



ERCOT Monthly Operational Overview
(August 2016)

ERCOT Public
September 15, 2016

Grid Planning & Operations

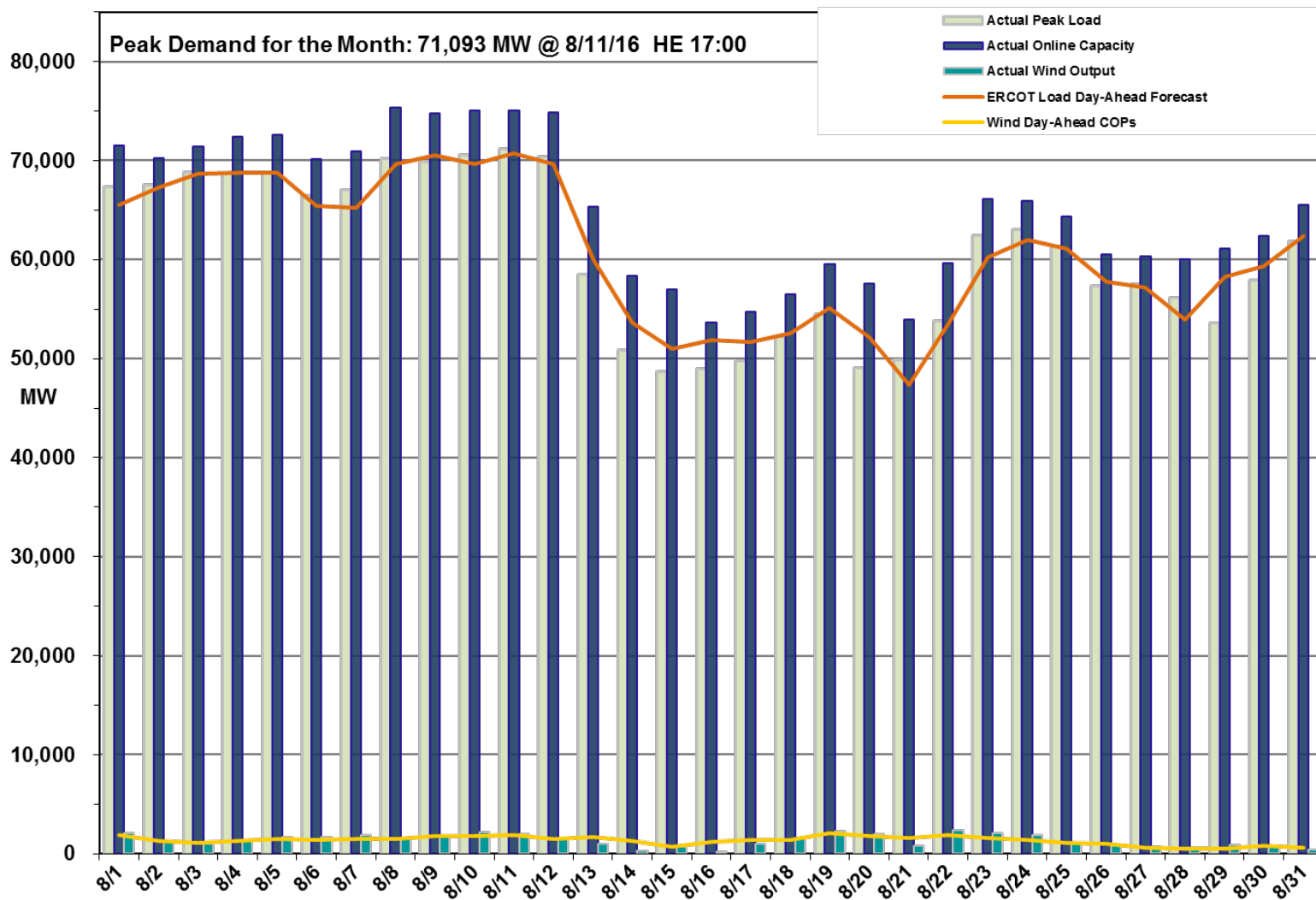
Operations

- The preliminary Settlements hourly peak demand of 71,093 MW on August 11th, was greater than the day-ahead mid-term load forecast peak of 70,718 MW for the same operating hour.
 - The operational instantaneous peak demand was 71,338 MW (telemetry).
- Day-ahead load forecast error for August was 2.22%
- ERCOT issued 15 notifications:
 - One OCN issued due to capacity insufficiency
 - Eleven Advisories issued due to Physical Responsive Capability being less than 3,000 MW.
 - One Advisory due to postponed DAM Solution
 - One Watch due to a SCED failure
 - One Watch due to Physical Responsive Capability being less than 2,500 MW

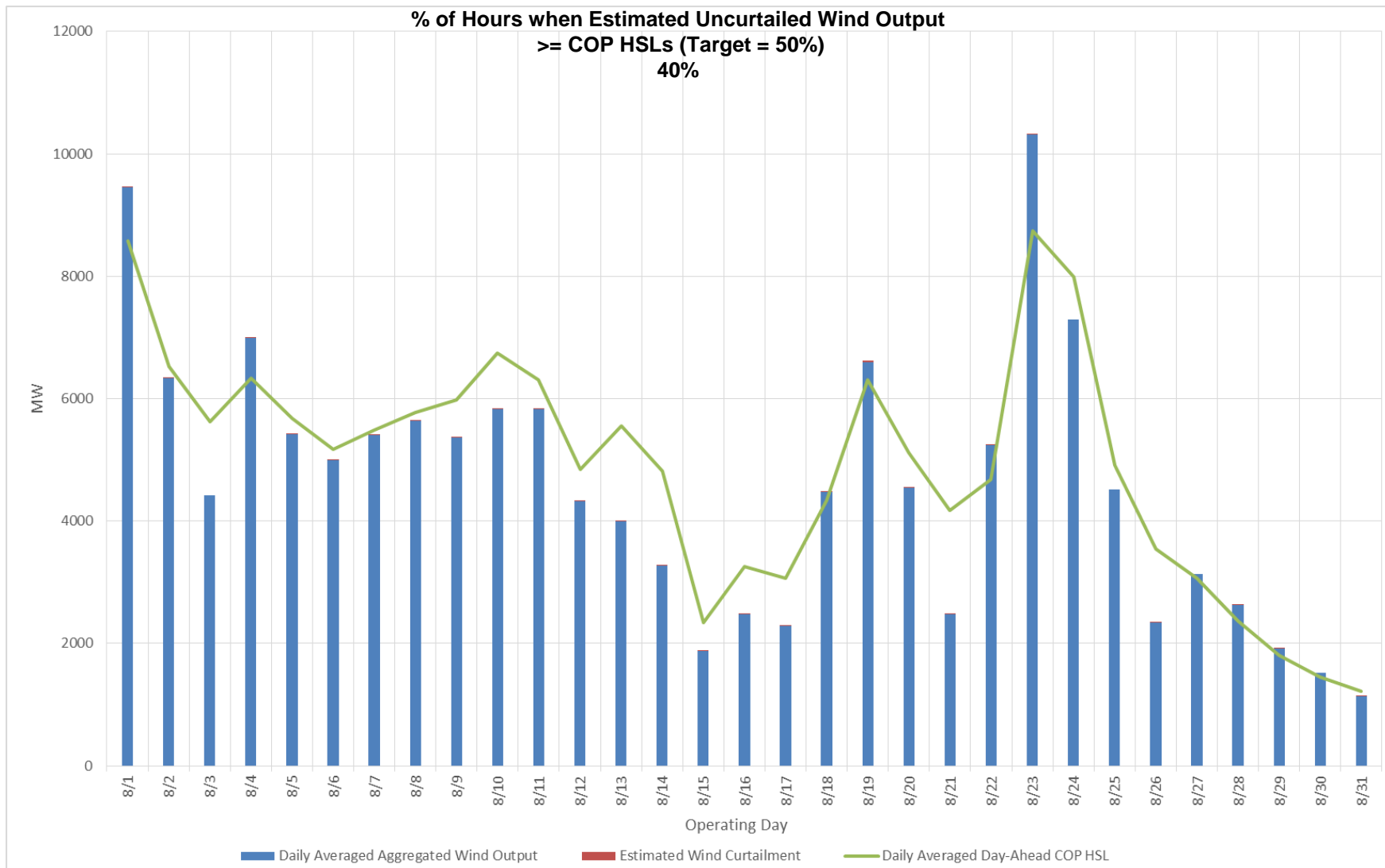
Planning Activities

- 236 active generation interconnection requests totaling 57,931 MW, including 26,038 MW of wind generation, as of August 31, 2016. Six additional requests and an increase of 960 MW from July 30, 2016.
- 16,631 MW wind capacity in commercial operations on August 31, 2016.

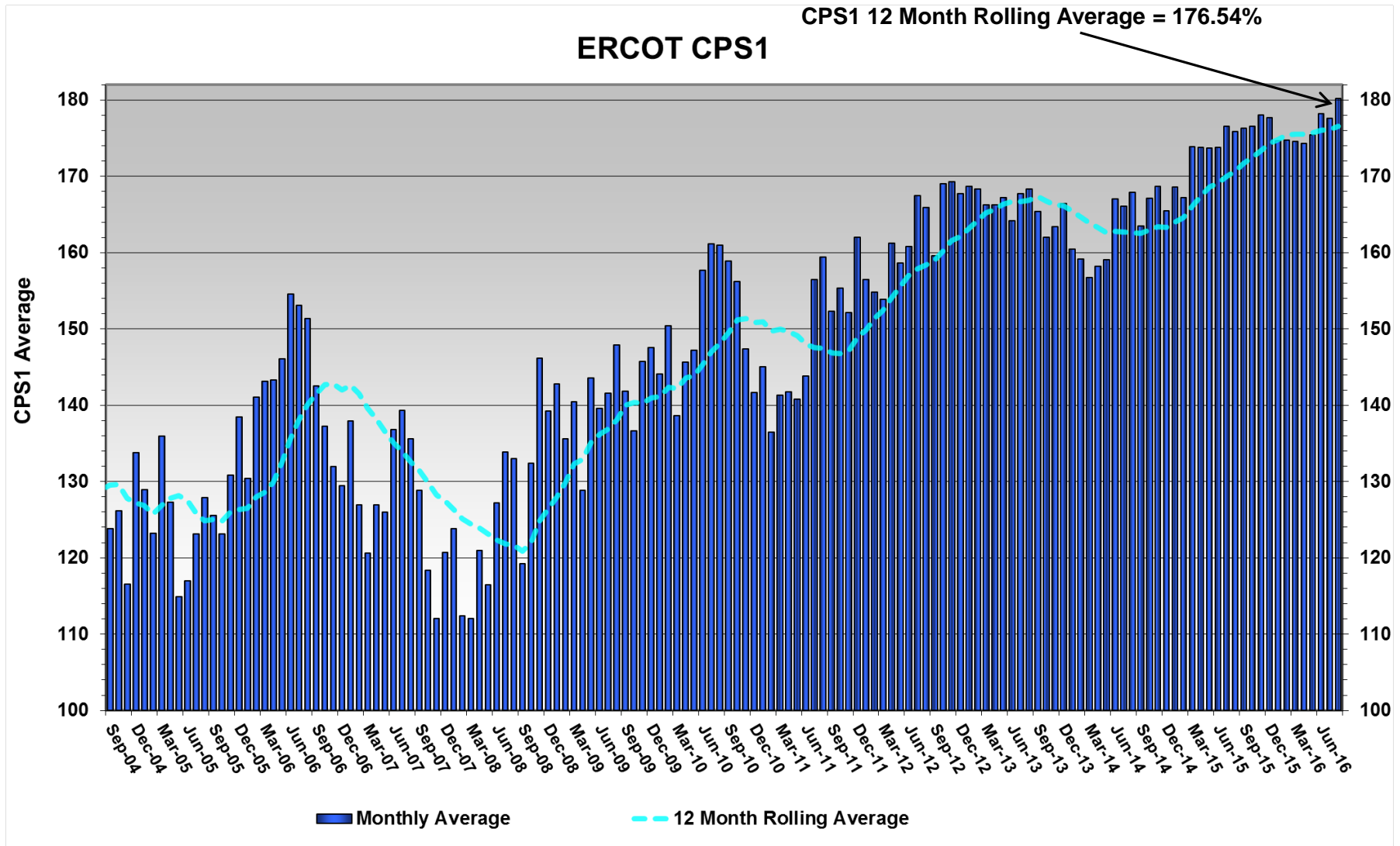
Daily Peak Demand: Hourly Average Actual vs. Forecast, Wind Day-Ahead COPs, & On-Line Capacity at Peak – August 2016



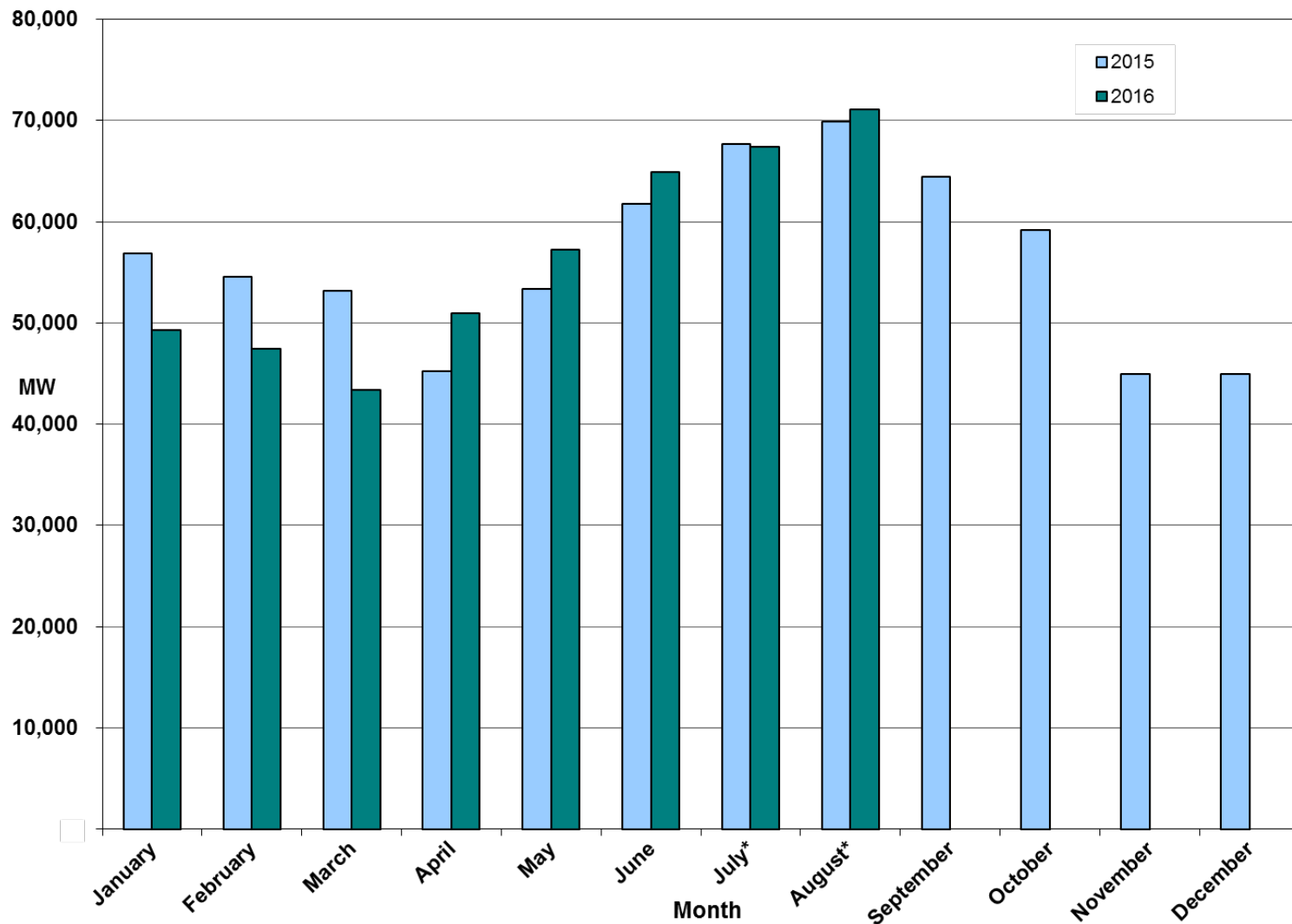
Actual Wind Output plus Curtailments vs. Wind Day-Ahead COPs for All Hours – August 2016



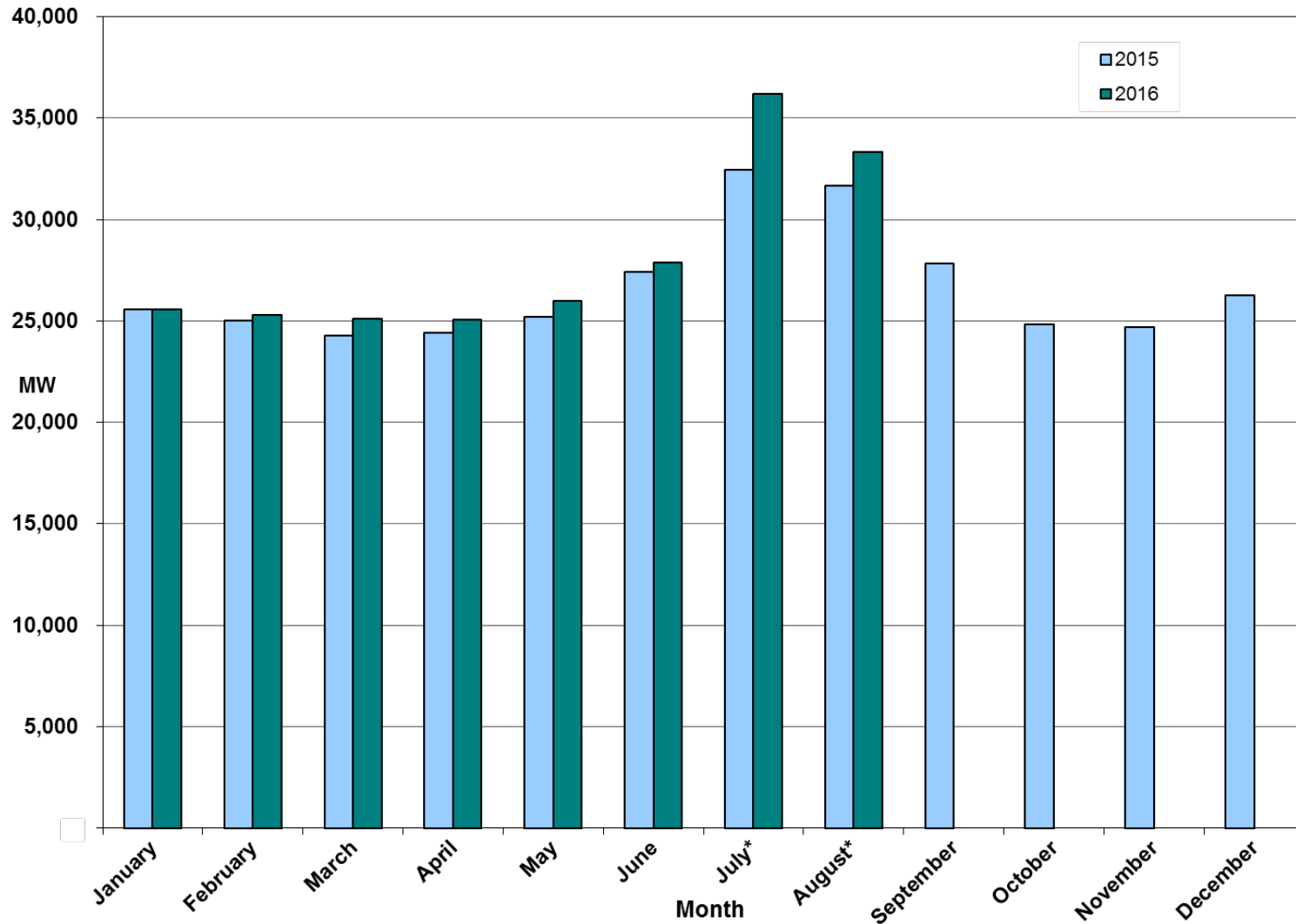
ERCOT's CPS1 Monthly Performance – August 2016



Monthly Actual Hourly Peak Demand – August 2016



Monthly Actual Minimum 15-minute Demand – August 2016

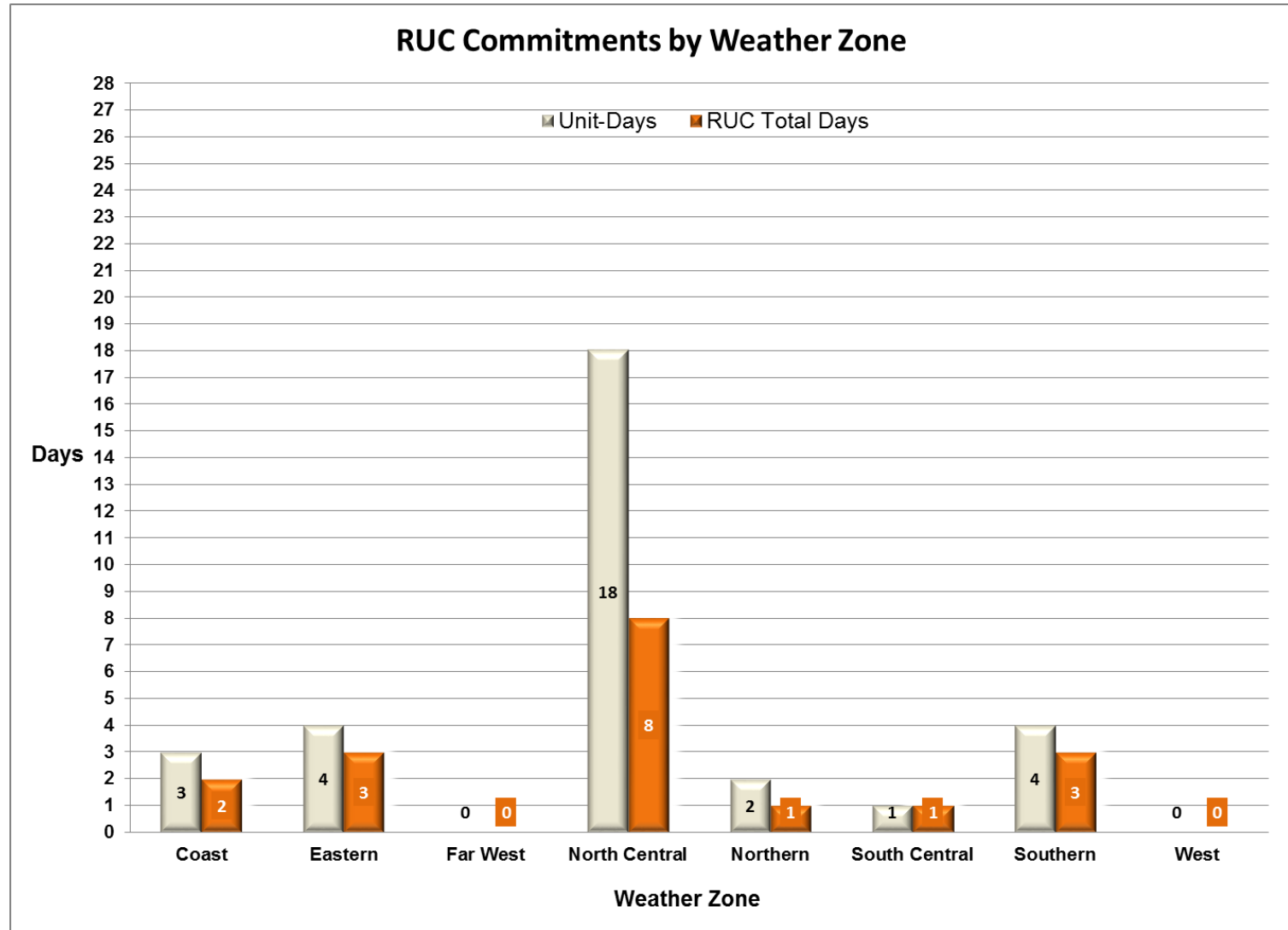


Day-Ahead Load Forecast Performance – August 2016

**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	August 2016 MAPE	
Average Annual MAPE	2.86	2.83	2.86	2.69	2.22	
Lowest Monthly MAPE	2.07	2.15	1.89	1.94	Lowest Daily MAPE	0.65 August 5
Highest Monthly MAPE	3.50	3.70	3.81	3.86	Highest Daily MAPE	4.15 August 20

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



Generic Transmission Constraints (GTCs) – August 2016

GTCs	Aug-15	Jun-16	Jul-16	Aug-16	Last 12 Months Total Days (Sep 15 – Aug 16)
	Days GTCs	Days GTCs	Days GTCs	Days GTCs	
North – Houston	0	0	0	0	2
Valley Import	0	0	0	0	7
Zorillo - Ajo	11	5	21	4	96
Panhandle	0	8	16	2	74
Laredo	-	0	0	4	9
Liston	-	21	29	25	198

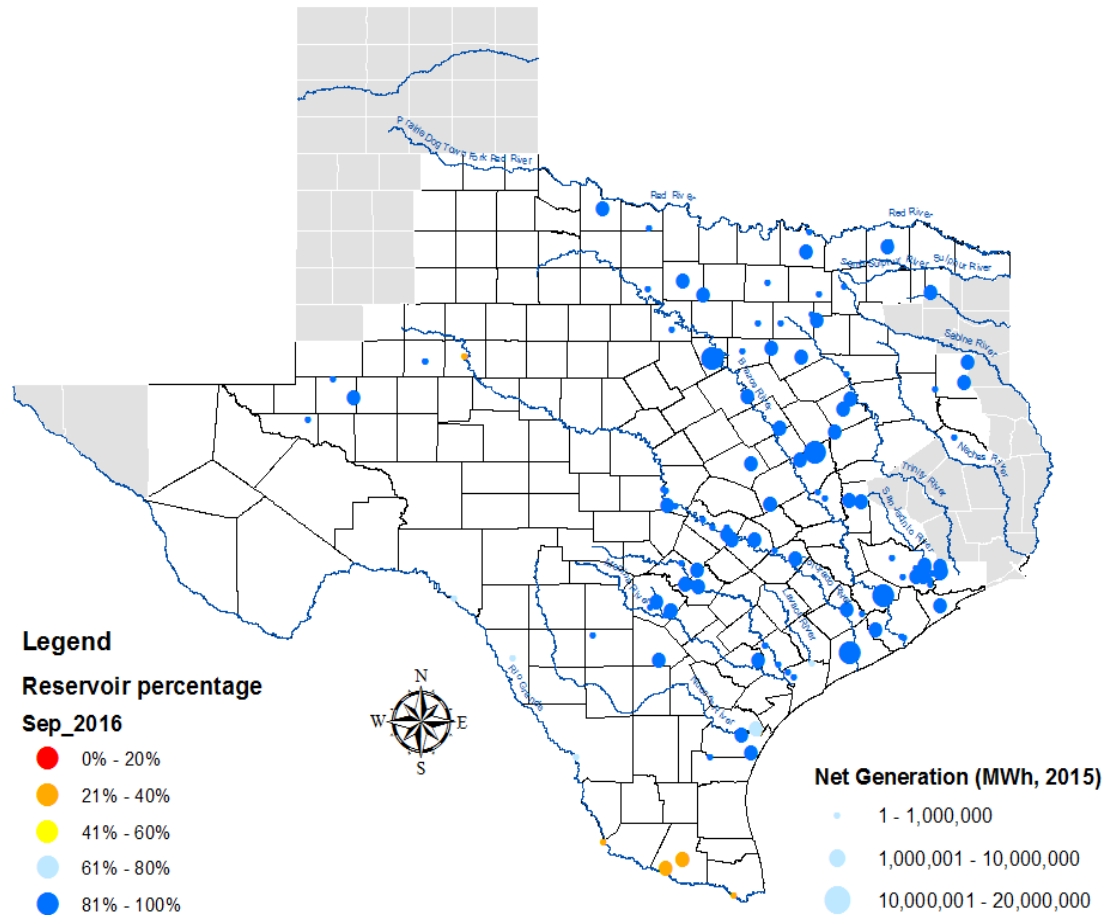
GTC: A transmission flow limit more constraining than a Transmission Element’s normal limit established to constrain flow between geographic areas of the ERCOT Transmission System that is used to enforce stability and voltage constraints that cannot be modeled directly in ERCOT’s transmission security 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 – August 2016

- One OCN issued due to capacity insufficiency
 - Issued on 8/2
- Eleven Advisories issued due to Physical Responsive Capability being less than 3,000 MW.
 - Issued on 8/2, 8/3, 8/4, 8/5, 8/6, 8/10, 8/11, 8/17, 8/24, 8/25, 8/27
- One Advisory due to postponed DAM Solution
 - Issued 8/31
- One Watch due to a SCED failure
 - Issued 8/25
- One Watch due to Physical Responsive Capability being less than 2,500 MW
 - Issued 8/27

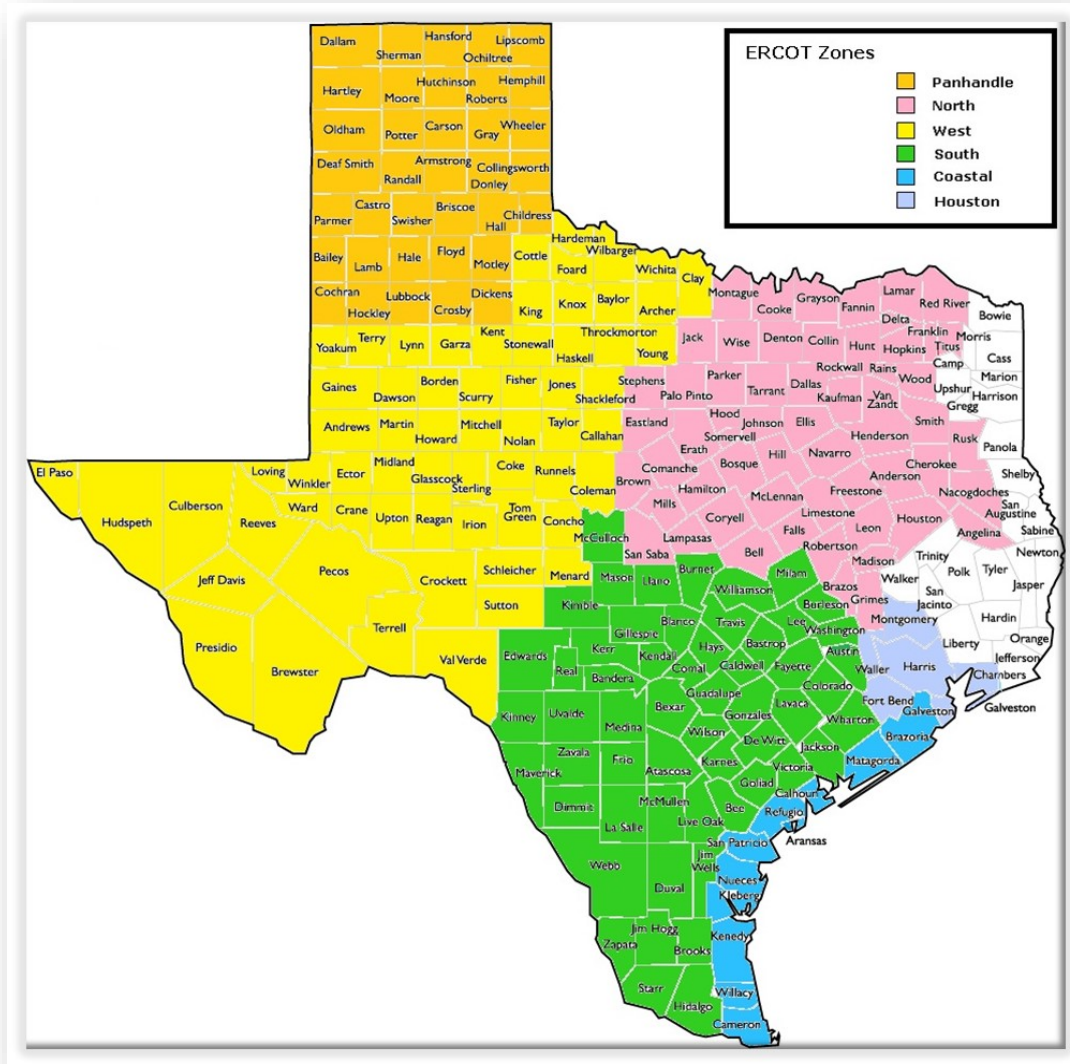
Lake Levels Update – September 1, 2016



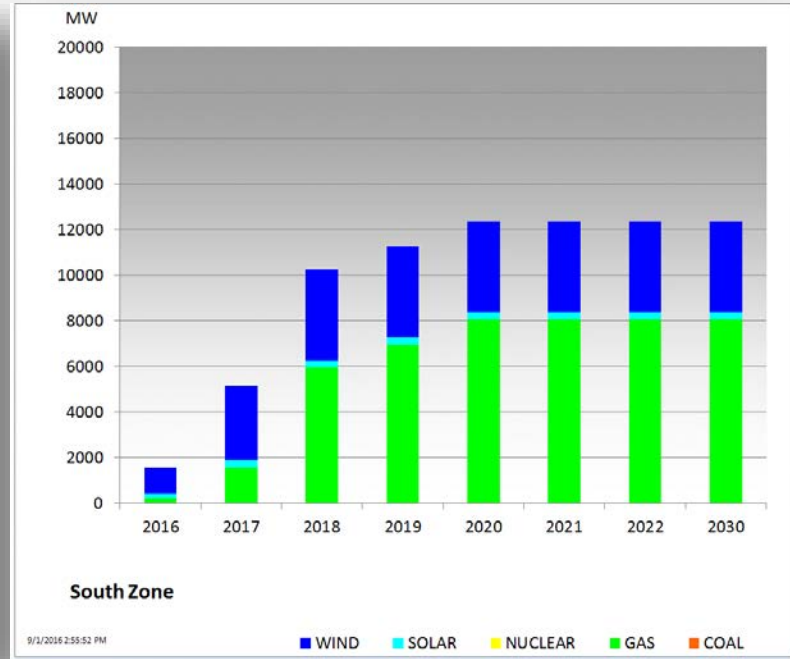
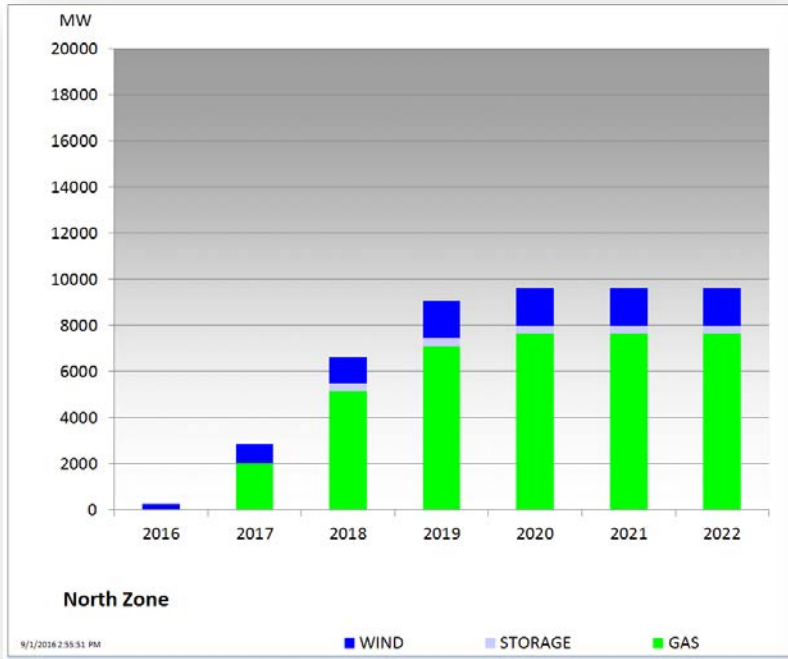
Planning Summary – August 2016

- ERCOT is currently tracking 236 active generation interconnection requests totaling 57,931 MW. This includes 26,038 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).

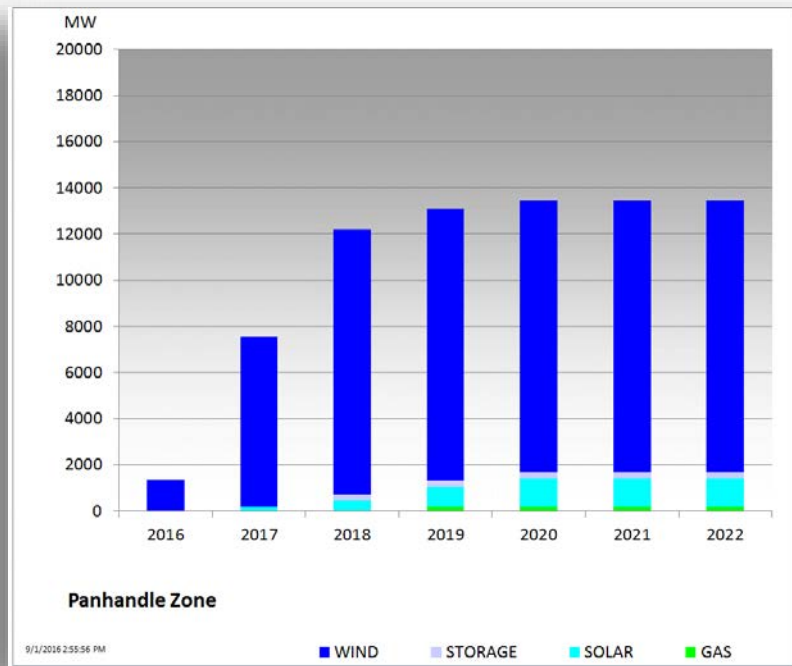
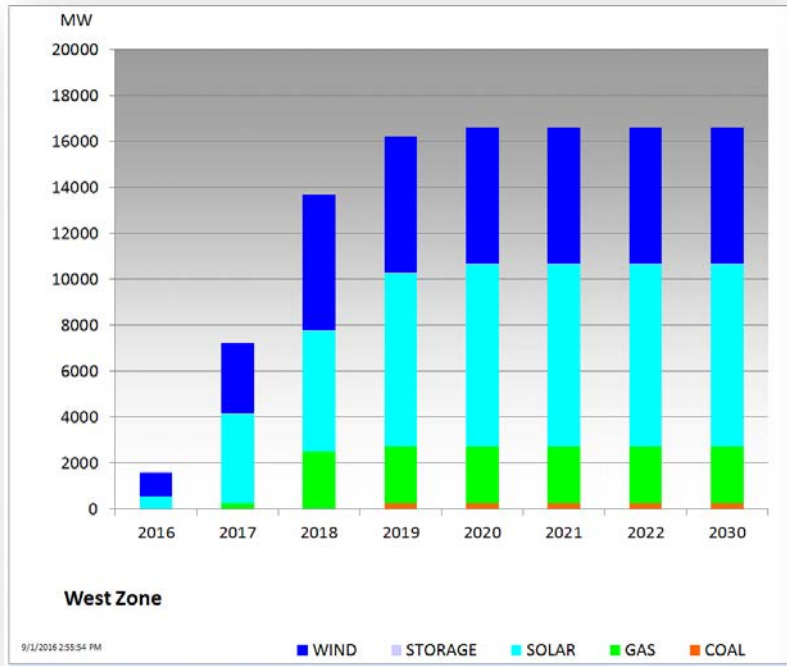
Mapping of Counties to ERCOT Zones – August 2016



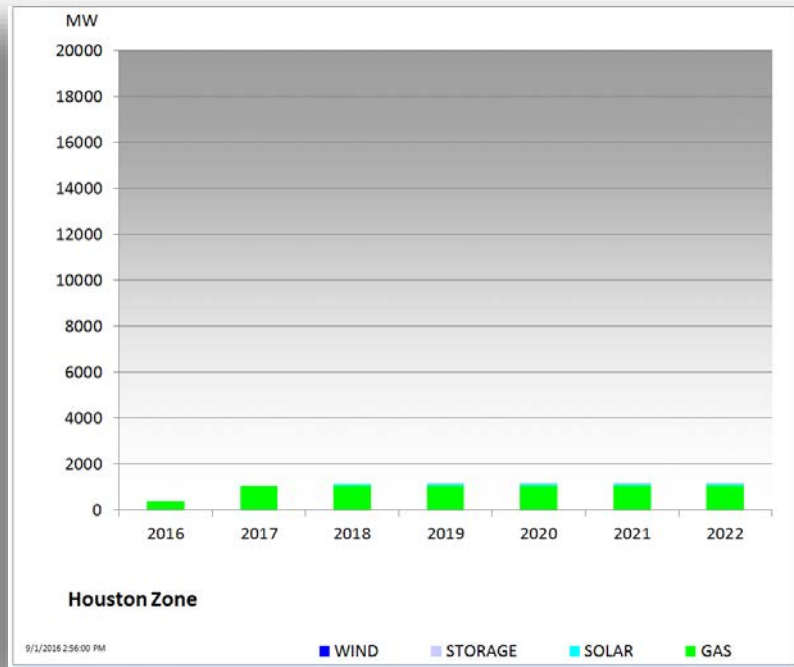
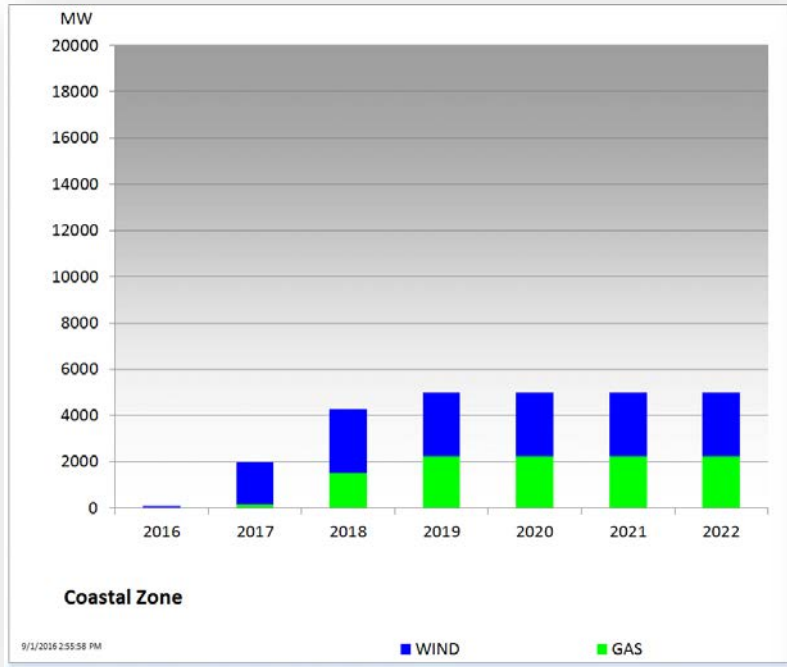
Cumulative MW Capacity of Interconnection Requests by Zone August 2016



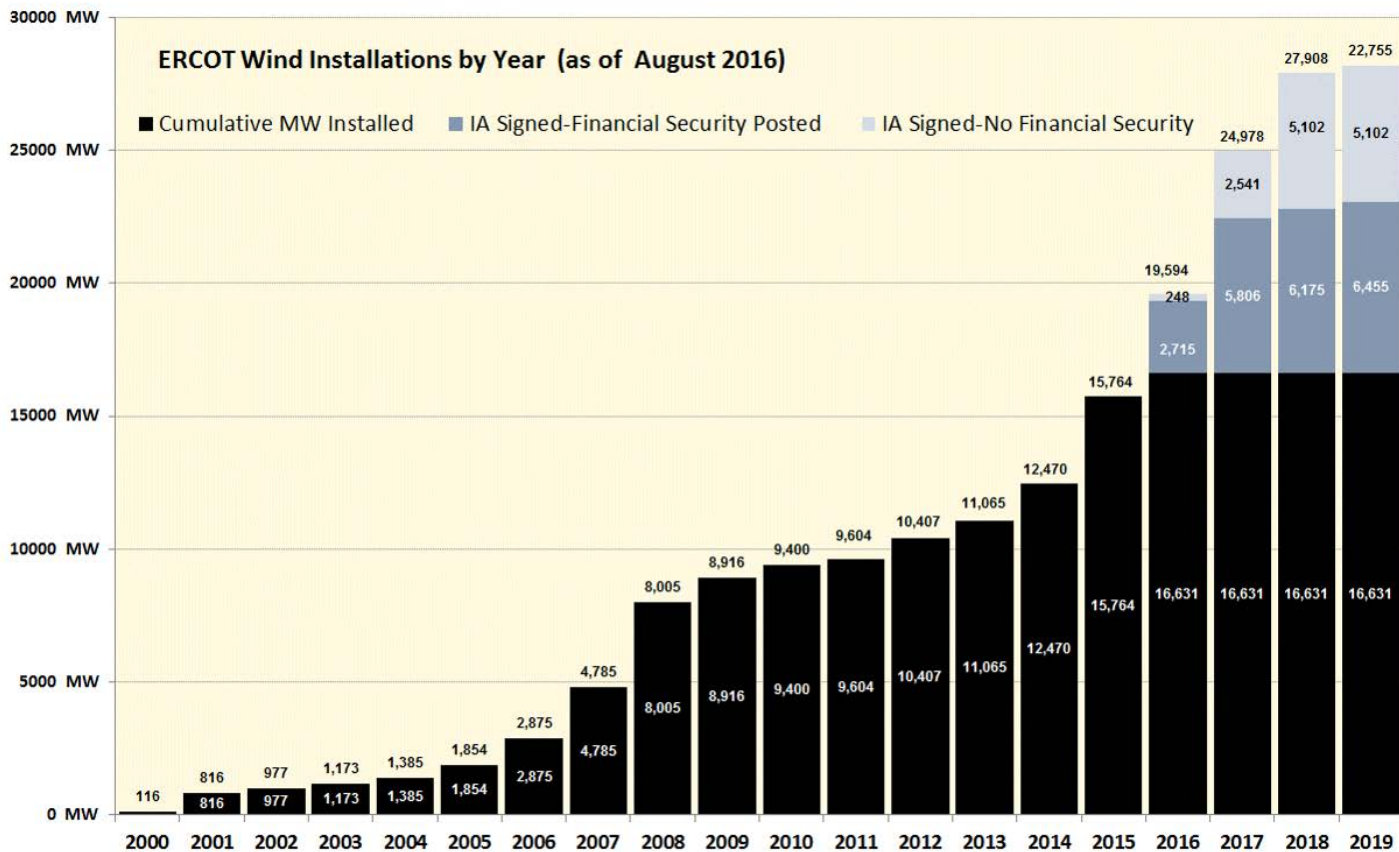
Cumulative MW Capacity of Interconnection Requests by Zone August 2016



Cumulative MW Capacity of Interconnection Requests by Zone August 2016



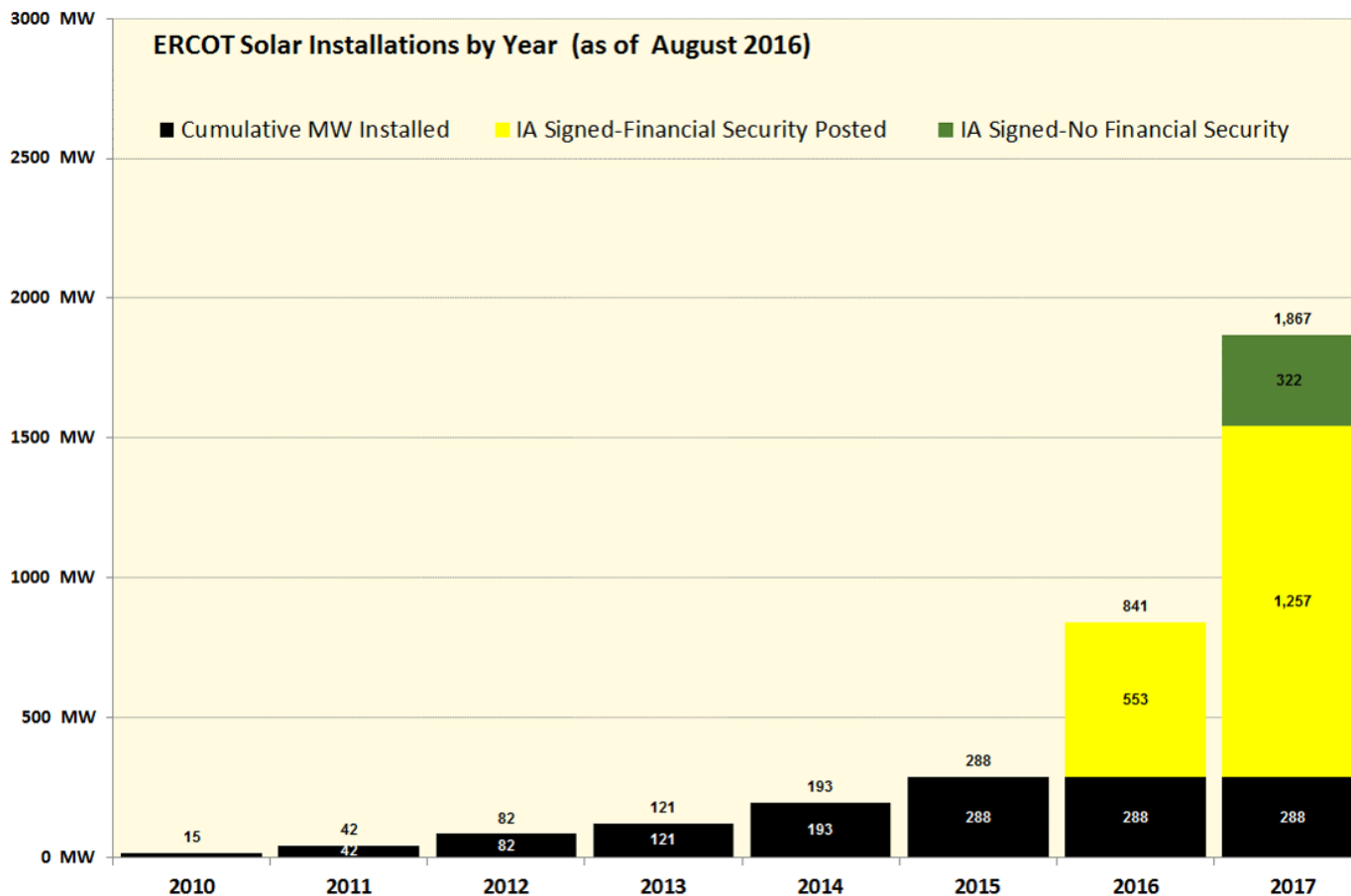
Wind Generation – August 2016



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.

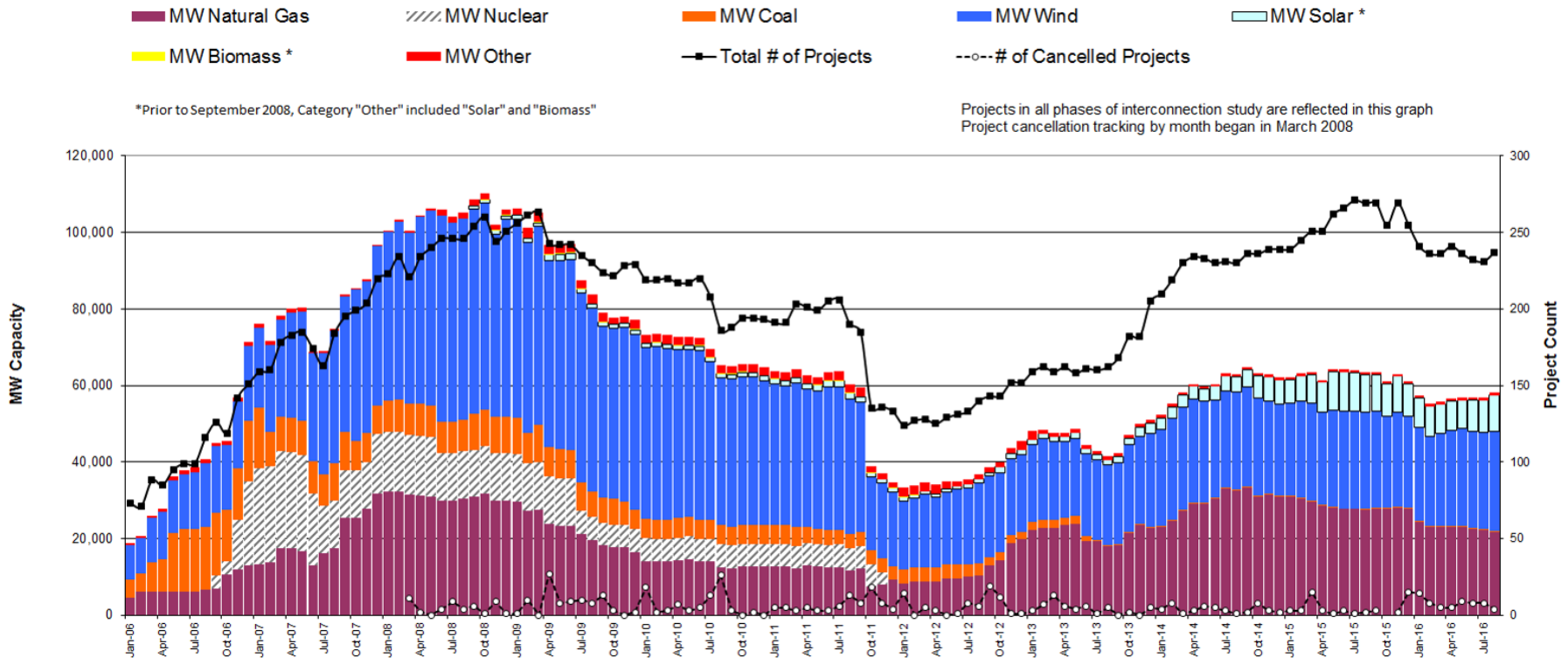
Financial security posted for funding interconnection facilities does not include CREZ security deposits, which are refunded to the Interconnecting Entity when an IA is signed.

Solar Generation – August 2016

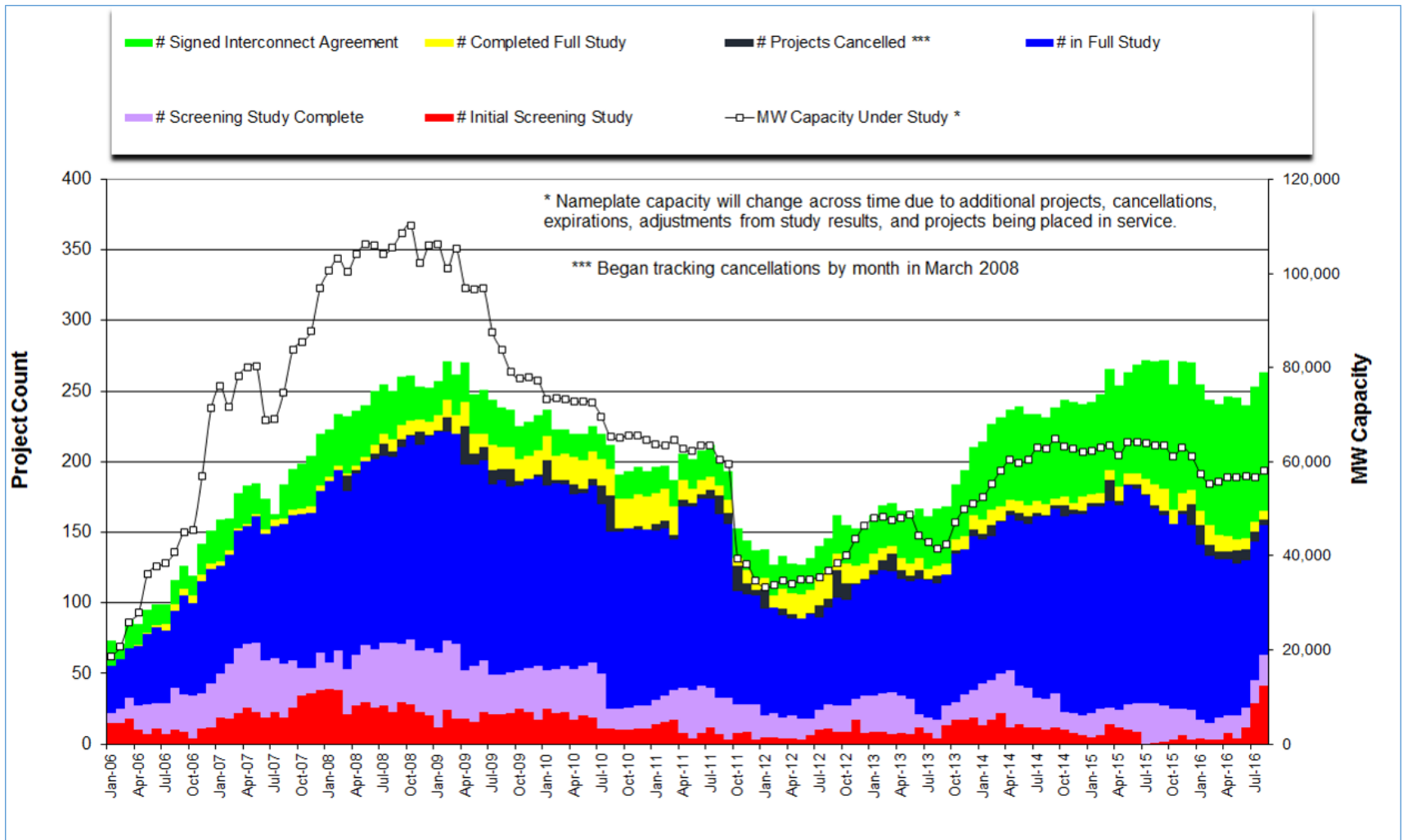


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Generation Interconnection Activity by Fuel – August 2016



Generation Interconnection Activity by Project Phase – August 2016



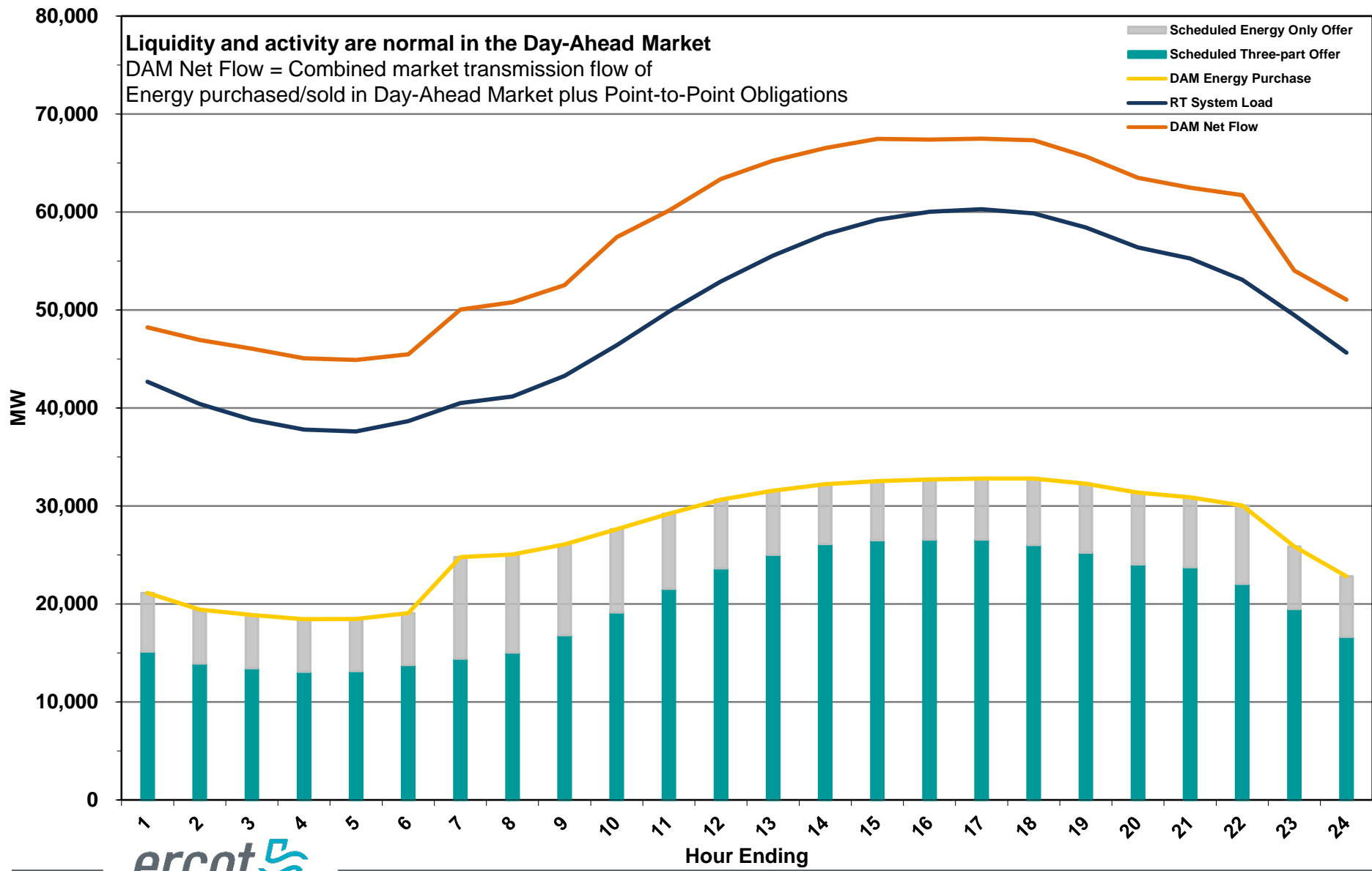
Market Operations

Day-Ahead Schedule (Hourly Average) – August 2016

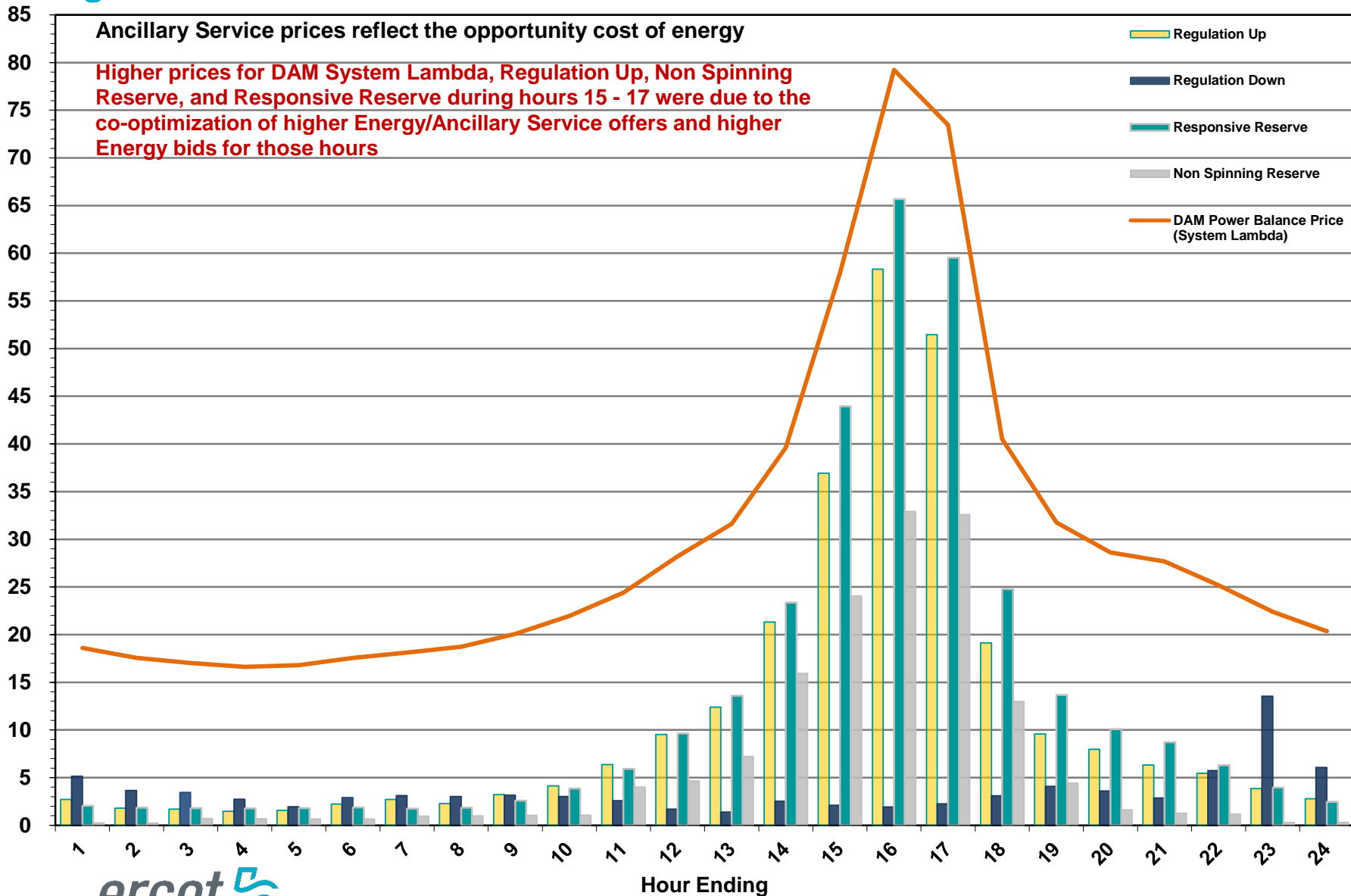
Liquidity and activity are normal in the Day-Ahead Market

DAM Net Flow = Combined market transmission flow of Energy purchased/sold in Day-Ahead Market plus Point-to-Point Obligations

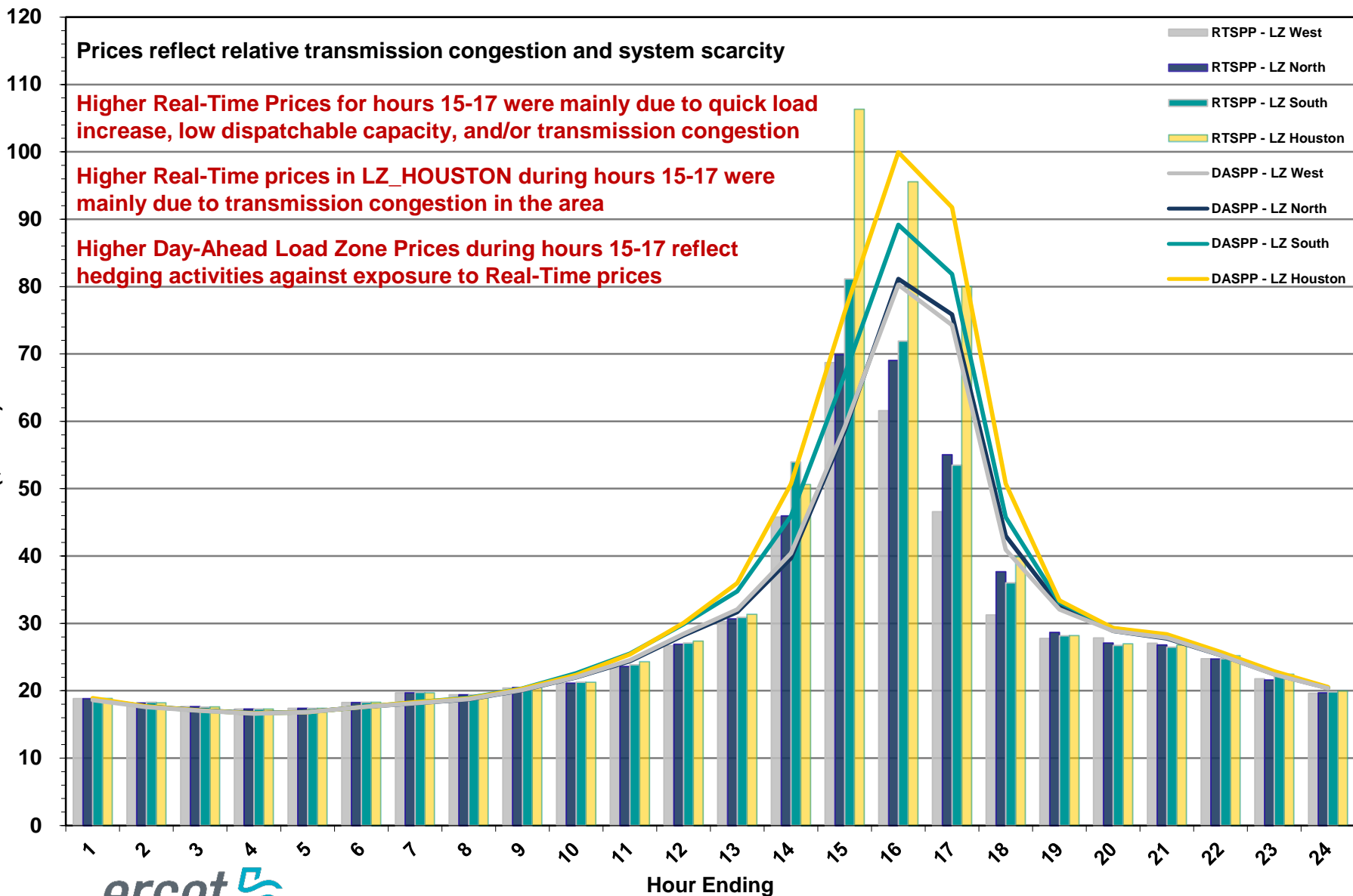
- Scheduled Energy Only Offer
- Scheduled Three-part Offer
- DAM Energy Purchase
- RT System Load
- DAM Net Flow



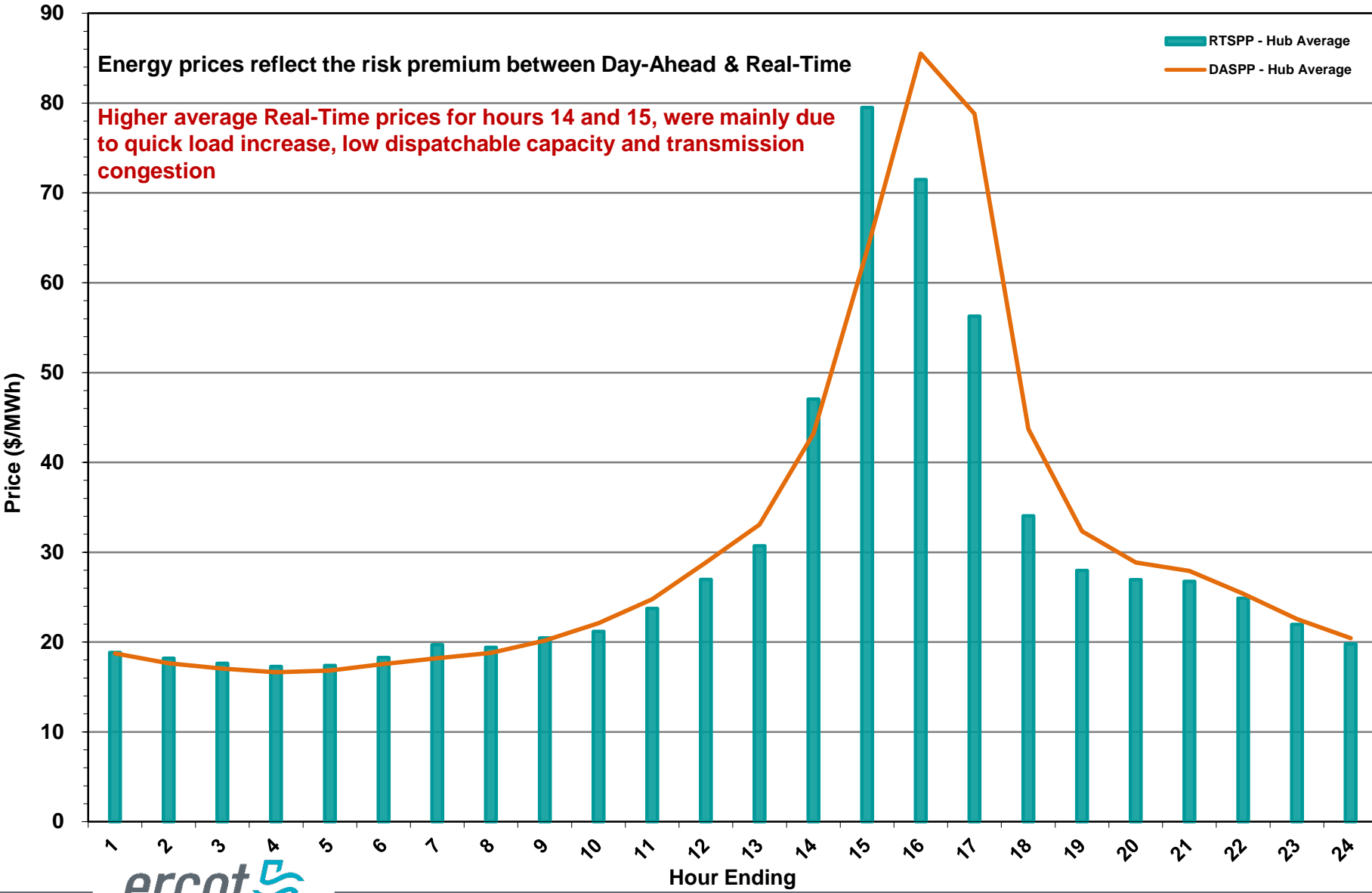
Day-Ahead Electricity and Ancillary Service Prices (Hourly Average) – August 2016



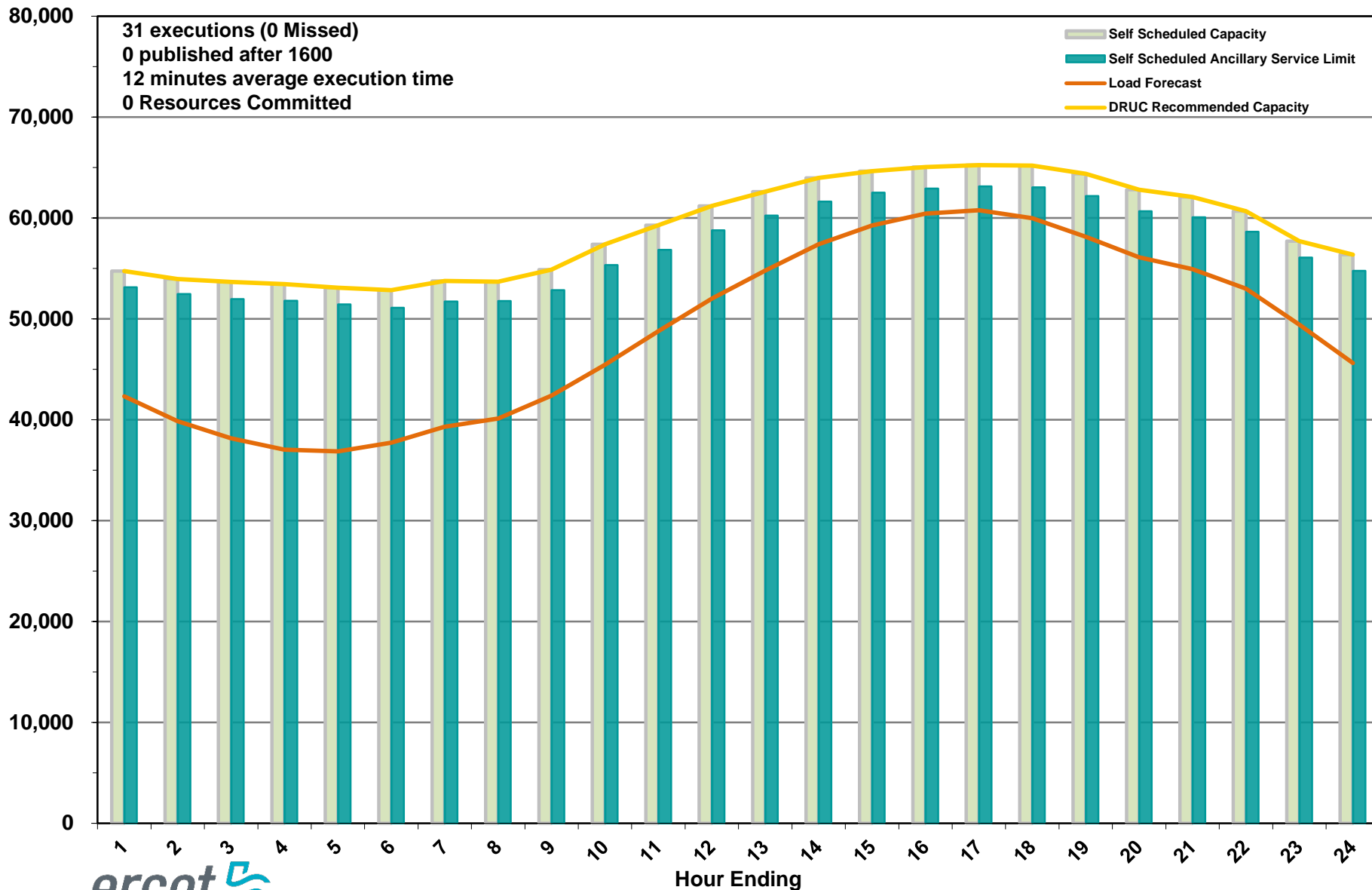
Day-Ahead vs Real-Time Load Zone SPP (Hourly Average) – August 2016



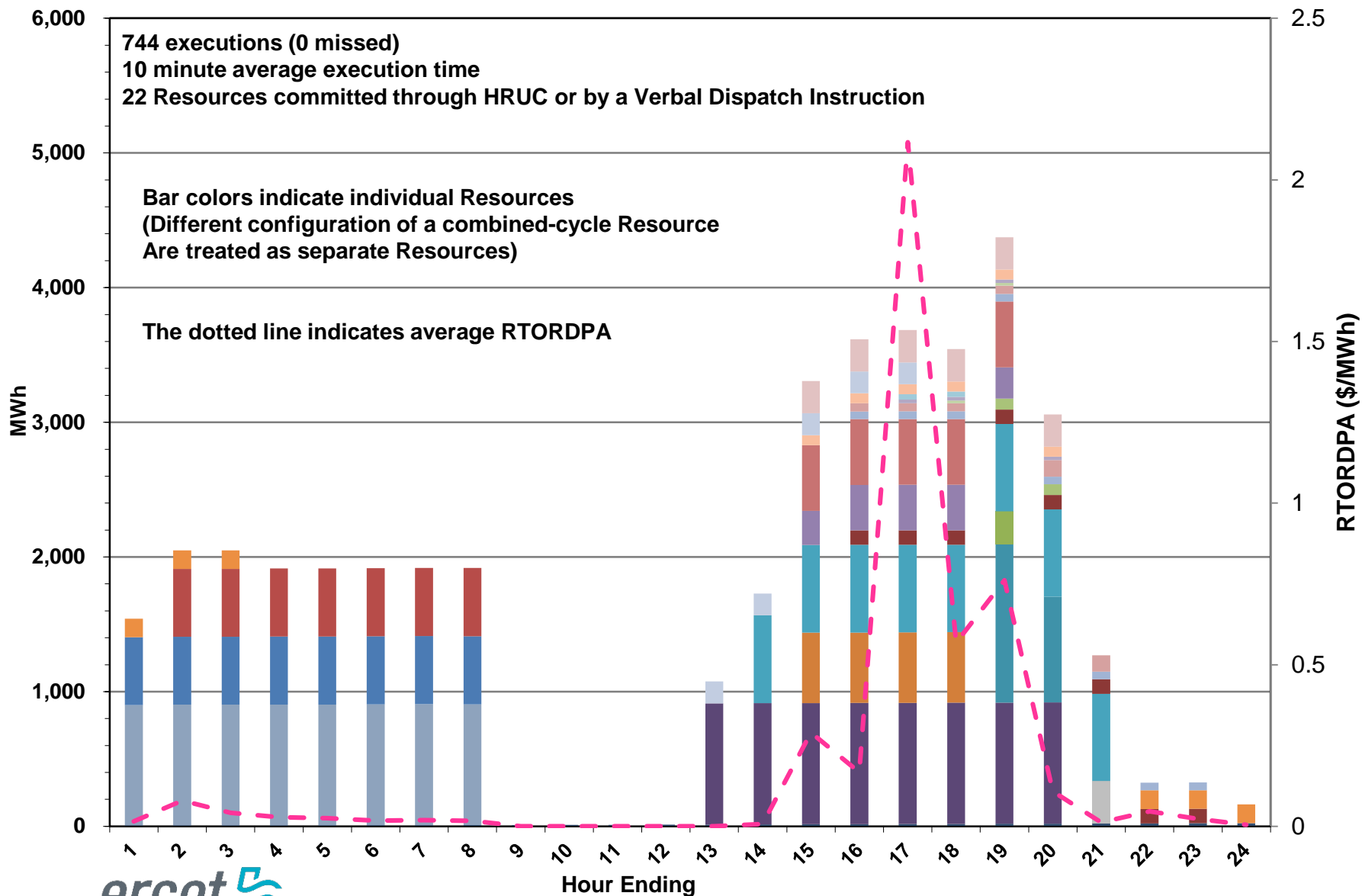
Day-Ahead vs Real-Time Hub Average SPP (Hourly Average) – August 2016



DRUC Monthly Summary (Hourly Average) – August 2016



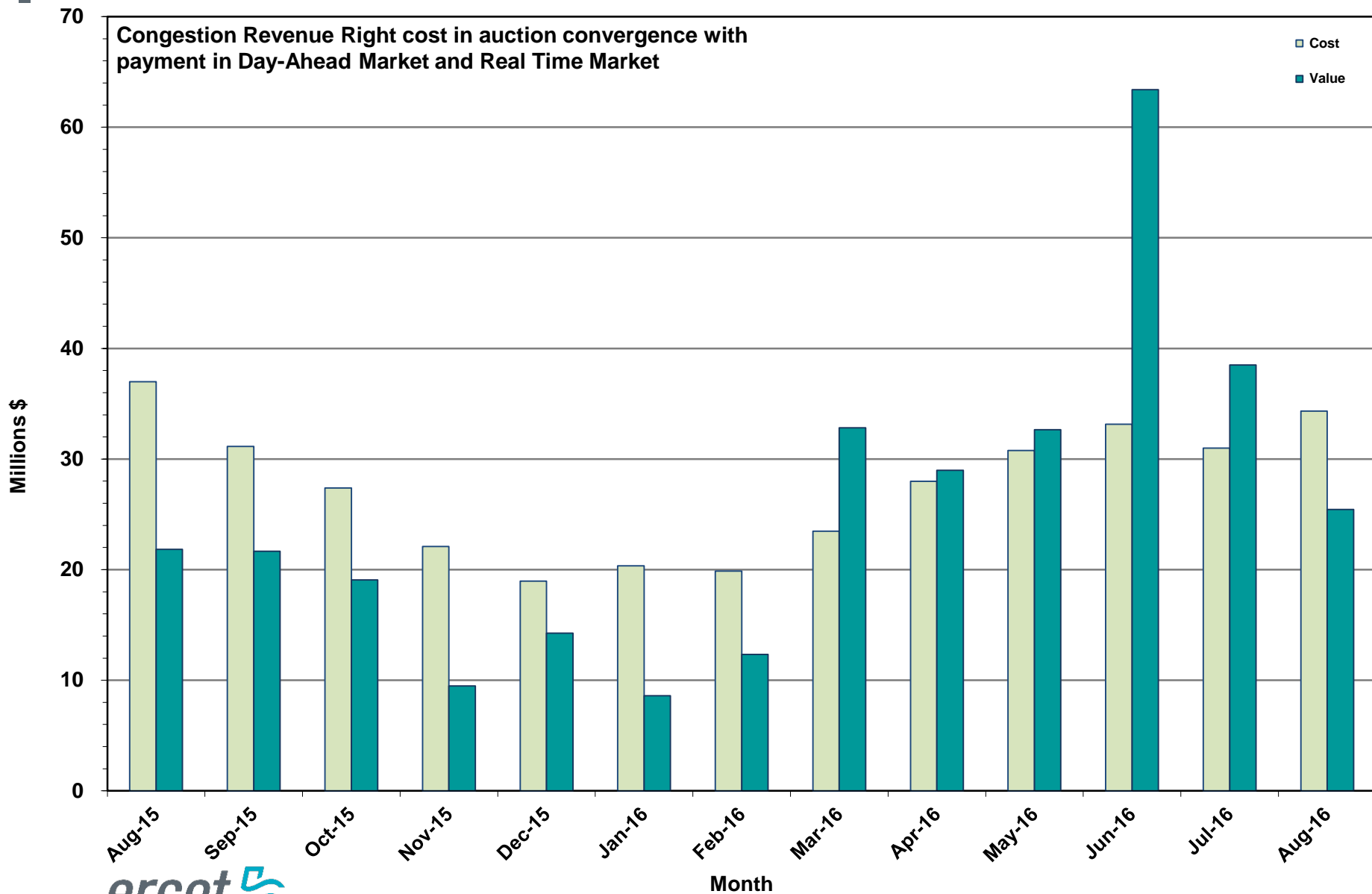
HRUC Monthly Summary and Real-Time On-Line Reliability Deployment Price Adder (RTORDPA) (Hourly Average) – August 2016



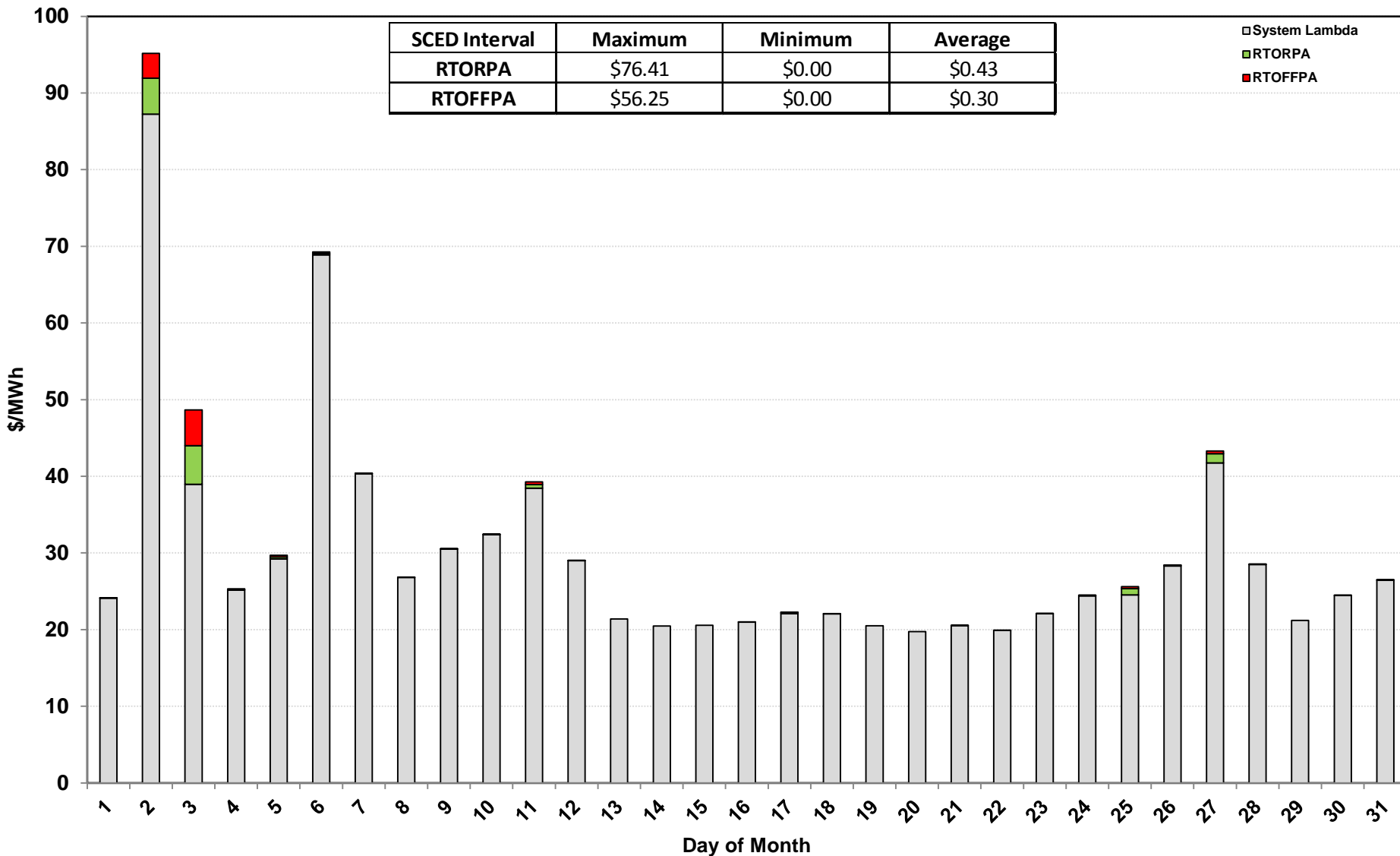
Non-Spinning Reserve Service Deployment – August 2016

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

CRR Price Convergence – August 2016



Daily Average System Lambda and ORDC Price Adders – August 2016



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.

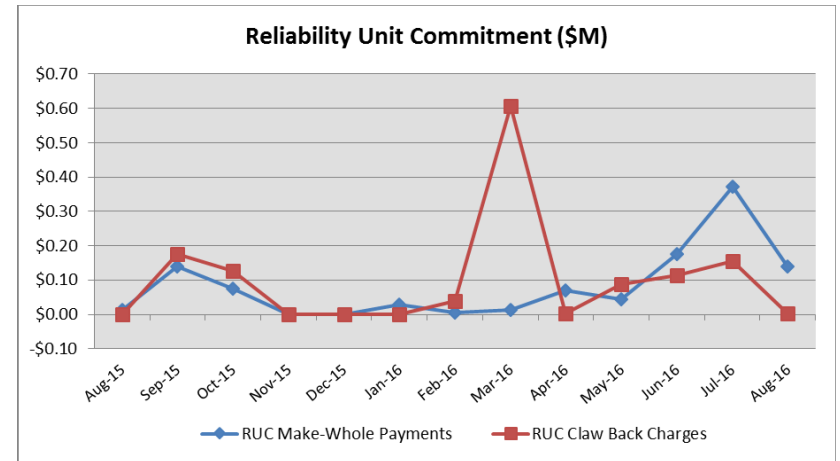
Time Period 4 Hours Ending 1700 - 1900 (4:00:00 p.m. to 7:00:00 p.m.) Monday through Friday except ERCOT Holidays.

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 – August 2016

Reliability Unit Commitment (RUC)	\$ in Millions
RUC Make-Whole Payments	(\$0.14)
RUC Clawback Charges	\$0.00
RUC Commitment Settlement	(\$0.14)
RUC Capacity Short Charges	\$0.14
RUC Make-Whole Uplift	\$0.00
RUC Commitment Cost Allocation	\$0.14
RUC Decommitment Payments	\$0.00



RUC Make-Whole Payments were \$0.14M in August 2016.
RUC Clawback Charges were \$0.00M.

There was \$0.00M allocated directly to load in August 2016, compared to:

- \$0.16M in July 2016
- \$0.00M in August 2015

Capacity Services – August 2016

Capacity Services	\$ in Millions
Regulation Up Service	\$2.75
Regulation Down Service	\$1.02
Responsive Reserve Service	\$20.95
Non-Spinning Reserve Service	\$6.80
Black Start Service	\$0.64
Voltage Services - Reactive Power	\$0.00
Voltage Services - Lost Opportunity	\$0.00
Total Charges	\$32.16

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

August 2016 cost was \$32.16M, compared to:

- A charge of \$22.93M in July 2016
- A charge of \$89.70M in August 2015

Energy Settlement – August 2016

Day-Ahead Market Energy Settlement	\$ in Millions
Energy Purchases	\$686.80
Point to Point Obligation Purchases	\$30.78
RMR Day-Ahead Revenue	\$0.00
Energy Sales	(\$685.62)
Day-Ahead Congestion Rent	\$31.96
Day-Ahead Market Make-Whole Payments	(\$0.46)

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

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

Real-Time Market Energy Settlement	\$ in Millions
Energy Imbalance at a Resource Node	(\$622.76)
Energy Imbalance at a Load Zone	\$1,012.00
Energy Imbalance at a Hub	(\$339.89)
Real Time Congestion from Self Schedules	\$0.06
Block Load Transfers and DC Ties	(\$2.10)
Impact to Revenue Neutrality	\$47.31
Emergency Energy Payments	(\$0.07)
Base Point Deviation Charges	\$0.24
Real-Time Metered Generation (MWh in millions)	36.50

Congestion Revenue Rights (CRR) – August 2016

	\$ in Millions
Annual Auction	(\$25.98)
Monthly Auction	(\$8.35)
Total Auction Revenue	(\$34.33)
Day-Ahead CRR Settlement	(\$25.44)
Day-Ahead CRR Short-Charges	\$0.02
Day-Ahead CRR Short-Charges Refunded	(\$0.02)
Real-Time CRR Settlement	\$0.00
Real-Time CRR Short-Charges	\$0.00
Real-Time CRR Short-Charges Refunded	\$0.00
Total CRR Funding	(\$25.44)
Day-Ahead Point to Point Obligations Settlement	\$30.78
Real-Time Point to Point Obligation Settlement	(\$48.22)
Net Point to Point Obligation Settlement	\$17.44

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 \$17.44 M compared to a net charge of \$17.38M last month.

CRR Balancing Account Fund – August 2016

CRR Balancing Account Fund	\$ in Millions
Beginning Balance for the Month	\$10.00
CRR Balancing Account Credit Total	\$6.54
CRR PTP Option Award Charges	\$0.05
Day-Ahead CRR Short-Charges Refunded	(\$0.02)
Load Allocated CRR Amount	(\$6.57)
Total Fund Amount	\$10.00

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

In the month of August 2016, the fund cap remained at \$10M and excess funds of \$6.57M were allocated to Load.

Revenue Neutrality – August 2016

Revenue Neutrality Settlement

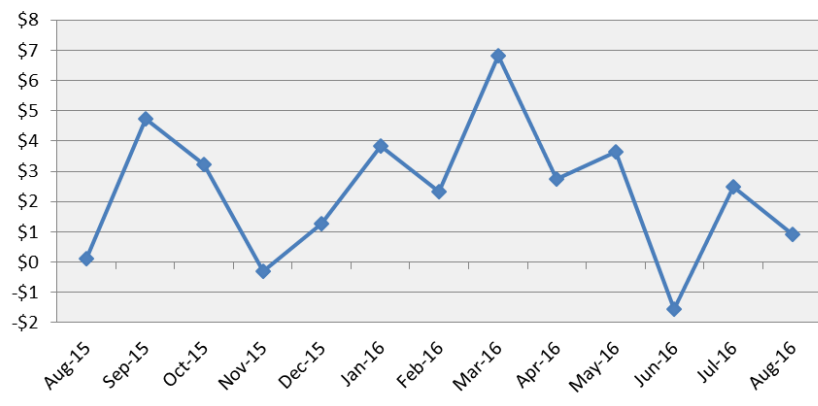
	\$ in Millions
Real-Time Point to Point Obligation Settlement	(\$48.22)
Real-Time Point to Point Options and Options with Refund Settlement	\$0.00
Real-Time Energy Imbalance Settlement	\$49.34
Real-Time Congestion from Self-Schedules Settlement	\$0.06
DC Tie & Block Load Transfer Settlement	(\$2.10)
Charge to Load	\$0.92

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

August 2016 was a charge of \$0.92M, compared to:

- \$2.51M charge in July 2016
- \$0.14M charge in August 2015

Revenue Neutrality Uplift (\$M)



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

Real-Time Ancillary Service Imbalance	\$ in Thousands
Real-Time AS Imbalance Payment Amount	(\$351.55)
Load Allocated AS Imbalance Revenue Neutrality Amount	\$351.54
Total Charges	\$351.54

In August 2016, total credits to QSEs w/an Ancillary Service Imbalance were \$351,548, while total charges in July 2016 were \$176,946.

8 of the 31 days in August had settlement dollars equal to \$0 for the day.

All days in August 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 August 3rd in the amount of \$126,011.

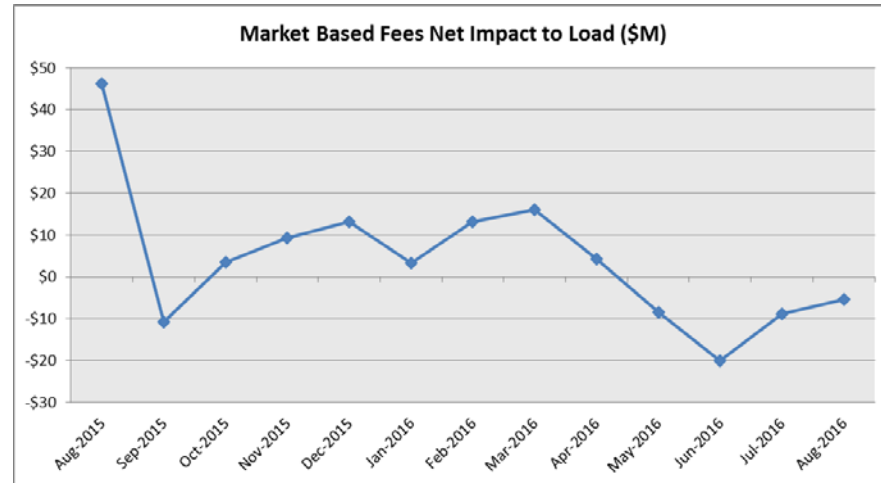
Net Allocation to Load – August 2016

Market-Based Allocation	\$ in Millions
CRR Auction Revenue Disbursement Settlement	(\$34.33)
Balancing Account Proceeds Settlement	(\$6.57)
Net Reliability Unit Commitment Settlement	(\$0.00)
Ancillary Services Settlement	\$32.16
Reliability Must Run Settlement (incl. RMR for Capacity)	\$2.37
Real-Time Revenue Neutrality Settlement	\$0.92
Emergency Energy Settlement	\$0.07
Base Point Deviation Settlement	(\$0.24)
ORDC Settlement	\$0.35
Total	(\$5.27)
Fee Allocation	
ERCOT Administrative Fee Settlement	\$20.31
Net Allocated to Load	\$15.04

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

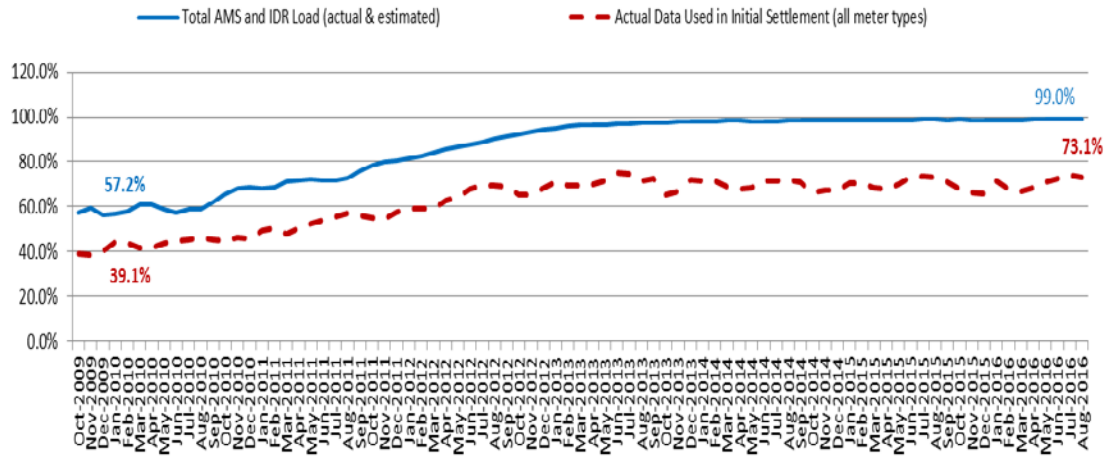
August 2016 was a charge of \$15.04M, compared to:

- A charge of \$12.40M in July 2016
- A charge of \$63.44M in August 2015



Advanced Meter Settlement Impacts – August 2016

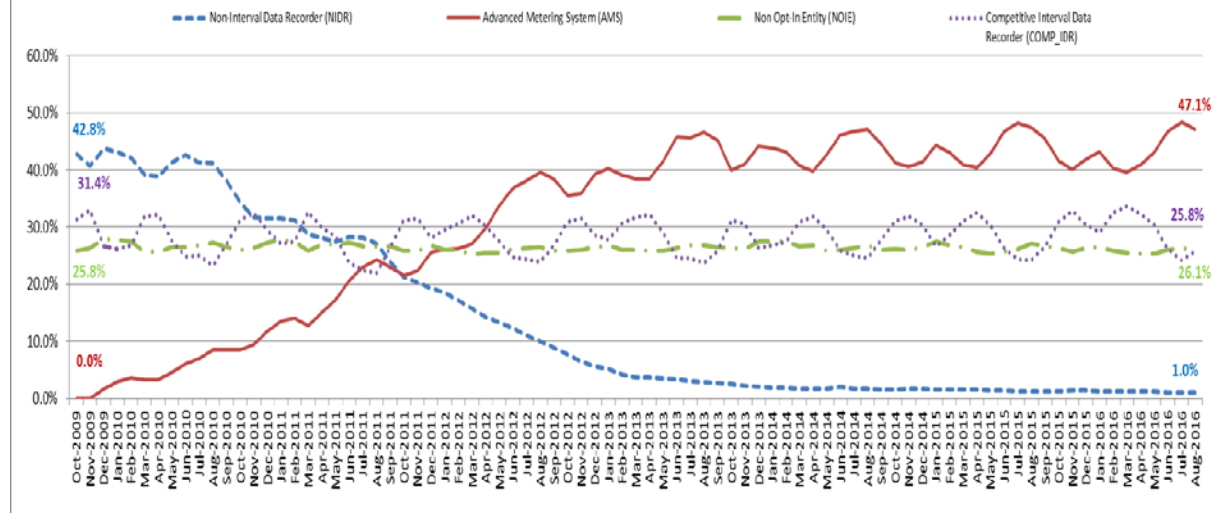
Percent Actual/Percent Interval Data Recorder (IDR)



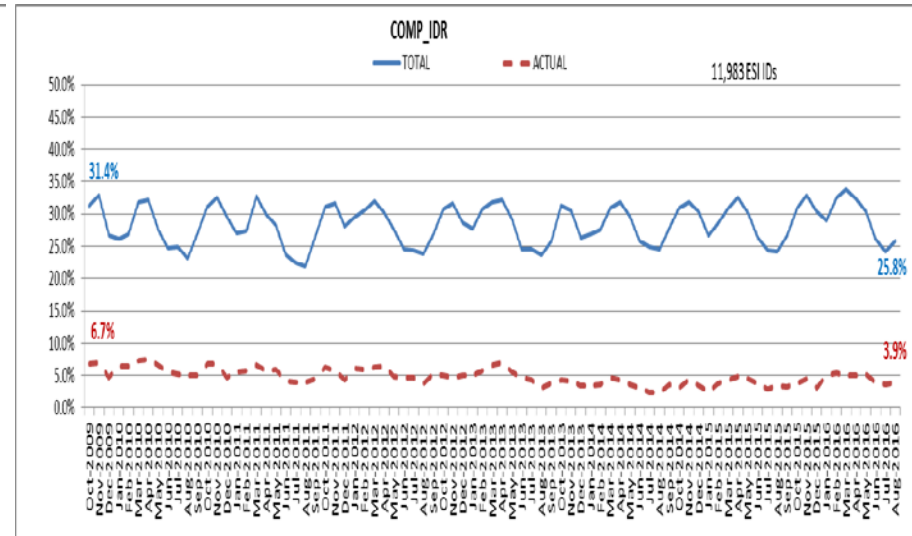
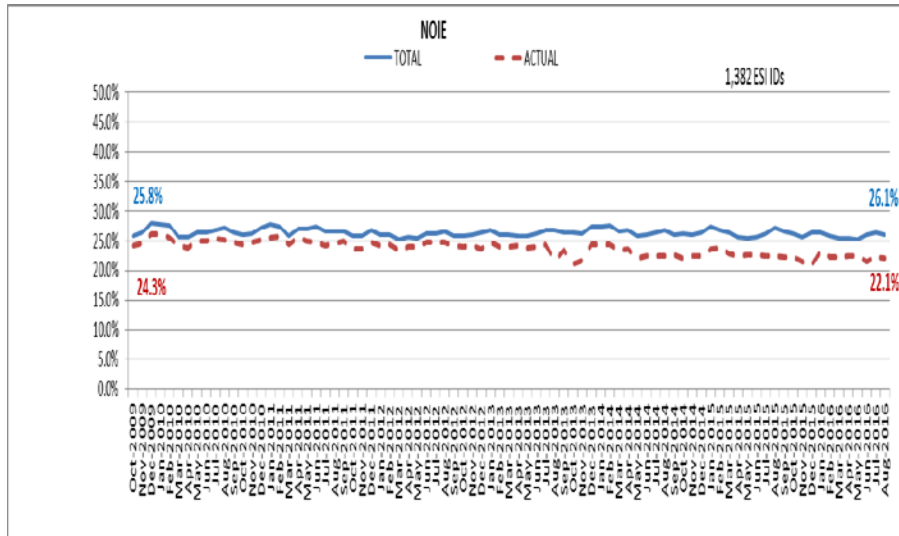
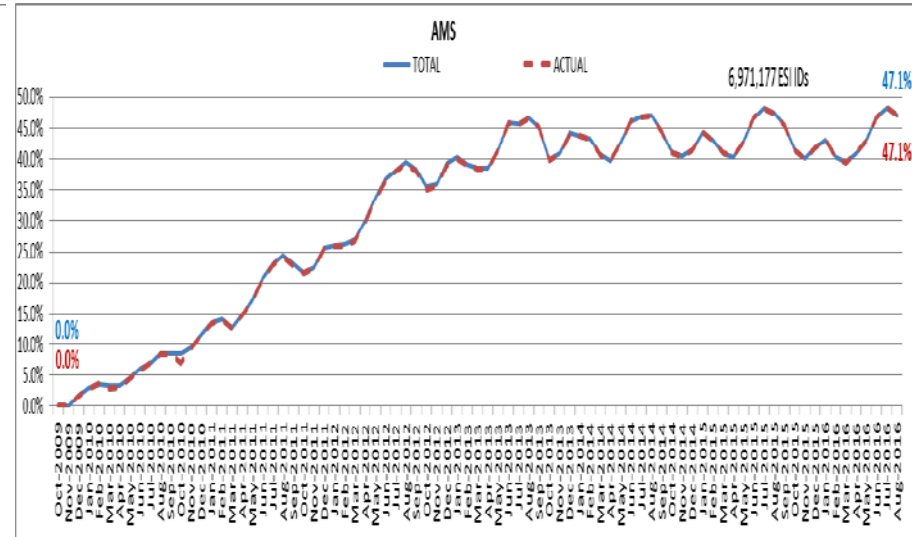
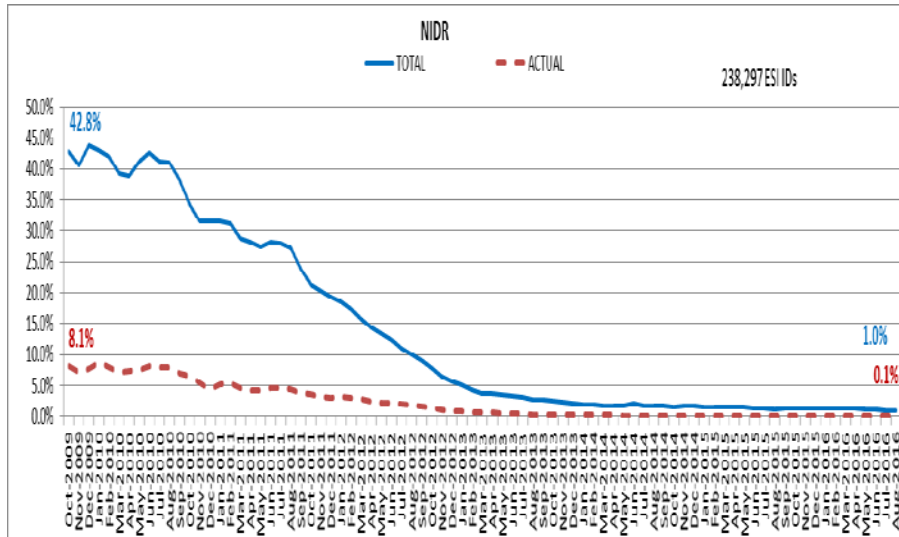
August 2016: At month end, settling 6.9M ESIIDs using Advanced Meter data.

August 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 – August 2016

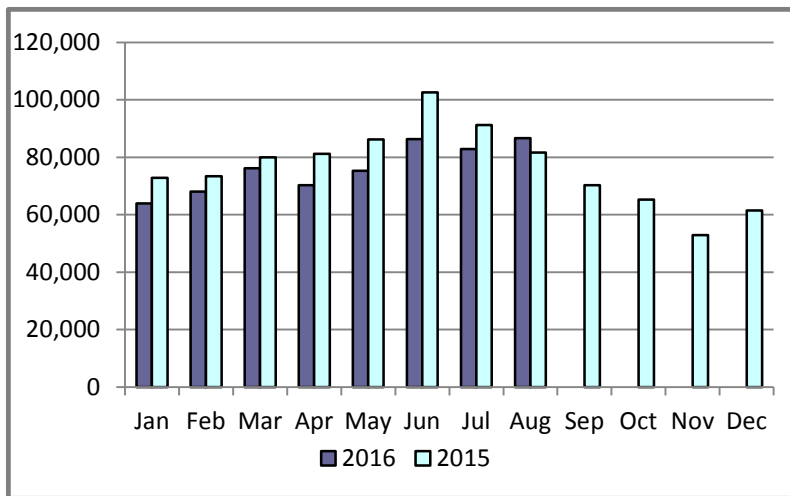


Retail Transaction Volumes – Summary – August 2016

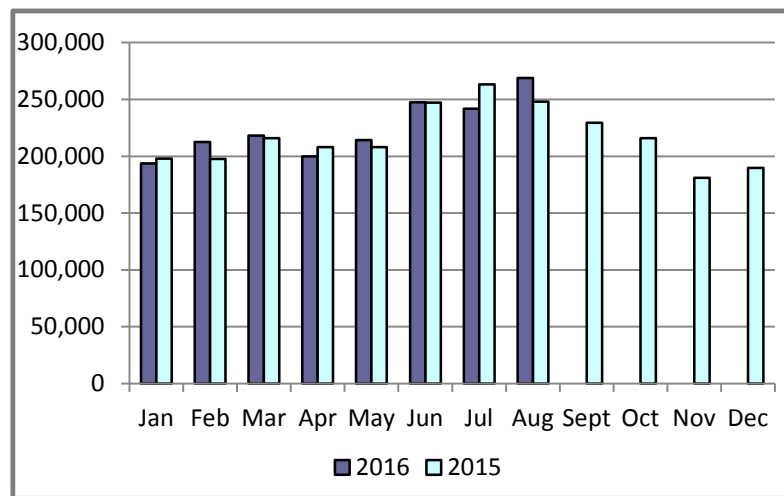
Transaction Type	Year-To-Date		Transactions Received	
	August 2016	August 2015	August 2016	August 2015
Switches	609,824	669,306	86,656	81,674
Acquisition	0	0	0	0
Move - Ins	1,796,728	1,786,284	268,781	248,124
Move - Outs	916,591	916,560	133,170	123,894
Continuous Service Agreements (CSA)	415,378	348,192	42,622	35,078
Mass Transitions	0	0	0	0
Total	3,738,521	3,720,342	531,229	488,770

Retail Transaction Volumes – Summary – August 2016

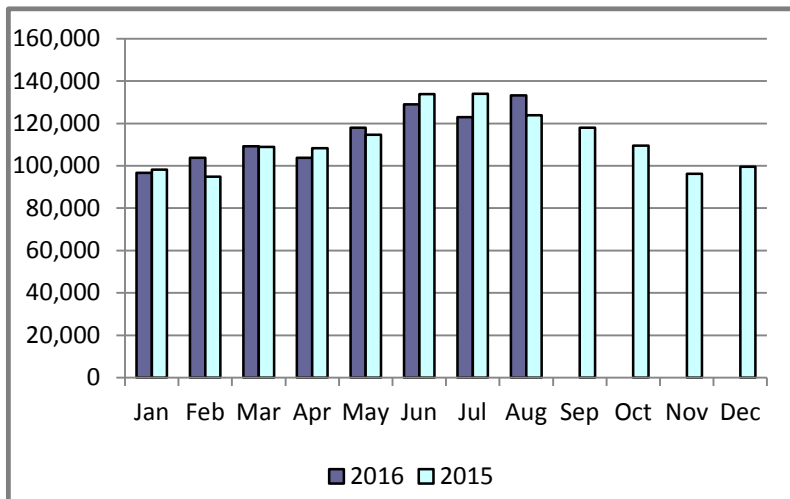
Switches/Acquisitions



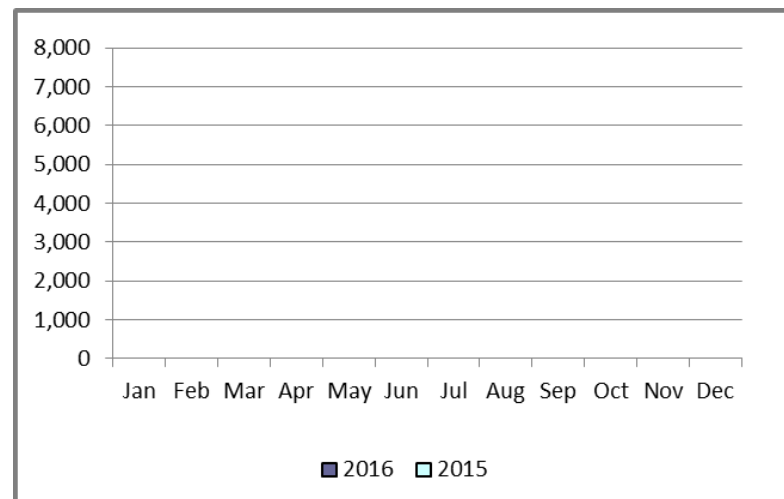
Move-Ins



Move-Outs

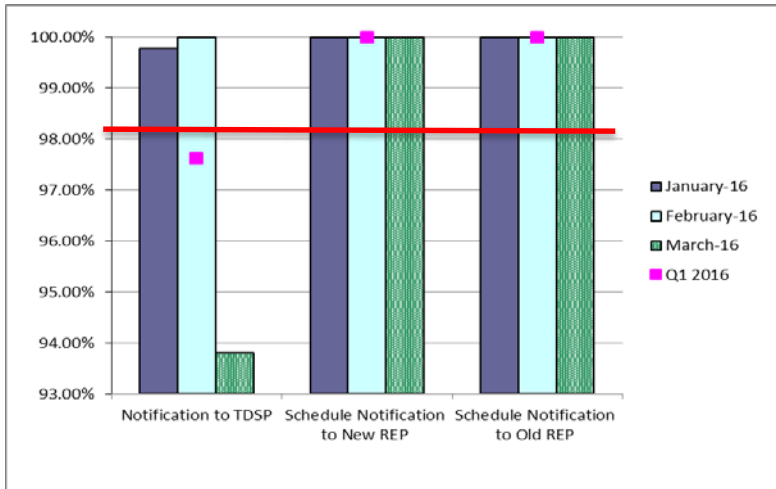


Mass Transition

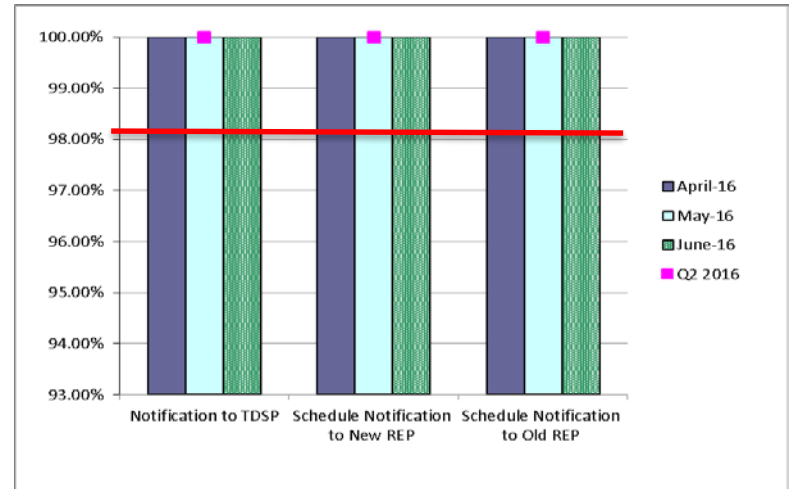


Retail Performance Measures – Switch – August 2016

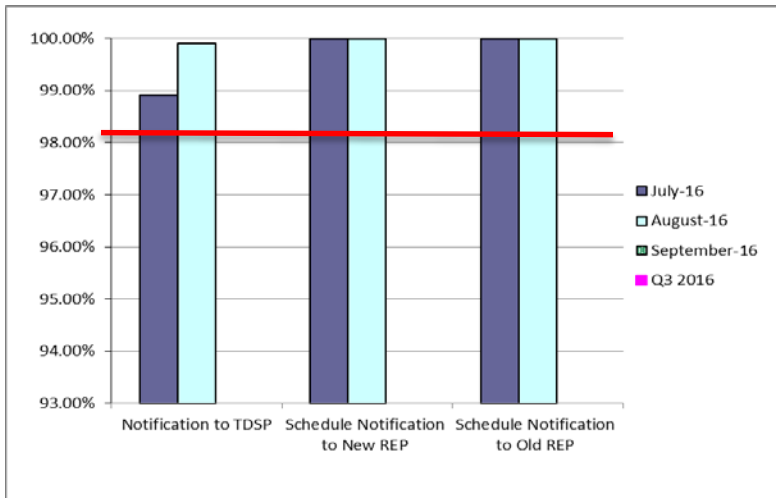
1st Quarter



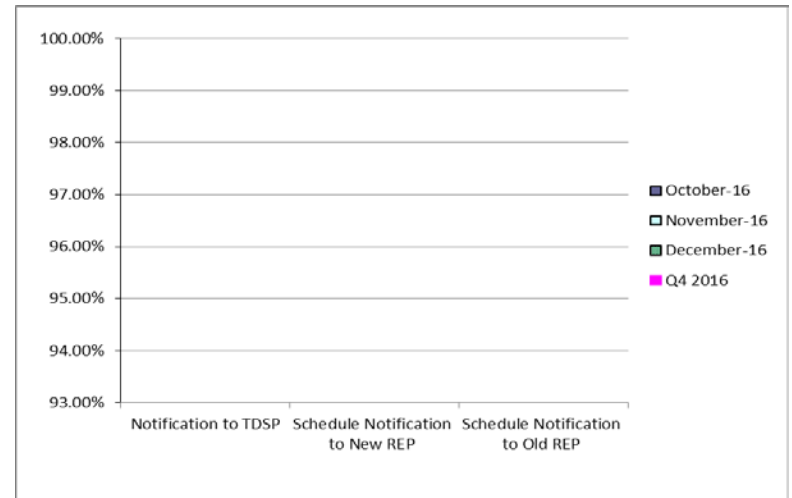
2nd Quarter



3rd Quarter

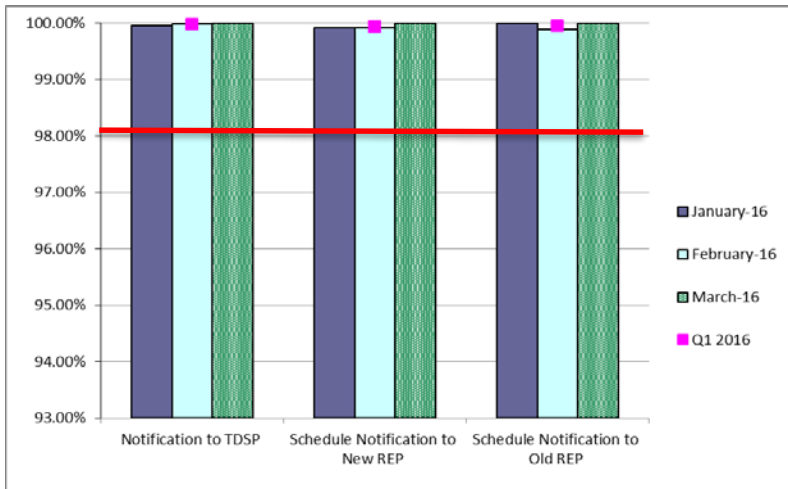


4th Quarter

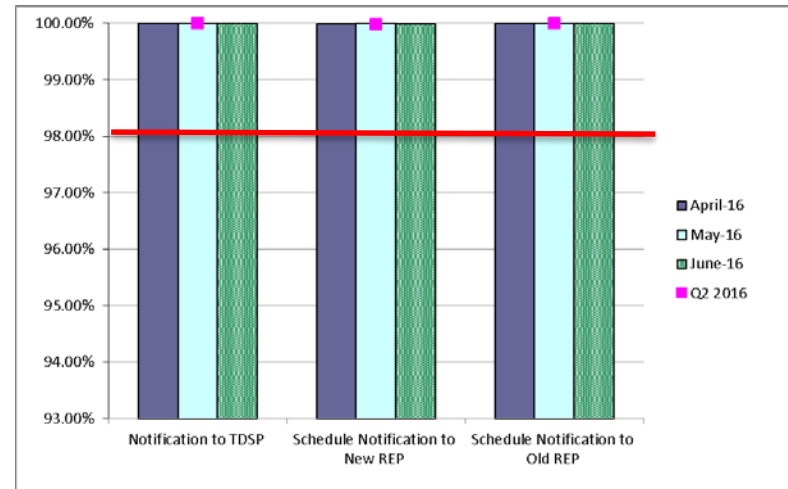


Retail Performance Measures – Same Day Move-In – August 2016

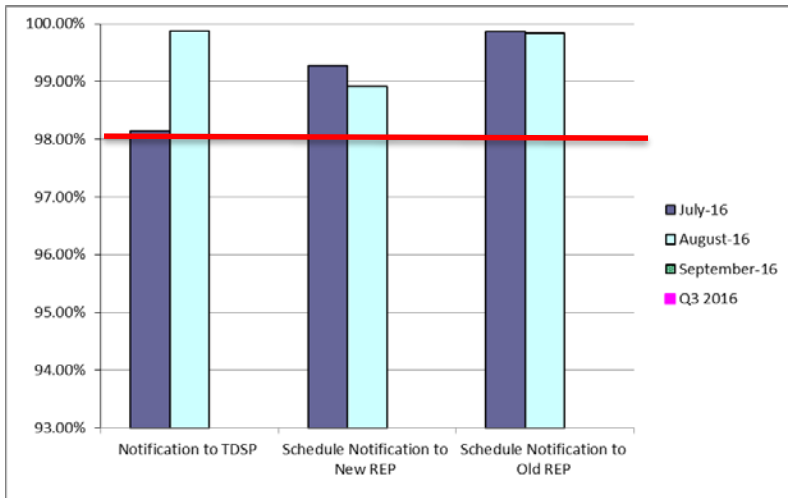
1st Quarter



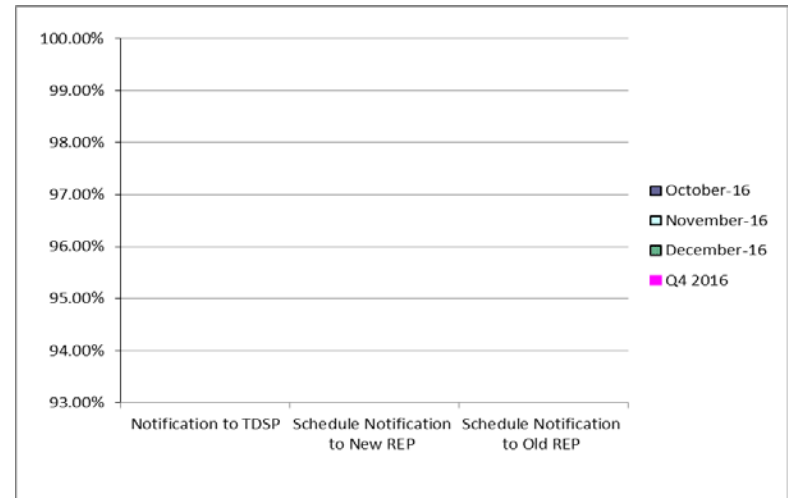
2nd Quarter



3rd Quarter

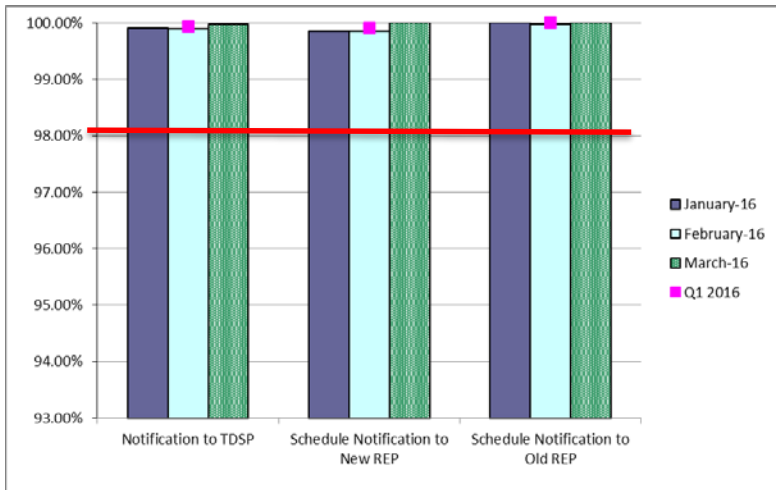


4th Quarter

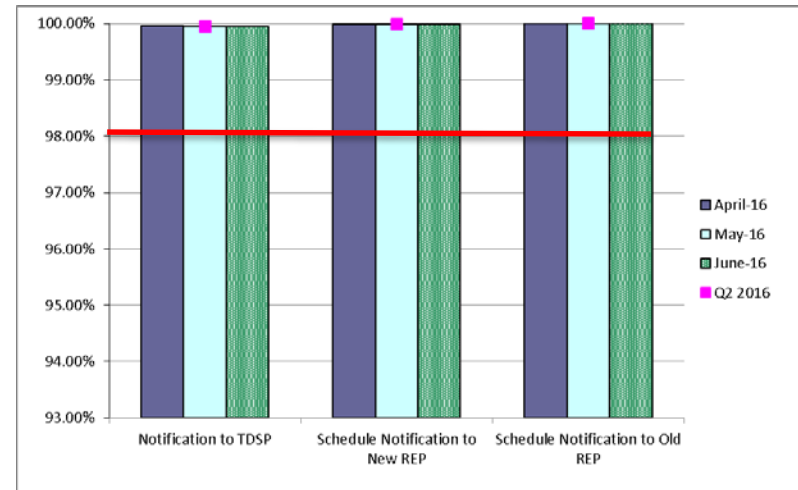


Retail Performance Measures – Standard Move-In – August 2016

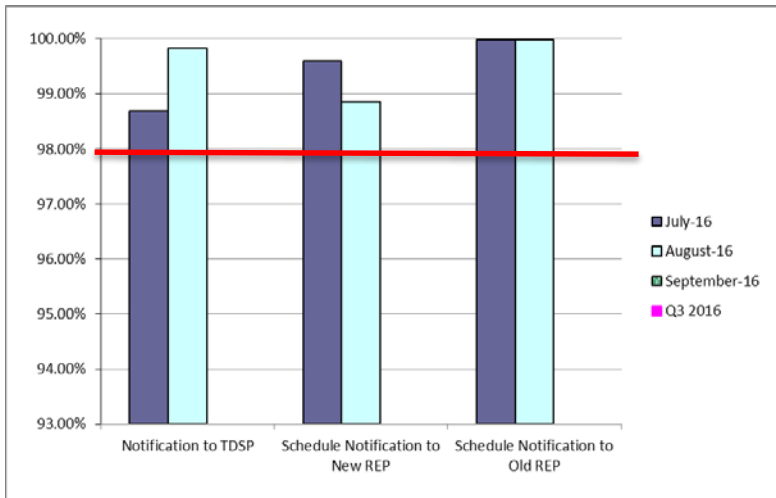
1st Quarter



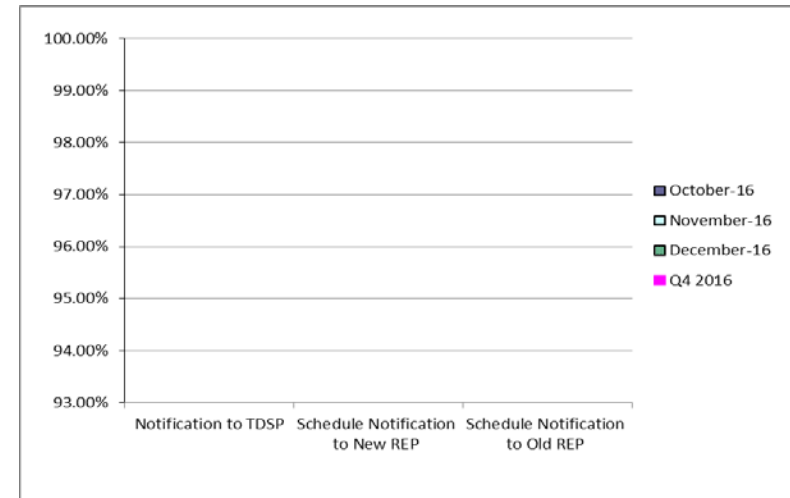
2nd Quarter



3rd Quarter



4th Quarter



Projects Report

ERCOT Portfolio Stoplight Report – August 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 = 73)		\$15,280,996
	Projects Not Yet Started (Count = 9)		\$ 709,140
	Projects Completed (Count = 23)		\$ 1,412,892
	Carryover of Excess 2015 Project Spending		\$ 1,743,545
	Spending Reductions Required to Maintain Capital Budget		\$ -
	TOTAL		\$19,146,573
			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 = 5)
TBD	Multi Station Breaker to Breaker One Lines (Planning)
205-01	TIBCO BusinessWorks Application Upgrade
NPRR764	QSE Capacity Short Calculations Based on an 80% Probability of Exceedance (P80)
SCR788	Addition of Integral ACE Feedback to GTBD Calculation
SCR790	Wind Resource Power Production and Forecast Transparency

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 = 37)	Phase Start	Baseline Phase Finish	Approved Phase Finish	Scheduled Go-Live Date	Scheduled Phase Finish	Schedule Health		Budget Health	
141-01	Production Virtualization	6/1/2016	7/27/2016	9/28/2016	TBD	9/28/2016		0%		0%
158-01	Load Forecast Enhancements	1/14/2015	6/19/2015	9/28/2016	TBD	9/28/2016		0%		0%
170-03	ECAP - Enterprise Content Management System (Proof of Concept)	1/13/2016	5/17/2016	10/26/2016	TBD	10/31/2016		-1%		22%
170-04	ECAP - ERCOT Information Governance and Taxonomy	1/13/2016	6/6/2016	10/26/2016	TBD	10/26/2016		0%		-2%
173-01	ERCOT Flight Certification Website	7/23/2015	11/2/2016	11/2/2016	TBD	11/2/2016		0%		0%
181-01	CRR Framework Upgrade	12/16/2015	8/31/2016	8/31/2016	TBD	9/14/2016	1	-5%		0%
183-01	CMM Tech Refresh	12/16/2015	8/17/2016	3/15/2017	TBD	3/15/2017		0%	NA	See 2015 CMMNPRRs
183-01	CMM-FT GUI Integration	12/16/2015	8/17/2016	3/15/2017	TBD	3/15/2017		0%	NA	See 2015 CMMNPRRs
185-01	Records Management and eDiscovery	1/28/2016	8/31/2016	8/31/2016	TBD	9/21/2016	1	-9%		5%
190-01	SharePoint Governance Project	4/27/2016	7/20/2016	12/14/2016	TBD	12/14/2016		0%		7%
193-01	PMU Tool Evaluation and Implementation	5/4/2016	11/9/2016	11/9/2016	TBD	11/9/2016		0%		1%
196-01	GINR Project Status Application Replacement	7/27/2016	3/1/2017	12/7/2016	TBD	12/7/2016		0%		43%
197-01	AREA - Demand and Energy Report	6/22/2016	7/20/2016	7/20/2016	TBD	9/14/2016	1	-200%		0%
198-01	Reactive Power Coordination	7/13/2016	10/12/2016	10/12/2016	TBD	10/12/2016		0%		2%
202-01	Email Gateway Replacement	8/31/2016	11/2/2016	11/2/2016	TBD	11/2/2016		0%		46%
203-01	DW Replication Upgrade	8/23/2016	10/26/2016	10/26/2016	TBD	10/26/2016		0%		0%
O&M	IT Change Management Evaluation	8/24/2016	11/16/2016	11/16/2016	TBD	11/16/2016		0%		0%
Various	2016 RARF Enhancements	8/24/2016	11/16/2016	11/16/2016	TBD	11/16/2016		0%		-3%
Various	2015 CMM NPRRs	12/16/2015	8/17/2016	3/15/2017	TBD	3/15/2017		0%		32%
Various	NOGRR147 and SCR787 NDCRC Enhancement	7/27/2016	9/14/2016	9/14/2016	TBD	9/14/2016		0%		-2%
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	8/31/2016	TBD	9/14/2016	1	-5%	NA	See #181-01
SCR787	Maintain NDCRC Data For Generator Transfer Between Resource Entities	7/27/2016	9/14/2016	9/14/2016	TBD	9/14/2016		0%	NA	See NOGRR147 & SCR787
NOGRR147	Reactive Power Testing Requirements	7/27/2016	9/14/2016	9/14/2016	TBD	9/14/2016		0%	NA	See NOGRR147 & SCR787
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 CMMNPRRs
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 CMMNPRRs
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 CMMNPRRs
NPRR648	Remove References to Flowgate Rights	12/16/2015	8/17/2016	3/15/2017	TBD	3/15/2017		0%	NA	See 2015 CMMNPRRs
NPRR660	Remove CRR State Change Adder	12/16/2015	8/17/2016	3/15/2017	TBD	3/15/2017		0%	NA	See 2015 CMMNPRRs
NPRR683	Revision to Available Credit Limit Calculation	12/16/2015	8/17/2016	3/15/2017	TBD	3/15/2017		0%	NA	See 2015 CMMNPRRs
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 CMMNPRRs
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 CMMNPRRs
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 CMMNPRRs
NPRR754	Revise Load Distribution Factors Report Posting Frequency	9/7/2016	10/12/2016	10/12/2016	TBD	10/12/2016		0%		0%

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Project Number	Projects in Execution Phase (Count = 24)	Phase Start	Baseline Go-Live Date	Approved Go-Live Date	Scheduled Go-Live Date	Scheduled Phase Finish	Schedule Health		Budget Health	
							Color	Value	Color	Value
065-01	NMMS Upgrade	12/17/2014	9/22/2016	9/22/2016	TBD	2/1/2017	2		2	-14%
169-01	Short Circuit Ratio Functionality	1/20/2016	9/19/2016	9/19/2016	9/19/2016	9/30/2016		0%		30%
170-01	Enterprise Content Alignment Program	8/26/2015	11/15/2017	11/15/2017	9/25/2017	9/25/2017		6%		-3%
170-05	ECAP - ERCOT Identity Alignment	2/24/2016	7/30/2016	9/18/2016	9/18/2016	11/23/2016		0%		2%
172-01	Physical Security Project #2	6/30/2016	2/13/2017	2/13/2017	2/27/2017	3/13/2017	1	-6%		4%
174-01	2015 Outage Scheduler Enhancements	12/2/2015	9/14/2016	9/14/2016	9/28/2016	10/21/2016		-4%		0%
177-01	Cyber Security Project #19	4/6/2016	7/13/2016	10/31/2016	11/15/2016	11/29/2016	1	-7%		4%
180-01	Upgrade of MDM - GEMS	3/30/2016	6/17/2016	8/29/2016	9/9/2016	10/21/2016	1	-7%		40%
187-00	Capital Efficiencies and Enhancements - 2016	1/1/2015	12/31/2016	12/31/2016	12/31/2016	12/31/2016		0%	2	-6%
188-01	Mass Transition/Acquisition Enhancements (MTAQ)	5/25/2016	4/2/2017	4/2/2017	4/2/2017	5/17/2017		0%	2	-6%
189-01	Enterprise Resource Planning	4/13/2016	9/27/2016	9/27/2016	9/27/2016	11/2/2016		0%		50%
191-01	CRR Auction Improvements	4/27/2016	9/1/2016	9/9/2016	9/9/2016	10/26/2016		0%		29%
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 Baseloading for CRR Auctions	4/27/2016	9/1/2016	9/9/2016	9/9/2016	10/26/2016		0%		See #191-01
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%		-1%
SCR786	Retail Market Test Environment	6/22/2016	12/12/2016	12/12/2016	12/12/2016	2/1/2017		0%		5%
RMGR127	Efficiencies for Acquisition Transfer	5/25/2016	4/2/2017	4/2/2017	4/2/2017	5/17/2017		0%	NA	See #188-01
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	9/22/2016	10/20/2016		-2%	NA	See #174-01
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%		53%
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
NOGR050	Resolution of Reporting Issues Related to NPRR219	12/2/2015	9/14/2016	9/14/2016	9/22/2016	10/20/2016		-2%	NA	See #174-01
SCR783	Outage Scheduler Enhancements – Group 2, Usability and Filtering Enhancements	12/2/2015	9/14/2016	9/14/2016	9/22/2016	10/20/2016		-2%	NA	See #174-01

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Project Number	Projects in Stabilization (Count = 2)	Execution Phase Start	Baseline Go-Live Target	Approved Go-Live Target	Actual Go-Live Date	Scheduled Execution Phase Finish	Schedule Health		Budget Health	
NPRR662	Proxy Energy Offer Curves	3/2/2016	9/1/2016	9/1/2016	8/31/2016	9/22/2016		0%		19%
052-01	EMS Upgrade	9/24/2014	5/25/2016	5/25/2016	6/16/2016	10/31/2016		-3%		6%
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	
Project Number	Projects Completed (Count =23)	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
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%
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%
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%		0%

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Project Number	2016 Projects Not Yet Started (Count = 9)	Forecast Start Date
TBD	REC Technology Refresh	Sep-2016
NPRR649	Addressing Issues Surrounding High Dispatch Limit (HDL) Overrides	Sep-2016
NPRR758	Improved Transparency for Outages Potentially Having a High Economic Impact	Sep-2016
TBD	Cyber Security Project #20	Sep-2016
TBD	Cyber Security Project #21	Sep-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	Standard Report for Events and Near-Miss Analysis	Oct-2016
TBD	TeleAlert Replacement	Oct-2016