



## ERCOT Monthly Operational Overview (February 2018)

ERCOT Public  
March 15, 2018

# Grid Planning & Operations

## Summary – February 2018

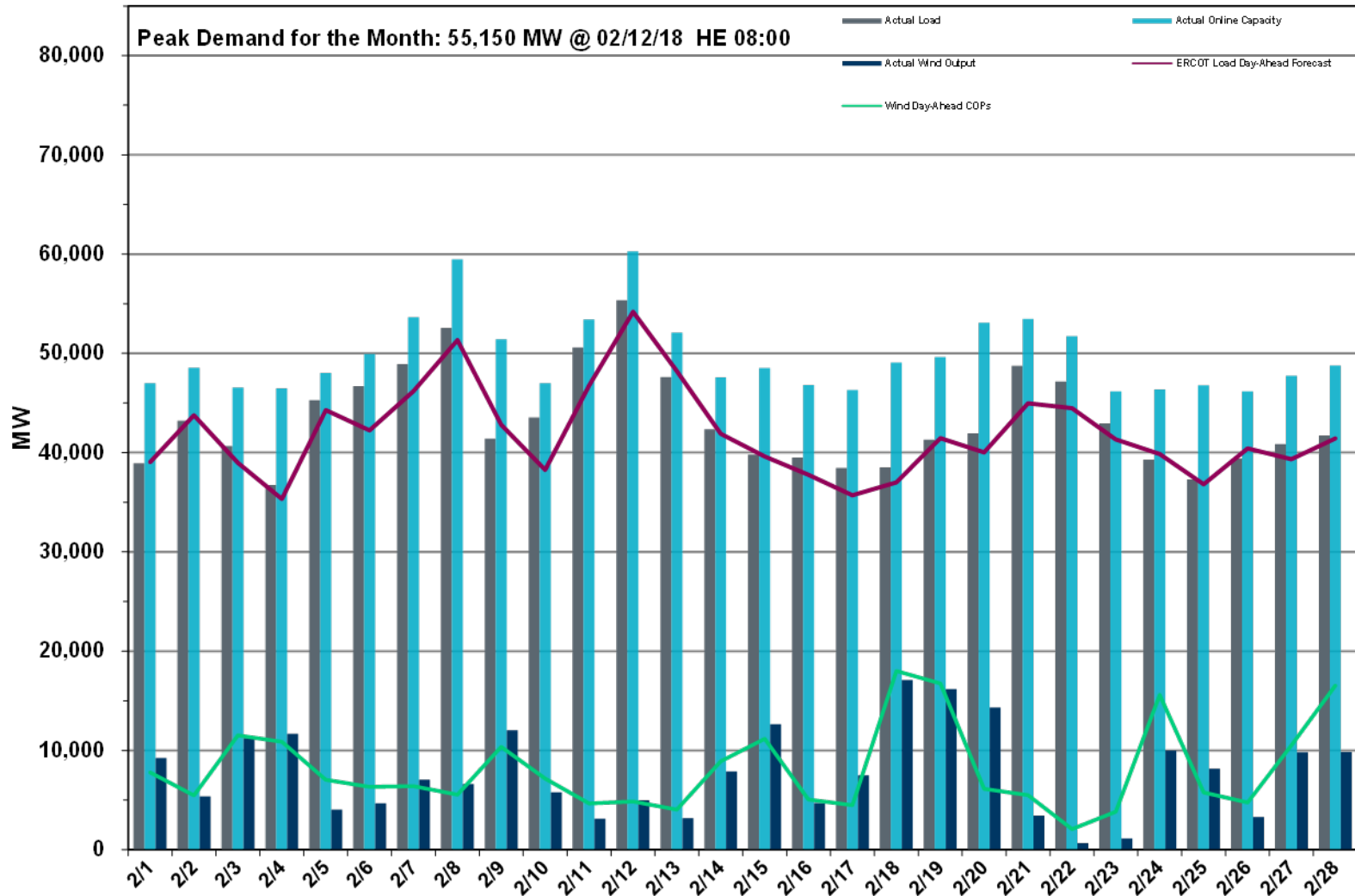
### Operations

- The preliminary Settlements hourly peak demand of 55,150\* MW on February 12 was higher than the day-ahead mid-term load forecast peak of 54,181 MW for same operating hour.
  - The operational instantaneous peak demand was 55,933 MW (telemetry).
- Day-ahead load forecast error for February was 3.66%
- ERCOT issued 1 notification:
  - One Watch issued for Railroad DC Tie due to minimum bandwidth allowance of 15MW

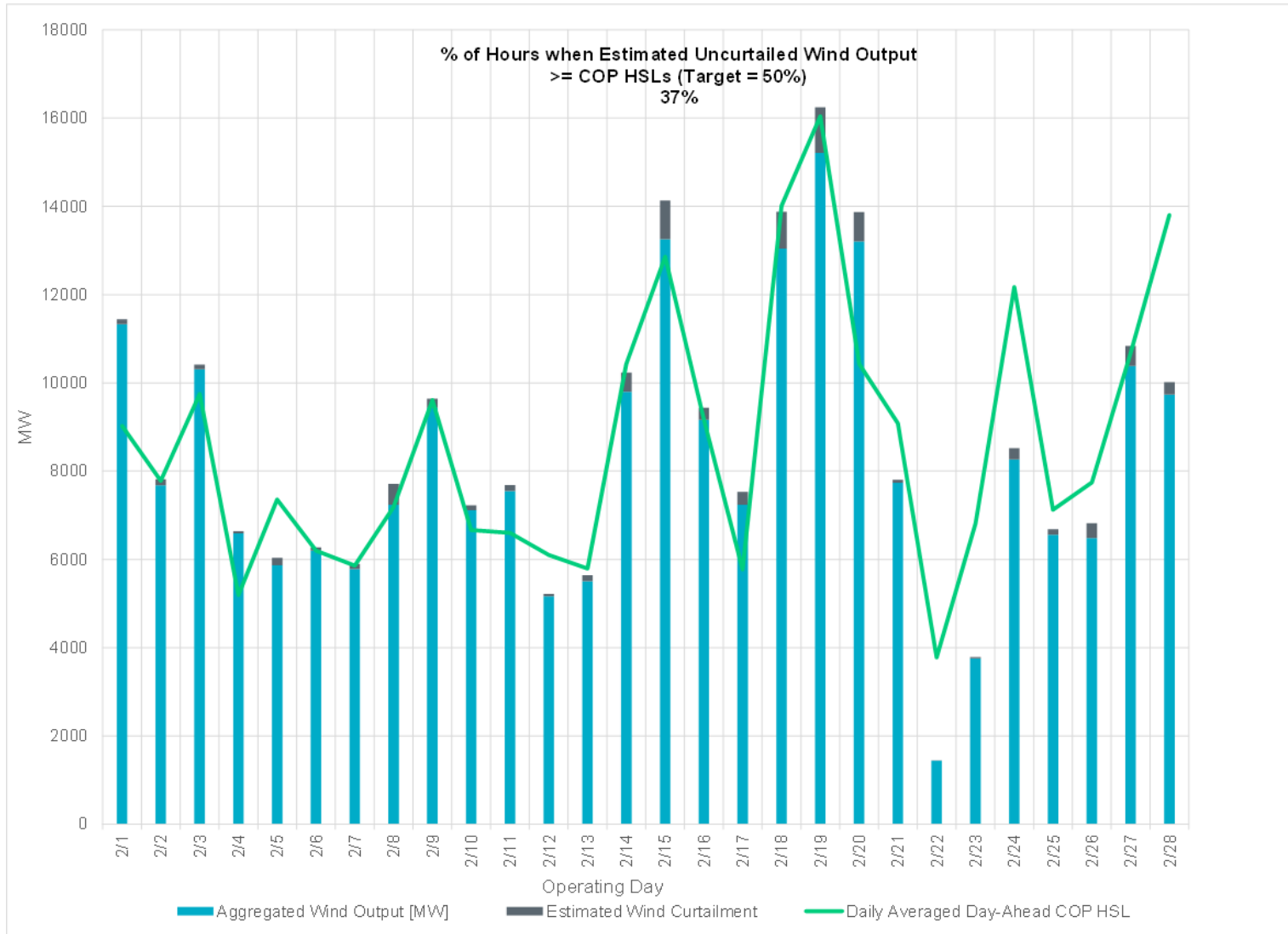
### Planning Activities

- 334 active generation interconnection requests totaling 67,398 MW, including 32,258 MW of wind generation, as of February 28, 2018. One fewer requests and an increase of 471 MW from January 31, 2017.
- 20,890 MW wind capacity in commercial operations as of March 1, 2018.

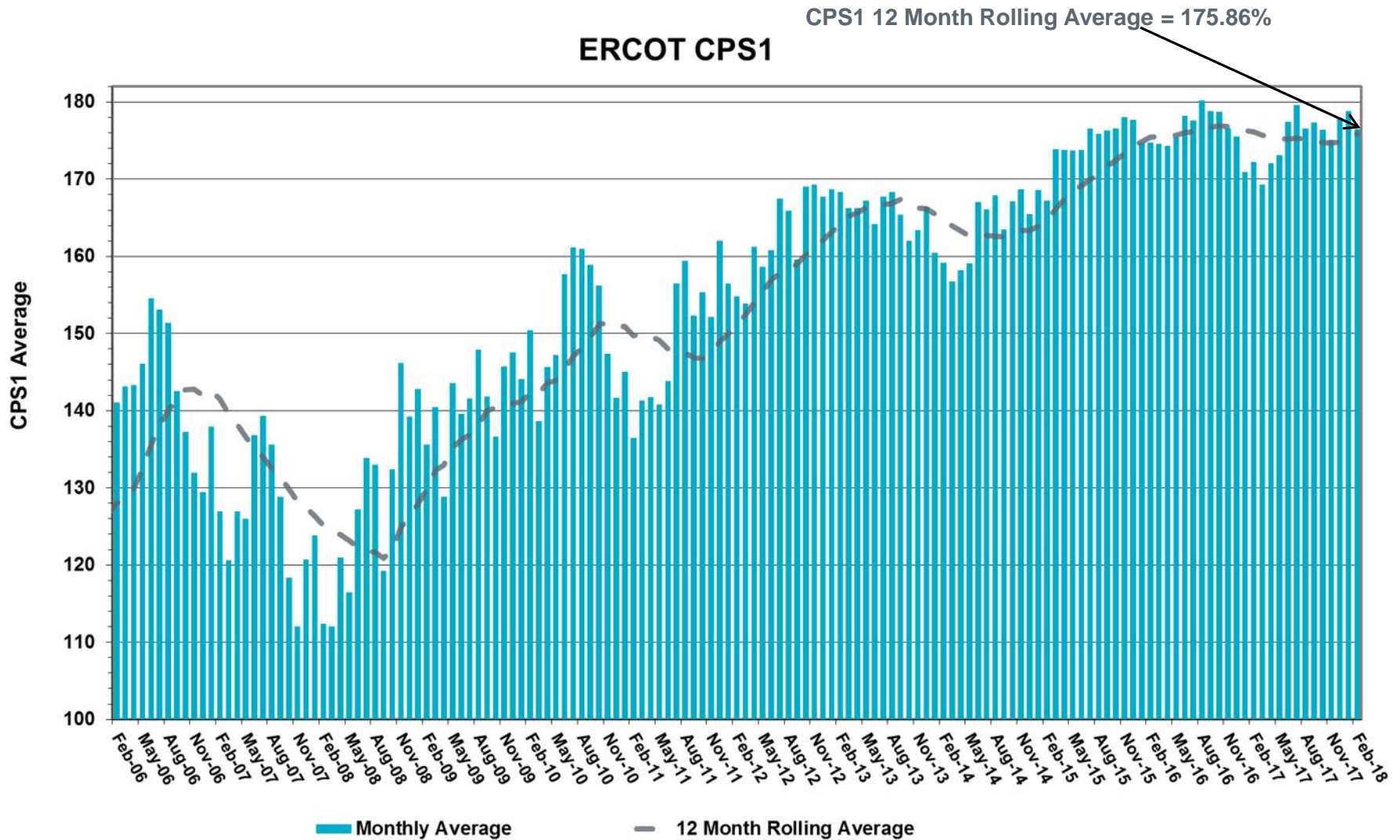
# Daily Peak Demand: Hourly Average Actual vs. Forecast, Wind Day-Ahead COPs & On-Line Capacity at Peak – February 2018



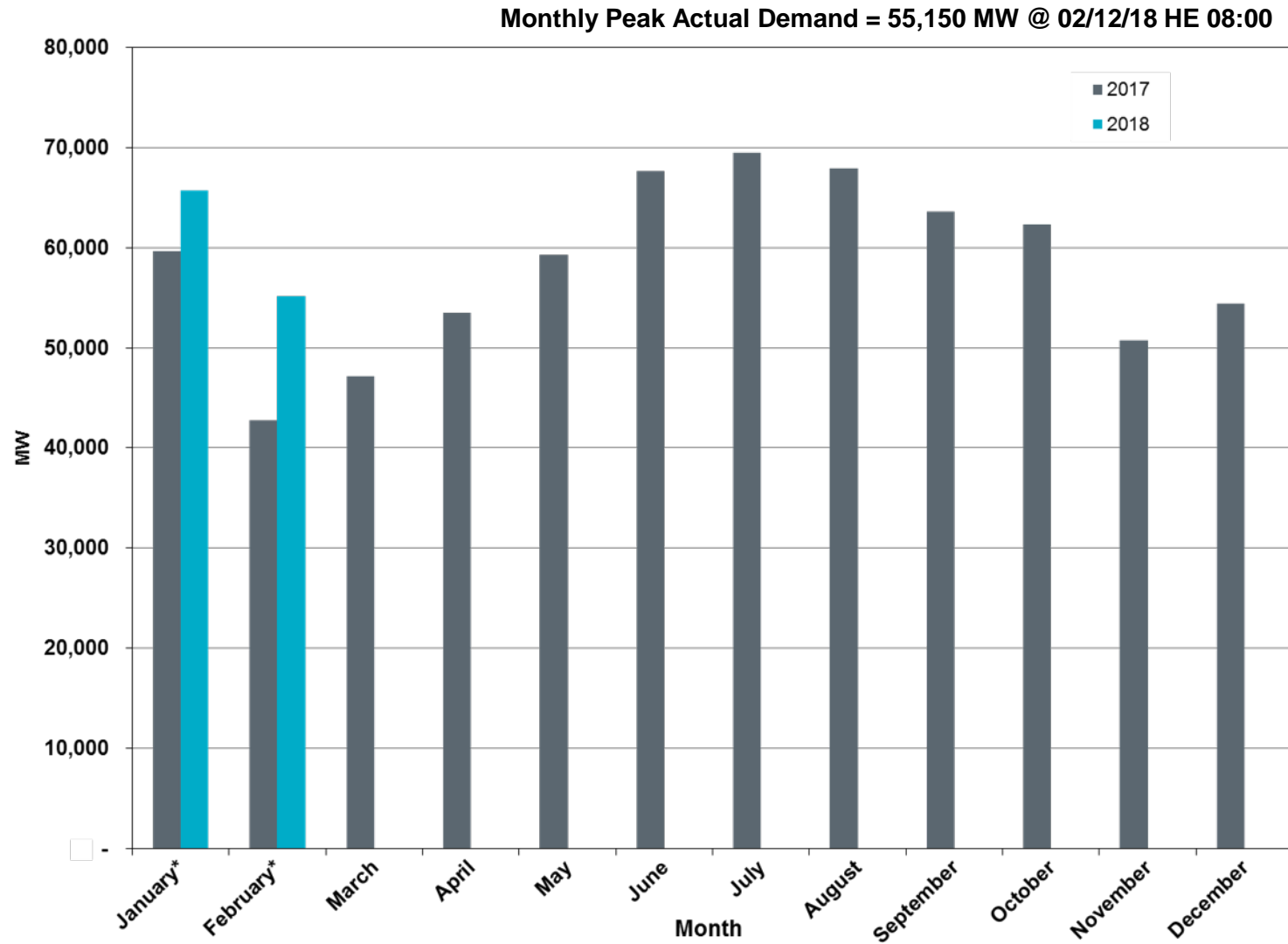
# Actual Wind Output plus Curtailments vs. Wind Day-Ahead COPs for All Hours – February 2018



# ERCOT's CPS1 Monthly Performance – February 2018

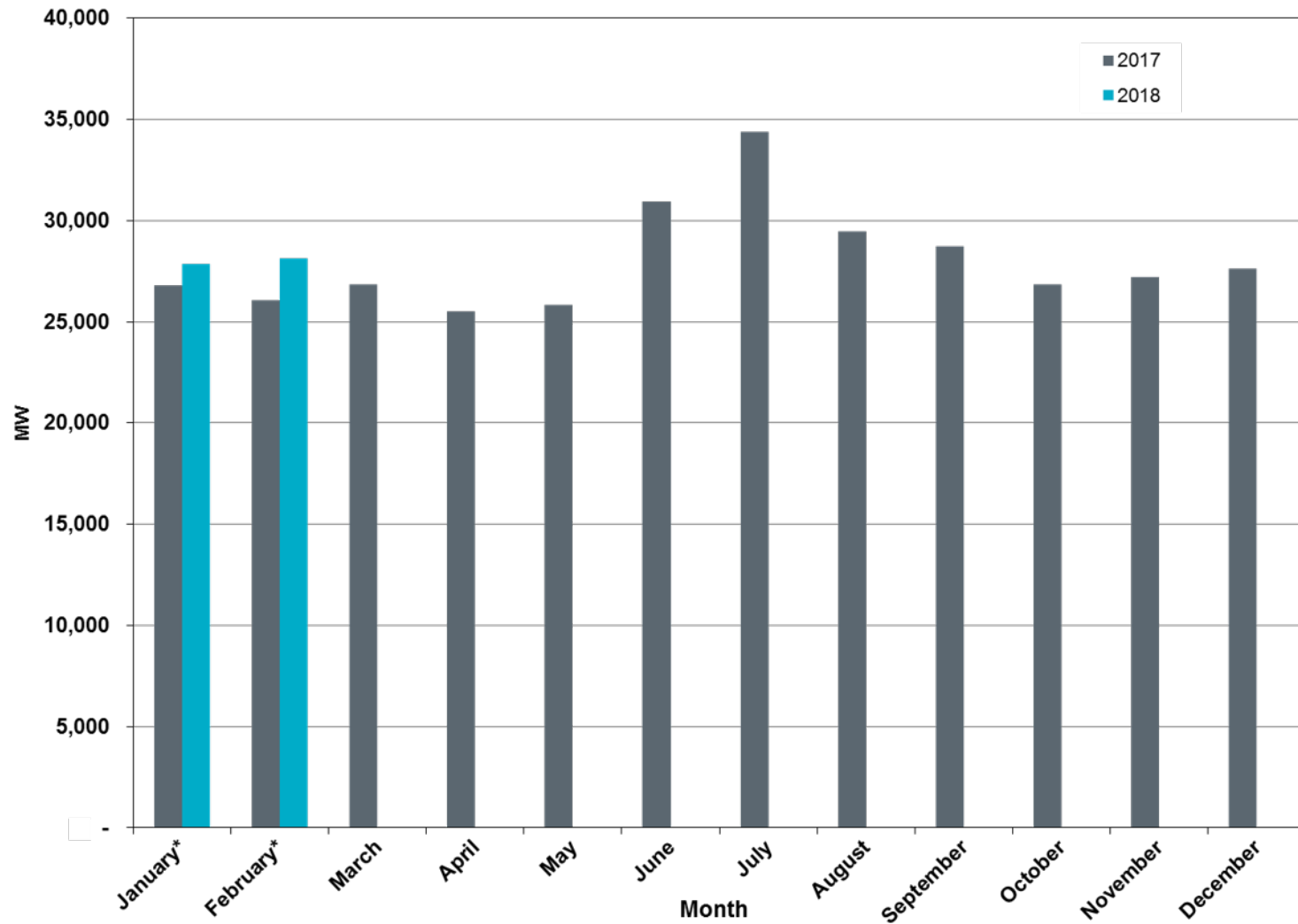


## Monthly Peak Actual Demand – February 2018



\* Preliminary for latest two months of the current year

## Monthly Minimum Actual 15-Minute Demand – February 2018



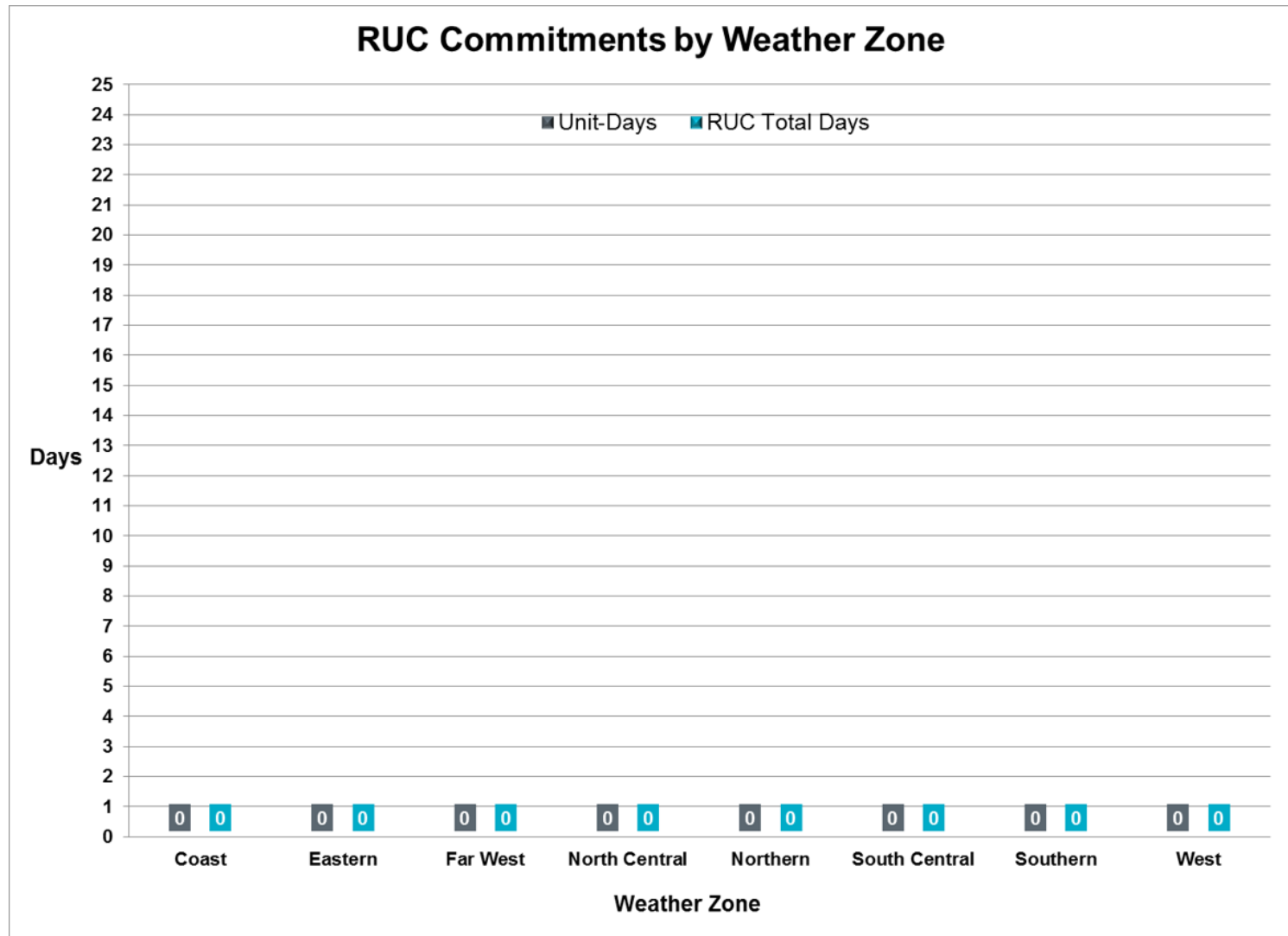
\* Preliminary for latest two months of the current year

## Day-Ahead Load Forecast Performance – February 2018

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

	2015 MAPE	2016 MAPE	2017 MAPE	2018 MAPE	February 2018 MAPE	
<b>Average Annual MAPE</b>	2.86	2.62	2.55	3.52	3.66	
<b>Lowest Monthly MAPE</b>	1.89	1.94	1.69	3.66	<b>Lowest Daily MAPE</b>	0.87 Feb 13
<b>Highest Monthly MAPE</b>	3.81	3.86	4.07	3.37	<b>Highest Daily MAPE</b>	10.34 Feb 21

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



## Generic Transmission Constraints (GTCs) – February 2018

GTCs	Feb-17 Days GTCs	Dec-17 Days GTCs	Jan-18 Days GTCs	Feb-18 Days GTCs	Last 12 Months Total Days (Mar 17 – Feb 18)
North – Houston	0	0	0	0	7
Valley Import	1	1	5	0	14
Panhandle	21	22	24	27	275
Red Tap	0	0	0	0	0
North Edinburg – Lobo	-	0	0	0	1
Nelson Sharpe – Rio Hondo	-	11	11	13	35
East Texas	-	0	0	0	16

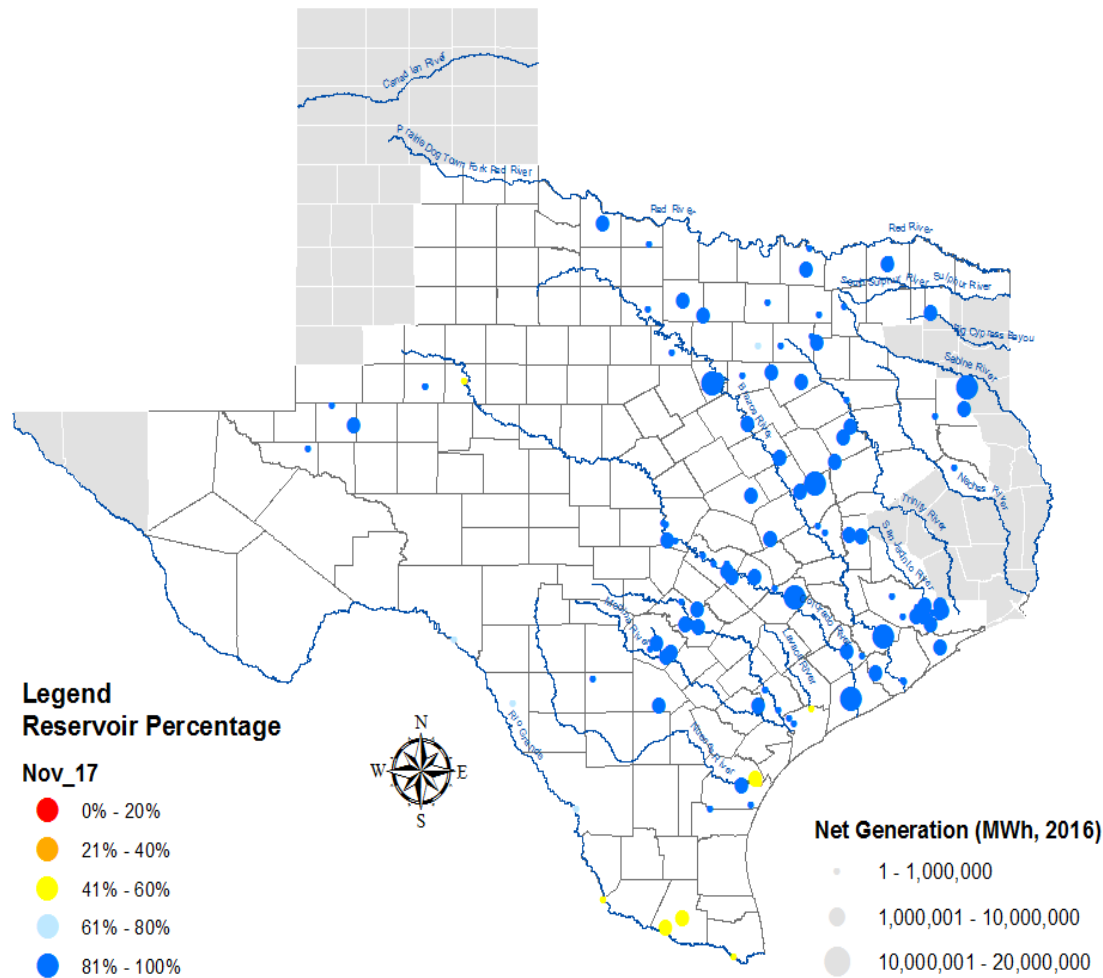
**GTC:** A transmission flow limit more constraining than a Transmission Element's normal limit established to constrain flow between geographic areas of the ERCOT Transmission System that is used to enforce stability and voltage constraints that cannot be modeled directly in ERCOT's transmission security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

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

## Advisories and Watches – February 2018

- One Watch issued for Railroad DC Tie due to minimum bandwidth allowance of 15 MW
  - Issued 2/28

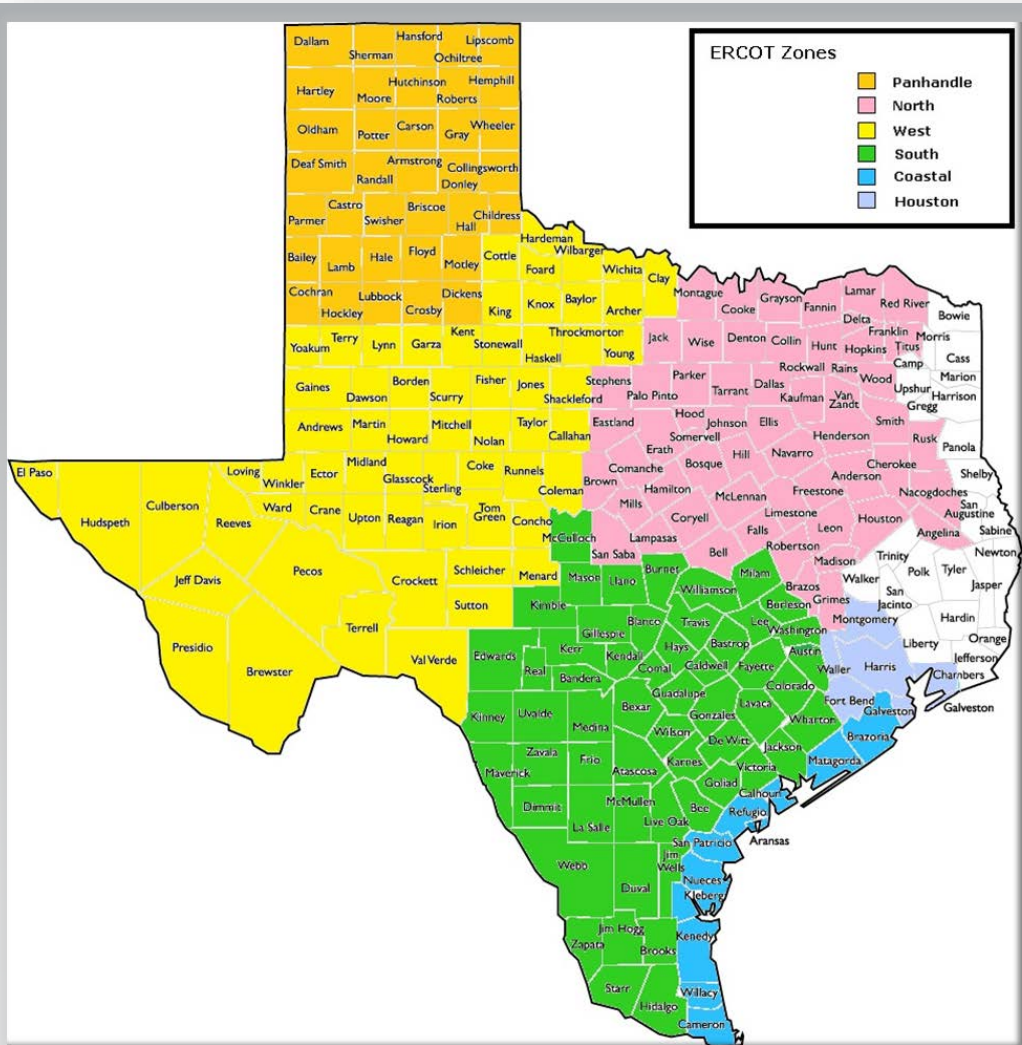
## Lake Levels Update – March 1, 2018



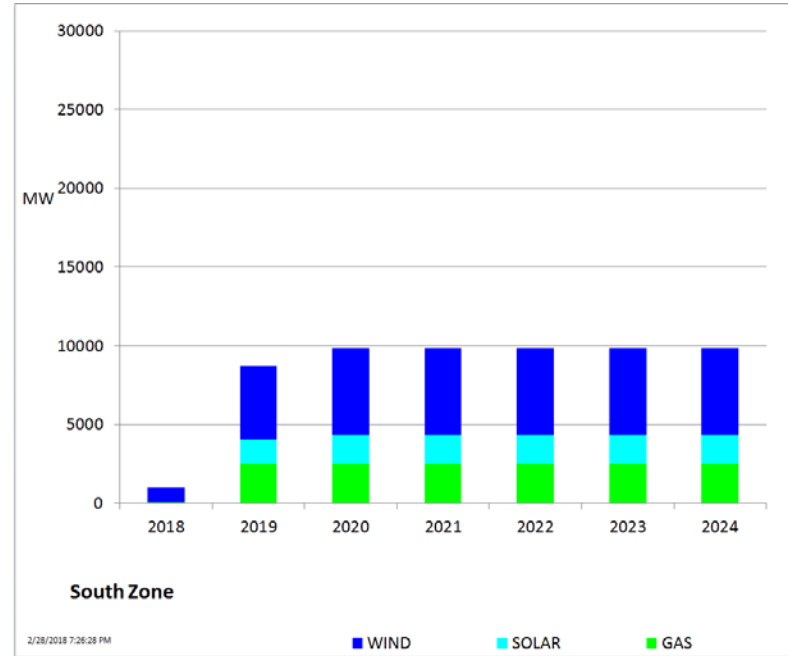
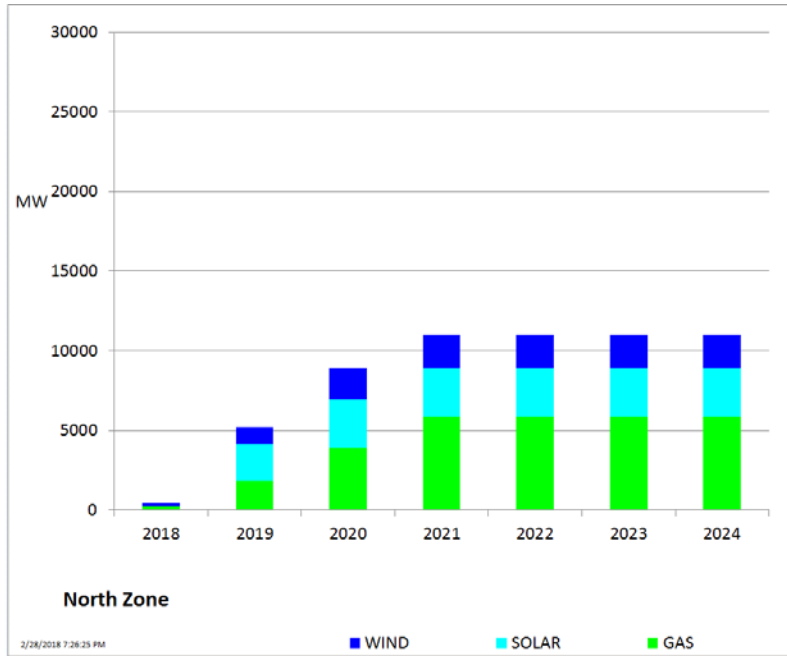
## Planning Summary – February 2018

- ERCOT is currently tracking 334 active generation interconnection requests totaling 67,398 MW. This includes 32,258 MW of wind generation.
- ERCOT is currently reviewing proposed transmission improvements with a total cost of \$903.5 million.
- Transmission Projects endorsed in 2018 total \$43 million.
- All projects (in engineering, routing, licensing, and construction) total approximately \$7.07 billion (as of October 15, 2017).
- Transmission Projects energized in 2017 total about \$805.4 million (as of October 15, 2017).

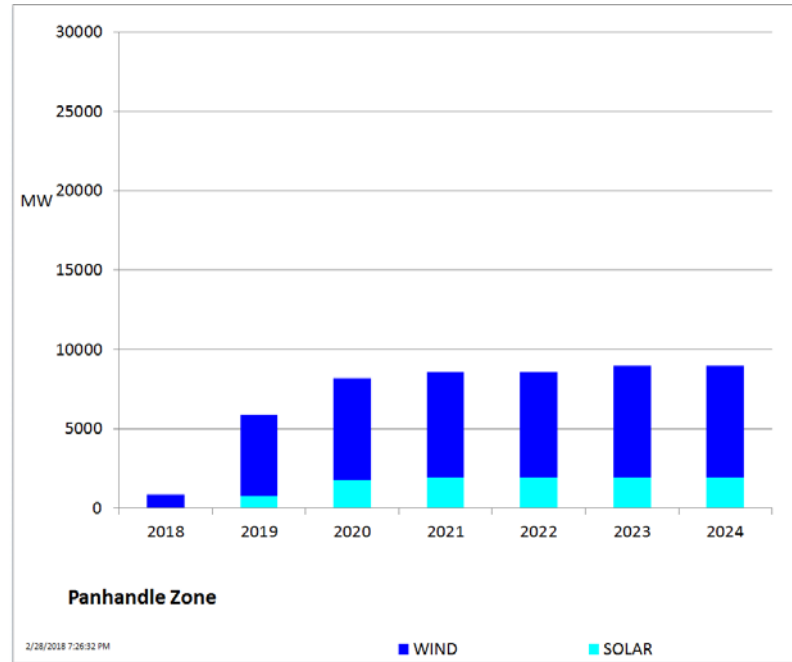
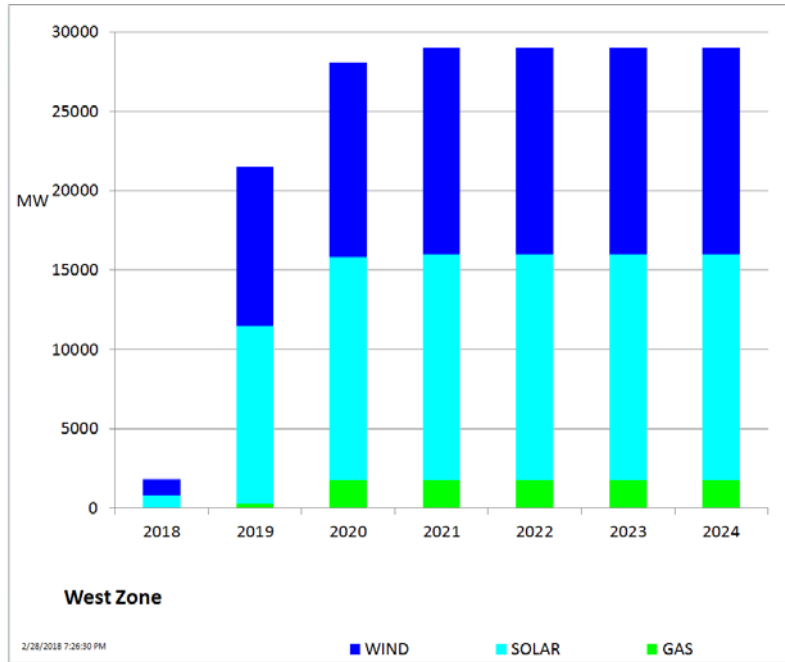
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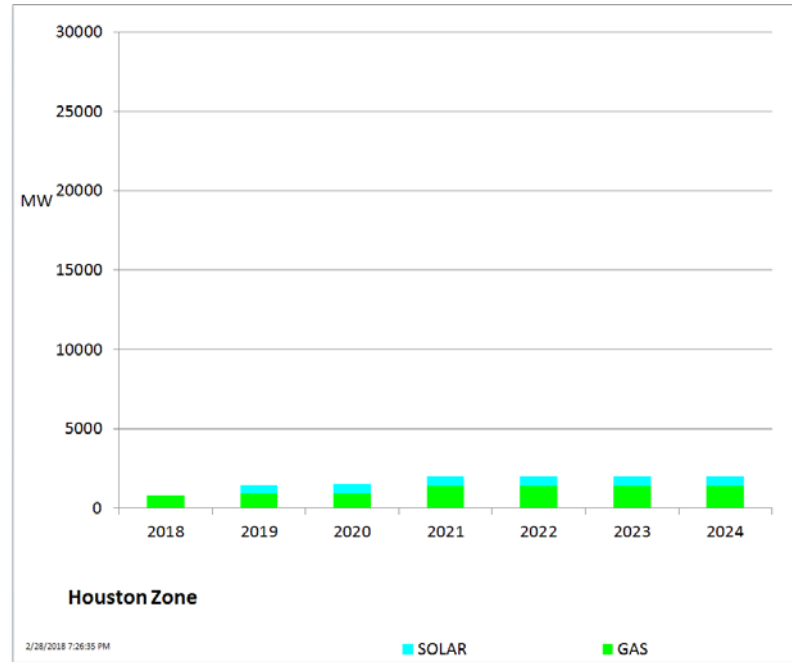
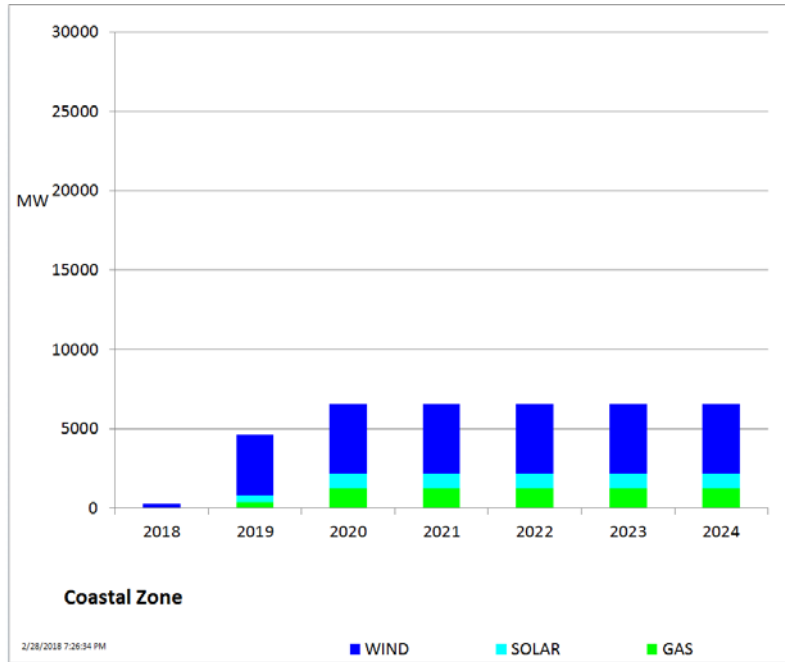
# Cumulative MW Capacity of Interconnection Requests by Zone – February 2018



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

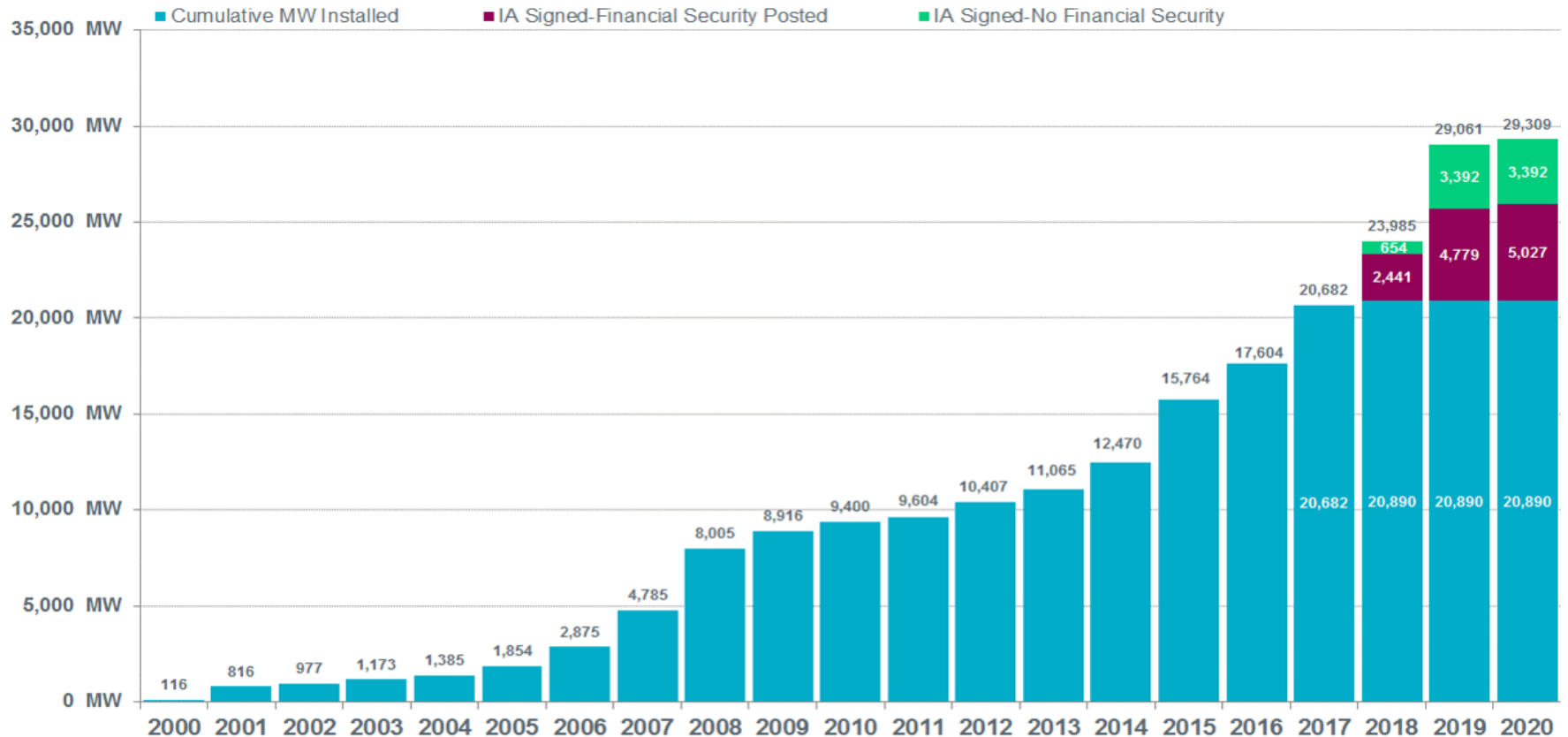


# Cumulative MW Capacity of Interconnection Requests by Zone – February 2018



# Wind Generation – February 2018

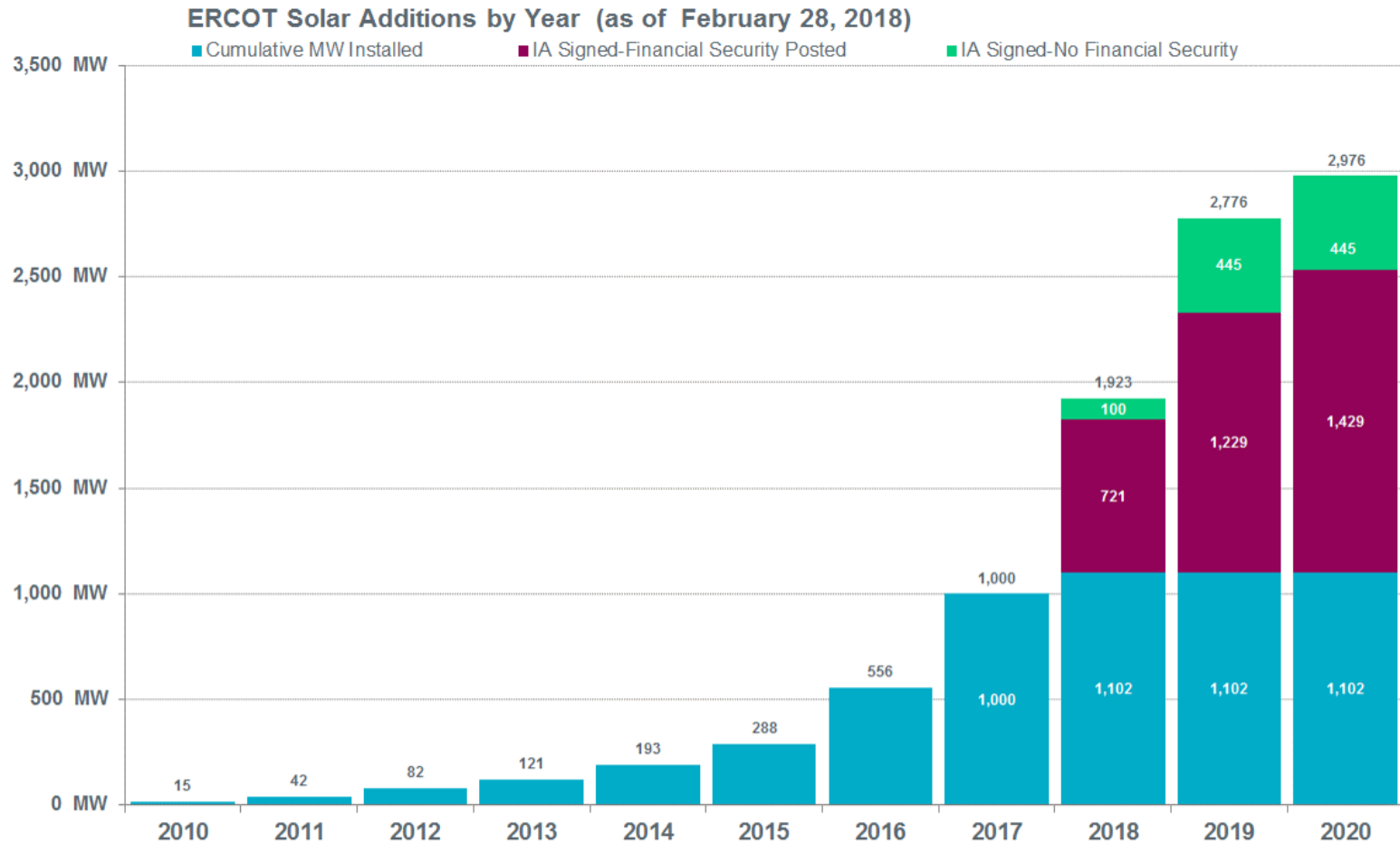
ERCOT Wind Additions by Year (as of February 28, 2018)



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 for the current year account for changes reported by the facility owners during the reporting month, and will be reflected in subsequent years' totals.
- Installed capacities include only wind facilities that have registered with ERCOT (Those larger than one megawatt and supply power to the ERCOT system.)
- This chart reports annual planned units with projected Commercial Operations Dates throughout the calendar year. In contrast, ERCOT's Capacity, Demand and Reserves (CDR) report shows planned capacity projected to be commercially available on or before the start of the Summer and Winter Peak Load seasons.
- Financial security posted for funding interconnection facilities does not include CREZ security deposits, which are refunded to the Interconnecting Entity when an IA is signed.

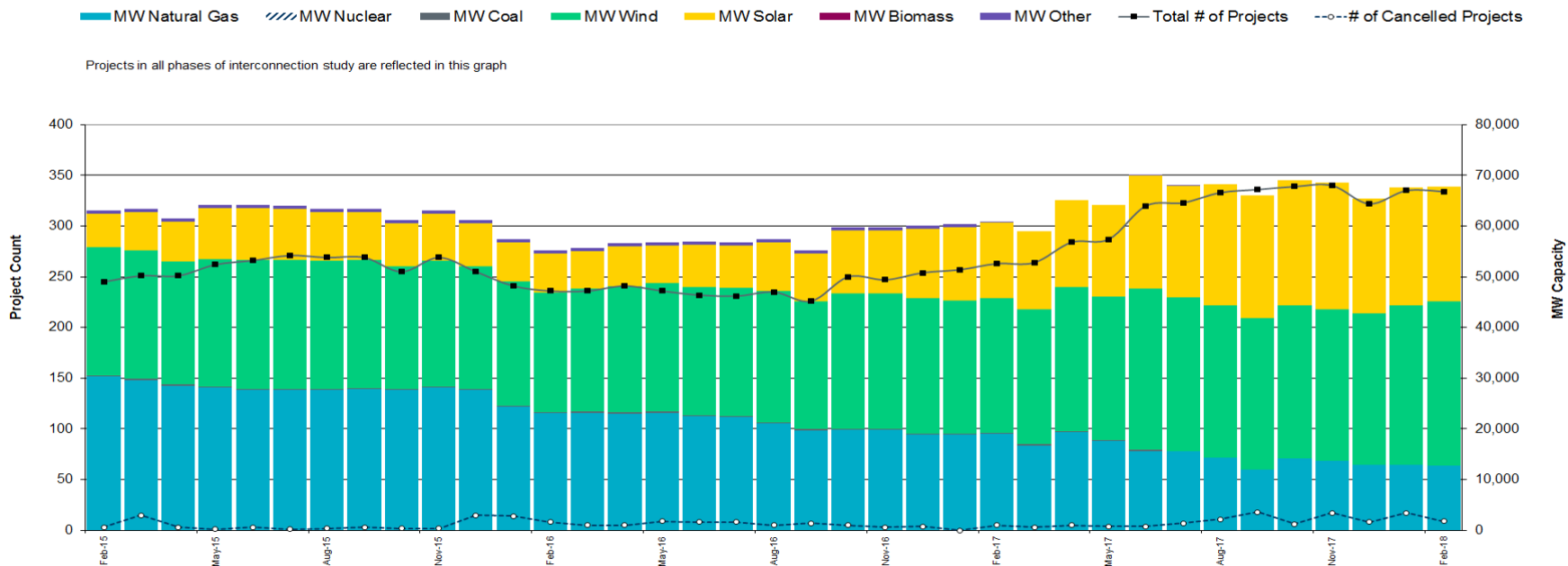
# Solar Generation – February 2018



**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 for the current year account for changes reported by the facility owners during the reporting month, and will be reflected in subsequent years' totals.
- Installed capacities include only solar 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.

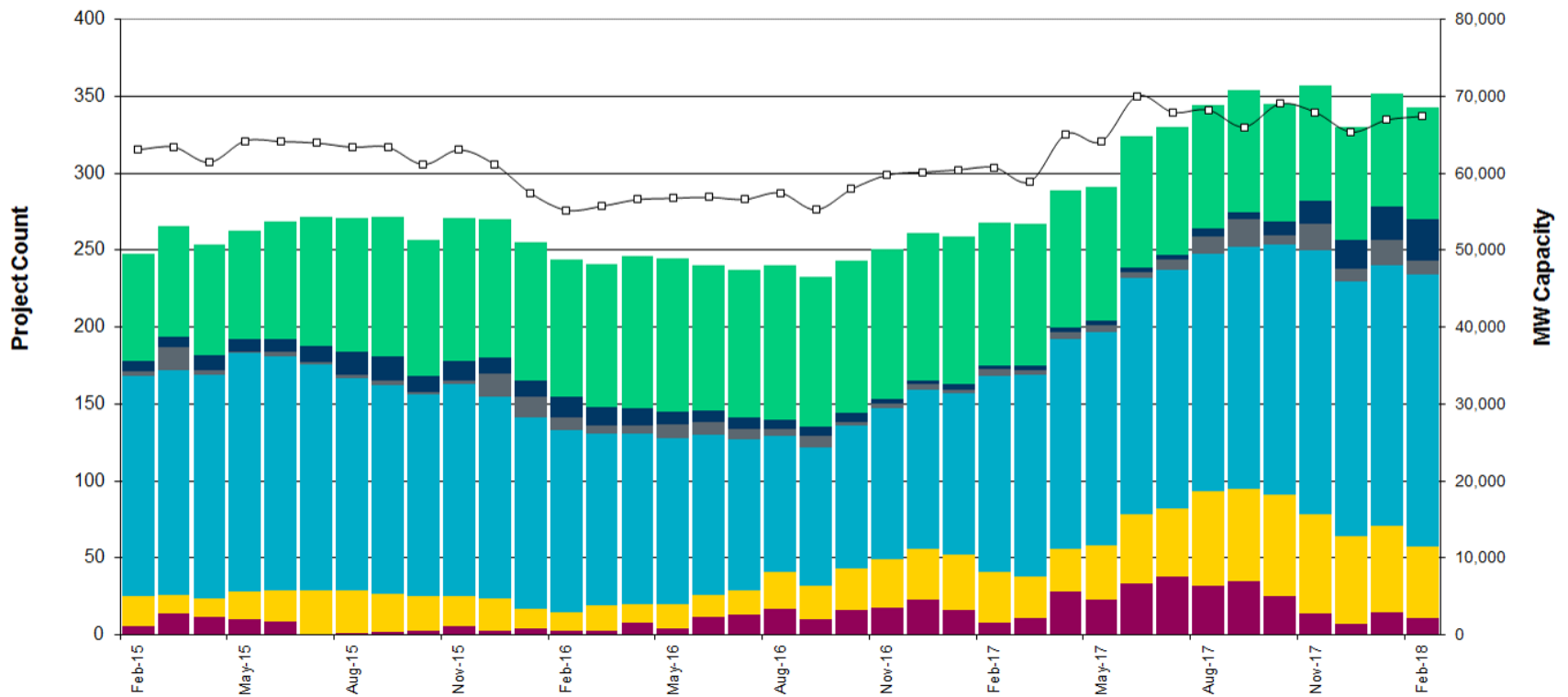
# Generation Interconnection Activity by Fuel – February 2018



# Generation Interconnection Activity by Project Phase – February 2018

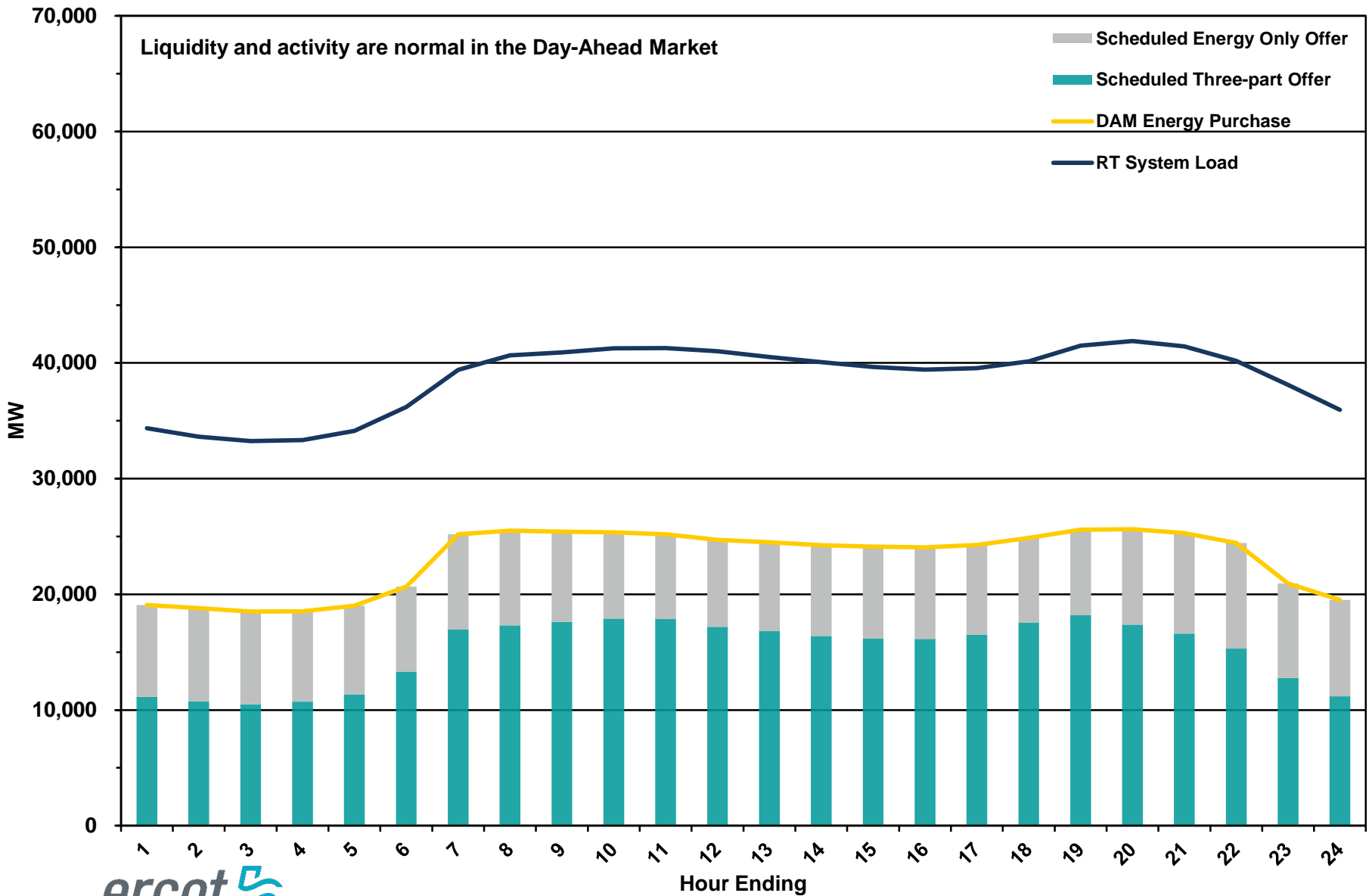
■ # Signed Interconnect Agreement   
 ■ # Completed Full Study   
 ■ # Projects Cancelled   
 ■ # in Full Study  
■ # Screening Study Complete   
■ # Initial Screening Study   
—□— MW Capacity Under Study \*

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

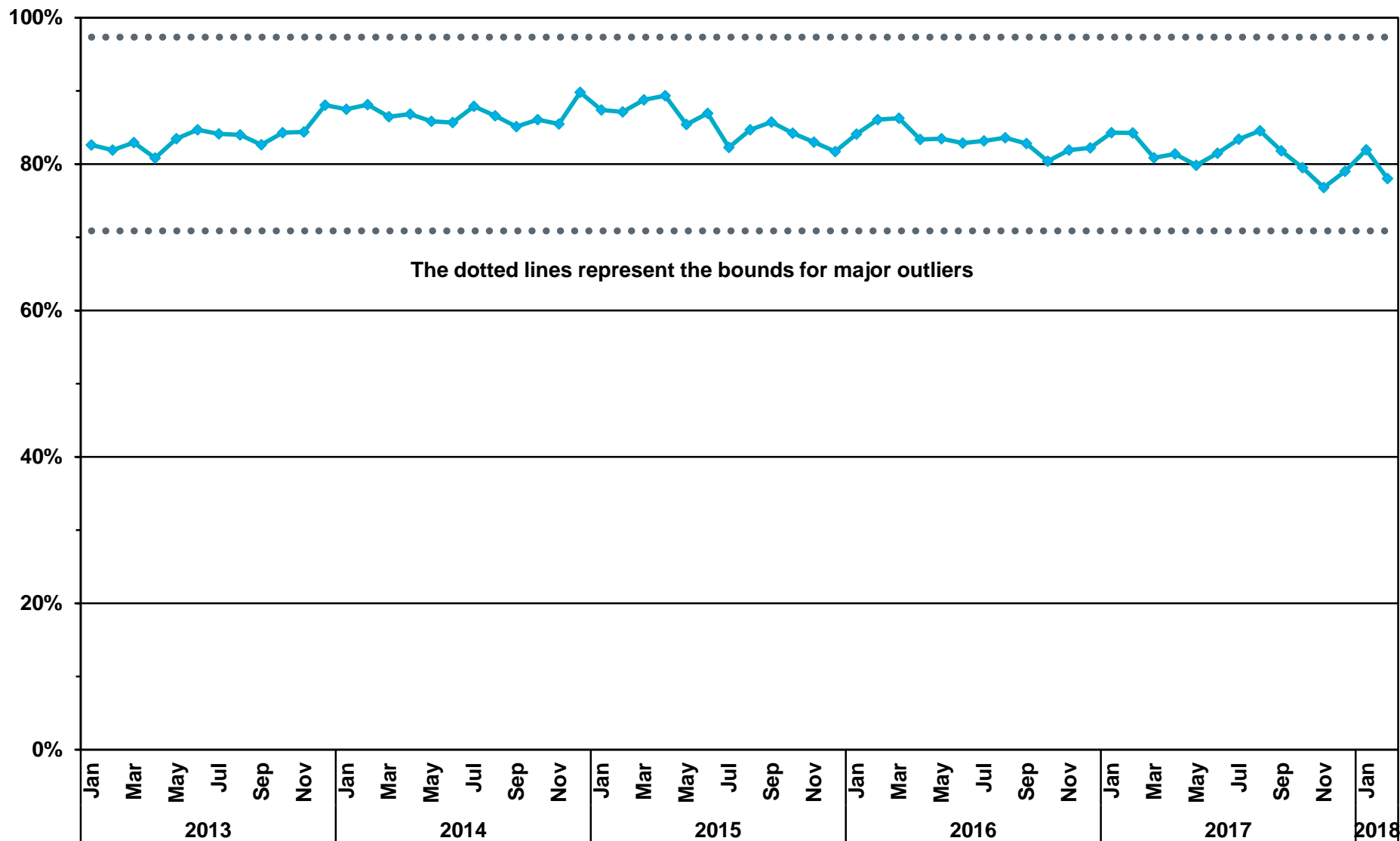


# Market Operations

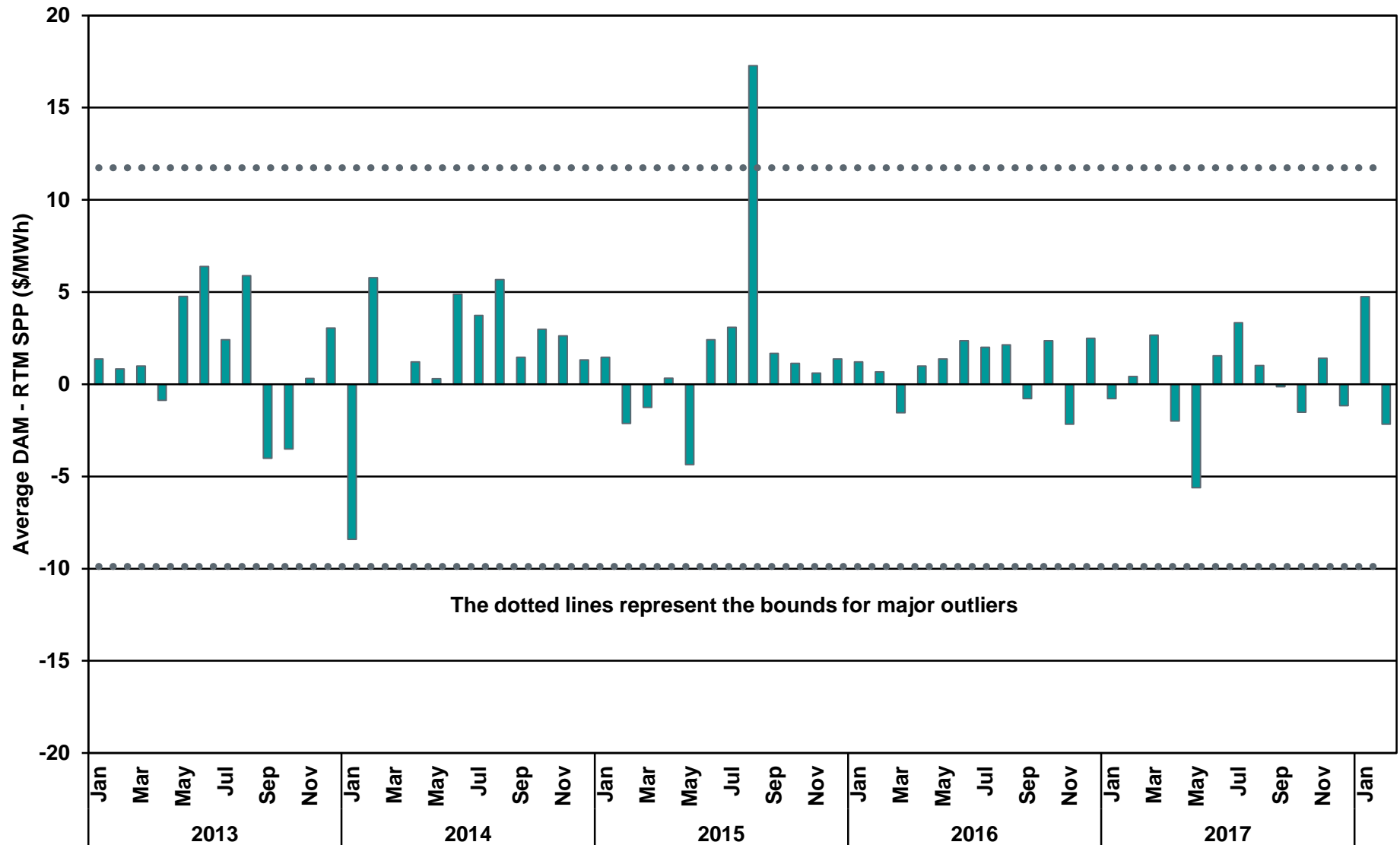
## Day-Ahead Schedule (Hourly Average) – February 2018



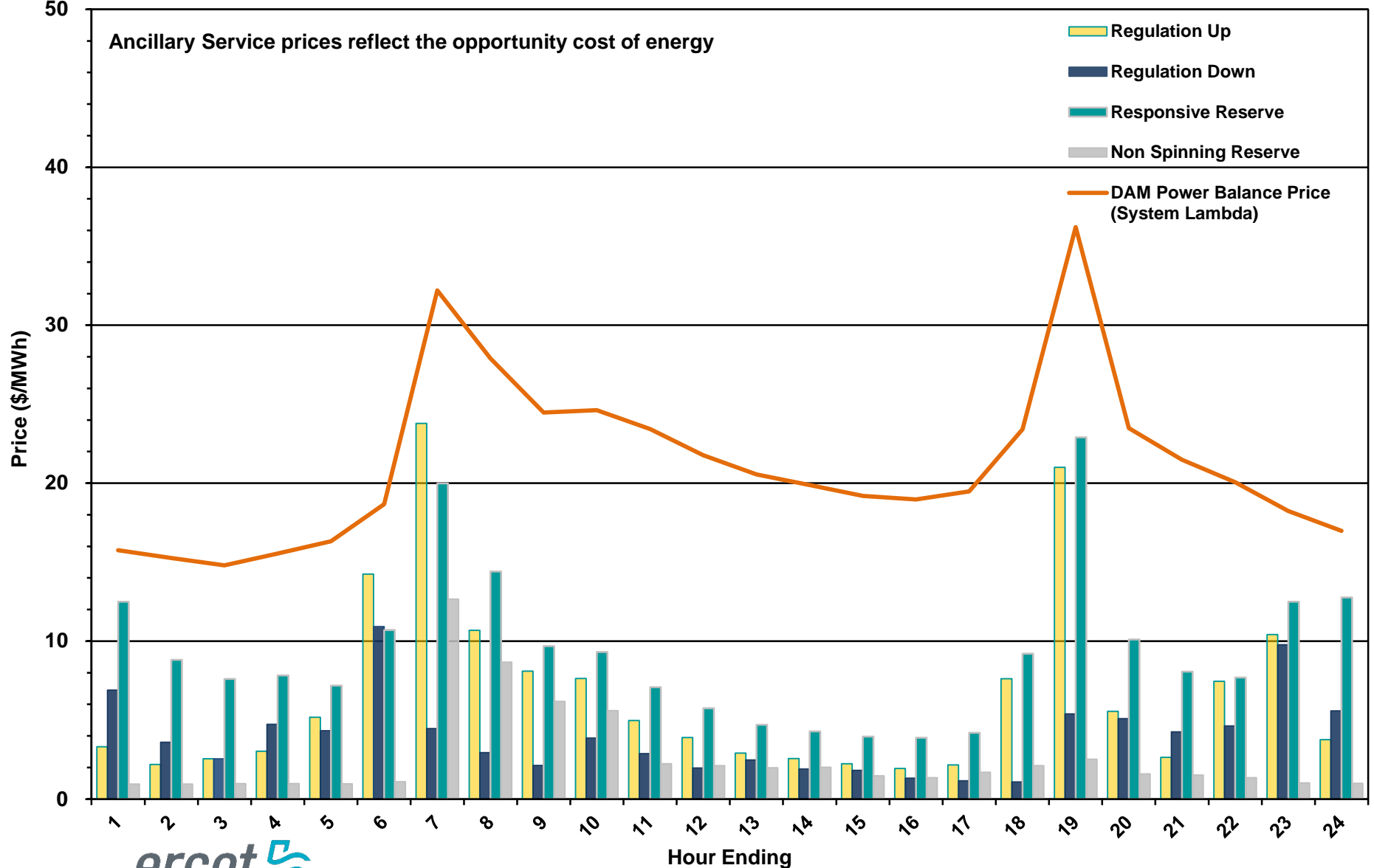
# Percentage of Real-Time Load Transacted in the DAM – February 2018



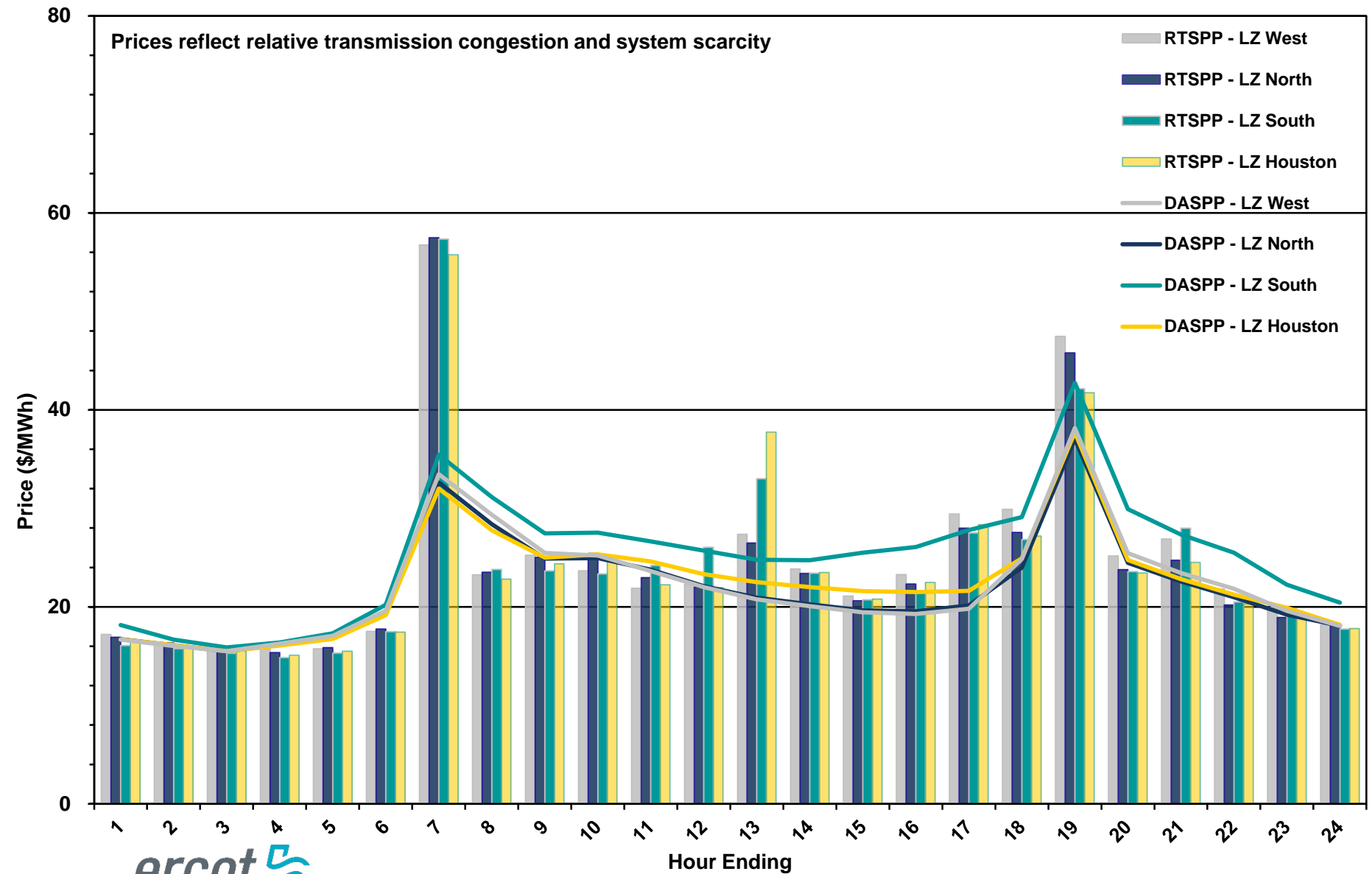
## DAM and RTM Price Convergence – February 2018



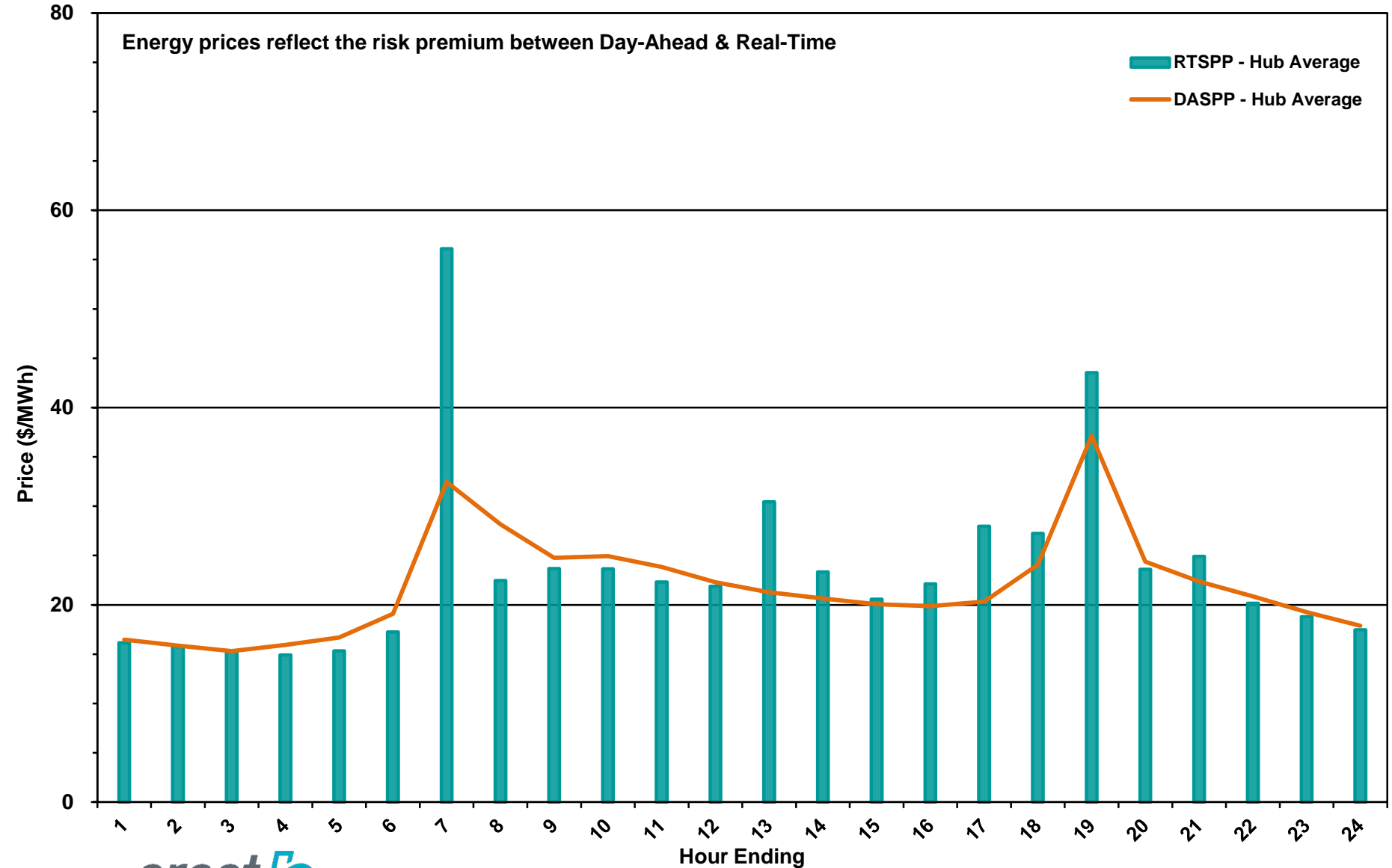
# Day-Ahead Electricity and Ancillary Service Prices (Hourly Average) – February 2018



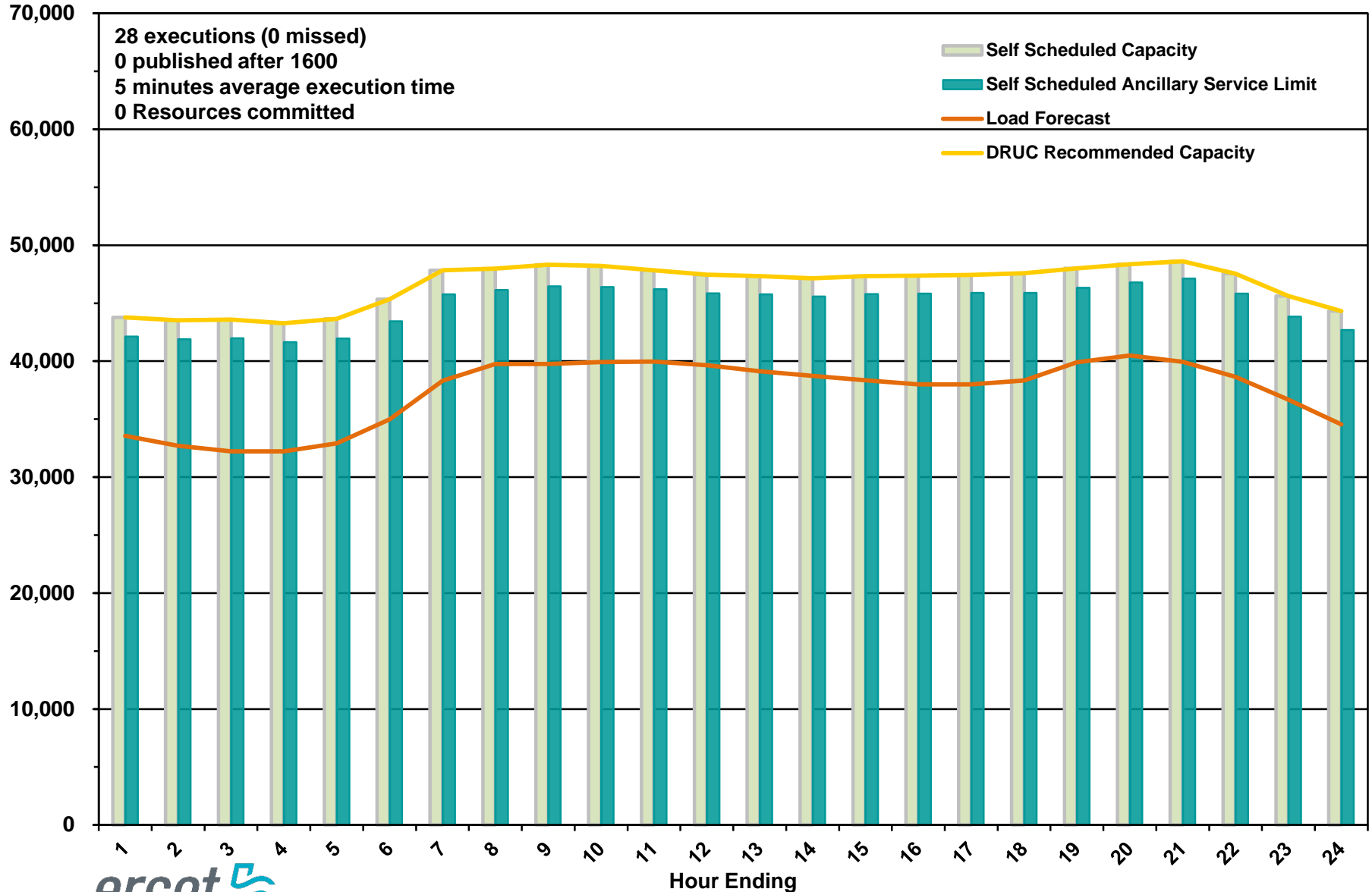
# Day-Ahead vs Real-Time Load Zone SPP (Hourly Average) – February 2018



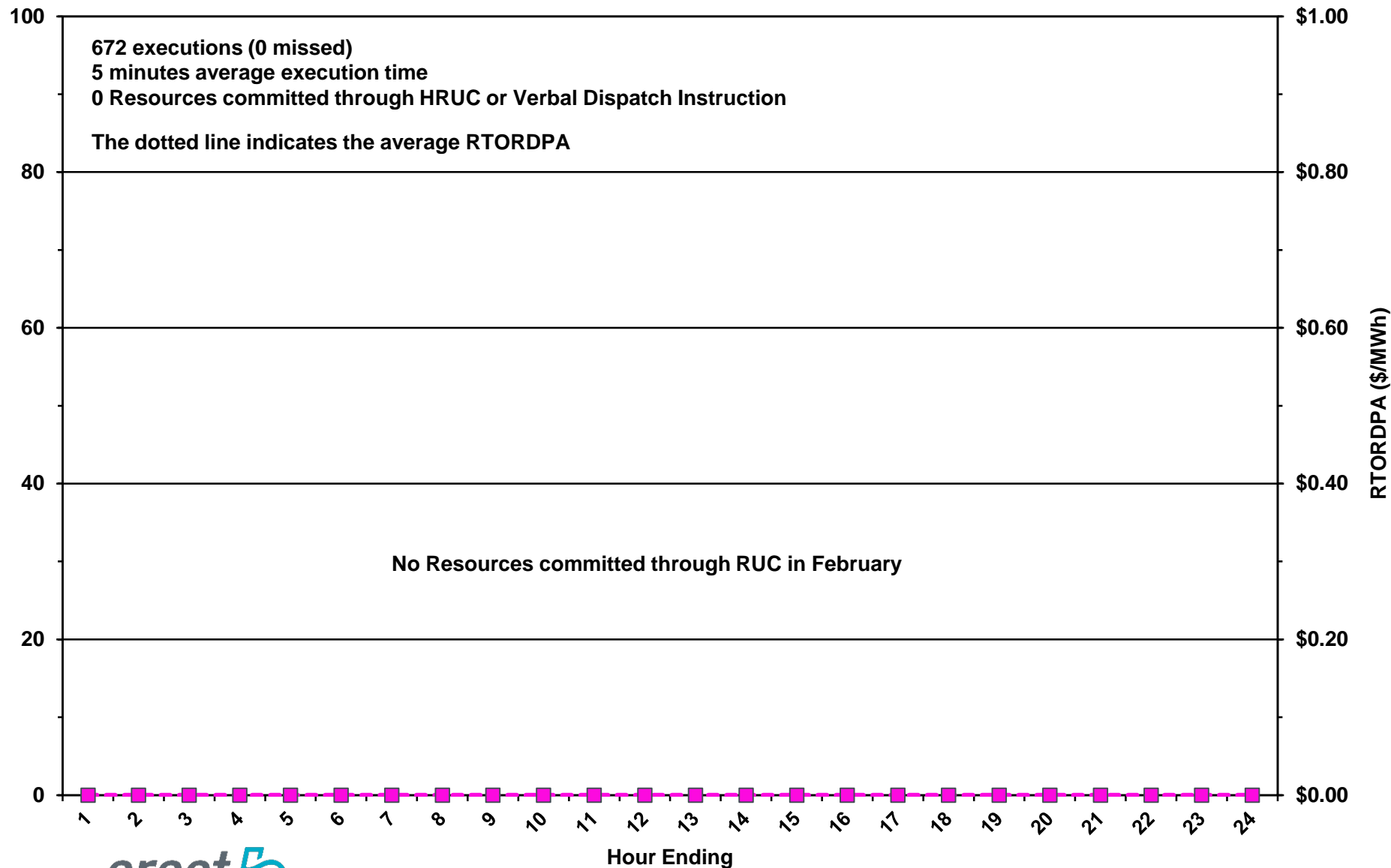
# Day-Ahead vs Real-Time Hub Average SPP (Hourly Average) – February 2018



# DRUC Monthly Summary (Hourly Average) – February 2018



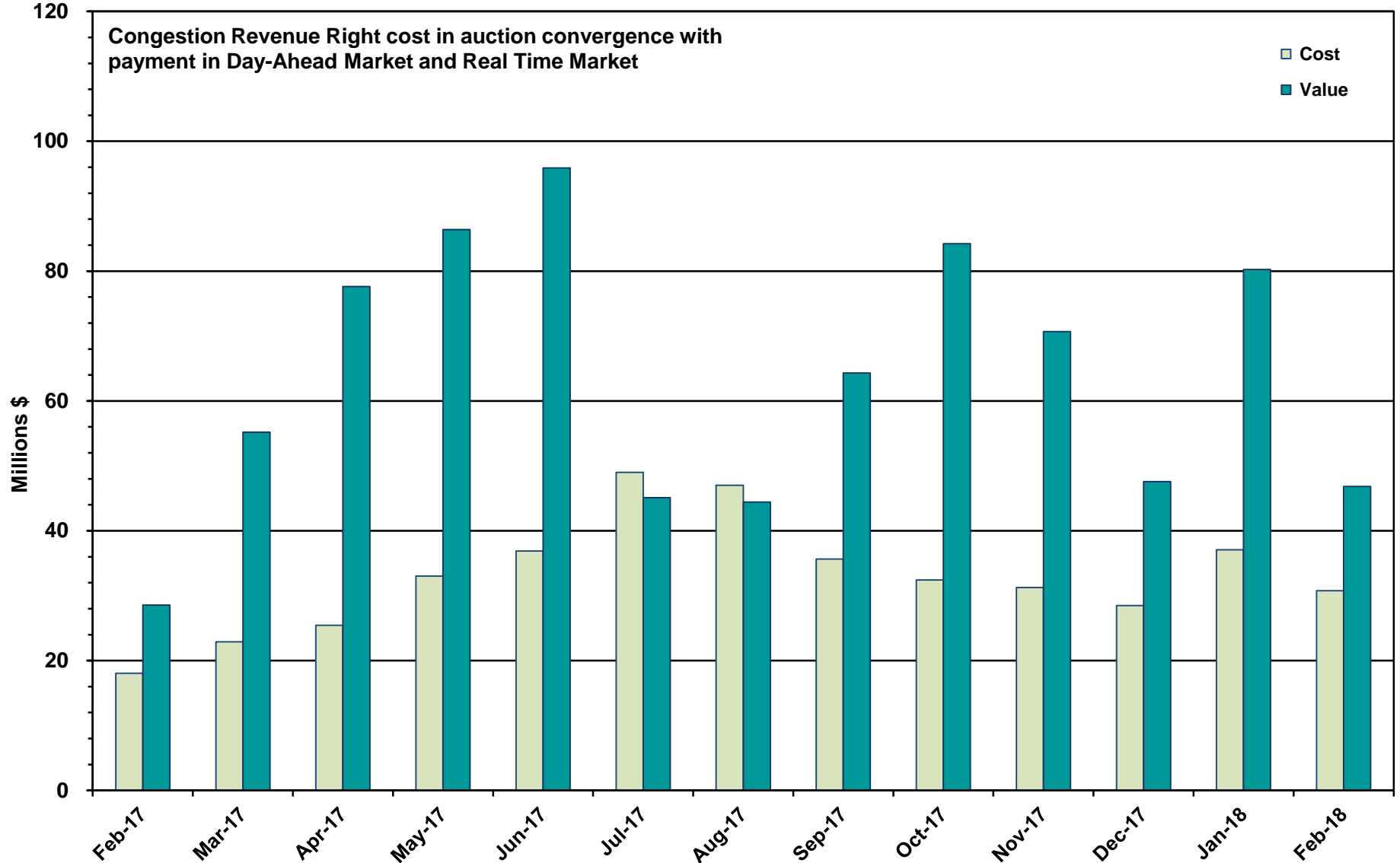
# HRUC Monthly Summary and Real Time On-Line Reliability Deployment Price Adder (RTORDPA) (Hourly Average) – February 2018



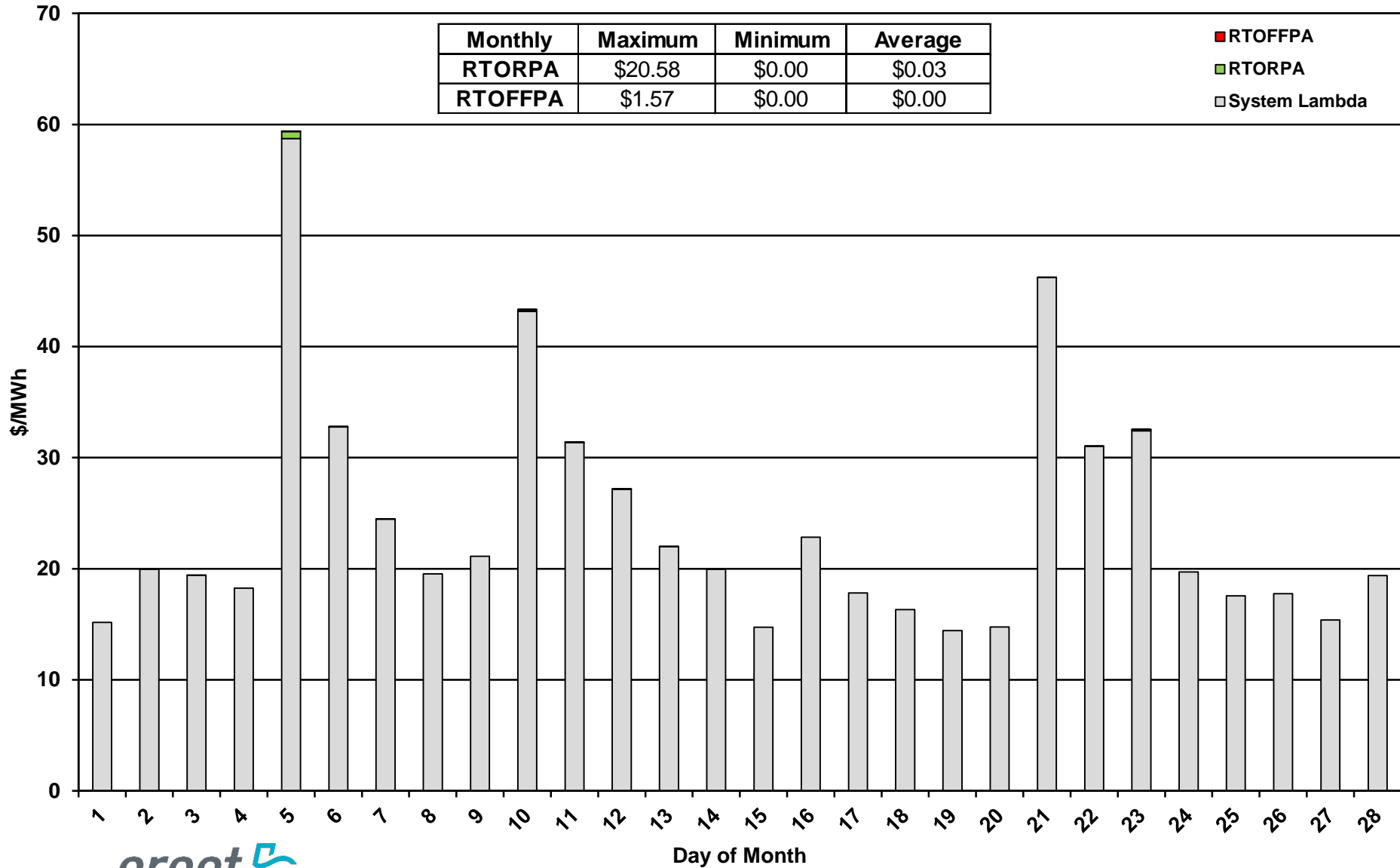
## Non-Spinning Reserve Service Deployment – February 2018

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

## CRR Price Convergence – February 2018



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



## ERS Procurement for February 2018 – May 2018

	TP1	TP2	TP3	TP4	TP5	TP6
Non Weather-Sensitive ERS-10 MW	186.590	197.059	193.848	189.941	185.253	172.191
Non Weather-Sensitive ERS-30 MW	654.589	705.649	690.570	682.154	659.905	589.511
Weather-Sensitive ERS-10 MW	0	0	0	0	0	0
Weather-Sensitive ERS-30 MW	0	0	0	0	0	0
Total MW Procured	841.179	902.708	884.418	872.095	845.158	761.702
Clearing Price	\$20.72	\$11.95	\$2.00	\$20.26	\$12.29	\$2.38

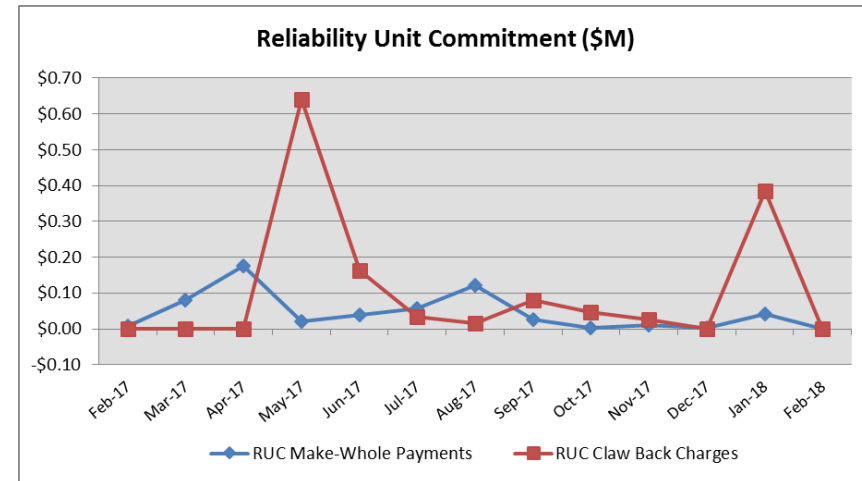
### Time Period

### 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 – February 2018

Reliability Unit Commitment (RUC)	\$ in Millions
RUC Make-Whole Payments	\$0.00
RUC Clawback Charges	\$0.00
<b>RUC Commitment Settlement</b>	<b>\$0.00</b>
RUC Capacity Short Charges	\$0.00
RUC Make-Whole Uplift	\$0.00
<b>RUC Commitment Cost Allocation</b>	<b>\$0.00</b>
RUC Decommitment Payments	\$0.00
<b>Total RUC Allocation to Load</b>	<b>\$0.00</b>



In February 2018, there was a credit of \$0.00M allocated to load for RUC compared to:

- A credit of \$0.39M in January 2018
- A credit of \$0.00M in February 2017

## Ancillary and Other Services – February 2018

<b>Ancillary and Other Services</b>	<b>\$ in Millions</b>
<b>Regulation Up Service</b>	<b>\$1.70</b>
<b>Regulation Down Service</b>	<b>\$0.84</b>
<b>Responsive Reserve Service</b>	<b>\$14.39</b>
<b>Non-Spinning Reserve Service</b>	<b>\$3.41</b>
<b>Black Start Service</b>	<b>\$0.56</b>
<b>Voltage Services - Reactive Power</b>	<b>\$0.00</b>
<b>Voltage Services - Lost Opportunity</b>	<b>\$0.00</b>
<b>Total Charges Allocated to Load</b>	<b>\$20.90</b>

In February 2018, Ancillary and Other Services was a charge of \$20.90M, compared to:

- A charge of \$88.38M in January 2018
- A charge of \$23.02M in February 2017

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

Real-Time Ancillary Service Imbalance	\$ in Thousands
Real-Time AS Imbalance	(\$23)
Real-Time Reliability Deployment AS Imbalance	\$0
<b>Total RTASI Amount Allocated to Load</b>	<b>\$23</b>

In February 2018, Real-Time Ancillary Service Imbalance was a charge to load of \$23K, compared to:

- A charge of \$366K in January 2018
- A charge of \$152K in February 2017

## Energy Settlement – February 2018

<b>Day-Ahead Market Energy Settlement</b>	<b>\$ in Millions</b>
<b>Energy Purchases</b>	\$357.43
<b>Point to Point Obligation Purchases</b>	\$40.78
<b>Energy Sales</b>	(\$346.37)
<b>Day-Ahead Congestion Rent</b>	<b>\$51.84</b>
<b>Day-Ahead Market Make-Whole Payments</b>	(\$0.40)

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

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

<b>Real-Time Market Energy Settlement</b>	<b>\$ in Millions</b>
<b>Energy Imbalance at a Resource Node</b>	(\$298.15)
<b>Energy Imbalance at a Load Zone</b>	\$532.83
<b>Energy Imbalance at a Hub</b>	(\$195.05)
<b>Net Real-Time Energy Imbalance</b>	<b>\$39.63</b>
<b>Real Time Congestion from Self Schedules</b>	\$0.09
<b>Block Load Transfers and DC Ties</b>	(\$1.83)
<b>Total Impact to Revenue Neutrality</b>	<b>\$37.89</b>
<b>Load-Allocated Emergency Energy Payments</b>	(\$0.18)
<b>Load-Allocated Base Point Deviation Charges</b>	\$0.16

## Congestion Revenue Rights (CRR) – February 2018

	\$ in Millions
<b>Annual Auction</b>	(\$26.05)
<b>Monthly Auction</b>	(\$4.71)
<b>Total Auction Revenue</b>	<b>(\$30.76)</b>
<b>Day-Ahead CRR Settlements</b>	(\$46.84)
<b>Day-Ahead CRR Short-Charges</b>	\$0.18
<b>Day-Ahead CRR Short-Charges Refunded</b>	(\$0.18)
<b>Day-Ahead CRR Short-Charges Net</b>	<b>\$0.00</b>
<b>Total CRR Funding</b>	<b>(\$46.84)</b>
<b>Day-Ahead Point-to-Point Obligations</b>	\$40.78
<b>Real-Time Point-to-Point Obligations</b>	(\$38.63)
<b>Net Point-to-Point Obligations</b>	<b>\$2.15</b>

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

Point to Point Obligations settled with a net charge of \$2.15M compared to a net credit of \$59.34M last month.

## CRR Balancing Account Fund – February 2018

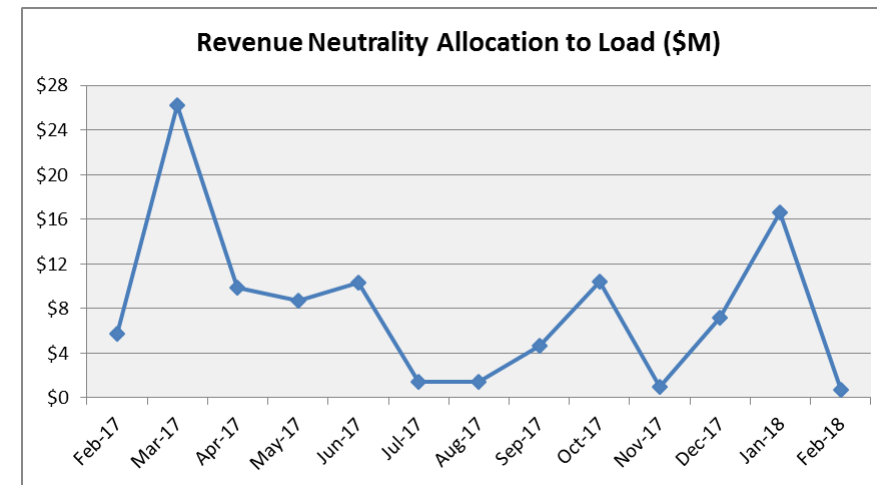
<b>CRR Balancing Account</b>	<b>\$ in Millions</b>
<b>Monthly Day-Ahead Congestion Rent</b>	\$51.84
<b>Monthly Day-Ahead CRR Settlements</b>	(\$46.84)
<b>Monthly Day-Ahead CRR Short -Charges</b>	\$0.18
<b>CRR Balancing Account Credit Total</b>	<b>\$5.18</b>
<b>Beginning Fund Balance for the Month</b>	\$10.00
<b>CRR Balancing Account Credit Total</b>	\$5.18
<b>Day-Ahead CRR Short-Charges Refunded</b>	(\$0.18)
<b>CRR PTP Option Award Charges</b>	\$0.05
<b>Load-Allocated CRR Amount</b>	(\$5.04)
<b>Total Fund Amount</b>	<b>\$10.00</b>

## Revenue Neutrality – February 2018

Revenue Neutrality	\$ in Millions
Real-Time Energy Imbalance	\$39.63
Real-Time Point to Point Obligation	(\$38.63)
Real-Time Congestion from Self-Schedules	\$0.09
DC Tie & Block Load Transfer	(\$1.83)
<b>Allocation to Load</b>	<b>\$0.74</b>

In February 2018, the Revenue Neutrality charge to load was \$0.74M compared to:

- A charge of \$16.57M in January 2018
- A charge of \$5.73M in February 2017

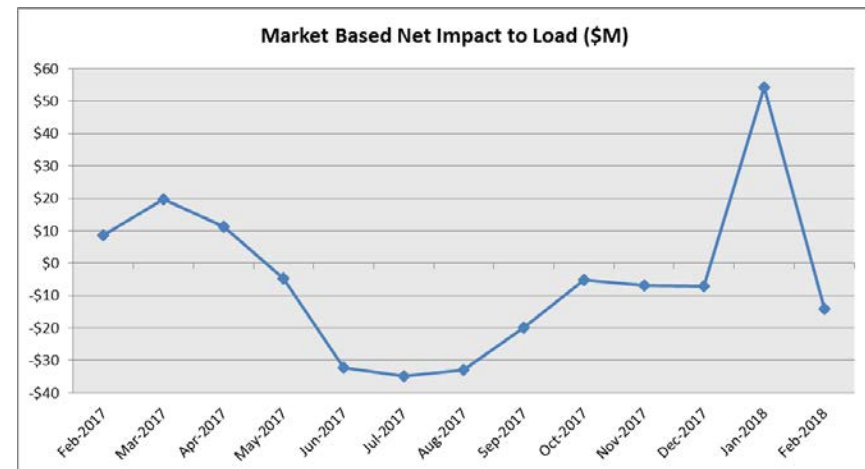


## Net Allocation to Load – February 2018

Market-Based Allocation	\$ in Millions
Reliability Unit Commitment	\$0.00
Ancillary and Other Services	\$20.90
Real-Time Ancillary Service Imbalance	\$0.02
Emergency Energy	\$0.18
Base Point Deviation	(\$0.16)
CRR Auction Revenue	(\$30.76)
CRR Balancing Account	(\$5.04)
Real-Time Revenue Neutrality	\$0.74
Reliability Must Run	\$0.00
Monthly Block Load Transfer	\$0.00
<b>Total</b>	<b>(\$14.13)</b>
<b>Fee Allocation</b>	
ERCOT Administrative Fee	\$14.38
<b>Net Allocated to Load</b>	<b>\$0.25</b>

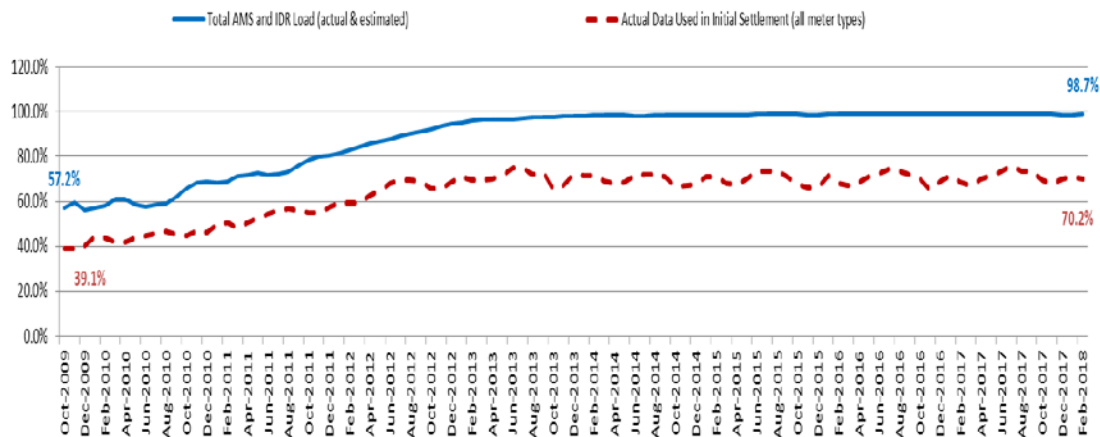
In February 2018, the Net Allocation to load was a charge of \$0.25M compared to:

- A charge of \$71.78M in January 2018
- A charge of \$21.48M in February 2017



# Advanced Meter Settlement Impacts – February 2018

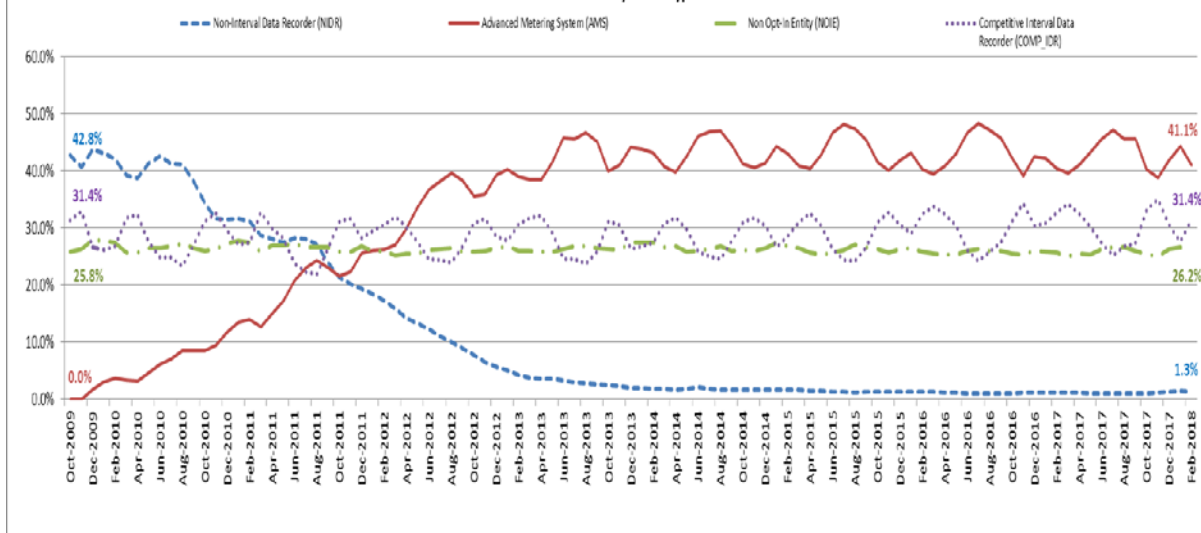
Percent Actual/Percent Interval Data Recorder (IDR)



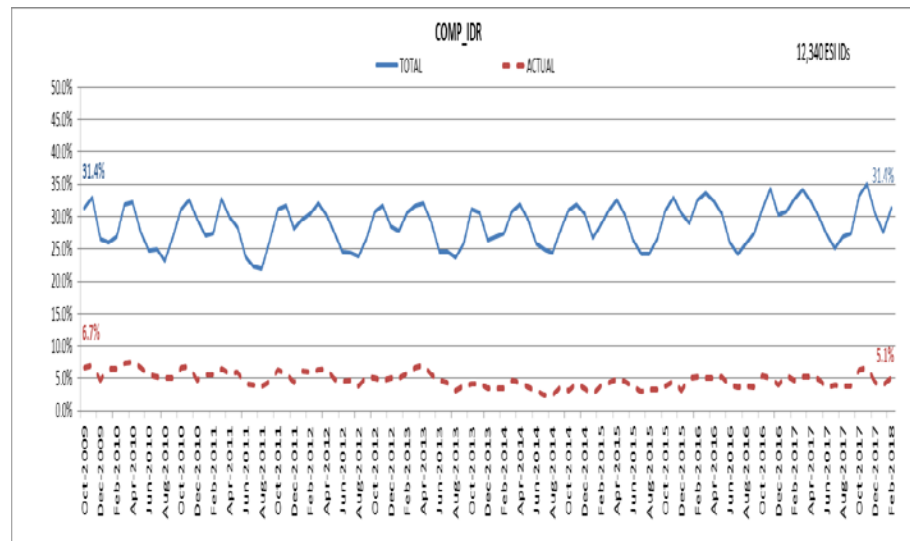
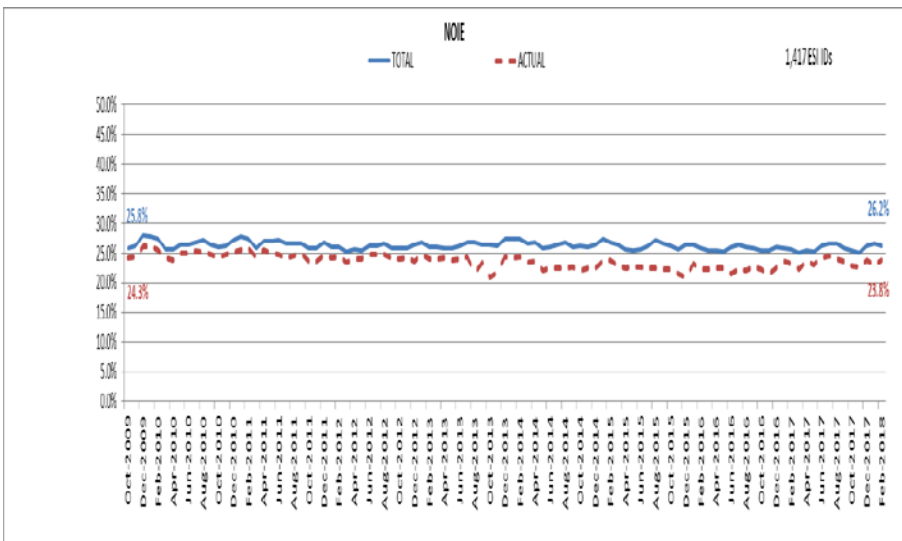
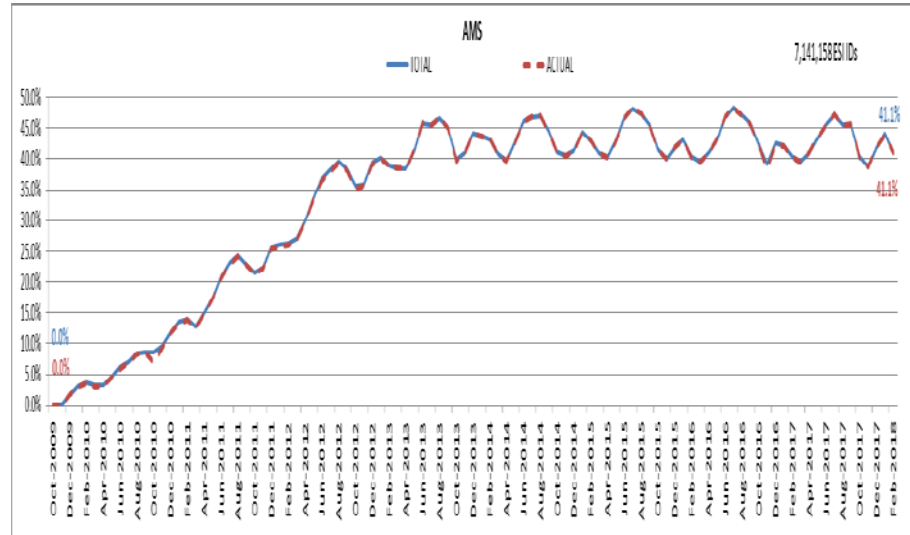
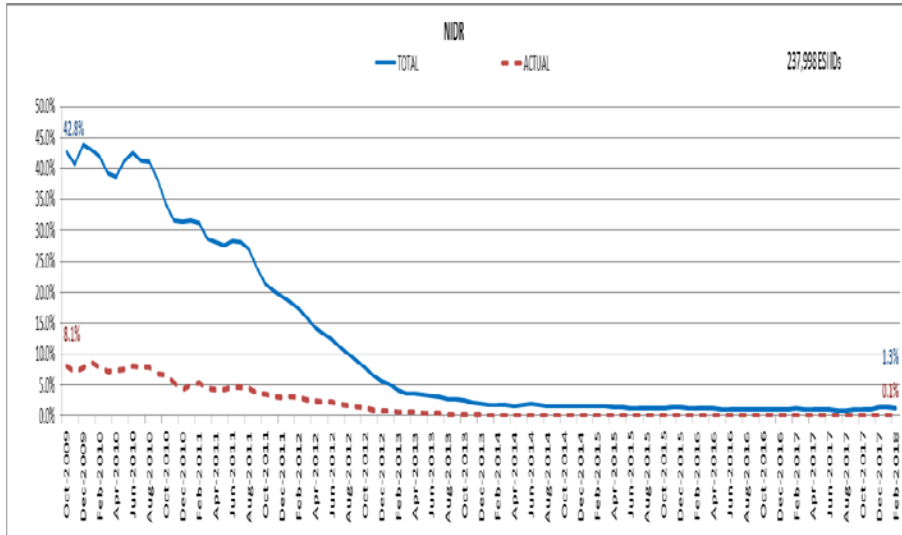
February 2018: At month end, settling 7.1M ESIIDs using Advanced Meter data.

February 2018: 98.7% 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 – February 2018

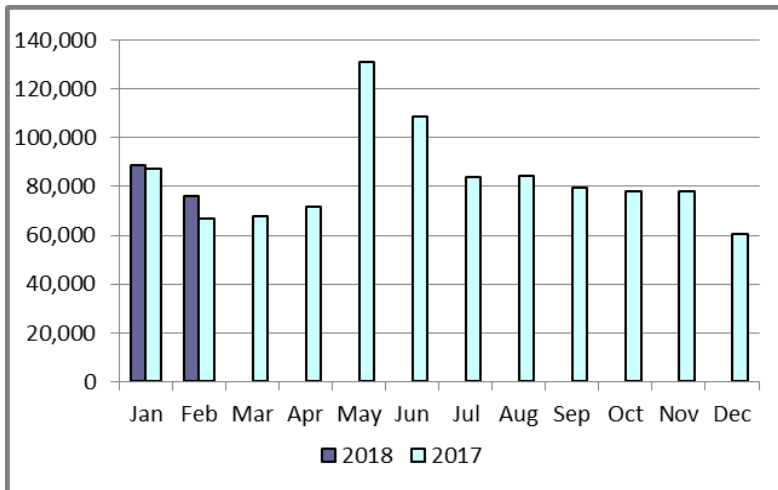


## Retail Transaction Volumes – Summary – February 2018

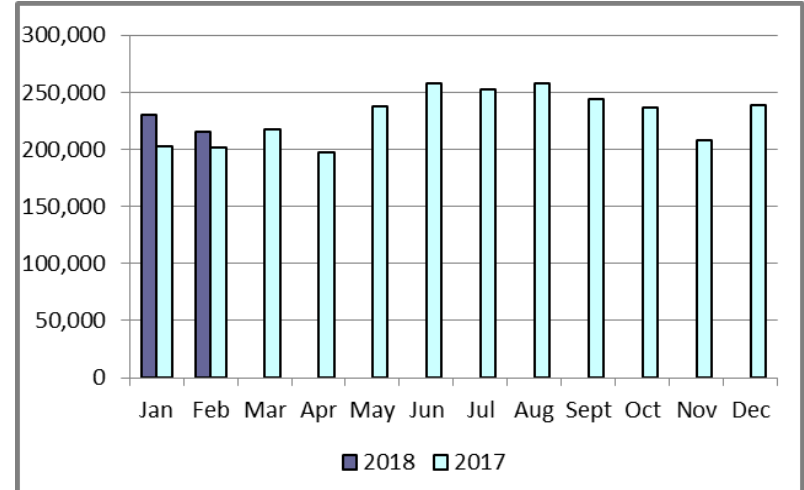
	Year-To-Date		Transactions Received	
Transaction Type	February 2018	February 2017	February 2018	February 2017
Switches	165,052	154,015	76,119	66,875
Acquisition	0	0	0	0
Move - Ins	445,690	404,596	215,281	201,984
Move - Outs	211,948	201,392	100,127	100,285
Continuous Service Agreements (CSA)	92,327	83,112	42,587	39,082
Mass Transitions	0	0	0	0
<b>Total</b>	<b>915,017</b>	<b>843,115</b>	<b>434,114</b>	<b>408,226</b>

# Retail Transaction Volumes – Summary – February 2018

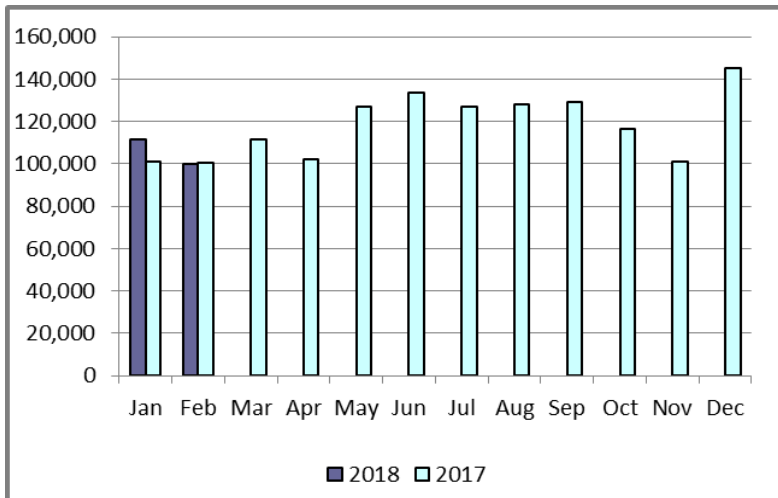
## Switches/Acquisitions



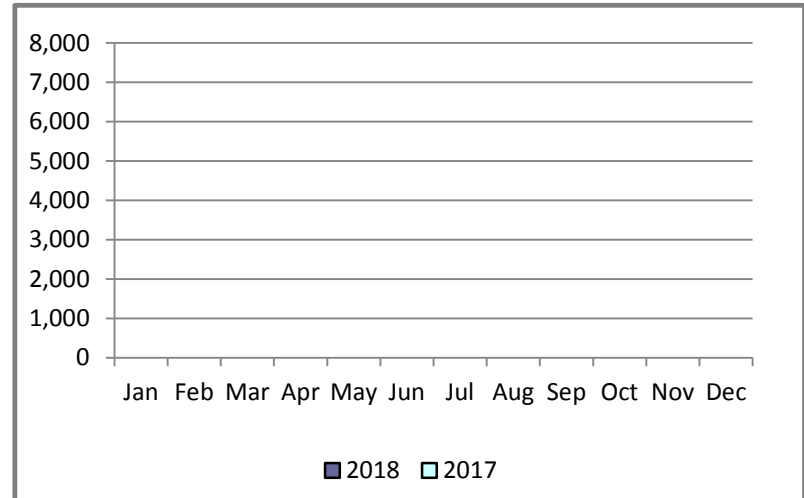
## Move-Ins



## Move-Outs

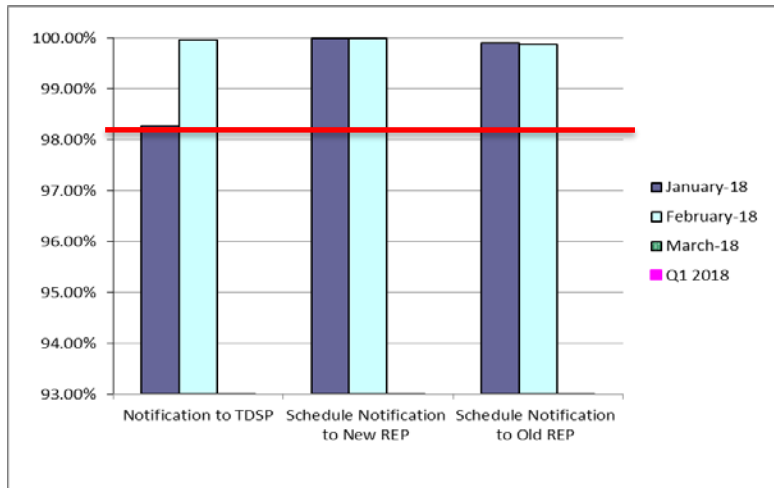


## Mass Transition

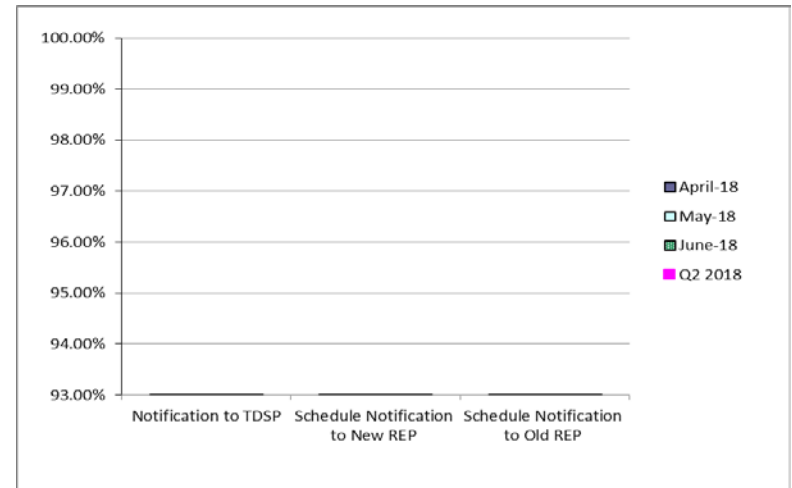


# Retail Performance Measures – Switch – February 2018

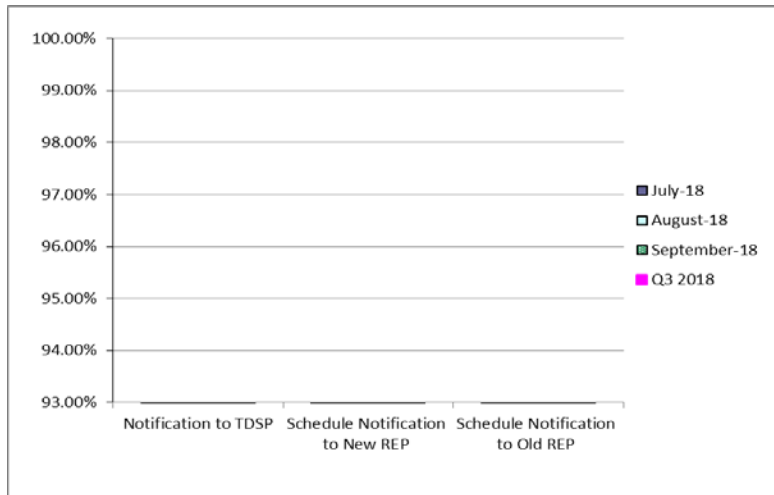
## 1<sup>st</sup> Quarter



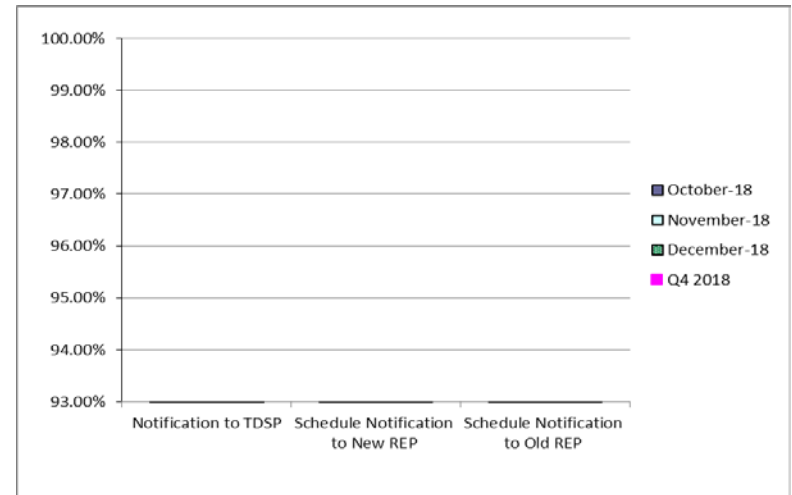
## 2<sup>nd</sup> Quarter



## 3<sup>rd</sup> Quarter

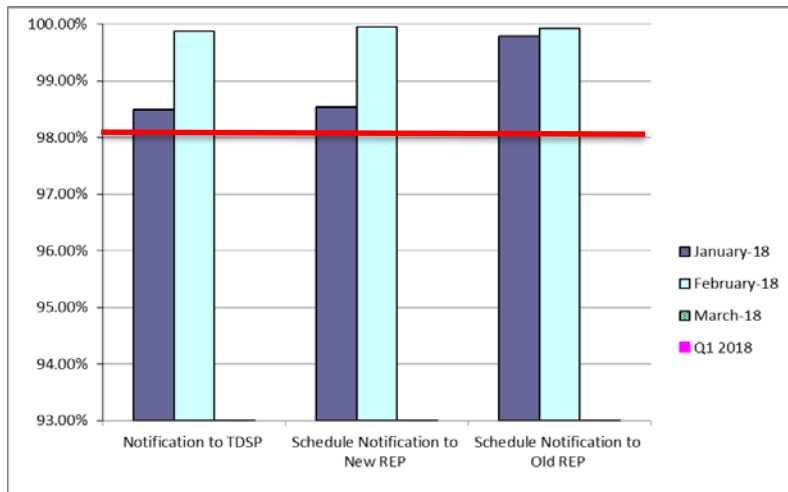


## 4<sup>th</sup> Quarter

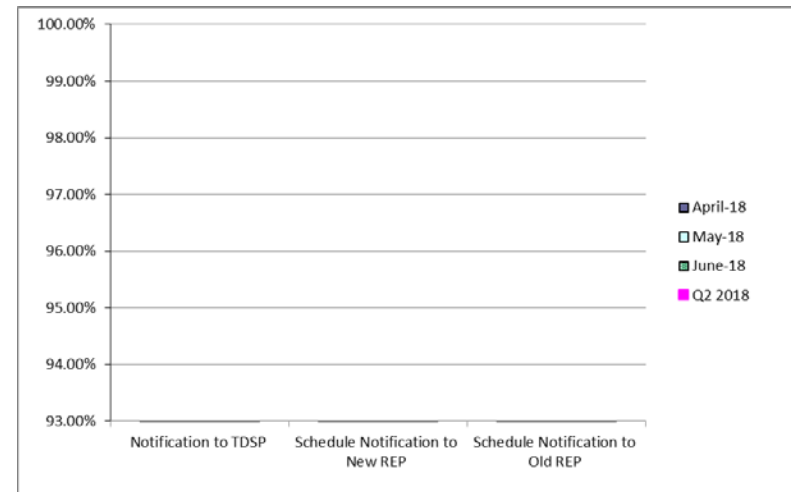


# Retail Performance Measures – Same Day Move-In – February 2018

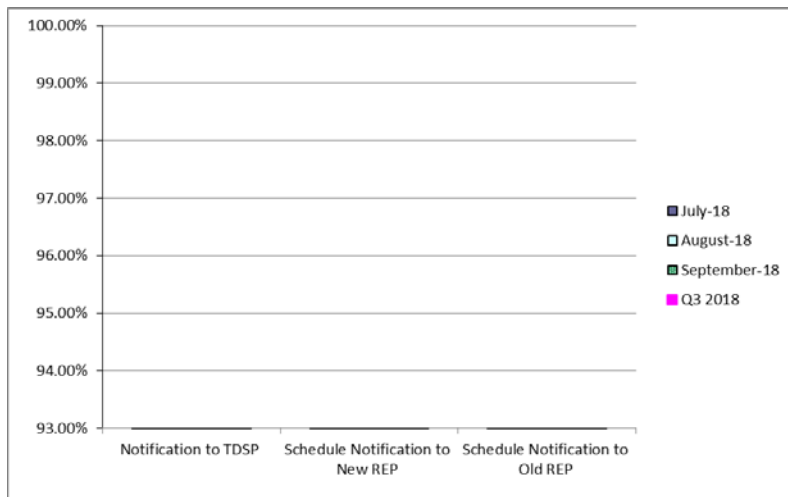
## 1<sup>st</sup> Quarter



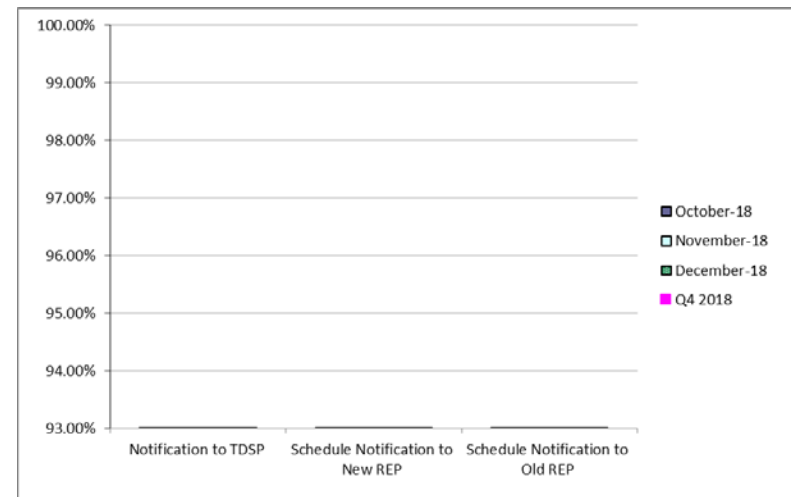
## 2<sup>nd</sup> Quarter



## 3<sup>rd</sup> Quarter

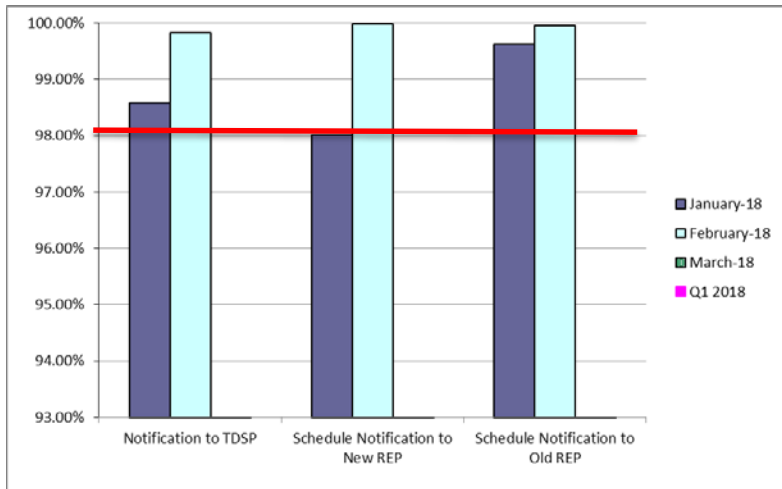


## 4<sup>th</sup> Quarter

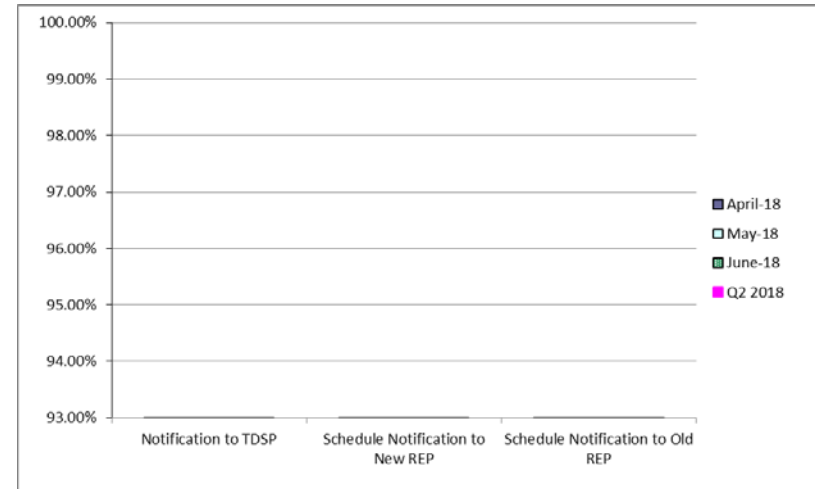


# Retail Performance Measures – Standard Move-In – February 2018

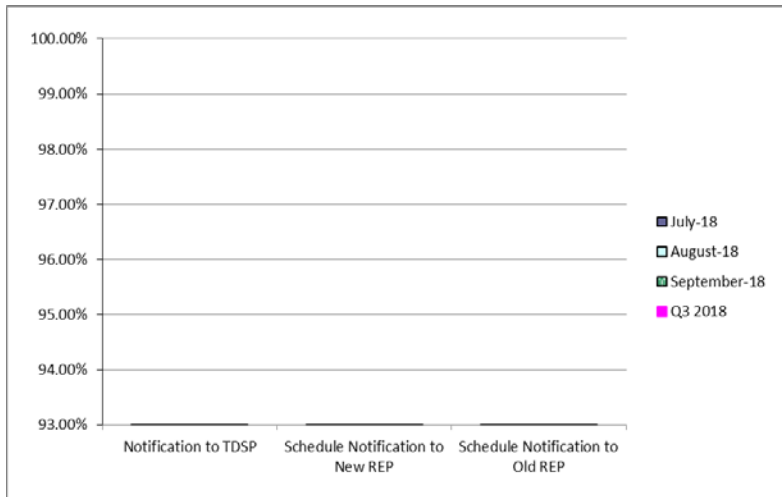
## 1<sup>st</sup> Quarter



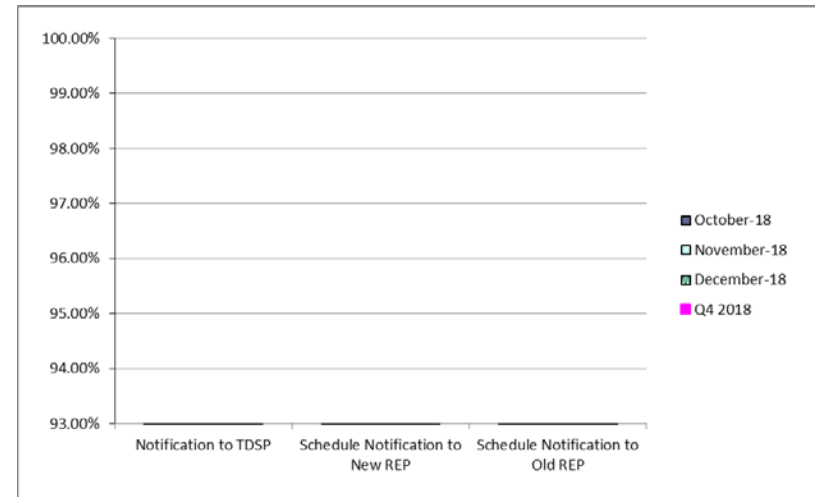
## 2<sup>nd</sup> Quarter



## 3<sup>rd</sup> Quarter



## 4<sup>th</sup> Quarter



# Projects Report

# ERCOT Portfolio Stoplight Report – February 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 = 84)		\$ 20,051,571
	Projects Not Yet Started (Count = 8)		\$ 2,502,241
	Projects Completed (Count = 19)		\$ 188,019
	Spending Reductions Required to Maintain Capital Budget		\$ (2,741,831)
	<b>TOTAL</b>		<b>\$ 20,000,000</b>

Project Number	Projects in Initiation Phase (Count = 6)
TBD	Synch Condenser Modeling
SCR789	Update NMMS Topology Processor to PSSE 34 Capability
SCR791	Correction of 60-day SCED GRD Disclosure Report
209-02	Weather Imaging and Line Observation (WILO)
269-01	Document Repository Redesign and Governance Implementation - Phase 1
279-01	Security Information and Event Management (SIEM) Replacement

## 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 – February 2018

Project Number	Projects in Planning Phase (Count = 13)	Phase Start	Baseline Phase Finish	Approved Phase Finish	Scheduled Go-Live Date	Scheduled Phase Finish	Schedule Health		Budget Health	
170-06	ECAP - ECMS Implementation Phase 1	12/6/2017	2/21/2018	2/21/2018	TBD	3/21/2018	1	-36%		0%
183-01	CMM-FT GUI Integration	12/16/2015	8/17/2016	TBD	TBD	TBD		0%	NA	See 2015 CMM NPRRs
239-01	Identity and Access Management	11/2/2017	5/2/2018	5/2/2018	TBD	5/2/2018		0%		0%
242-01	Portfolio Reporting Assessment	11/8/2017	12/19/2018	12/19/2018	TBD	12/19/2018		0%		10%
245-01	2017 EPS Metering Enhancements	12/13/2017	5/30/2018	5/30/2018	TBD	5/30/2018		0%		25%
258-01	WD Kainos SMART Automation Testing Tool	11/29/2017	3/7/2018	3/7/2018	TBD	3/16/2018	1	-9%		41%
260-01	Information Governance Assessment	10/18/2017	5/30/2018	5/30/2018	TBD	5/30/2018		0%		5%
263-01	Market Simulator	11/29/2017	2/21/2018	2/21/2018	TBD	3/21/2018	1	-33%		-2%
271-01	Issue Tracking and Resolution Tool Assessment	12/13/2017	4/25/2018	4/25/2018	TBD	4/25/2018		0%		16%
280-01	Quest Software Portfolio Transition	3/7/2018	4/4/2018	4/4/2018	TBD	4/4/2018		0%		16%
NPRR484	Revisions to Congestion Revenue Rights Credit Calculations and Payments - Phase 1b / 2	12/16/2015	8/17/2016	TBD	TBD	TBD		0%	NA	See 2015 CMM NPRRs
NPRR702	Flexible Accounts, Payment of Invoices, and Disposition of Interest on Cash Collateral	12/16/2015	8/17/2016	TBD	TBD	TBD		0%	NA	See 2015 CMM NPRRs
NPRR815	Revise the Limitation of Load Resources Providing Responsive Reserve (RRS) Service	2/14/2018	3/7/2018	3/7/2018	TBD	3/21/2018	1	-66%		0%
Project Number	Projects in Execution Phase (Count = 47)	Phase Start	Baseline Go-Live Date	Approved Go-Live Date	Scheduled Go-Live Date	Scheduled Phase Finish	Schedule Health		Budget Health	
170-01	Enterprise Content Alignment Program	8/26/2015	11/15/2017	8/31/2018	8/31/2018	8/31/2018		0%		10%
173-02	ERCOT Flight Certification Website	11/15/2017	2/28/2019	2/28/2019	2/28/2019	5/31/2019		0%		0%
181-01	CRR Framework Upgrade	10/26/2016	10/2/2017	1/22/2018	TBD	TBD		0%		-1%
183-01	CMM Tech Refresh	3/15/2017	5/19/2018	5/19/2018	5/19/2018	12/31/2018		0%	NA	See 2015 CMM NPRRs
193-01	PMU Tool Evaluation and Implementation	12/13/2017	8/9/2018	8/9/2018	8/9/2018	10/3/2018		0%		0%
196-01	GINR Project Status Application Replacement	12/21/2016	9/14/2017	3/5/2018	4/17/2018	4/17/2018	2	-9%	2	-11%
198-02	Reactive Power Coordination PoC	9/6/2017	6/16/2018	6/16/2018	6/13/2018	6/13/2018		1%		43%
209-01	Multi Station Breaker to Breaker One Lines	2/8/2017	3/9/2018	3/9/2018	3/9/2018	5/1/2018		0%		4%
210-01	REC Technology Refresh	8/30/2017	3/18/2018	5/31/2018	5/31/2018	7/11/2018		0%		1%
229-01	IT Change and Configuration Management Phase 2	8/2/2017	6/19/2018	6/19/2018	6/19/2018	9/5/2018		0%		-2%
233-24	Job Description Repository	2/8/2018	7/8/2018	7/8/2018	7/8/2018	7/8/2018		0%	NA	See 233-00
238-01	Application Authentication Tech Refresh	9/6/2017	3/19/2018	4/9/2018	4/9/2018	7/25/2018		0%		11%
241-01	AREA - Generation	10/11/2017	3/30/2018	3/30/2018	4/5/2018	4/19/2018		-3%		-3%
244-01	Corporate Wireless	11/29/2017	3/28/2018	12/5/2018	12/5/2018	12/5/2018		0%		0%

# ERCOT Portfolio Stoplight Report – February 2018

Project Number	Projects in Execution Phase (Count = 47)	Phase Start	Baseline Go-Live Date	Approved Go-Live Date	Scheduled Go-Live Date	Scheduled Phase Finish	Schedule Health		Budget Health	
246-01	iTest Data Refresh	12/13/2017	1/2/2019	1/2/2019	1/2/2019	1/2/2019		0%		26%
249-01	Secondary Wind Forecasting Service	8/30/2017	2/28/2018	4/5/2018	4/5/2018	6/27/2018		0%		14%
253-01	CIP Recovery Plan Project - Planning Phase 1	1/31/2018	8/29/2018	8/29/2018	8/29/2018	8/29/2018		0%		0%
257-01	Security Constrained Optimal Powerflow in Study Network Analysis	12/6/2017	10/25/2018	10/25/2018	10/25/2018	12/8/2018		0%		18%
259-01	DC SCADA and Metering Upgrade	10/25/2017	1/17/2018	5/11/2018	5/11/2018	6/30/2018		0%		2%
261-01	Generic Transmission Constraint Calculation	3/7/2018	12/13/2018	12/13/2018	12/13/2018	1/23/2019		0%		0%
265-01	Real-Time Assessment Continuity	1/31/2018	12/13/2018	12/13/2018	12/13/2018	1/30/2019		0%		71%
266-01	Remote Email Access Enhancement	12/13/2017	3/7/2018	3/7/2018	3/7/2018	3/7/2018		0%		21%
272-01	Operator Training Simulator Black Start GE Effort	12/6/2017	4/25/2018	4/25/2018	3/30/2018	3/30/2018		18%		3%
274-01	Average Mid-Term Load Forecast	3/7/2018	5/31/2018	5/31/2018	5/31/2018	6/27/2018		0%		0%
Various	2015 CMM NPRRs								2	-39%
NPRR519	Exemption of ERS-Only QSEs from Collateral and Capitalization Requirements	3/15/2017	5/19/2018	5/19/2018	5/19/2018	12/31/2018		0%	NA	See 2015 CMM NPRRs
NPRR562	Subsynchronous Resonance	3/15/2017	5/19/2018	5/19/2018	5/19/2018	12/31/2018		0%	NA	See 2015 CMM NPRRs
NPRR620	Collateral Requirements for Counter-Parties with No Load or Generation	3/15/2017	5/19/2018	5/19/2018	5/19/2018	12/31/2018		0%	NA	See 2015 CMM NPRRs
NPRR648	Remove References to Flowgate Rights	3/15/2017	5/19/2018	5/19/2018	3/18/2018	12/31/2018		14%	NA	See 2015 CMM NPRRs
NPRR660	Remove CRR State Change Adder	3/15/2017	5/19/2018	5/19/2018	5/19/2018	12/31/2018		0%	NA	See 2015 CMM NPRRs
NPRR683	Revision to Available Credit Limit Calculation	3/15/2017	5/19/2018	5/19/2018	3/18/2018	12/31/2018		14%	NA	See 2015 CMM NPRRs
NPRR741	Clarifications to TPE and EAL Credit Exposure Calculations	3/15/2017	5/19/2018	5/19/2018	5/19/2018	12/31/2018		0%	NA	See 2015 CMM NPRRs
NPRR743	Revision to MCE to Have a Floor For Load Exposure	3/15/2017	5/19/2018	5/19/2018	3/18/2018	12/31/2018		14%	NA	See 2015 CMM NPRRs
NPRR749	Option Cost for Outstanding CRRs	3/15/2017	5/19/2018	5/19/2018	3/18/2018	12/31/2018		14%	NA	See 2015 CMM NPRRs
NPRR755	Data Agent-Only QSE Registration	3/15/2017	5/19/2018	5/19/2018	5/19/2018	12/31/2018		0%	NA	See 2015 CMM NPRRs
NPRR760	Calculation of Exposure Variables For Days With No Activity	3/15/2017	5/19/2018	5/19/2018	3/18/2018	12/31/2018		14%	NA	See 2015 CMM NPRRs
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%		0%
NPRR776	Voltage Set Point Communication	9/20/2017	3/19/2018	4/5/2018	4/5/2018	6/27/2018		0%		10%
NPRR800	Revisions to Credit Exposure Calculations to Use Electricity Futures Market Prices	3/15/2017	5/19/2018	5/19/2018	3/18/2018	12/31/2018		14%	NA	See 2015 CMM NPRRs

# ERCOT Portfolio Stoplight Report – February 2018

Project Number	Projects in Execution Phase (Count = 47)	Phase Start	Baseline Go-Live Date	Approved Go-Live Date	Scheduled Go-Live Date	Scheduled Phase Finish	Schedule Health		Budget Health	
NPRR809	GTC or GTL for New Generation Interconnection	6/15/2017	3/31/2018	3/31/2018	3/31/2018	3/31/2018		0%	NA	See #233-00
NPRR833	Modify PTP Obligation Bid Clearing Change	11/8/2017	4/5/2018	4/5/2018	4/5/2018	5/3/2018		0%		9%
PGRR052	Stability Assessment for Interconnecting Generation	6/15/2017	3/31/2018	3/31/2018	3/31/2018	3/31/2018		0%	NA	See #233-00
PGRR054	Stability Limits in the Full Interconnect Study	6/15/2017	3/31/2018	3/31/2018	3/31/2018	3/31/2018		0%	NA	See #233-00
PGRR057	Responsibilities for Performing Geomagnetic Disturbance (GMD) Vulnerability	6/15/2017	7/1/2019	7/1/2019	7/1/2019	7/1/2019		0%	NA	See #233-00
SCR777	Bilateral CRR Interface Enhancement	10/26/2016	10/2/2017	1/22/2018	TBD	TBD		0%	NA	See #181-01
SCR781	RARF Replacement	12/20/2017	4/25/2018	4/25/2018	4/25/2018	4/25/2018		0%		3%
SCR792	Enhance Communications of BAAL Exceedances	2/14/2018	4/5/2018	4/5/2018	4/5/2018	4/25/2018		0%		0%
Project Number	Expedited Projects in Execution (Count = 15)									
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	
224-01	TelAlert Replacement	4/5/2017	6/27/2017	8/4/2017	8/4/2017	5/2/2018		0%		2%
230-01	SAS Technical Architecture Redesign	3/1/2017	12/13/2017	12/13/2017	12/13/2017	4/30/2018		0%		4%
Project Number	Projects On Hold (Count = 1)	Forecast Start Date	Baseline Phase Finish	Approved Go-Live Target	Scheduled Go-Live Date	Scheduled Phase Finish	Schedule Health		Budget Health	
228-01	Enterprise Database Upgrade									23%

# ERCOT Portfolio Stoplight Report – February 2018

Project Number	Projects Completed (Count = 11)	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%
234-01	Reporting Solution Resiliency (RSR)	4/5/2017	8/23/2017	11/27/2017	11/27/2017	1/10/2018		0%		9%
240-01	EDI Translator and Mapping Replacement Assessment	4/19/2017	9/27/2017	2/28/2018	TBD	3/7/2018		-2%		4%
254-01	Retail Windows Upgrade	10/11/2017	12/18/2017	12/18/2017	1/22/2018	2/7/2018	1	-51%		21%
255-01	Settlements Architecture Enhancements	10/25/2017	1/11/2018	1/11/2018	1/11/2018	2/14/2018		0%		48%
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%		21%
NPRR808	Three Year CRR Auction	8/23/2017	9/18/2017	9/18/2017	9/18/2017	1/31/2018		0%		50%
NPRR810	Applicability of RMR Incentive Factor on Reservation and Transportation Costs Associated with Firm Fuel Supplies	7/17/2017	11/12/2017	3/31/2018	3/31/2018	3/31/2018		0%	NA	See #233-00
NPRR830	Revision of 4-Coincident Peak Methodology	12/13/2017	2/6/2018	2/6/2018	2/6/2018	3/7/2018		0%		38%
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%		31%

Project Number	Expedited Projects Completed (Count = 8)	
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Project Number	2018 Projects Not Yet Started (Count = 8)	Forecast Start Date
NPRR817	Create a Panhandle Hub	Mar-2018
TBD	EDI Translator and Mapping Replacement	Mar-2018
NPRR843	Short-Term System Adequacy and AS Offer Disclosure Reports Additions	May-2018
ECAP	ECAP - ECMS Implementation Phase 2	Jun-2018
TBD	Resource Integration and Ongoing Operations (RIOO)	Jul-2018
TBD	Infrastructure Software Upgrade Assessment	Jul-2018
TBD	Job Scheduler Update in CSI Framework	Oct-2018
TBD	2018 OS Enhancements	Oct-2018