th Quarter



Projects Report

ERCOT Portfolio Stoplight Report – September 2016

Impact Metric Tolerances	2016 Project Funding	\$22,500,000	2016 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 = 79)		\$15,075,337
	Projects Not Yet Started (Count = 7)		\$ 1,022,905
	Projects Completed (Count = 26)		\$ 2,015,551
	Carryover of Excess 2015 Project Spending		\$ 1,743,545
	Spending Reductions Required to Maintain Capital Budget		\$ -
	TOTAL		\$19,857,338

Note: Approximately \$1.75M in PPL spending was accelerated from 2016 to 2015. This spending is being offset by equivalent reductions in 2016.

Project Number	Projects in Initiation Phase (Count = 6)
TBD	CAT & RRS Tools for Control Room Project
TBD	Capacity Availability Tool (CAT)
TBD	Responsive Reserve Service Sufficiency Analysis
209-01	Multi Station Breaker to Breaker One Lines (Planning)
NPRR649	Addressing Issues Surrounding High Dispatch Limit (HDL) Overrides
NPRR758	Improved Transparency for Outages Potentially Having a High Economic Impact

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 – September 2016

Project Number	Projects in Planning Phase (Count = 37)	Phase Start	Baseline Phase Finish	Approved Phase Finish	Scheduled Go-Live Date	Scheduled Phase Finish	Schedule Health	Budget Health
170-03	ECAP - Enterprise Content Management System (Proof of Concept)	1/13/2016	5/17/2016	10/26/2016	TBD	10/31/2016	0%	22%
170-04	ECAP - ERCOT Information Governance and Taxonomy	1/13/2016	6/6/2016	10/26/2016	TBD	10/26/2016	0%	4%
173-02	ERCOT Flight Certification Website	10/5/2016	2/1/2017	2/1/2017	TBD	2/1/2017	0%	84%
181-01	CRR Framework Upgrade	12/16/2015	8/31/2016	10/19/2016	TBD	10/19/2016	0%	1%
183-01	CMM Tech Refresh	12/16/2015	8/17/2016	3/15/2017	TBD	3/15/2017	0%	NA See 2015 CMM NPRRs
183-01	CMM-FT GUI Integration	12/16/2015	8/17/2016	3/15/2017	TBD	3/15/2017	0%	NA See 2015 CMM NPRRs
185-01	Records Management and eDiscovery	1/28/2016	8/31/2016	12/7/2016	TBD	11/30/2016	2%	0%
190-01	SharePoint Governance Project	4/27/2016	7/20/2016	12/14/2016	TBD	12/14/2016	0%	0%
193-01	PMU Tool Evaluation and Implementation	5/4/2016	11/9/2016	11/9/2016	TBD	11/9/2016	0%	0%
196-01	GINR Project Status Application Replacement	7/27/2016	3/1/2017	12/7/2016	TBD	12/7/2016	0%	-2%
198-01	Reactive Power Coordination	7/13/2016	10/12/2016	11/30/2016	TBD	11/18/2016	8%	-2%
202-01	Email Gateway Replacement	8/31/2016	11/2/2016	11/2/2016	TBD	11/2/2016	0%	62%
203-01	DW Replication Upgrade	8/23/2016	10/26/2016	10/26/2016	TBD	11/7/2016	1	-18%
205-01	TIBCO BusinessWorks Application Upgrade	9/21/2016	12/28/2016	12/28/2016	TBD	12/28/2016	0%	0%
206-01	IT Change Management Evaluation	8/24/2016	11/16/2016	11/16/2016	TBD	11/16/2016	0%	36%
210-01	REC Technology Refresh	10/5/2016	1/4/2017	1/4/2017	TBD	1/4/2017	0%	8%
211-01	Identity & Access Management Evaluation	10/5/2016	2/22/2017	2/22/2017	TBD	2/22/2017	0%	0%
212-01	Test Data and Environment Enhancements Initiative (TDEE)	10/5/2016	11/2/2016	11/2/2016	TBD	11/2/2016	0%	60%
Various	2016 RARF Enhancements	8/24/2016	11/16/2016	11/16/2016	TBD	11/16/2016	0%	0%
Various	2015 CMM NPRRs	12/16/2015	8/17/2016	3/15/2017	TBD	3/15/2017	0%	33%
RRGRR003	Modifications to Improve Wind Forecasting	8/24/2016	11/16/2016	11/16/2016	TBD	11/16/2016	0%	NA See 2016 RARF Enh.
RRGRR006	Clarification of Descriptions and Alignment with Resource Asset Registration Forms	8/24/2016	11/16/2016	11/16/2016	TBD	11/16/2016	0%	NA See 2016 RARF Enh.
RRGRR007	Adding Solar Resource Registration Inputs	8/24/2016	11/16/2016	11/16/2016	TBD	11/16/2016	0%	NA See 2016 RARF Enh.
RRGRR009	Adding Voltage Limit Sets, Relay Loadability, MLSE, and GMD Data	8/24/2016	11/16/2016	11/16/2016	TBD	11/16/2016	0%	NA See 2016 RARF Enh.
SCR777	Bilateral CRR Interface Enhancement	12/16/2015	8/31/2016	10/19/2016	TBD	10/19/2016	0%	NA See #181-01
SCR790	Wind Resource Power Production and Forecast Transparency	10/5/2016	1/4/2017	1/4/2017	TBD	1/4/2017	0%	0%
NPRR484	Revisions to Congestion Revenue Rights Credit Calculations and Payments - Phase 1b / 2	12/16/2015	8/17/2016	3/15/2017	TBD	3/15/2017	0%	NA See 2015 CMM NPRRs
NPRR519	Exemption of ERS-Only QSEs from Collateral and Capitalization Requirements	12/16/2015	8/17/2016	3/15/2017	TBD	3/15/2017	0%	NA See 2015 CMM NPRRs
NPRR620	Collateral Requirements for Counter-Parties with No Load or Generation	12/16/2015	8/17/2016	3/15/2017	TBD	3/15/2017	0%	NA See 2015 CMM NPRRs
NPRR648	Remove References to Flowgate Rights	12/16/2015	8/17/2016	3/15/2017	TBD	3/15/2017	0%	NA See 2015 CMM NPRRs
NPRR660	Remove CRR State Change Adder	12/16/2015	8/17/2016	3/15/2017	TBD	3/15/2017	0%	NA See 2015 CMM NPRRs
NPRR683	Revision to Available Credit Limit Calculation	12/16/2015	8/17/2016	3/15/2017	TBD	3/15/2017	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	3/15/2017	TBD	3/15/2017	0%	NA See 2015 CMM NPRRs
NPRR741	Clarifications to TPE and EAL Credit Exposure Calculations	12/16/2015	8/17/2016	3/15/2017	TBD	3/15/2017	0%	NA See 2015 CMM NPRRs
NPRR754	Revise Load Distribution Factors Report Posting Frequency	9/7/2016	10/12/2016	10/12/2016	TBD	10/12/2016	0%	4%
NPRR764	QSE Capacity Short Calculations Based on an 80% Probability of Exceedance (P80)	9/28/2016	11/9/2016	11/9/2016	TBD	11/9/2016	0%	0%
NPRR743	Revision to MCE to Have a Floor For Load Exposure	12/16/2015	8/17/2016	3/15/2017	TBD	3/15/2017	0%	NA See 2015 CMM NPRRs



ERCOT Portfolio Stoplight Report – September 2016

Project Number	Projects in Execution Phase (Count = 20)	Phase Start	Baseline Go-Live Date	Approved Go-Live Date	Scheduled Go-Live Date	Scheduled Phase Finish	Schedule Health		Budget Health	
065-01	NMMS Upgrade	12/17/2014	9/22/2016	2/13/2017	2/13/2017	2/13/2017		0%		0%
158-01	Load Forecast Enhancements	9/28/2016	3/31/2017	3/31/2017	3/31/2017	5/18/2017		0%		2%
170-01	Enterprise Content Alignment Program	8/26/2015	11/15/2017	11/15/2017	9/25/2017	9/25/2017		6%		0%
172-01	Physical Security Project #2	6/30/2016	2/13/2017	2/13/2017	2/27/2017	3/13/2017	1	-6%		16%
173-01	Serena Software (MarkeTrak) Upgrade	10/5/2016	1/29/2017	1/29/2017	1/29/2017	3/15/2017		0%		1%
177-01	Cyber Security Project #19	4/6/2016	7/13/2016	10/31/2016	11/15/2016	11/29/2016	1	-7%		15%
187-00	Capital Efficiencies and Enhancements - 2016	1/1/2015	12/31/2016	12/31/2016	12/31/2016	12/31/2016		0%		-4%
188-01	Mass Transition/Acquisition Enhancements (MTAQ)	5/25/2016	4/2/2017	4/2/2017	4/2/2017	5/17/2017		0%		-1%
197-01	AREA - Demand and Energy Report	9/14/2016	5/4/2017	5/4/2017	5/4/2017	5/11/2017		0%		2%
Various	NPRR495 and NPRR736 Changes to Ancillary Services Capacity Monitor	7/20/2016	11/3/2016	11/3/2016	11/3/2016	11/15/2016		0%		2%
Various	NOGRR147 and SCR787 NDCRC Enhancement	9/14/2016	12/8/2016	12/8/2016	12/8/2016	12/30/2016		0%		2%
SCR786	Retail Market Test Environment	6/22/2016	12/12/2016	12/12/2016	12/12/2016	2/1/2017		0%		8%
SCR787	Maintain NDCRC Data For Generator Transfer Between Resource Entities	9/14/2016	12/8/2016	12/8/2016	12/8/2016	12/30/2016		0%	NA	See NOGRR147 &
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%		0%
RMGRR127	Efficiencies for Acquisition Transfer	5/25/2016	4/2/2017	4/2/2017	4/2/2017	5/17/2017		0%	NA	See #188-01
NOGRR147	Reactive Power Testing Requirements	9/14/2016	12/8/2016	12/8/2016	12/8/2016	12/30/2016		0%	NA	See NOGRR147 &
NPRR272	Definition and Participation of Quick Start Generation Resources	8/3/2016	2/9/2017	2/9/2017	2/8/2017	2/21/2017		0%		57%
NPRR495	Changes to Ancillary Services Capacity Monitor	7/20/2016	11/3/2016	11/3/2016	11/3/2016	11/15/2016		0%	NA	See NPRR495 and 736
NPRR736	Updates to the Ancillary Service Capacity Monitor Display	7/20/2016	11/3/2016	11/3/2016	11/3/2016	11/15/2016		0%	NA	See NPRR495 and 736
NPRR770	Addition of Outaged Resource Capacity to Short-Term System Adequacy Report	7/20/2016	11/3/2016	11/3/2016	11/3/2016	11/15/2016		0%	NA	See NPRR495 and 736

ERCOT Portfolio Stoplight Report – September 2016

Project Number	Projects in Stabilization (Count = 11)	Execution Phase Start	Baseline Go-Live Target	Approved Go-Live Target	Actual Go-Live Date	Scheduled Execution Phase Finish	Schedule Health		Budget Health	
052-01	EMS Upgrade	9/24/2014	5/25/2016	5/25/2016	6/16/2016	10/31/2016		-3%		6%
170-05	ECAP - ERCOT Identity Alignment	2/24/2016	9/18/2016	9/18/2016	9/18/2016	11/23/2016		0%		0%
174-01	2015 Outage Scheduler Enhancements	12/2/2015	9/14/2016	9/14/2016	9/26/2016	10/21/2016		-4%		0%
180-01	Upgrade of MDM - GEMS	3/30/2016	8/29/2016	8/29/2016	9/9/2016	10/12/2016	1	-7%		16%
189-01	Enterprise Resource Planning	4/13/2016	9/27/2016	9/27/2016	9/27/2016	11/2/2016		0%		57%
191-01	CRR Auction Improvements	4/27/2016	9/1/2016	9/9/2016	9/9/2016	10/26/2016		0%		7%
191-01	Improved CRR Credit Limit Display and Calculation Triggers	4/27/2016	9/1/2016	9/9/2016	9/9/2016	10/26/2016		0%		See #191-01
191-01	Improved Re-Calculation of CRR Baseloding for CRR Auctions	4/27/2016	9/1/2016	9/9/2016	9/9/2016	10/26/2016		0%		See #191-01
NPRR219	Resolution of Alignment Items A33, A92, A106, and A150 - TSPs Must Submit Outages for Resource Owned Equipment and Clarification of Changes in Status of Transmission Element Postings	12/2/2015	9/14/2016	9/14/2016	9/26/2016	10/21/2016		-4%	NA	See #174-01
NOGRR050	Resolution of Reporting Issues Related to NPRR219	12/2/2015	9/14/2016	9/14/2016	9/26/2016	10/21/2016		-4%	NA	See #174-01
SCR783	Outage Scheduler Enhancements – Group 2, Usability and Filtering Enhancements	12/2/2015	9/14/2016	9/14/2016	9/26/2016	10/21/2016		-4%	NA	See #174-01
Project Number	Projects On Hold (Count = 5)	Forecast Start Date	Baseline Phase Finish	Approved Go-Live Target	Scheduled Go-Live Date	Scheduled Phase Finish	Schedule Health		Budget Health	
SCR781	MP Online Data Entry - Market Requirements	8/20/2014	11/28/2014	TBD	TBD	TBD			3	See #106-01
NPRR573	Alignment of PRC Calculation	TBD	TBD	TBD	TBD	TBD			3	
106-01	MP Online Data Entry - Ph 1	10/9/2013	3/5/2014	TBD	TBD	TBD			3	
129-01	Access and Roles Management	7/1/2014	10/1/2014	TBD	TBD	TBD			3	
166-01	Jboss Application Monitoring & Management (JAMM)	TBD	TBD	TBD	TBD	TBD			3	

ERCOT Portfolio Stoplight Report – September 2016

Project Number	Projects Completed (Count =26)	Baseline Execution Phase Start	Baseline Go-Live Target	Approved Go-Live Target	Actual Go-Live Date	Actual Execution Phase Finish	Schedule Health		Budget Health	
NPRR419	Revise Real Time Energy Imbalance and RMR Adjustment Charge	1/13/2016	4/12/2016	4/12/2016	4/12/2016	6/6/2016		0%		7%
TBD	Monthly BLT Payment and Charge for Presidio Exception	4/9/2015	6/23/2016	6/23/2016	6/16/2016	6/23/2016		1%	NA	See #187-00
NPRR515	Day-Ahead Market Self-Commitment of Generation Resources	10/5/2015	3/31/2016	3/31/2016	6/23/2016	7/13/2016	2	-47%		0%
NPRR556	Resource Adequacy During Transmission Equipment Outage	9/21/2015	10/23/2015	10/23/2015	10/23/2015	12/10/2015		0%		23%
NPRR588	Clarifications for PV Generation Resources	9/16/2015	2/19/2016	2/19/2016	2/9/2016	3/30/2016		6%	NA	See #161-01
NPRR615	PVGR Forecasting	9/16/2015	2/19/2016	2/19/2016	2/9/2016	3/30/2016		6%	NA	See #161-01
NPRR617	Energy Offer Flexibility	1/27/2016	6/23/2016	6/23/2016	6/22/2016	8/10/2016		0%	NA	See NPRR617 / NPRR700
NPRR662	Proxy Energy Offer Curves	3/2/2016	9/1/2016	9/1/2016	8/31/2016	9/28/2016		0%		12%
NPRR680	Allow QSEs to Self-Arrange AS Quantities Greater Than Their AS Obligation	10/28/2015	12/11/2015	12/11/2015	12/11/2015	12/18/2015		0%		13%
NPRR686	Changing the IRR Forecast from Next 48 Hours to Next 168 Hours	9/16/2015	2/19/2016	2/19/2016	2/10/2016	3/30/2016		5%	NA	0%
NPRR700	Utilizing Actual Fuel Costs in Startup Offer Caps	1/27/2016	6/23/2016	6/23/2016	6/22/2016	8/10/2016		0%	NA	See NPRR617 / NPRR700
RMGRR126	Additional ERCOT Validations for Customer Billing Contact Information File	5/25/2016	7/24/2016	7/24/2016	7/24/2016	5/17/2017		0%	NA	See #188-01
184-01	NPRR617 and 700 Implementation	1/27/2016	6/23/2016	6/23/2016	6/23/2016	8/10/2016		0%	2	-6%
116-01	Collage Replacement	2/6/2014	9/22/2014	9/22/2014	2/29/2016	4/7/2016	2	-230%	2	-45%
120-01	IT Production Hardening	5/21/2015	4/1/2016	4/1/2016	4/14/2016	4/27/2016		-4%		33%
134-01	Privileged Account Management	4/1/2015	9/30/2015	9/30/2015	9/30/2015	1/27/2016		0%		14%
141-01	Production Virtualization	6/1/2016	7/27/2016	9/28/2016	TBD	9/28/2016		0%		0%
143-01	OSI Pi Visualization Enhancements	1/16/2015	6/19/2015	6/19/2015	1/22/2016	2/18/2016	1	-140%		0%
144-01	OC-48 Replacement with DWDM	2/4/2015	12/22/2015	12/22/2015	1/12/2016	3/2/2016	1	-6%		3%
161-01	NPRRs 588 and 615	9/16/2015	2/19/2016	2/19/2016	2/9/2016	3/30/2016		6%		-1%
163-01	Cyber Security Project #10	7/1/2015	9/15/2015	9/15/2015	9/22/2015	12/16/2015	1	-9%		9%
165-00	Capital Efficiencies and Enhancements - 2015	1/1/2015	12/31/2015	12/31/2015	12/31/2015	12/31/2015		0%		42%
168-01	Configuration Management System Requirements for CIP v5 Readiness	7/6/2015	12/17/2015	12/17/2015	12/17/2015	7/13/2016		0%		3%
169-01	Short Circuit Ratio Functionality	1/20/2016	9/19/2016	9/19/2016	9/19/2016	9/30/2016		0%		31%
171-01	CIP v5 Readiness Project	7/22/2015	4/29/2016	7/1/2016	4/29/2016	7/13/2016		18%		-2%
179-01	Infoblox Hardware Refresh	2/4/2016	8/12/2016	8/12/2016	6/27/2016	8/17/2016		24%		1%

ERCOT Portfolio Stoplight Report – September 2016

Project Number	2016 Projects Not Yet Started (Count = 7)	Forecast Start Date
TBD	Cyber Security Project #20	Oct-2016
TBD	Cyber Security Project #21	Oct-2016
NPRR744	RUC Trigger for the Reliability Deployment Price Adder and Alignment with RUC Settlement	Oct-2016
NPRR746	Adjustments Due to Negative Load	Oct-2016
TBD	SAS Technical Architecture Redesign	Oct-2016
TBD	Standard Report for Events and Near-Miss Analysis	Oct-2016
TBD	TeleAlert Replacement	Oct-2016