



**ERCOT Monthly Operational Overview**  
(December 2018)

ERCOT Public  
January 15, 2019

# Grid Planning & Operations

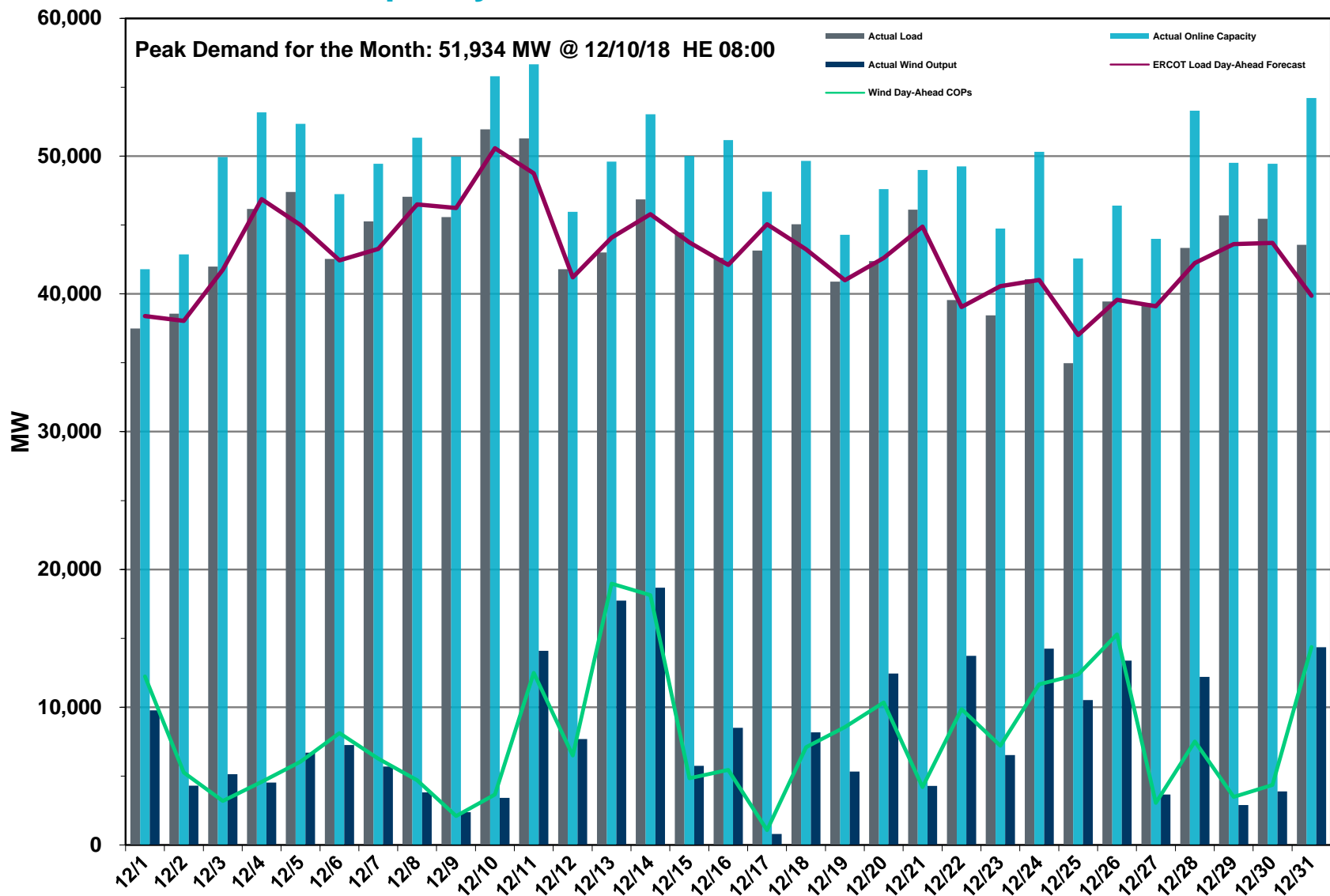
### Operations

- The preliminary Settlements hourly peak demand of 51,934\* MW on December 10 was higher than the day-ahead mid-term load forecast peak of 50,574 MW for the same operating hour.
  - The operational instantaneous peak demand was 52,428 MW (telemetry).
- Day-ahead load forecast error for December was 2.11%
- ERCOT issued two notifications:
  - One OCN issued for potential extreme cold weather
  - One Advisory issued for DAM timeline deviation

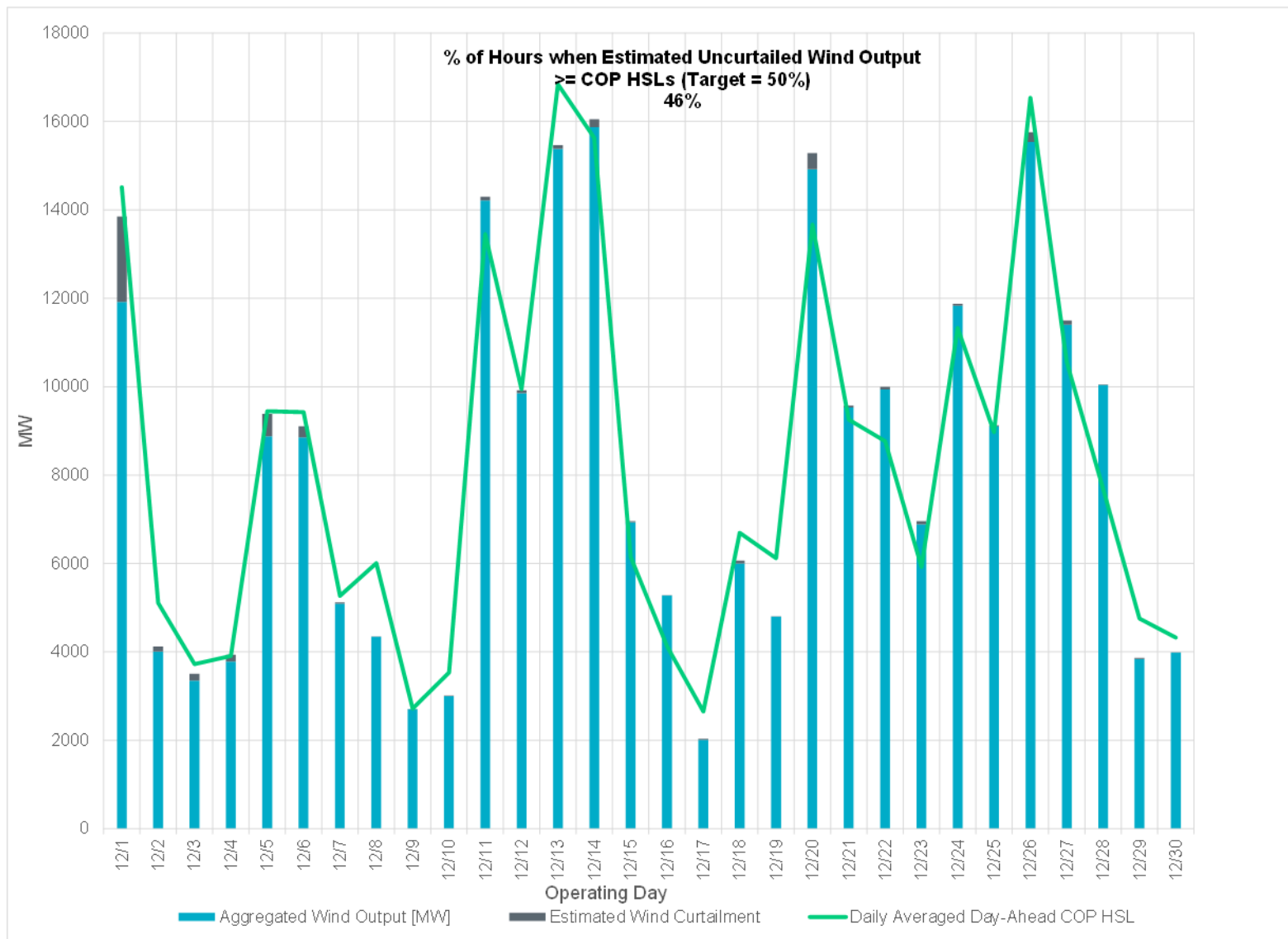
### Planning Activities

- 465 active generation interconnection requests totaling 91,921 MW, including 39,596 MW of wind generation, as of December 31, 2018. Twenty-two additional requests and an increase of 5,404 MW from November 30, 2018.
- 21,751 MW wind capacity in commercial operations as of January 1, 2019.

# Daily Peak Demand: Hourly Average Actual vs. Forecast, Wind Day-Ahead COPs & On-Line Capacity at Peak – December 2018



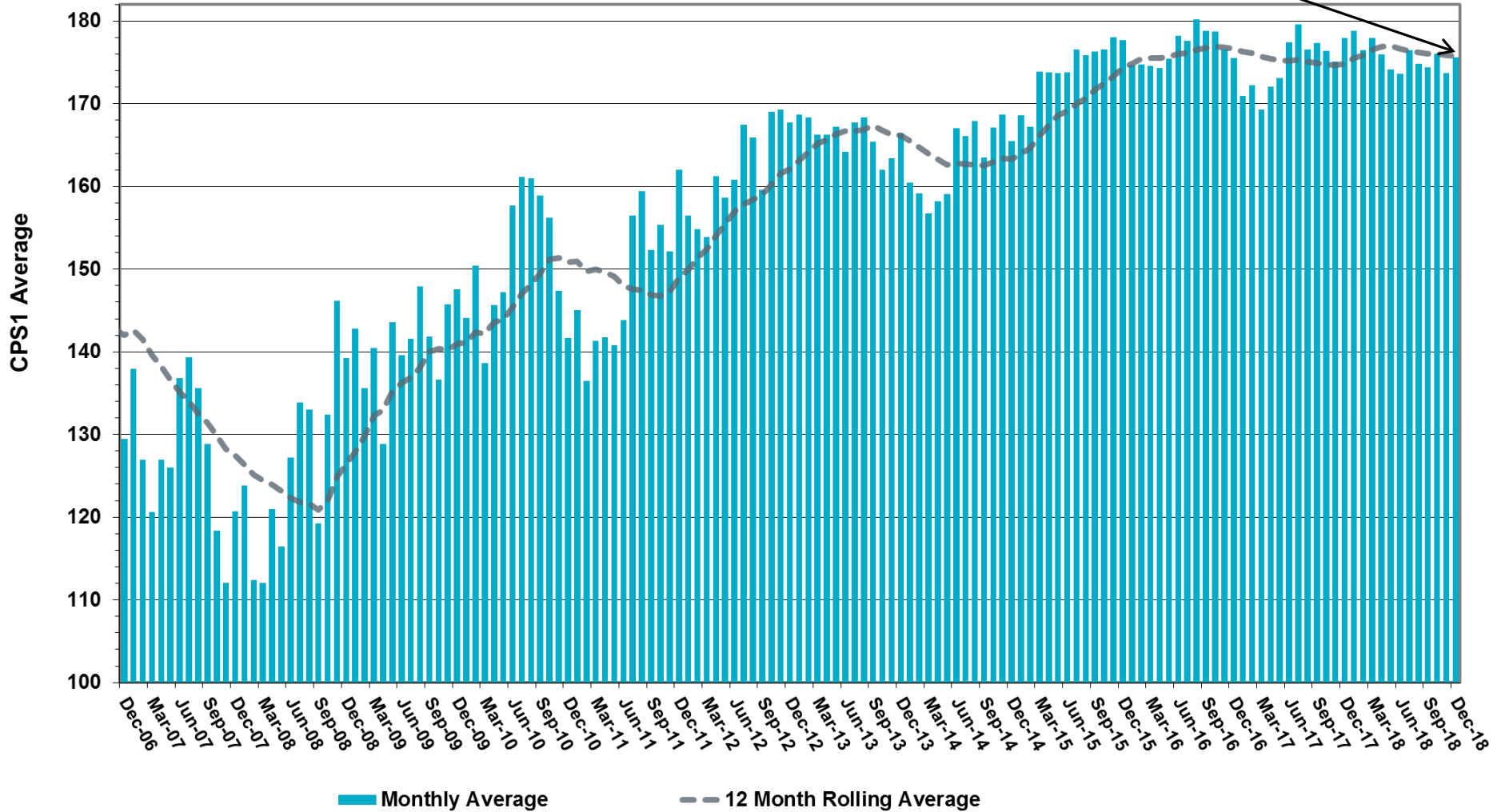
# Actual Wind Output plus Curtailments vs. Wind Day-Ahead COPs for All Hours – December 2018



# ERCOT's CPS1 Monthly Performance – December 2018

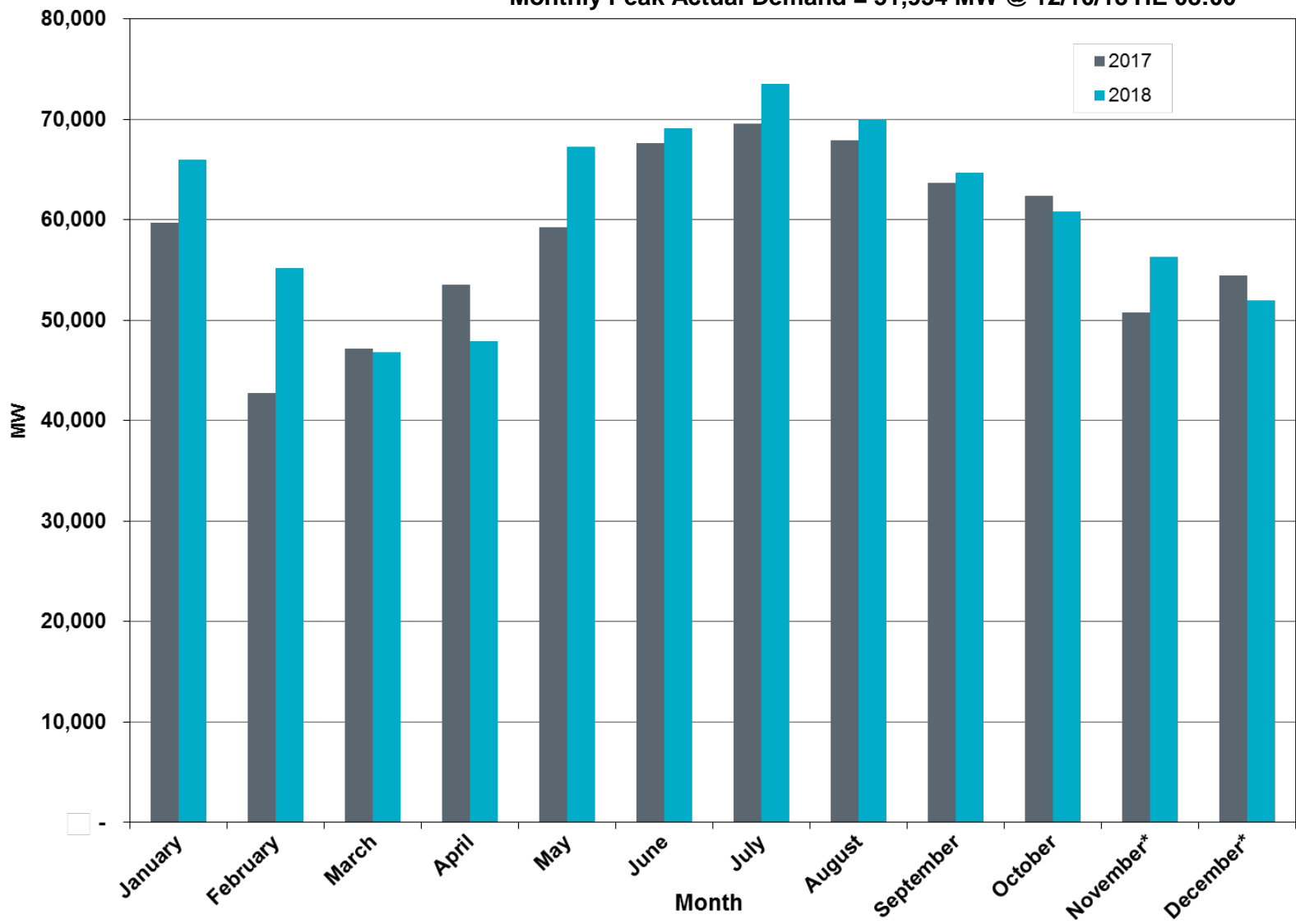
## ERCOT CPS1

CPS1 12 Month Rolling Average = 175.80%



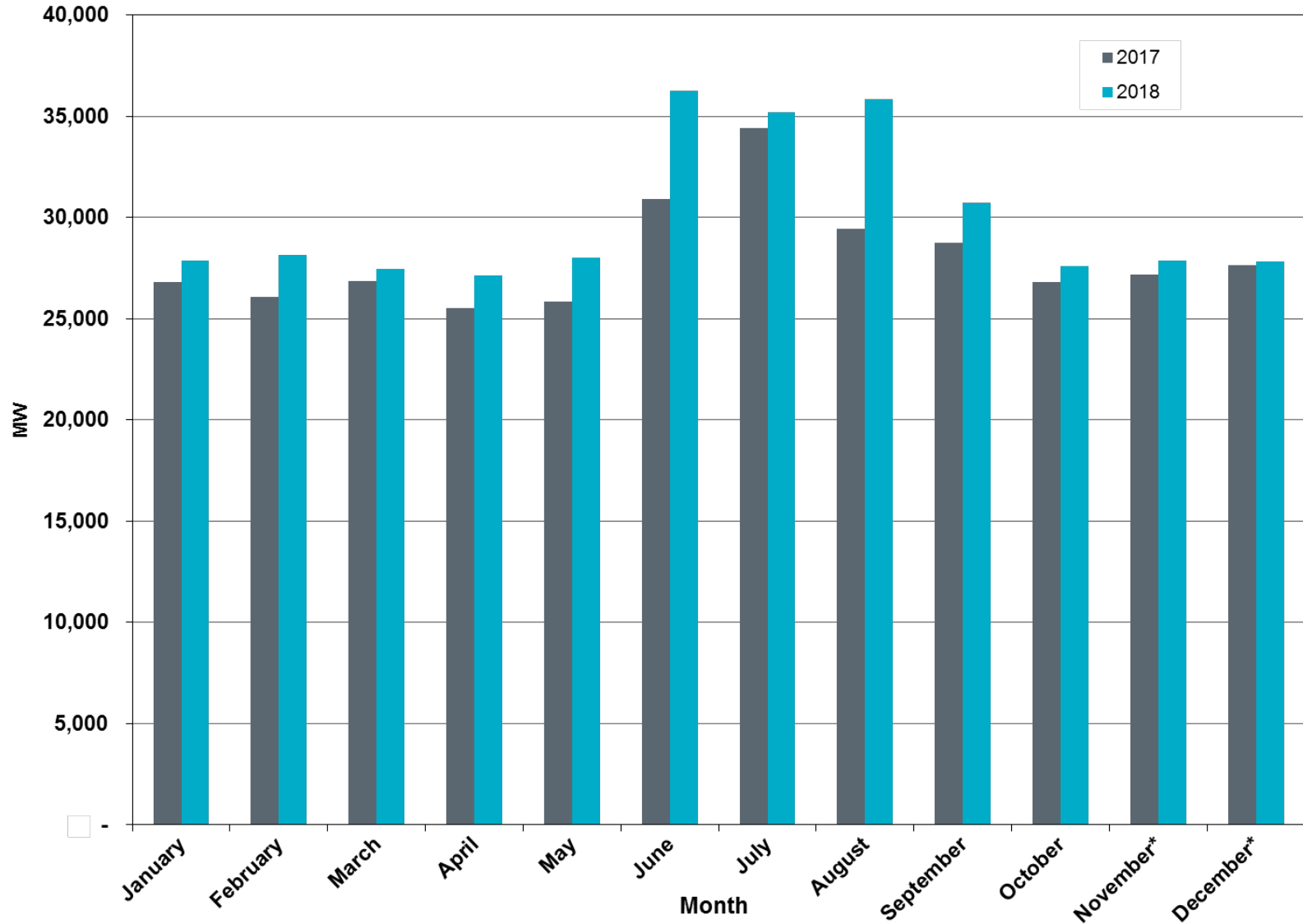
# Monthly Peak Actual Demand – December 2018

Monthly Peak Actual Demand = 51,934 MW @ 12/10/18 HE 08:00



\*Preliminary for latest two months of the current year

# Monthly Minimum Actual 15-Minute Demand – December 2018



\*Preliminary for latest two months of the current year



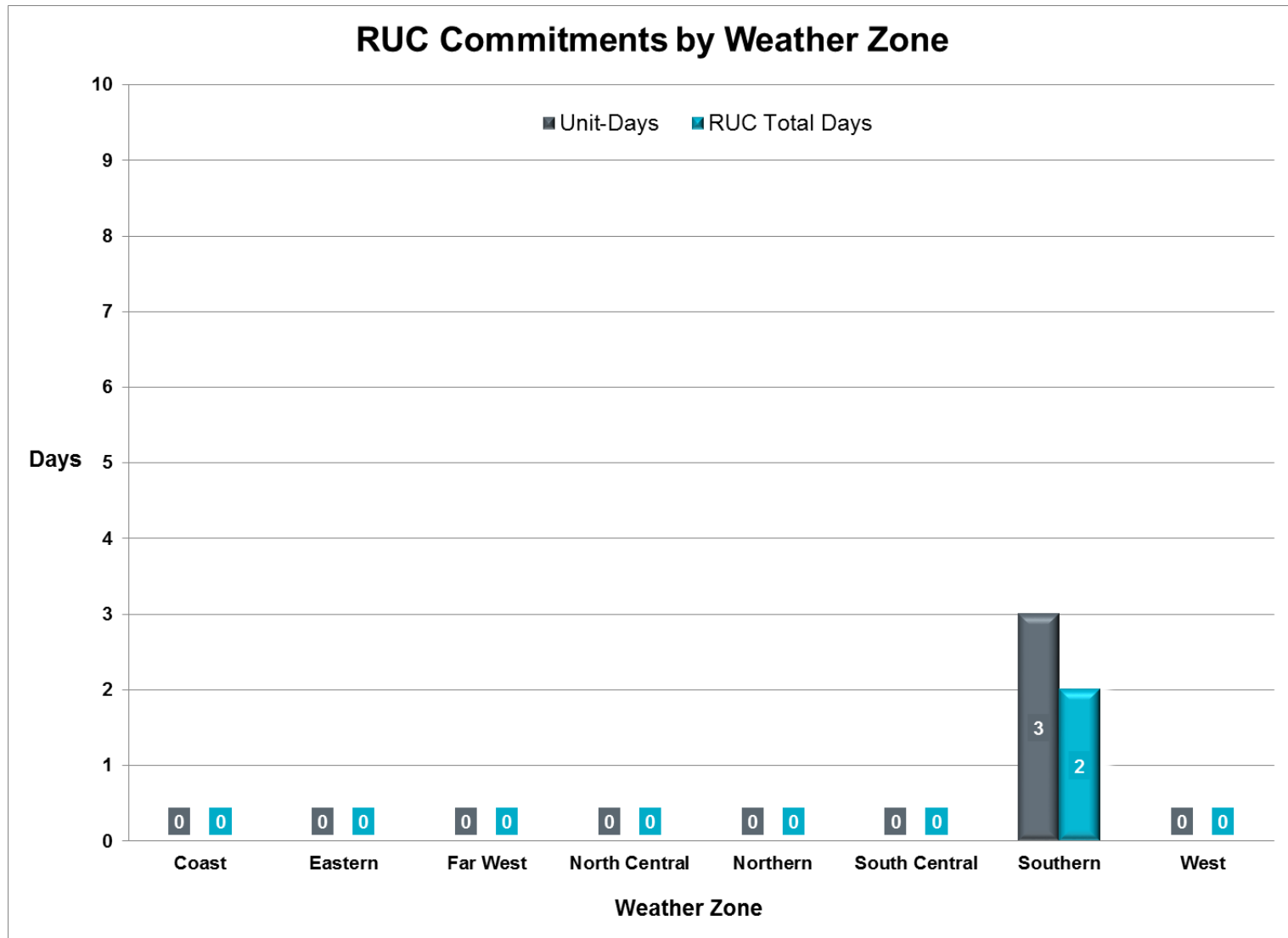


## Day-Ahead Load Forecast Performance – December 2018

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

	<b>2015 MAPE</b>	<b>2016 MAPE</b>	<b>2017 MAPE</b>	<b>2018 MAPE</b>	<b>December 2018 MAPE</b>	
<b>Average Annual MAPE</b>	2.86	2.62	2.55	2.34	2.11	
<b>Lowest Monthly MAPE</b>	1.89	1.94	1.69	1.64	<b>Lowest Daily MAPE</b>	0.45 Dec 3
<b>Highest Monthly MAPE</b>	3.81	3.86	4.07	3.66	<b>Highest Daily MAPE</b>	4.59 Dec 31

# Reliability Unit Commitment (RUC) Capacity by Weather Zone – December 2018



## Generic Transmission Constraints (GTCs) – December 2018

GTCs	Dec-178 Days GTCs	Oct-18 Days GTCs	Nov-18 Days GTCs	Dec-18 Days GTCs	Last 12 Months Total Days (Jan 18 – Dec 18)
North – Houston	0	2	0	0	7
Valley Import	1	0	0	0	11
Panhandle	22	16	19	17	236
Red Tap	0	0	3	5	8
North Edinburg – Lobo	0	0	0	0	0
Nelson Sharpe – Rio Hondo	11	0	0	0	54
East Texas	0	0	0	0	0
McCamey	-	0	0	0	0
Treadwell	-	0	0	0	0

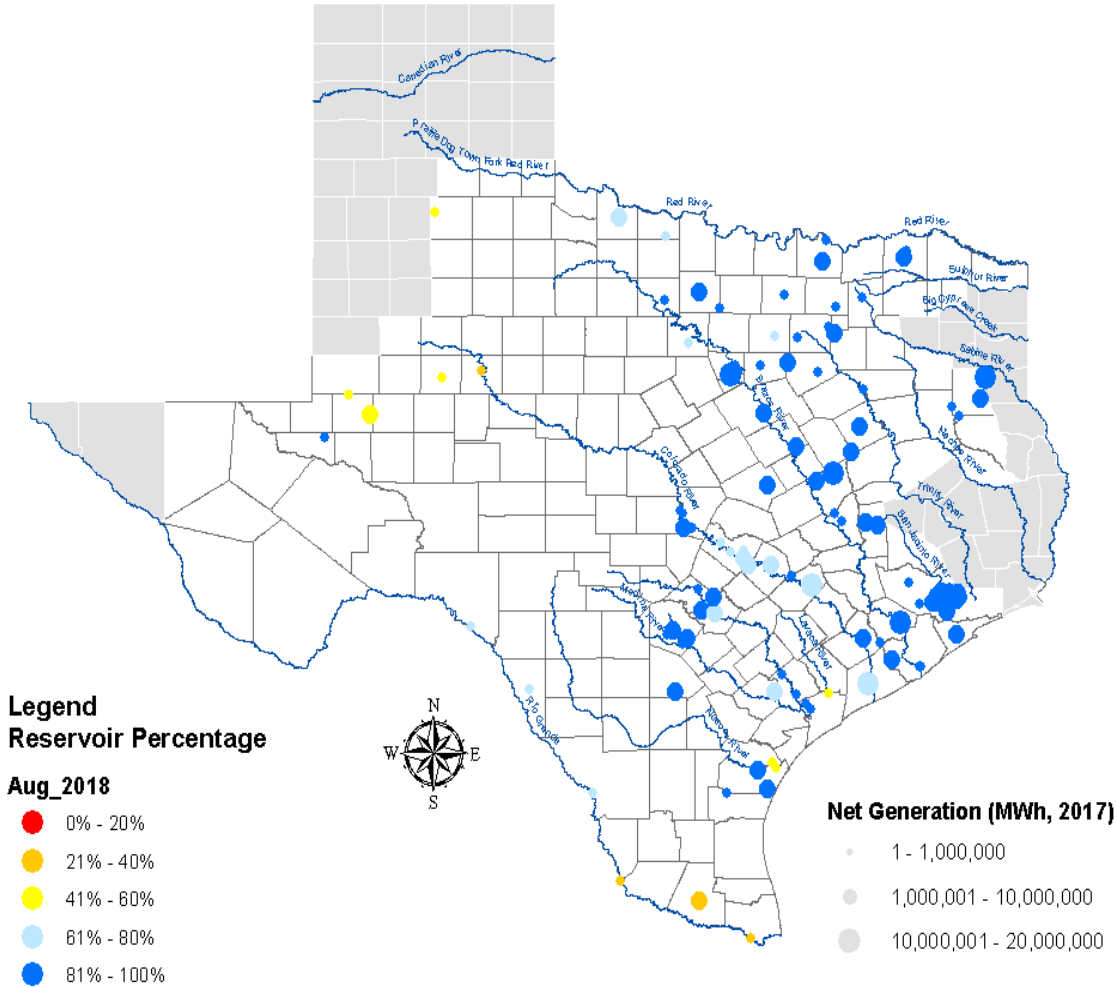
**GTC:** A transmission flow limit more constraining than a Transmission Element's normal limit established to constrain flow between geographic areas of the ERCOT Transmission System that is used to enforce stability and voltage constraints that cannot be modeled directly in ERCOT's transmission security 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 – December 2018

- One OCN issued for a potential extreme cold weather for operating day 1/2/2019 and 1/3/2019
  - Issued 12/30
- One Advisory issued for DAM timeline deviation
  - Issued 12/19

# Lake Levels Update – January 1, 2019



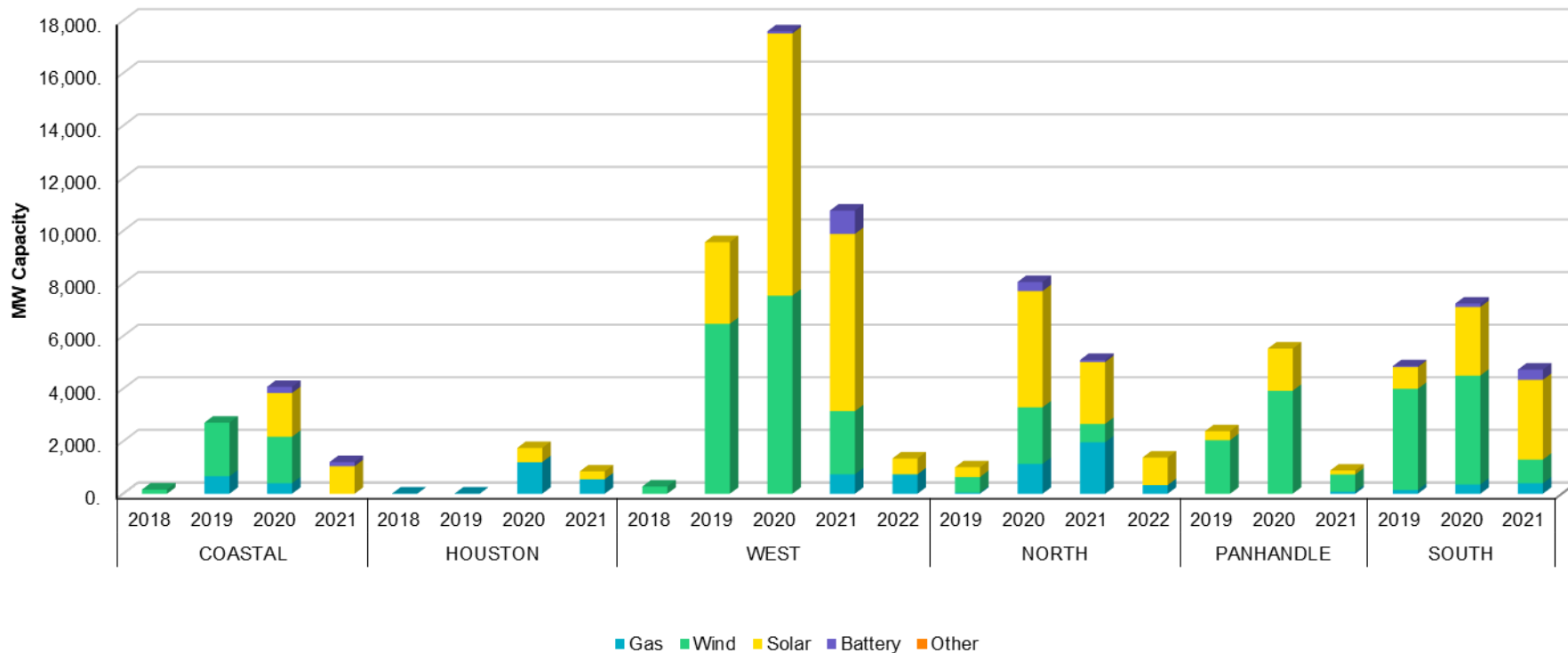
## Planning Summary – December 2018

- ERCOT is currently tracking 465 active generation interconnection requests totaling 91,921 MW. This includes 39,596 MW of wind generation.
- ERCOT is currently reviewing proposed transmission improvements with a total cost of \$561.7 million (as of December 31, 2018).
- Transmission Projects endorsed in 2018 total \$611.85 million (as of December 31, 2018).
- All projects (in engineering, routing, licensing and construction) total approximately \$6.03 billion (as of October 15, 2018).
- Transmission Projects energized in 2018 total about \$1.44 billion (as of October 15, 2018).



# Cumulative MW Capacity of Interconnection Requests by Zone – December 2018

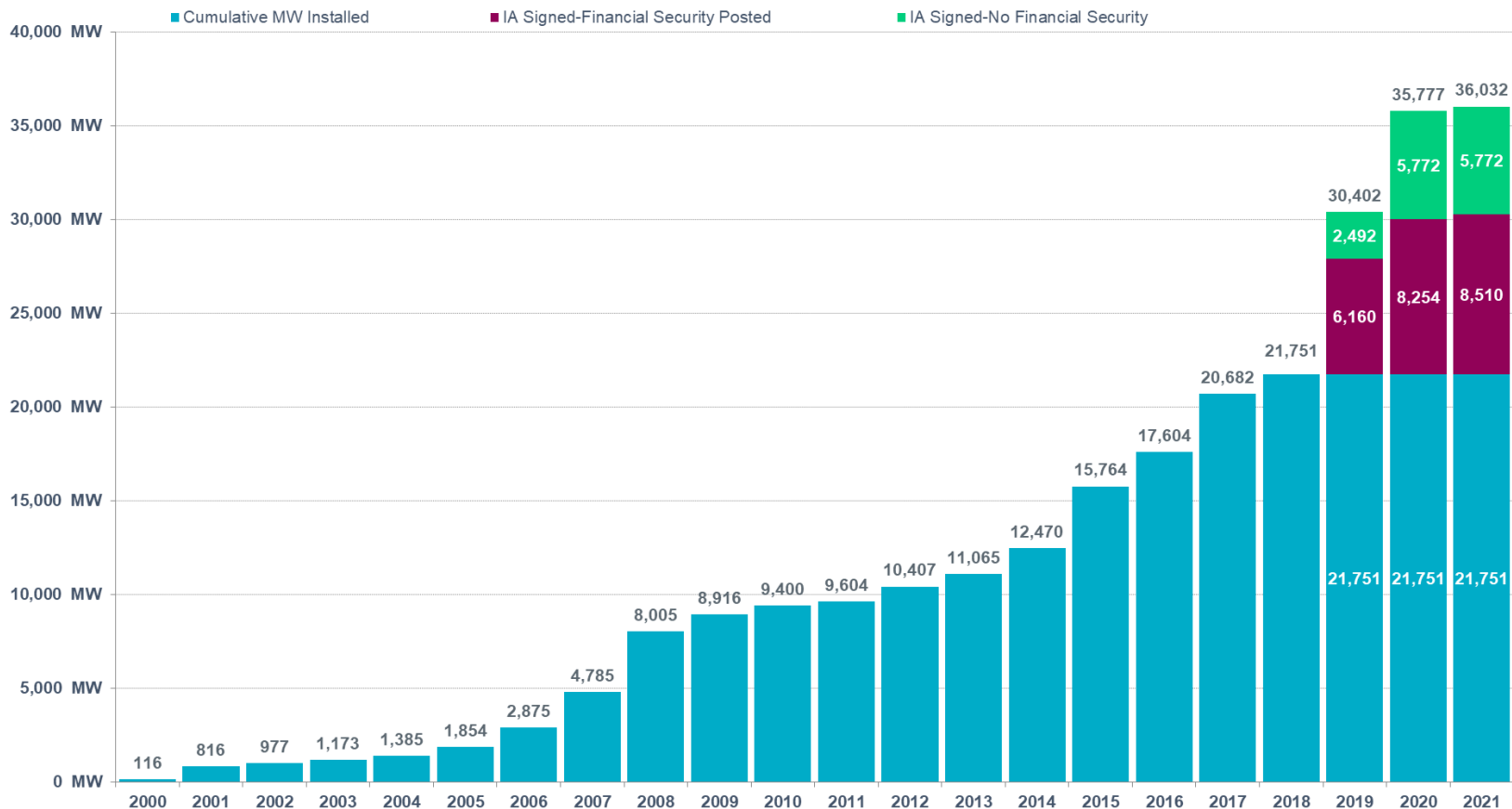
## Capacity for Planned Projects by Projected In-service Year and CDR Forecast Zone





# Wind Generation – December 2018

## ERCOT Wind Additions by Year (as of Dec 31, 2018)

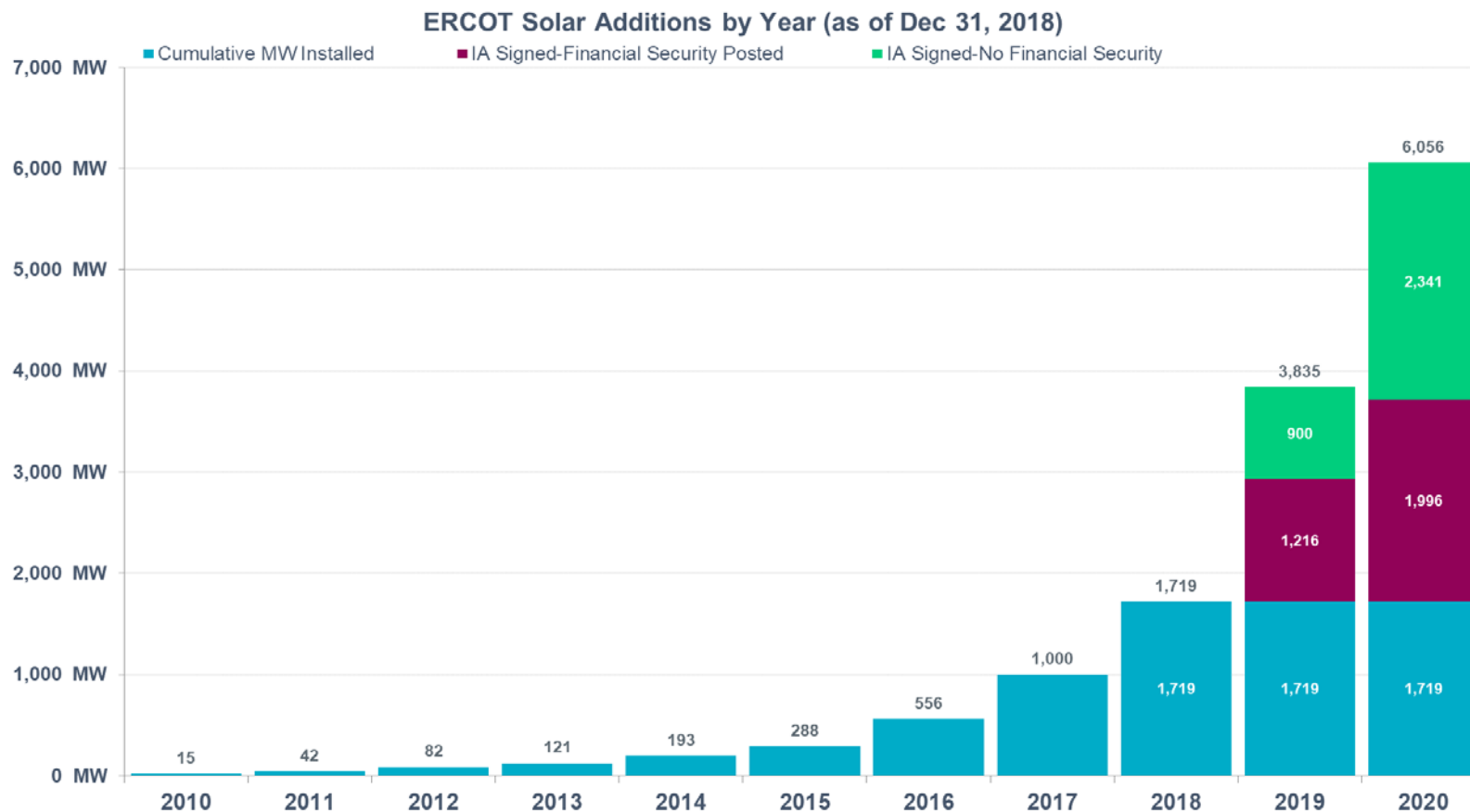


**Notes:**

- 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 are the original nameplate rating of the generation facilities, and do not reflect retirements or rating changes over time due to facility expansions or repowering.
- 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.
- Projects that have prior-year Projected CODs that have not been met, and for which ERCOT has not received COD updates, appear as planned projects for the subsequent year.



# Solar Generation – December 2018



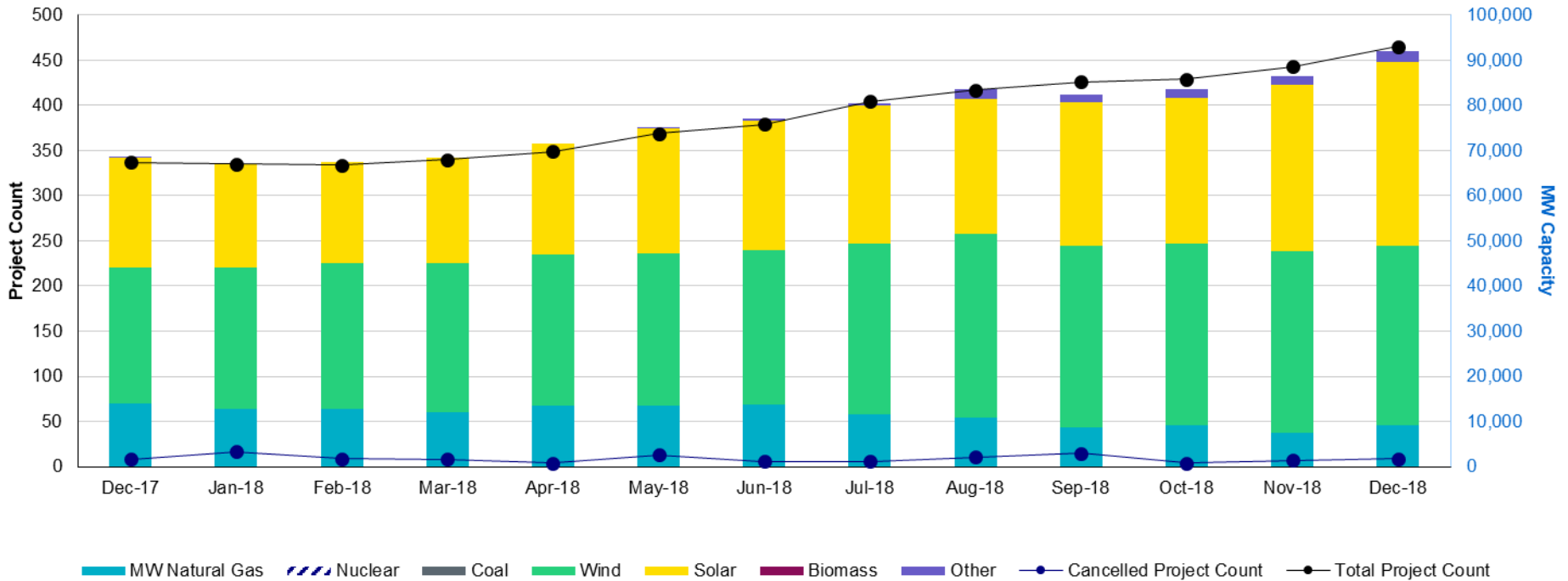
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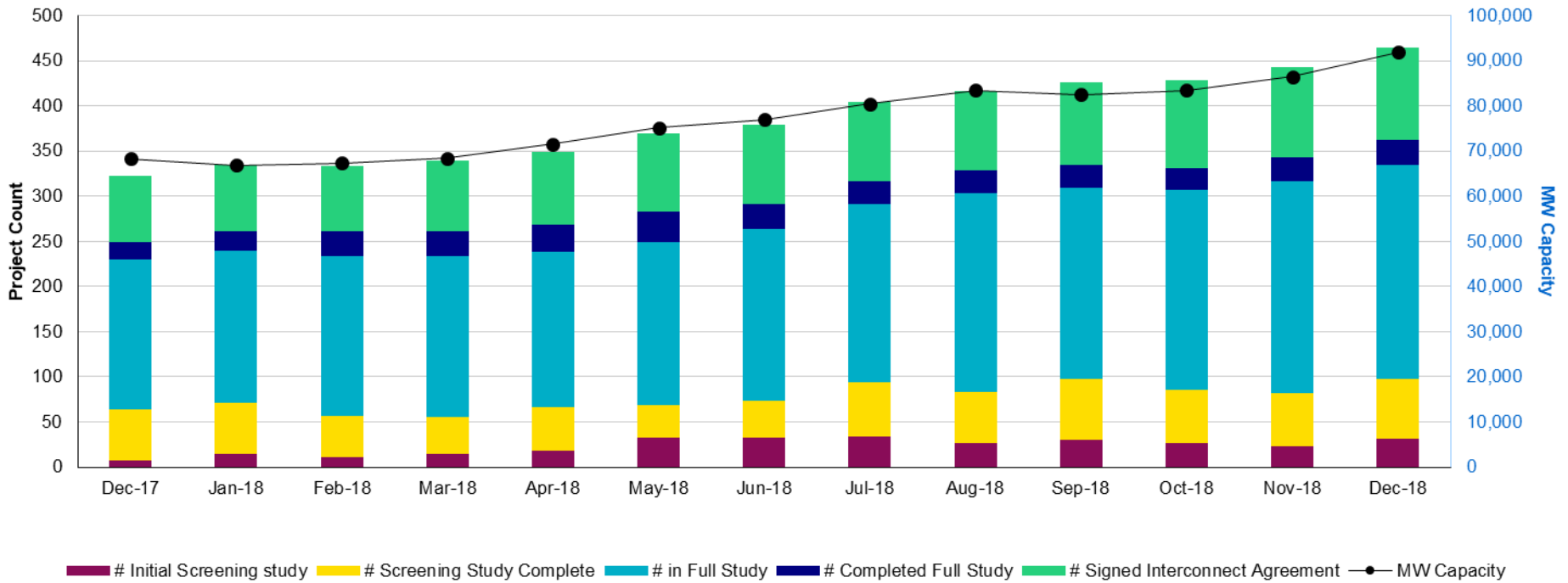
# Generation Interconnection Activity by Fuel – December 2018

## Monthly Capacity by Fuel Type plus Project Count, 13-Month Rolling Basis



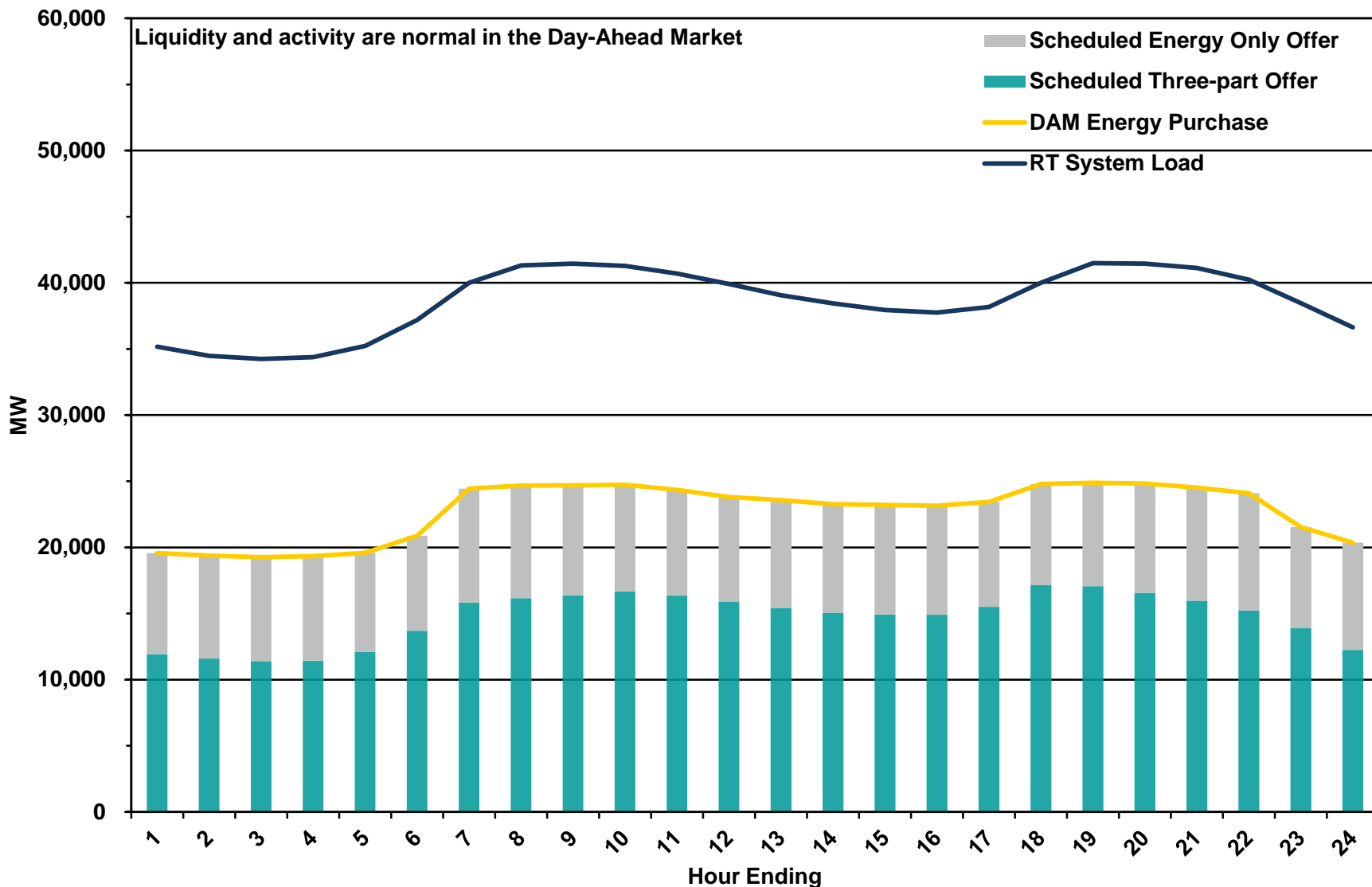
# Generation Interconnection Activity by Project Phase – December 2018

## Monthly Capacity by GINR Milestone plus Project Count, 13-Month Rolling Basis

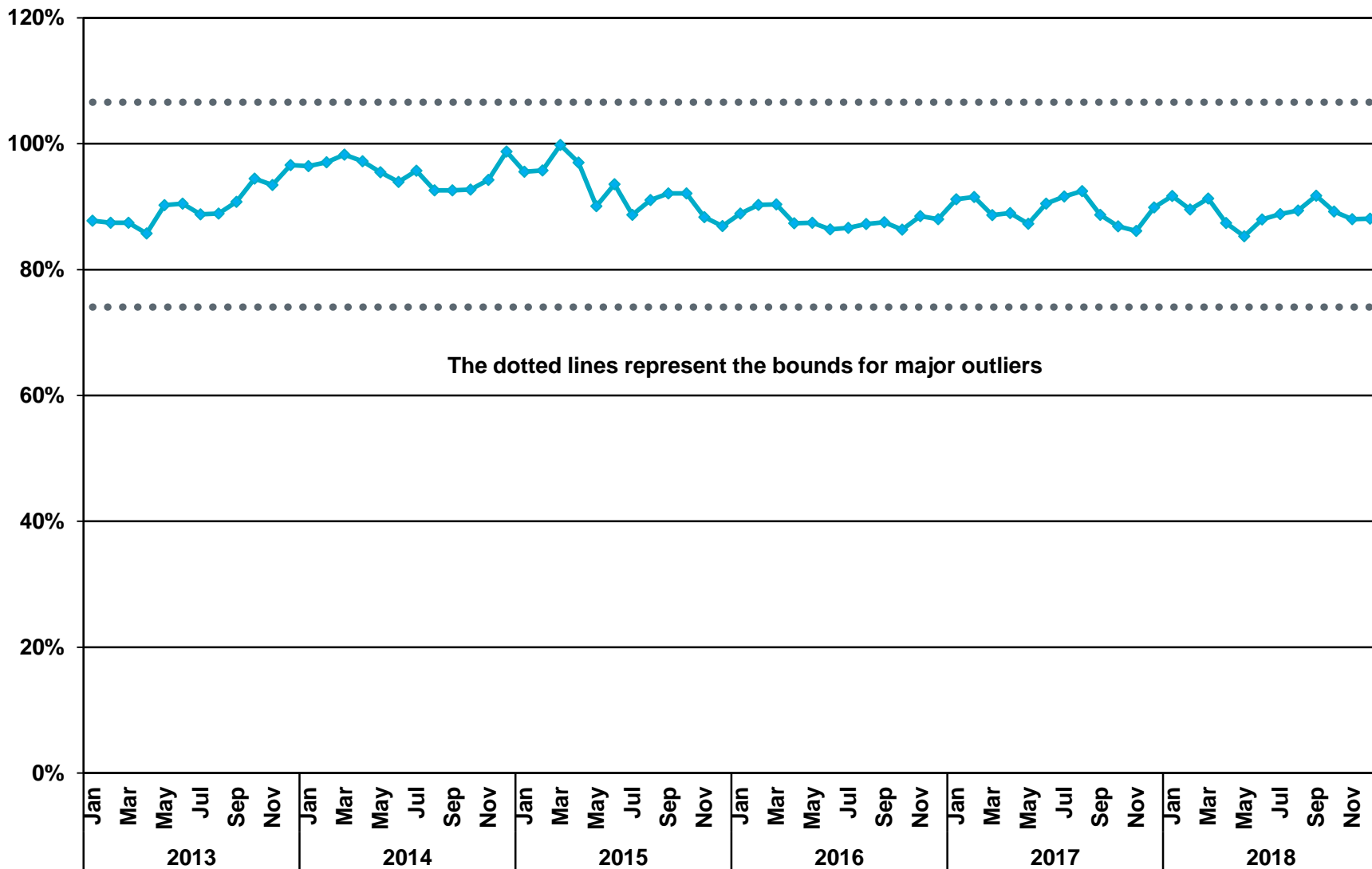


# Market Operations

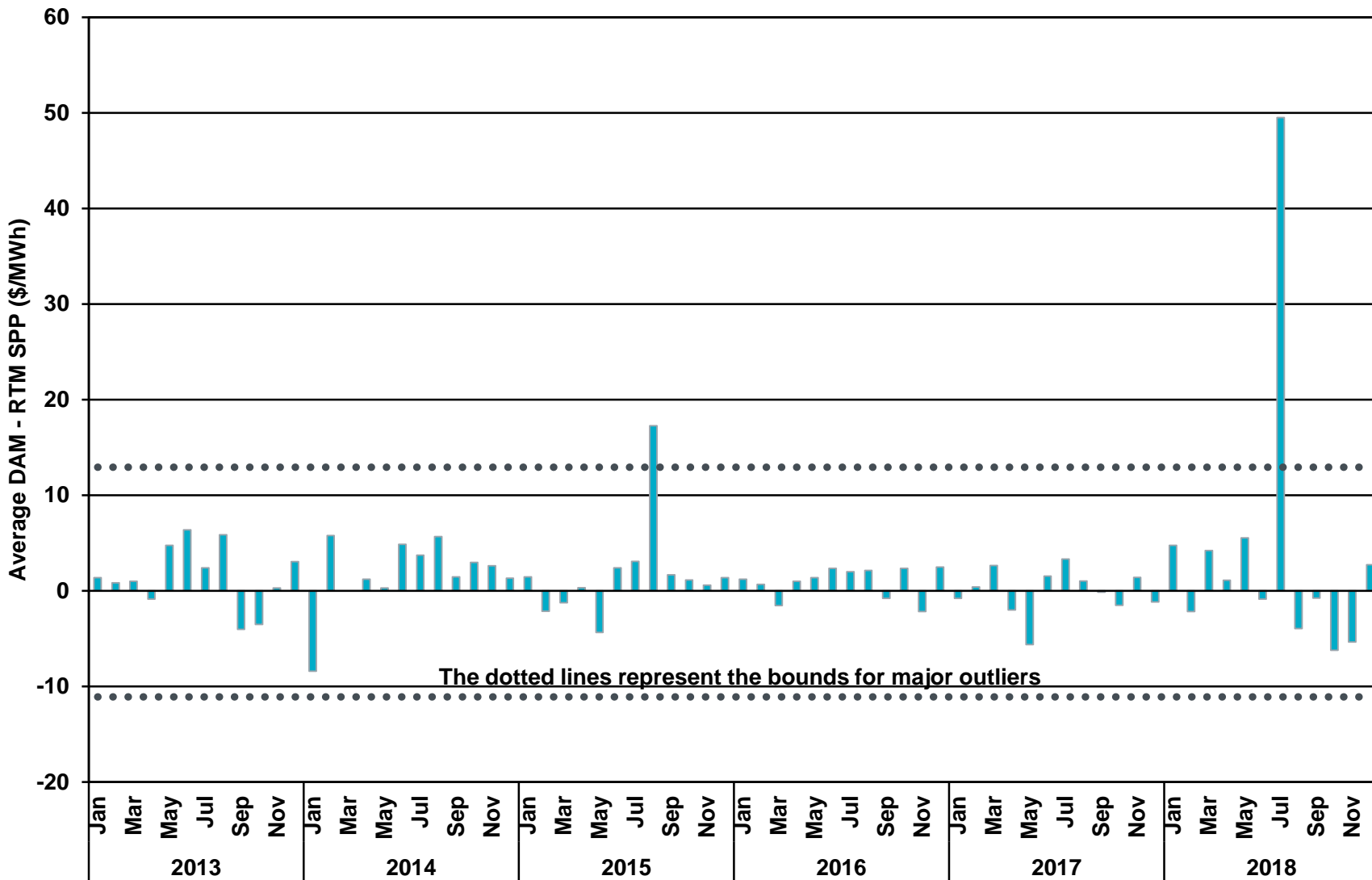
# Day-Ahead Schedule (Hourly Average) – December 2018



# Percentage of Real-Time Load Transacted in the DAM (Counter-Party Level) – December 2018

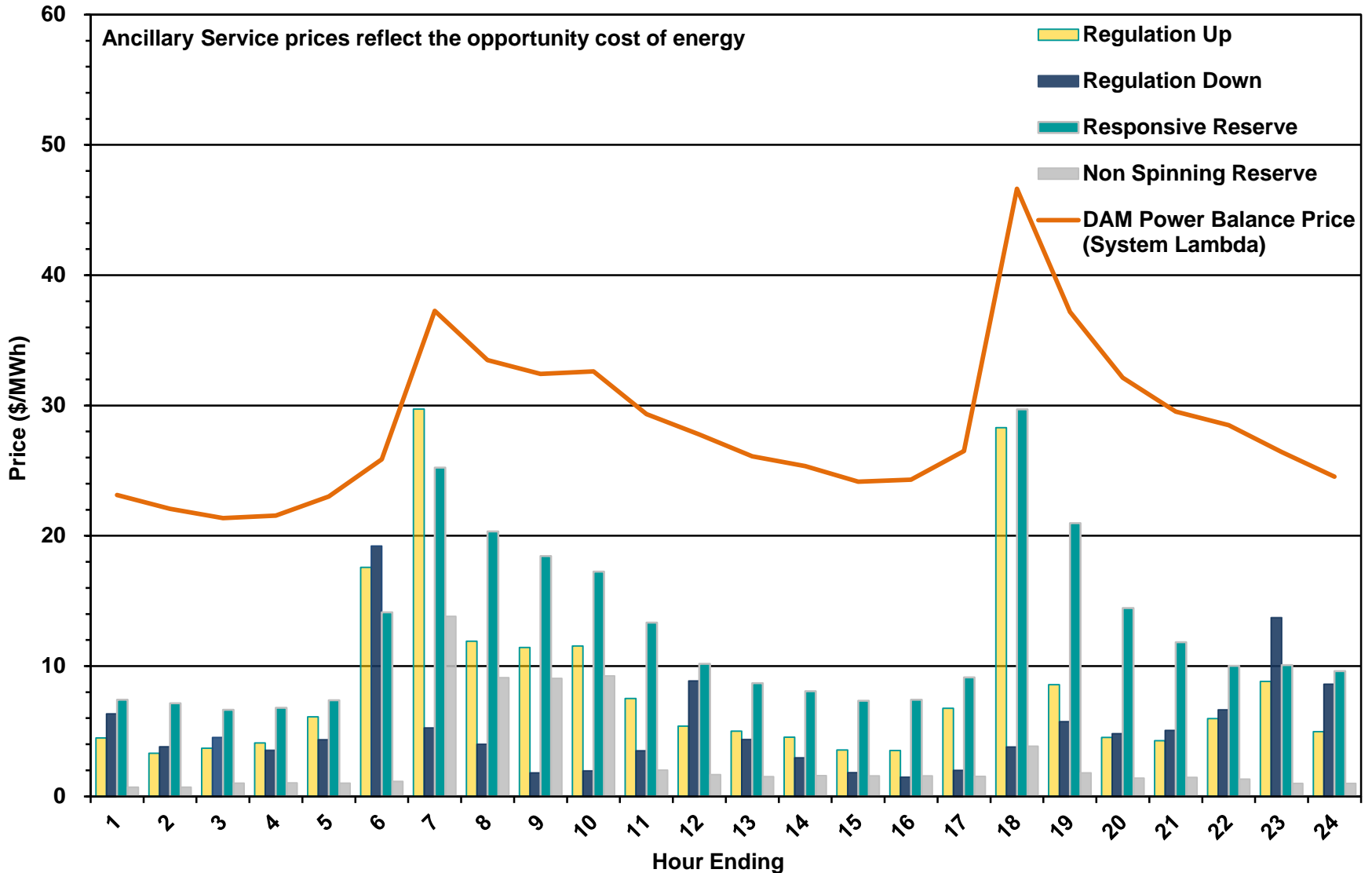


# DAM and RTM Price Convergence – December 2018

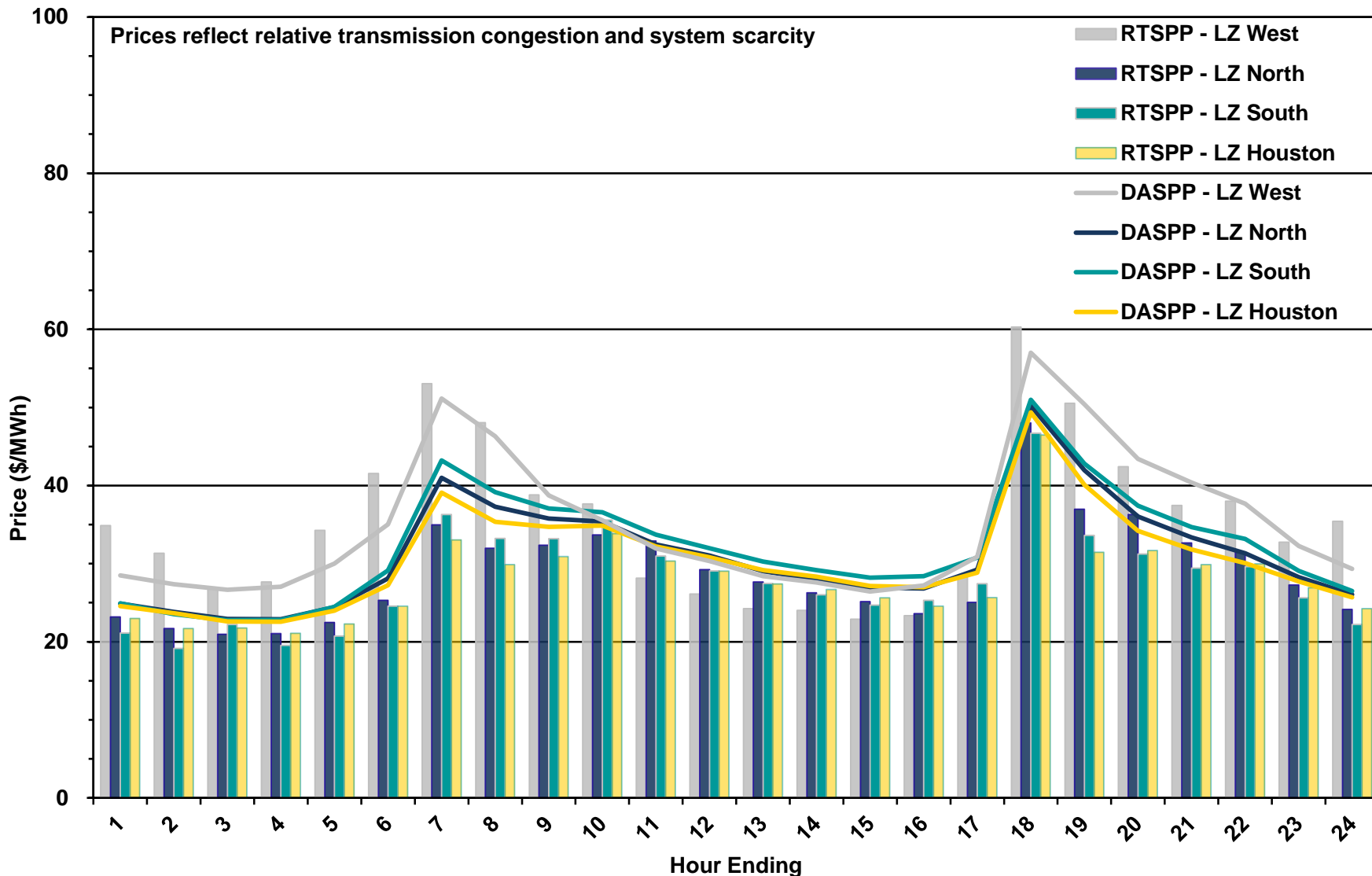




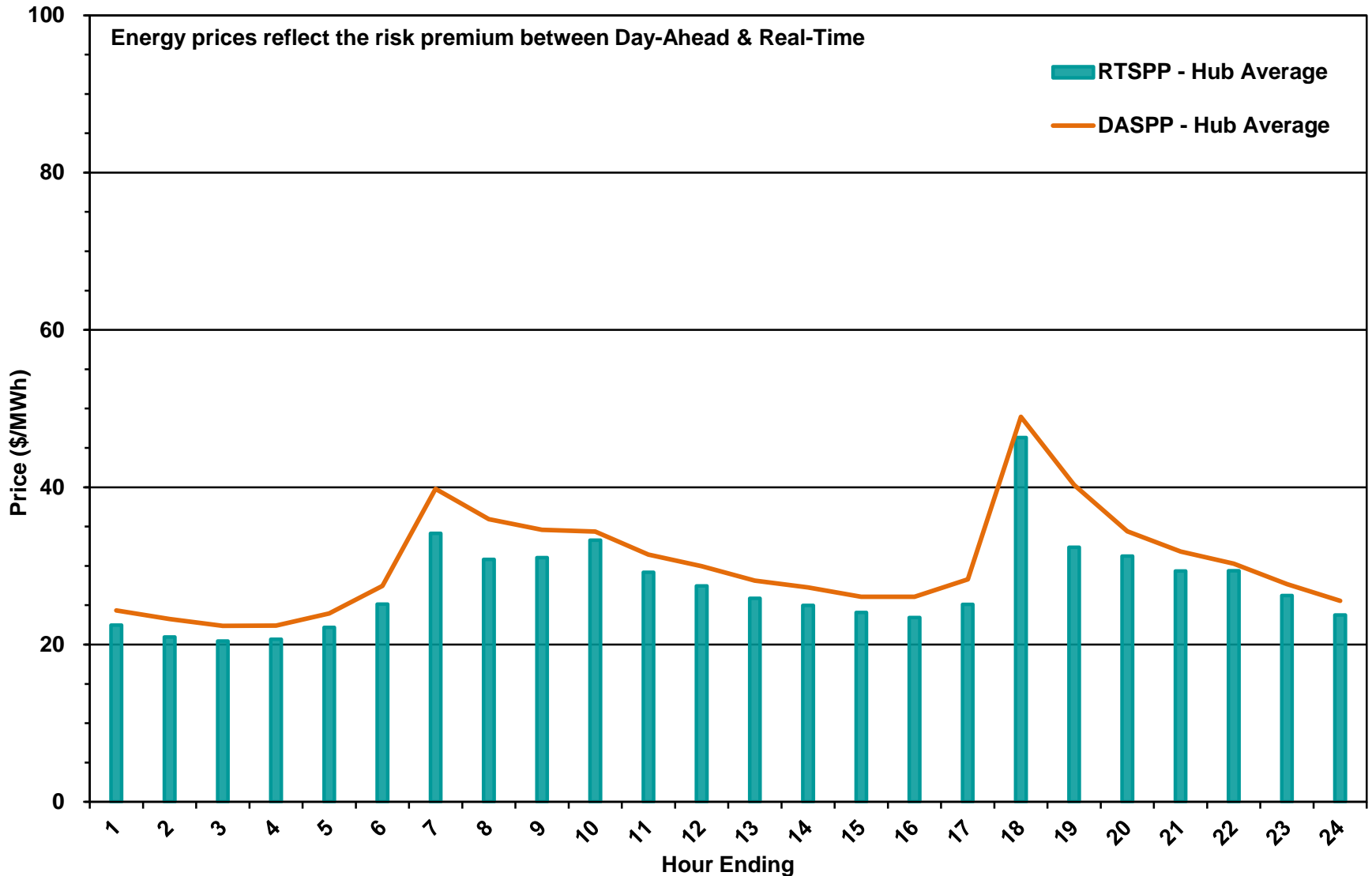
# Day-Ahead Electricity and Ancillary Service Prices (Hourly Average) – December 2018



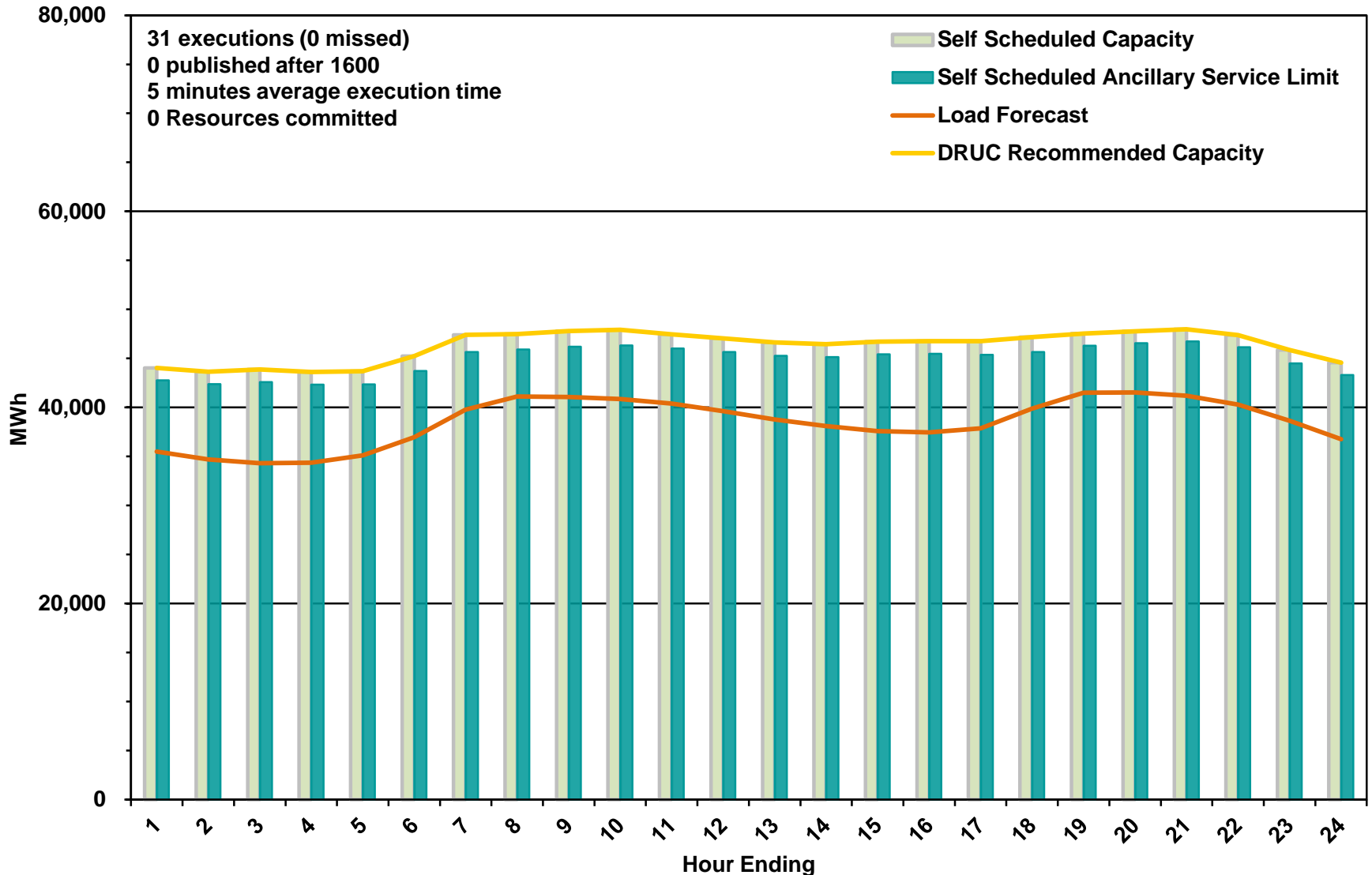
# Day-Ahead vs Real-Time Load Zone SPP (Hourly Average) – December 2018



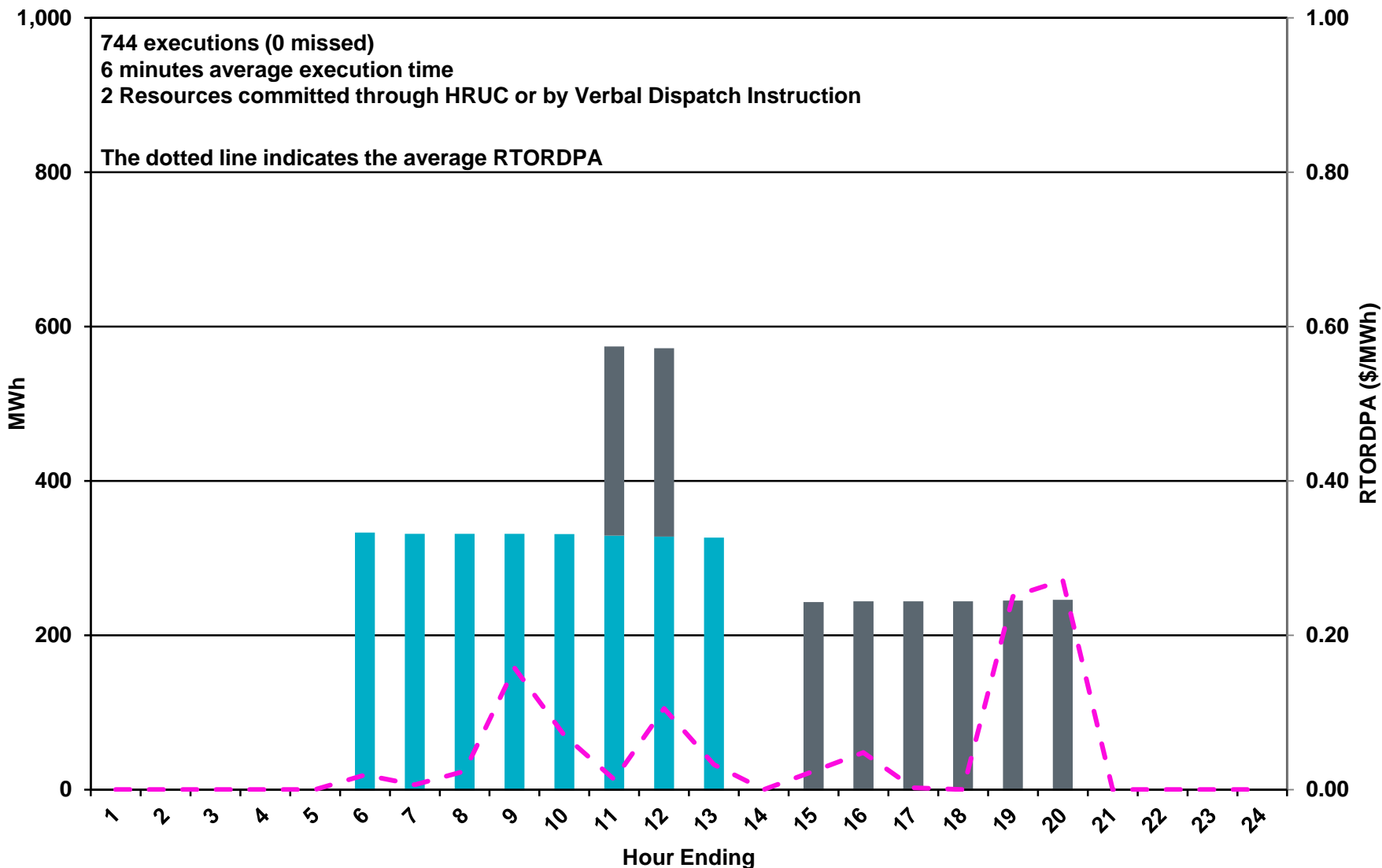
# Day-Ahead vs Real-Time Hub Average SPP (Hourly Average) – December 2018



# DRUC Monthly Summary (Hourly Average) – December 2018



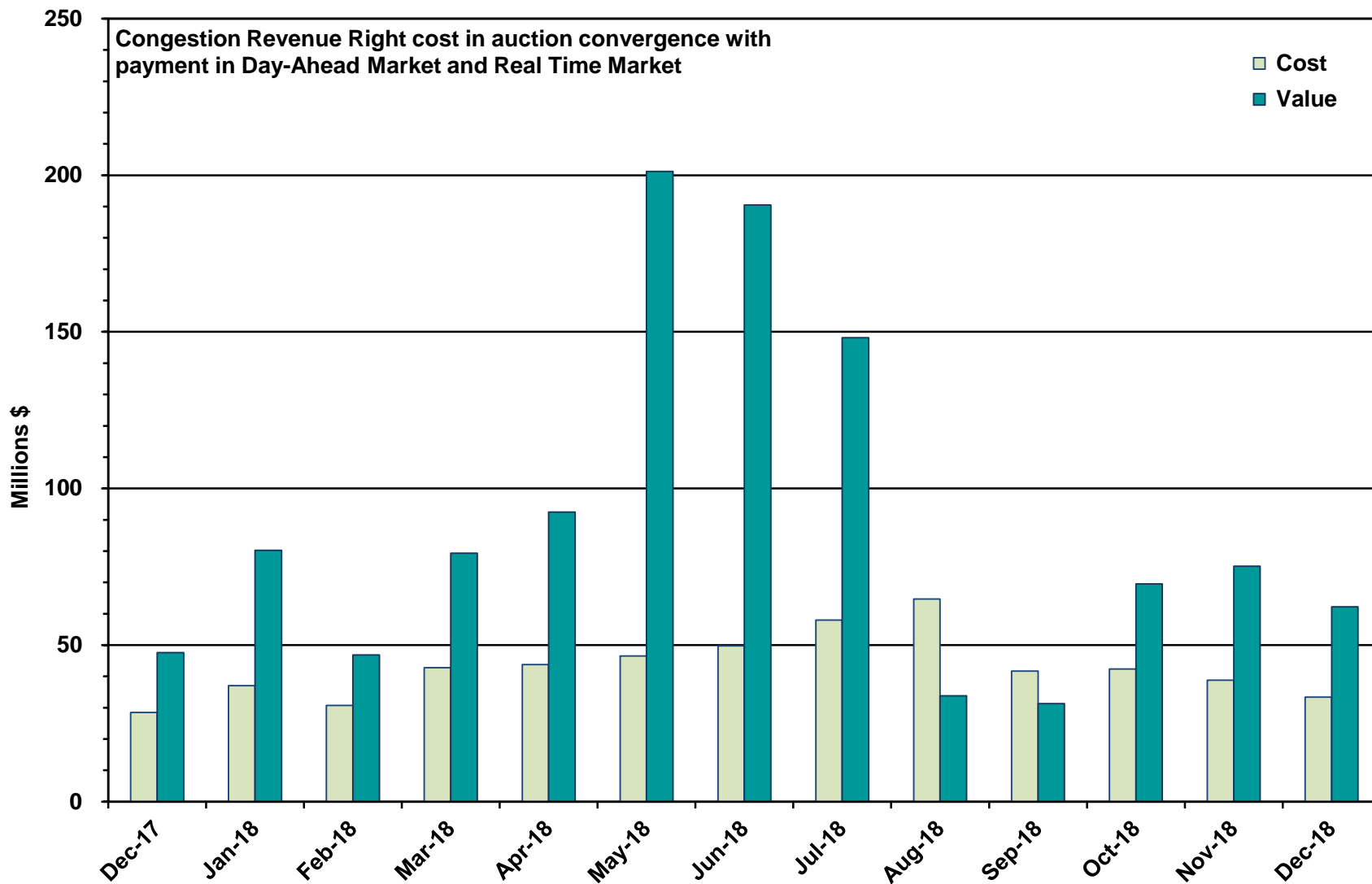
# HRUC Monthly Summary and Real Time On-Line Reliability Deployment Price Adder (RTORDPA) (Hourly Average) – December 2018



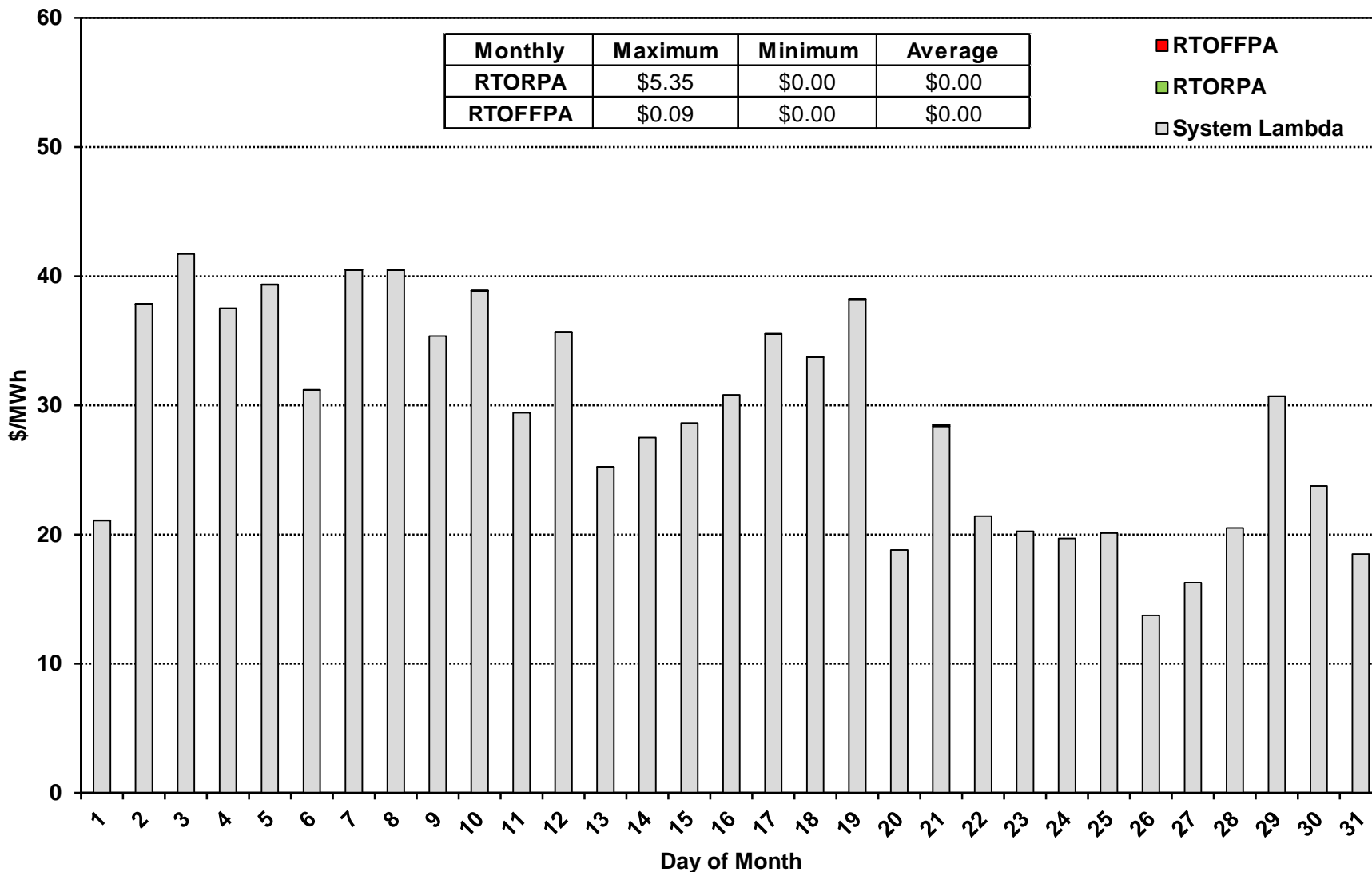
## Non-Spinning Reserve Service Deployment – December 2018

Deployment Start Time	Deployment End Time	Deployment Duration (Hours)	Max Deployment (MW)	Reason
N/A				

# CRR Price Convergence – December 2018



# Daily Average System Lambda and ORDC Price Adders – December 2018





## ERS Procurement for October 2018 – January 2019

	TP1	TP2	TP3	TP4	TP5	TP6
Non Weather-Sensitive ERS-10 MW	162.740	168.420	116.642	161.688	160.131	144.273
Non Weather-Sensitive ERS-30 MW	755.973	809.020	459.787	791.528	761.368	661.249
Weather-Sensitive ERS-10 MW	0	0	0	0	0	0
Weather-Sensitive ERS-30 MW	7.6	0	0	7.6	0	0
Total MW Procured	926.313	977.440	576.429	960.816	921.499	805.522
Clearing Price	\$14.63	\$11.90	\$0.27	\$17.34	\$12.92	\$1.06

**Time Period**

**Time Period Hours**

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

## Reliability Services – December 2018

### Reliability Unit Commitment (RUC) \$ in Millions

RUC Make-Whole Payments \$0.00

RUC Clawback Charges \$0.02

**RUC Commitment Settlement \$0.02**

RUC Capacity Short Charges \$0.00

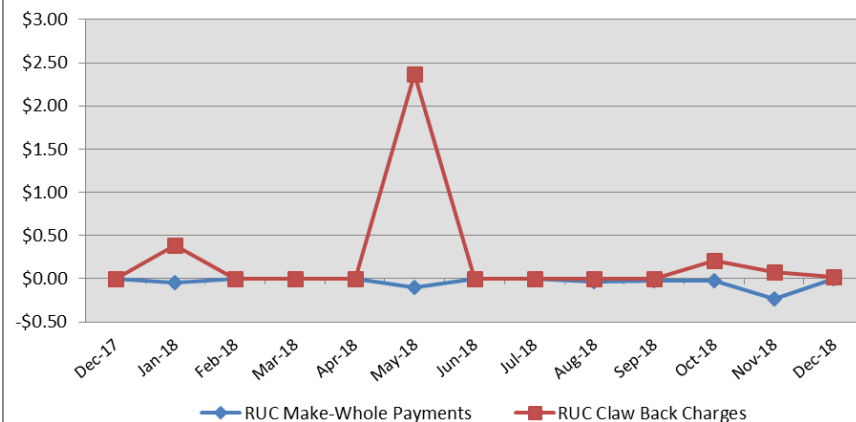
RUC Make-Whole Uplift \$0.00

**RUC Commitment Cost Allocation \$0.00**

RUC Decommitment Payments \$0.00

**Total RUC Allocation to Load (\$0.02)**

Reliability Unit Commitment (\$M)



In December 2018, there was a credit of \$0.02M allocated to load for RUC compared to:

- A credit of \$0.08M in November 2018
- A credit of \$0.00M in December 2017

## Ancillary and Other Services – December 2018

<b>Ancillary and Other Services</b>	<b>\$ in Millions</b>
Regulation Up Service	\$2.21
Regulation Down Service	\$1.19
Responsive Reserve Service	\$18.49
Non-Spinning Reserve Service	\$4.02
Black Start Service	\$0.62
Voltage Services - Reactive Power	\$0.00
Voltage Services - Lost Opportunity	\$0.00
<b>Total Charges Allocated to Load</b>	<b>\$26.54</b>

In December 2018, Ancillary and Other Services was a charge of \$26.54M, compared to:

- A charge of \$36.46M in November 2018
- A charge of \$14.82M in December 2017

## Real-Time Ancillary Service Imbalance (ORDC) – December 2018

<b>Real-Time Ancillary Service Imbalance</b>	\$ in Thousands
Real-Time AS Imbalance	(\$5)
Real-Time Reliability Deployment AS Imbalance	(\$150)
<b>Total RTASI Amount Allocated to Load</b>	<b>\$154</b>

In December 2018, Real-Time Ancillary Service Imbalance was a charge to load of \$154K, compared to:

- A charge of \$265K in November 2018
- A charge of \$21K in December 2017

## Energy Settlement – December 2018

Day-Ahead Market Energy Settlement	\$ in Millions
Energy Purchases	\$534.61
Point to Point Obligation Purchases	\$53.31
Energy Sales	(\$524.67)
Day-Ahead Congestion Rent	\$63.26
Day-Ahead Market Make-Whole Payments	(\$0.36)

Day-Ahead Market energy settlement activity increased from last month and increased from December 2017.

Real-Time Market energy settlement activity decreased from last month and increased from December 2017.

Real-Time Market Energy Settlement	\$ in Millions
Energy Imbalance at a Resource Node	(\$399.89)
Energy Imbalance at a Load Zone	\$686.54
Energy Imbalance at a Hub	(\$221.11)
Net Real-Time Energy Imbalance	\$65.53
Real Time Congestion from Self Schedules	\$0.29
Block Load Transfers and DC Ties	(\$2.12)
Total Impact to Revenue Neutrality	\$63.70
Load-Allocated Emergency Energy Payments	(\$0.26)
Load-Allocated Base Point Deviation Charges	\$0.16

## Congestion Revenue Rights (CRR) – December 2018

	\$ in Millions
Long-Term Auction	(\$28.55)
Monthly Auction	(\$4.85)
<b>Total Auction Revenue</b>	<b>(\$33.40)</b>
Day-Ahead CRR Settlements	(\$62.24)
Day-Ahead CRR Short-Charges	\$3.53
Day-Ahead CRR Short-Charges Refunded	(\$3.53)
<b>Day-Ahead CRR Short-Charges Net</b>	<b>\$0.00</b>
<b>Total CRR Funding</b>	<b>(\$62.24)</b>
Day-Ahead Point-to-Point Obligations	\$53.31
Real-Time Point-to-Point Obligations	(\$70.95)
<b>Net Point-to-Point Obligations</b>	<b>(\$17.64)</b>

Congestion Revenue Rights settlement payments were fully funded. The additional funding to settle the CRR Short Charges was provided from the CRR Balancing Account Fund.

Point to Point Obligations settled with a net credit of \$17.64M compared to a net charge of \$1.95M last month.

## CRR Balancing Account Fund – December 2018

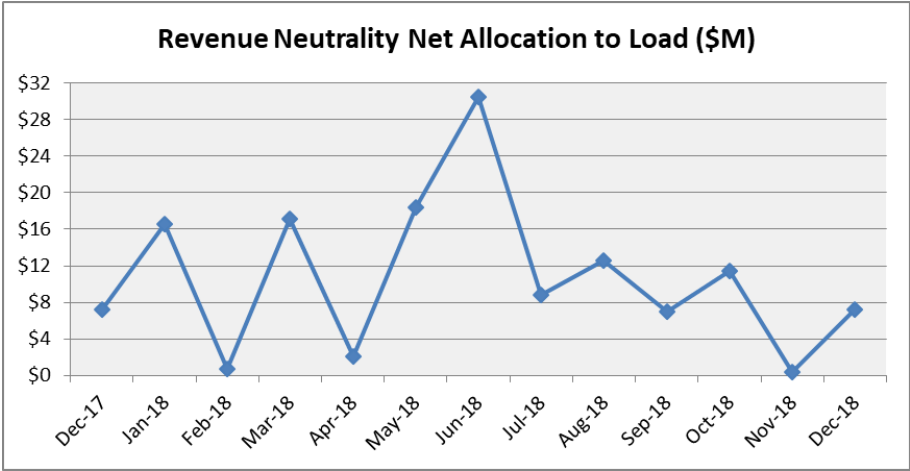
<b>CRR Balancing Account</b>	<b>\$ in Millions</b>
Monthly Day-Ahead Congestion Rent	\$63.26
Monthly Day-Ahead CRR Settlements	(\$62.24)
Monthly Day-Ahead CRR Short -Charges	\$3.53
<b>CRR Balancing Account Credit Total</b>	<b>\$4.55</b>
<b>Beginning Fund Balance for the Month</b>	<b>\$6.70</b>
<b>CRR Balancing Account Credit Total</b>	<b>\$4.55</b>
<b>Day-Ahead CRR Short-Charges Refunded</b>	<b>(\$3.53)</b>
<b>CRR PTP Option Award Charges</b>	<b>\$0.05</b>
<b>Load-Allocated CRR Amount</b>	<b>\$0.00</b>
<b>Total Fund Amount</b>	<b>\$7.77</b>

# Revenue Neutrality – December 2018

Revenue Neutrality	\$ in Millions
Real-Time Energy Imbalance	\$65.53
Real-Time Point to Point Obligation	(\$70.95)
Real-Time Congestion from Self-Schedules	\$0.29
DC Tie & Block Load Transfer	(\$2.12)
<b>Allocation to Load</b>	<b>\$7.25</b>

In December 2018, the Revenue Neutrality charge to load was \$7.25M compared to:

- A charge of \$0.39M in November 2018
- A charge of \$7.18M in December 2017



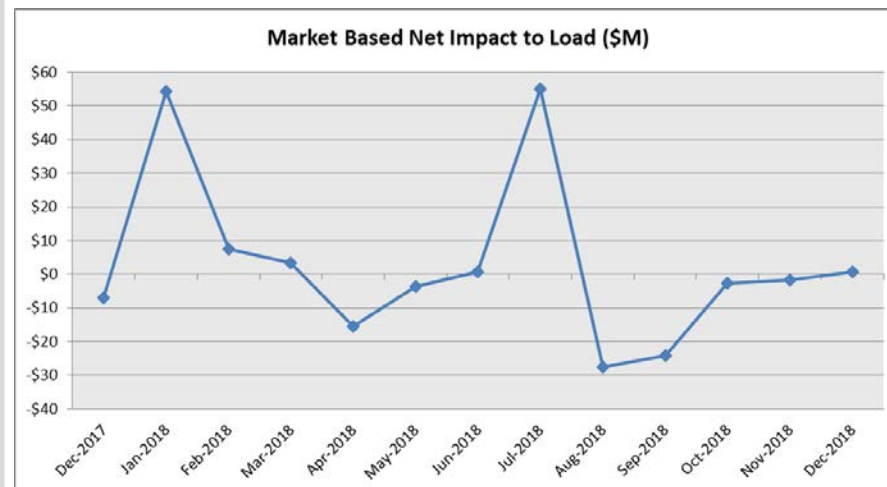


## Net Allocation to Load – December 2018

Market-Based Allocation	\$ in Millions
Reliability Unit Commitment	(\$0.02)
Ancillary and Other Services	\$26.54
Real-Time Ancillary Service Imbalance	\$0.15
Emergency Energy	\$0.26
Base Point Deviation	(\$0.16)
CRR Auction Revenue	(\$33.40)
CRR Balancing Account	\$0.00
Real-Time Revenue Neutrality	\$7.25
Reliability Must Run	\$0.00
Monthly Block Load Transfer	\$0.00
<b>Total</b>	<b>\$0.62</b>
<b>Fee Allocation</b>	
ERCOT Administrative Fee	\$15.96
<b>Net Allocated to Load</b>	<b>\$16.58</b>

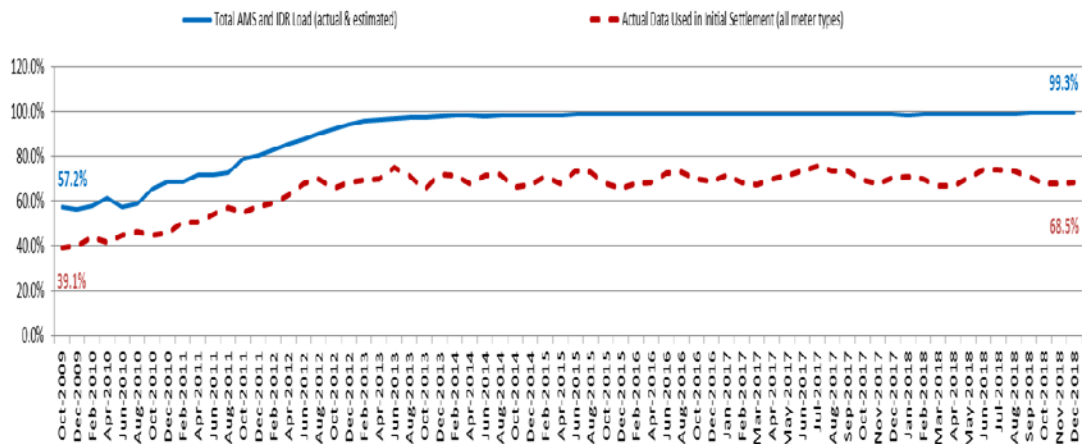
In December 2018, the Net Allocation to load was a charge of \$16.58M compared to:

- A charge of \$13.38M in November 2018
- A charge of \$9.19M in December 2017



# Advanced Meter Settlement Impacts – December 2018

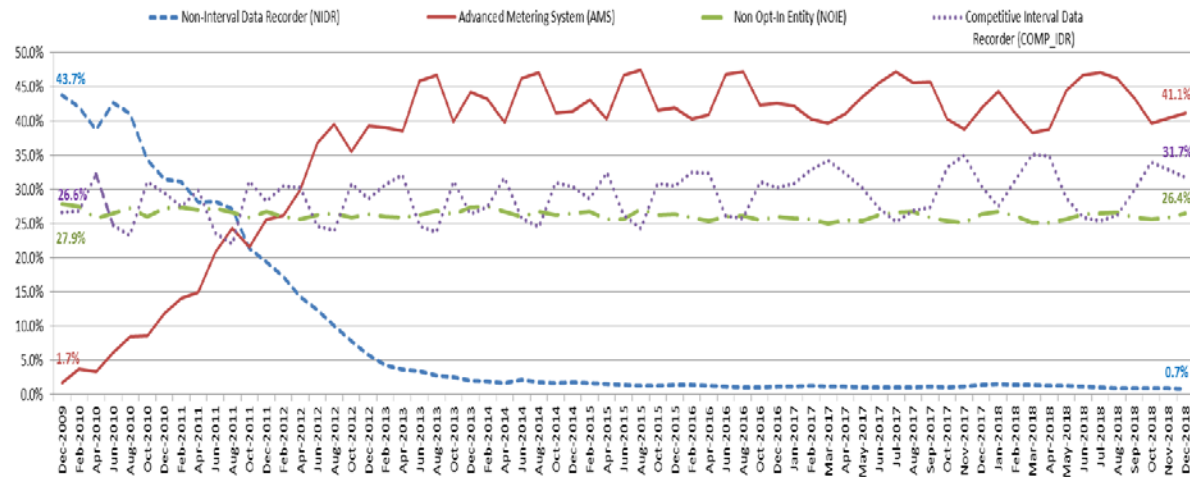
Percent Actual/Percent Interval Data Recorder (IDR)



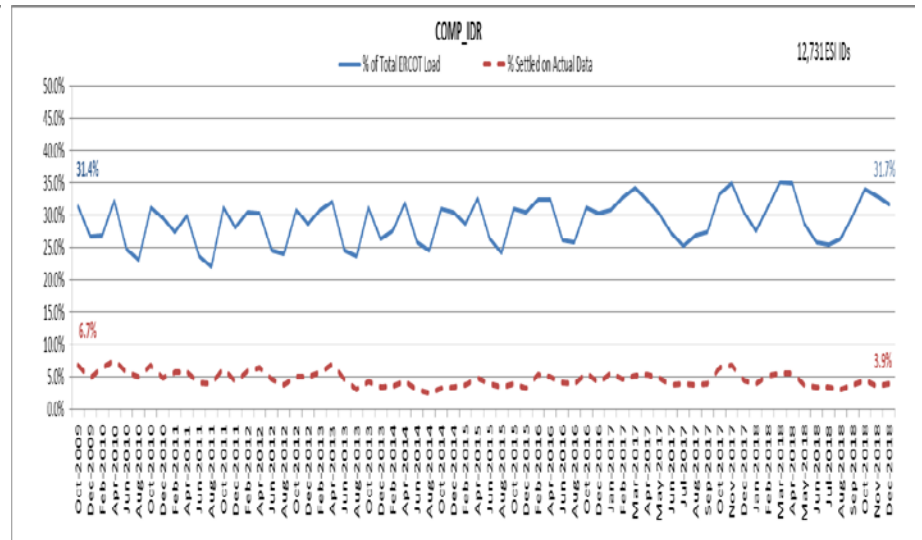
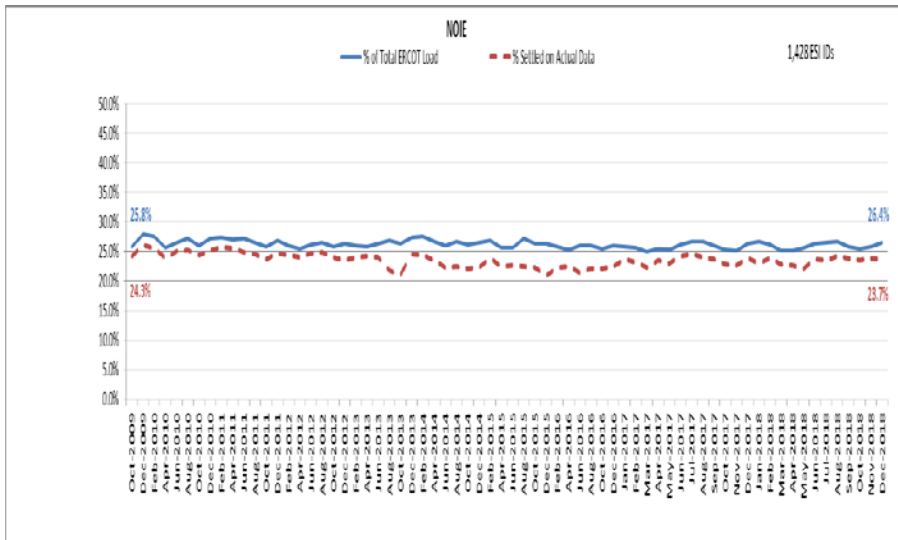
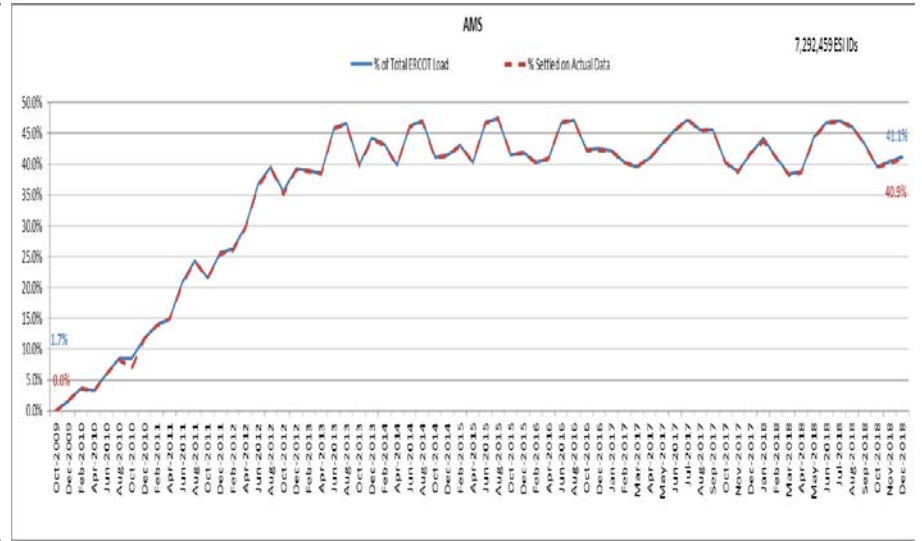
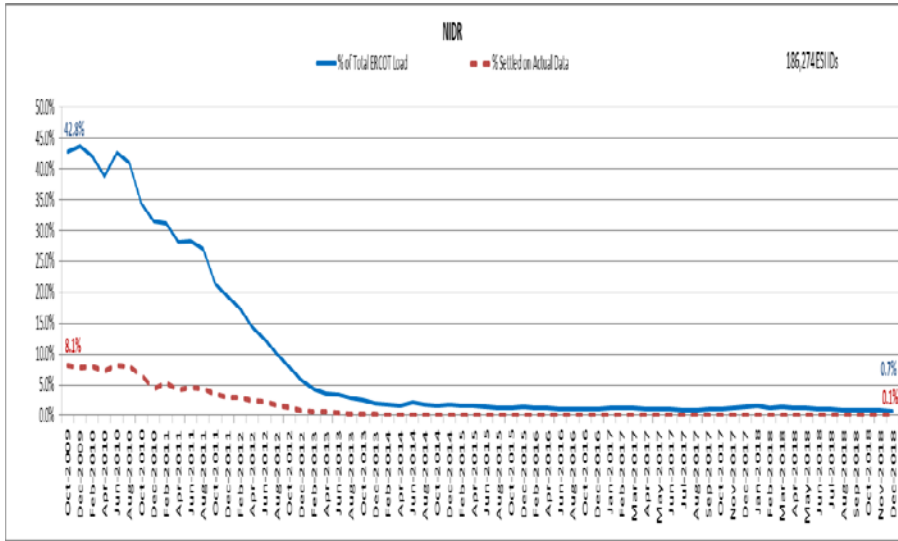
December 2018: At month end, settling 7.2M ESIIDs using Advanced Meter data.

December 2018: 99.3% of the load in ERCOT is settled with 15-min interval data (AMS, Competitive IDR, and NOIE IDR).

Percent of Load by Meter Type



# ERCOT Wide Load Volumes by Meter Type – INITIAL Settlement – December 2018

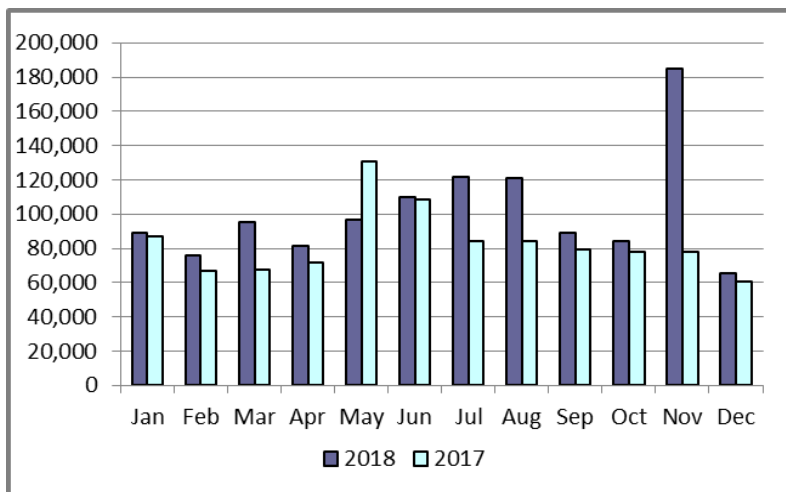


## Retail Transaction Volumes – Summary – December 2018

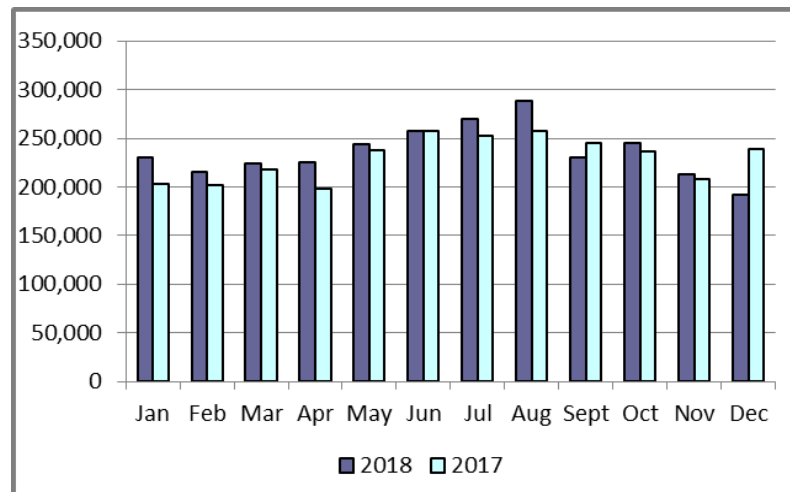
Transaction Type	Year-To-Date		Transactions Received	
	December 2018	December 2017	December 2018	December 2017
Switches	1,214,662	997,452	65,380	60,560
Acquisition	0	0	0	0
Move - Ins	2,836,671	2,753,368	192,182	238,340
Move - Outs	1,362,069	1,422,322	92,240	144,987
Continuous Service Agreements (CSA)	635,614	497,811	44,361	47,725
Mass Transitions	9,034	0	0	0
<b>Total</b>	<b>6,058,050</b>	<b>5,670,953</b>	<b>394,163</b>	<b>491,612</b>

# Retail Transaction Volumes – Summary – December 2018

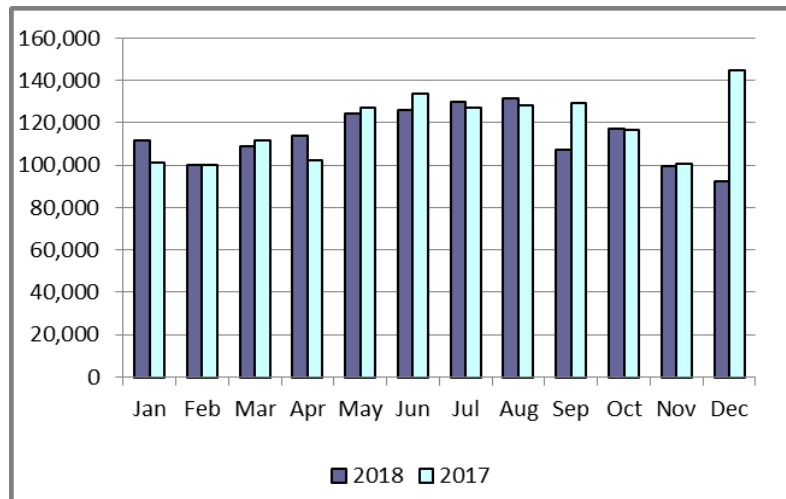
## Switches/Acquisitions



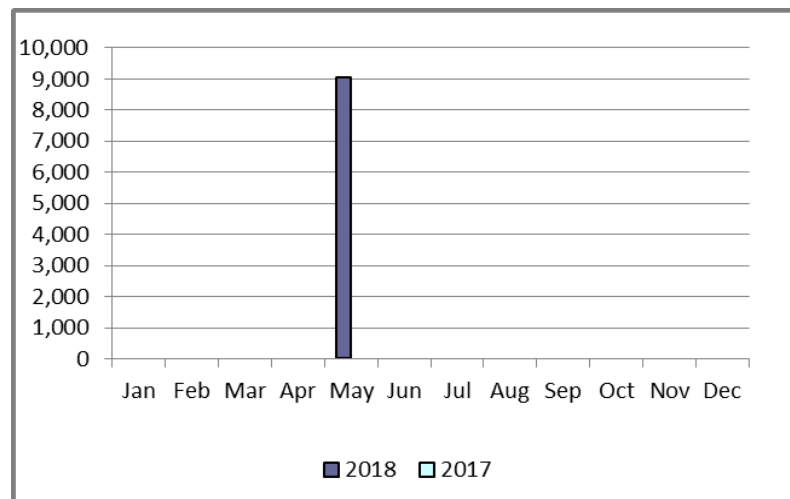
## Move-Ins



## Move-Outs



## Mass Transition



# Projects Report

# ERCOT Portfolio Stoplight Report – December 2018

Impact Metric Tolerances	2018 Project Funding	\$ 20,000,000	2018 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 = 80)		\$ 20,066,214
	Projects Not Yet Started (Count = 0)		\$ -
	Projects Completed (Count = 80)		\$ 3,958,333
	<b>TOTAL</b>		<b>\$ 24,024,547</b>

Project Number	Projects in Initiation Phase (Count = 1)
NPRR901	Switchable Generation Resource Status Code

## 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

Project Number	Projects in Planning Phase (Count = 11)	Phase Start	Baseline Phase Finish	Approved Phase Finish	Scheduled Go-Live Date	Scheduled Phase Finish	Schedule Health		Budget Health	
295-00	Forward Looking Operations Tools (FLOAT) Program Control	10/17/2018	4/17/2019	4/17/2019	TBD	4/17/2019	Green	0%	Green	35%
134-02	Privileged Account Management (PAM) Phase 2	8/8/2018	12/19/2018	8/20/2019	TBD	8/20/2019	Green	0%	Green	0%
209-04	GridGeo MMAP Assessment	10/17/2018	2/27/2019	2/27/2019	TBD	2/27/2019	Green	0%	Green	-2%
286-01	Java Platform Assessment	6/20/2018	11/21/2018	3/26/2019	TBD	3/26/2019	Green	0%	Green	-1%
288-00	Retail Portfolio Refresh (RPR) Program Control	9/5/2018	3/27/2019	3/27/2019	TBD	3/27/2019	Green	0%	Green	23%
288-01	EDI Map and Translator Replacement	8/29/2018	2/27/2019	2/27/2019	TBD	2/27/2019	Green	0%	Green	0%
293-01	Governance, Risk and Compliance (GRC) Replacement Tool	11/14/2018	1/30/2019	1/30/2019	TBD	1/30/2019	Green	0%	Green	21%
NPRR817	Create a Panhandle Hub	11/14/2018	12/12/2018	12/12/2018	TBD	1/15/2019	Red	-121%	Green	1%
NPRR847	Exceptional Fuel Cost Included in the Mitigated Offer Cap	11/14/2018	12/12/2018	12/12/2018	TBD	1/15/2019	Red	-121%	Green	See NPRR817
NPRR865	Publish RTM Shift Factors for Hubs, Load Zones, and DC Ties	1/9/2019	1/29/2019	1/29/2019	TBD	1/29/2019	Green	0%	Green	30%
NPRR880	Publish Real-Time Market Shift Factors for Private Use Network Settlement Points	1/9/2019	1/29/2019	1/29/2019	TBD	1/29/2019	Green	0%	Green	See NPRR865



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Project Number	Projects in Execution Phase (Count = 26)	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	3/27/2019	3/27/2019	3/27/2019		0%		0%
170-06	ECAP - ECMS Implementation Phase 1	4/25/2018	11/30/2018	1/14/2019	1/14/2019	3/31/2019		0%		0%
173-02	ERCOT Flight Certification Website	11/15/2017	2/28/2019	6/4/2019	6/4/2019	7/31/2019		0%		2%
183-01	CMM Tech Refresh	3/15/2017	5/19/2018	6/15/2019	6/15/2019	9/30/2019		0%	NA	See 2015 CMM NPRRs
196-01	GINR Project Status Application Replacement	12/21/2016	9/14/2017	2/28/2019	2/28/2019	4/2/2019		0%	2	-13%
209-02	Weather Imaging and Line Observation (WILO)	5/30/2018	2/1/2019	4/5/2019	4/5/2019	5/28/2019		0%		2%
209-03	Study Network (STNET) Integration	11/28/2018	8/28/2019	8/28/2019	8/28/2019	9/25/2019		0%		3%
228-01	Enterprise Database Upgrade	8/8/2018	1/29/2020	1/29/2020	1/29/2020	1/29/2020		0%		16%
238-01	Application Authentication Tech Refresh	9/6/2017	3/19/2018	5/31/2019	5/31/2019	7/30/2019		0%		2%
239-01	Identity and Access Management	5/9/2018	12/15/2018	6/19/2019	6/19/2019	7/30/2019		0%		0%
245-01	2017 EPS Metering Enhancements	6/27/2018	8/9/2019	8/9/2019	8/9/2019	9/25/2019		0%		4%
257-01	Security Constrained Optimal Powerflow in Study Network Analysis	12/6/2017	10/25/2018	11/15/2018	3/15/2019	3/28/2019	1	-34%		7%
263-01	Market Simulator	4/11/2018	12/13/2018	6/21/2019	6/21/2019	7/30/2019		0%		2%
265-01	Real-Time Assessment Continuity	1/31/2018	12/13/2018	2/8/2019	2/8/2019	2/28/2019		0%		-1%
Various	2015 CMM NPRRs									0%
NPRR519	Exemption of ERS-Only QSEs from Collateral and Capitalization Requirements	3/15/2017	5/19/2018	6/15/2019	6/15/2019	9/30/2019		0%		See 2015 CMM NPRRs
NPRR620	Collateral Requirements for Counter-Parties with No Load or Generation	3/15/2017	5/19/2018	6/15/2019	6/15/2019	9/30/2019		0%	NA	See 2015 CMM NPRRs
NPRR660	Remove CRR State Change Adder	3/15/2017	5/19/2018	6/15/2019	6/15/2019	9/30/2019		0%	NA	See 2015 CMM NPRRs
NPRR741	Clarifications to TPE and EAL Credit Exposure Calculations	3/15/2017	5/19/2018	6/15/2019	6/15/2019	9/30/2019		0%	NA	See 2015 CMM NPRRs
NPRR749	Option Cost for Outstanding CRRs	8/8/2018	12/13/2018	2/7/2019	2/7/2019	4/23/2019		0%	NA	See NPRR833
NPRR755	Data Agent-Only QSE Registration	3/15/2017	5/19/2018	6/15/2019	6/15/2019	9/30/2019		0%	NA	See 2015 CMM NPRRs
NPRR821	Elimination of the CRR Deration Process	12/5/2018	4/4/2019	4/4/2019	4/4/2019	5/7/2019		0%		0%
NPRR833	Modify PTP Obligation Bid Clearing Change	8/8/2018	12/13/2018	2/7/2019	2/7/2019	5/21/2019		0%		-1%
NPRR842	Study Area Load Information	10/17/2018	2/8/2019	2/8/2019	2/8/2019	3/27/2019		0%		-4%
NPRR845	RMR Process and Agreement Revisions	12/19/2018	4/4/2019	4/4/2019	4/4/2019	5/7/2019		0%		3%
SCR781	RARF Replacement	12/20/2017	4/25/2018	10/31/2019	10/31/2019	10/31/2019		0%		5%



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Project Number	Expedited Projects in Execution (Count = 19)									
Project Number	Projects in Stabilization (Count = 17)	Execution Phase Start	Baseline Go-Live Target	Approved Go-Live Target	Actual Go-Live Date	Scheduled Execution Phase Finish	Schedule Health	Budget Health		
NPRR648	Remove References to Flowgate Rights	3/15/2017	5/19/2018	5/19/2018	2/6/2018	9/30/2019	23%	NA	See 2015 CMM NPRRs	
NPRR683	Revision to Available Credit Limit Calculation	3/15/2017	5/19/2018	5/19/2018	2/6/2018	9/30/2019	23%	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	2/6/2018	9/30/2019	23%	NA	See 2015 CMM NPRRs	
NPRR760	Calculation of Exposure Variables For Days With No Activity	3/15/2017	5/19/2018	5/19/2018	2/6/2018	9/30/2019	23%	NA	See 2015 CMM NPRRs	
NPRR800	Revisions to Credit Exposure Calculations to Use Electricity Futures Market Prices	3/15/2017	5/19/2018	5/19/2018	2/6/2018	9/30/2019	23%	NA	See 2015 CMM NPRRs	
NPRR843	Short-Term System Adequacy and AS Offer Disclosure Reports Additions	7/18/2018	10/25/2018	12/13/2018	12/13/2018	1/16/2019	0%		14%	
SCR777	Bilateral CRR Interface Enhancement	10/26/2016	10/2/2017	11/19/2018	11/19/2018	2/27/2019	0%	NA	See #181-01	
181-01	CRR Framework Upgrade	10/26/2016	10/2/2017	11/19/2018	11/19/2018	2/27/2019	0%		0%	
193-01	PMU Tool Evaluation and Implementation	12/13/2017	8/9/2018	8/5/2018	8/5/2018	3/20/2019	0%		14%	
210-01	REC Technology Refresh	8/30/2017	3/18/2018	12/13/2018	12/13/2018	1/16/2019	0%		3%	
229-01	IT Change and Configuration Management Phase 2	8/2/2017	6/19/2018	2/8/2019	12/16/2018	3/25/2019	9%		1%	
243-01	Training Facility	12/6/2017	12/12/2018	12/12/2018	11/6/2018	2/4/2019	9%		0%	
244-01	Corporate Wireless	11/29/2017	3/28/2018	12/5/2018	12/5/2018	5/23/2019	0%		0%	
261-01	Generic Transmission Constraint Calculation	3/7/2018	12/13/2018	12/13/2018	12/13/2018	1/23/2019	0%		13%	
266-01	Remote Email Access Enhancement	12/13/2017	3/7/2018	6/6/2018	6/19/2018	3/29/2019	2	-7%	2	-29%
279-01	Cyber Security Project #24	6/27/2018	10/26/2018	11/30/2018	11/30/2018	2/27/2019	0%		32%	
282-01	Synchronous Condenser Outage Modeling	6/6/2018	10/25/2018	10/25/2018	10/25/2018	3/5/2019	0%		0%	
Project Number	Projects On Hold (Count = 6)	Forecast Start Date	Baseline Phase Finish	Approved Go-Live Target	Scheduled Go-Live Date	Scheduled Phase Finish	Schedule Health	Budget Health		
SCR789	Update NMMS Topology Processor to PSSE 34 Capability									
246-01	iTest Data Refresh									
269-01	Document Repository Redesign and Governance Implementation - Phase 1									
287-01	Security Constrained Unit Commitment (SCUC)									
291-01	IT Asset Recovery									
292-01	Additional Branch Limit for Relays									



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Project Number	Projects Completed (Count = 35)	Baseline Execution Phase Start	Baseline Go-Live Target	Approved Go-Live Target	Actual Go-Live Date	Actual 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	12/13/2017		2%		0%
198-02	Reactive Power Coordination PoC	9/6/2017	6/16/2018	8/15/2018	8/22/2018	8/22/2018		-2%		54%
209-01	Multi Station Breaker to Breaker One Lines	2/8/2017	3/9/2018	5/3/2018	5/30/2018	9/19/2018	2	-6%	2	-6%
224-01	TelAlert Replacement	4/5/2017	6/27/2017	8/4/2017	8/4/2017	5/9/2018		0%		5%
230-01	SAS Technical Architecture Redesign	3/1/2017	12/13/2017	12/13/2017	12/13/2017	6/27/2018		0%		2%
234-01	Reporting Solution Resiliency (RSR)	4/5/2017	8/23/2017	11/27/2017	11/27/2017	1/10/2018		0%		8%
240-01	EDI Translator and Mapping Replacement Assessment	4/19/2017	9/27/2017	2/28/2018	TBD	3/7/2018		-2%		19%
241-01	AREA - Generation	10/11/2017	3/30/2018	8/9/2018	8/9/2018	9/5/2018		0%		-3%
242-01	Portfolio Reporting Assessment	11/8/2017	12/19/2018	12/19/2018	TBD	12/19/2018		0%		15%
249-01	Secondary Wind Forecasting Service	8/30/2017	2/28/2018	8/9/2018	8/9/2018	9/5/2018		0%		12%
253-01	CIP Recovery Plan Project - Planning Phase 1	1/31/2018	8/29/2018	8/29/2018	9/5/2018	9/5/2018		-3%		1%
254-01	Retail Windows Upgrade	10/11/2017	12/18/2017	12/18/2017	1/22/2018	2/7/2018	1	-51%		65%
255-01	Settlements Architecture Enhancements	10/25/2017	1/11/2018	1/11/2018	1/19/2018	2/14/2018	1	-10%		53%
258-01	WD Kainos SMART Automation Testing Tool	4/11/2018	6/4/2018	6/4/2018	6/4/2018	7/18/2018		0%		27%
259-01	DC SCADA and Metering Upgrade	10/25/2017	1/17/2018	7/25/2018	7/25/2018	10/17/2018		0%	2	-5%
260-01	Information Governance Assessment	10/18/2017	5/30/2018	9/19/2018	TBD	9/4/2018		4%		8%
271-01	Issue Tracking and Resolution Tool Assessment	12/13/2017	4/25/2018	4/25/2018	TBD	5/2/2018	1	-5%		-1%
272-01	Operator Training Simulator Black Start GE Effort	12/6/2017	4/25/2018	4/25/2018	4/27/2018	5/16/2018		-1%		19%
274-01	Average Mid-Term Load Forecast	3/7/2018	5/31/2018	5/31/2018	5/31/2018	6/27/2018		0%		49%
280-01	Quest Software Portfolio Transition	4/4/2018	6/27/2018	11/7/2018	11/14/2018	11/14/2018		-3%		0%
NPRR768	Revisions to Real-Time On-Line Reliability Deployment Price Adder Categories	3/7/2018	5/31/2018	5/31/2018	5/31/2018	6/27/2018		0%	2	-9%
NPRR776	Voltage Set Point Communication	9/20/2017	3/19/2018	4/5/2018	4/5/2018	9/5/2018		0%	2	-6%
NPRR778	Modifications to Date Change and Cancellation Evaluation Window	7/19/2017	10/29/2017	12/11/2017	12/11/2017	1/31/2018		0%		23%
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%		20%
NPRR808	Three Year CRR Auction	8/23/2017	9/18/2017	9/18/2017	9/1/2017	1/31/2018		65%		68%
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
NPRR815	Revise the Limitation of Load Resources Providing Responsive Reserve (RRS) Service	3/21/2018	5/31/2018	5/31/2018	5/31/2018	8/29/2018		0%		0%
NPRR819	Modification of Non-Price Error Resettlement Thresholds and Resettlement Clean-Ups	5/9/2018	8/9/2018	8/9/2018	8/9/2018	9/5/2018		0%		36%
NPRR830	Revision of 4-Coincident Peak Methodology	12/13/2017	2/6/2018	2/6/2018	2/6/2018	3/7/2018		0%		85%



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Project Number	Projects Completed (Count = 35)	Baseline Execution Phase Start	Baseline Go-Live Target	Approved Go-Live Target	Actual Go-Live Date	Actual Execution Phase Finish	Schedule Health		Budget Health	
NPRR831	Inclusion of Private Use Networks in Load Zone Price Calculations	8/2/2017	11/2/2017	11/2/2017	11/2/2017	2/21/2018		0%		33%
NPRR864	RUC Modifications to Consider Market-Based Solutions	6/20/2018	10/25/2018	10/25/2018	10/25/2018	12/5/2018		0%		18%
OBDRR002	ORDC OBD Revisions for PUCT Project 47199	3/7/2018	5/31/2018	5/31/2018	5/31/2018	6/27/2018		0%		See NPRR768
SCR791	Correction of 60-day SCED GRD Disclosure Report	5/2/2018	8/9/2018	8/9/2018	8/9/2018	9/5/2018		0%		54%
SCR792	Enhance Communications of BAAL Exceedances	2/14/2018	4/5/2018	4/5/2018	4/5/2018	4/25/2018		0%		69%
SCR795	Addition of Intra-Hour Wind Forecast to GTBD Calculation	8/8/2018	10/25/2018	10/25/2018	10/25/2018	12/19/2018		0%	2	-17%
<b>Project Number</b>	<b>Expedited Projects Completed (Count = 44)</b>									
<b>Project Number</b>	<b>2018 Projects Not Yet Started (Count = 0)</b>		<b>Forecast Start Date</b>							