



ERCOT Monthly Operational Overview ([March 2018](#))

ERCOT Public
April 15, 2018

Grid Planning & Operations

Summary – March 2018

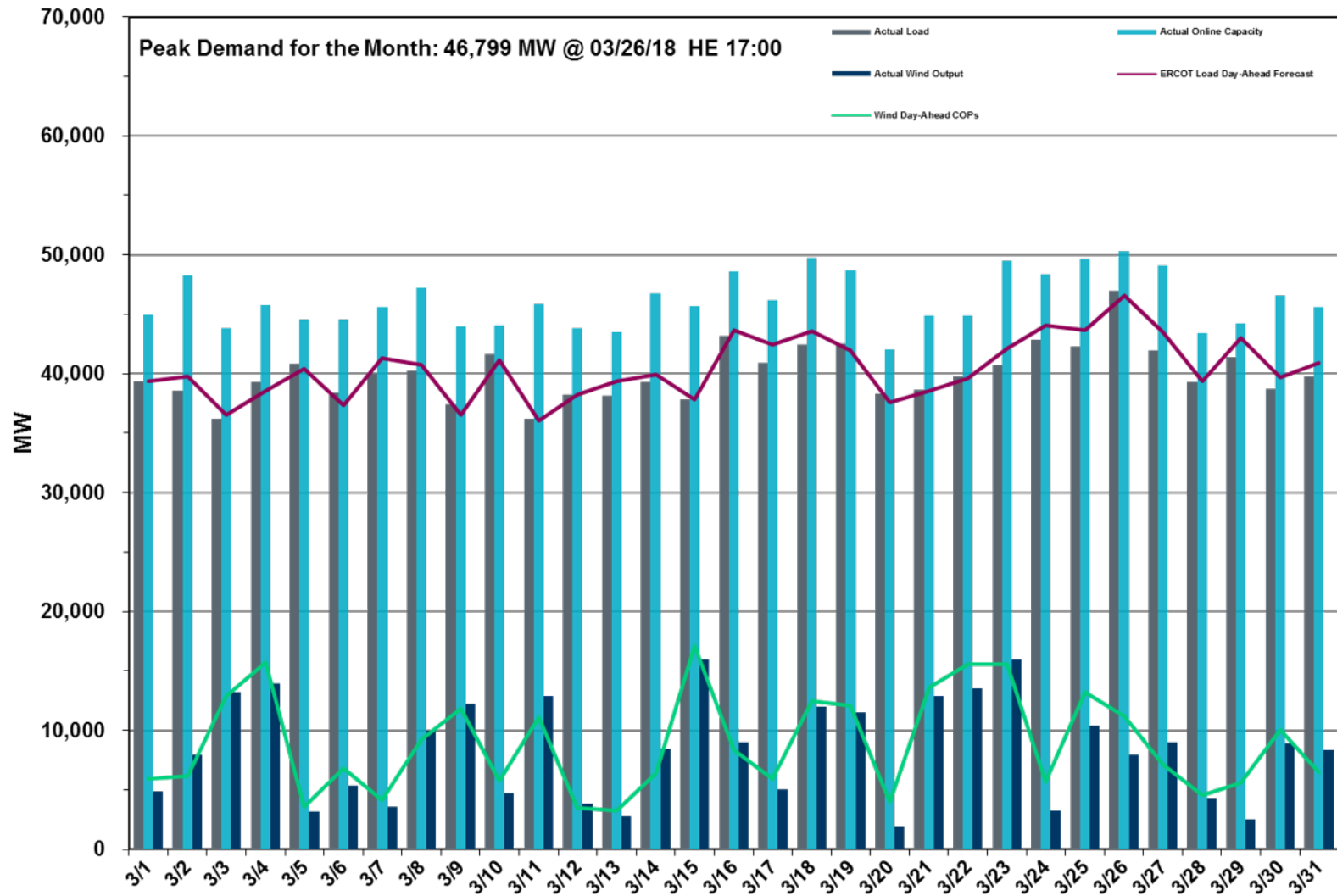
Operations

- The preliminary Settlements hourly peak demand of 46,799* MW on March 26 was higher than the day-ahead mid-term load forecast peak of 46,587 MW for same operating hour.
 - The operational instantaneous peak demand was 47,104 MW (telemetry).
- Day-ahead load forecast error for March was 2.11%
- ERCOT issued 11 notifications:
 - One Advisory issued for the delayed deadline for the posting of the DAM solution for Operating Day March 08, 2018 due to long solution time
 - One Advisory issued for the delayed deadline for the posting of the DAM solution for operating day March 10, 2018 due to long internal price validation processing time
 - Two Advisories issued due to ERCOT's Voltage Security Assessment Tool is currently unavailable
 - One Watch issued due to a forced outage of Eagle Pass DC Tie
 - One Watch issued due to HRUC not completing for HE05 due to timeline deviation
 - Three Watches issued due to forced extension of Eagle Pass DC Tie
 - One Watch issued due to a post-contingency overload in Far West Texas
 - One Watch issued for the Rio Grande Valley due to local congestion in the Rio Grande Valley

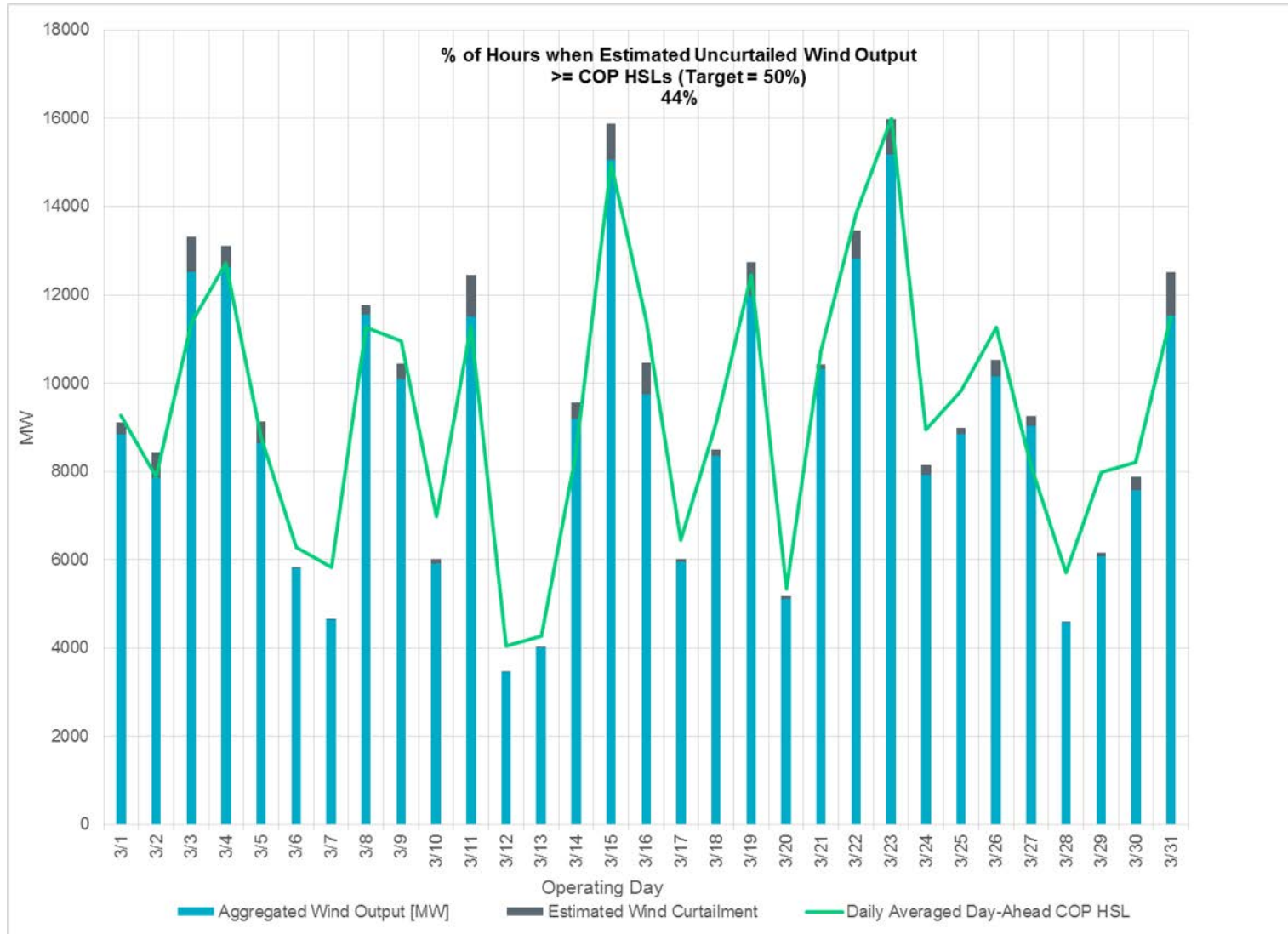
Planning Activities

- 340 active generation interconnection requests totaling 68,477 MW, including 32,897 MW of wind generation, as of March 31, 2018. Six additional requests and an increase of 1,079 MW from February 28, 2018.
- 20,890 MW wind capacity in commercial operations as of April 1, 2018.

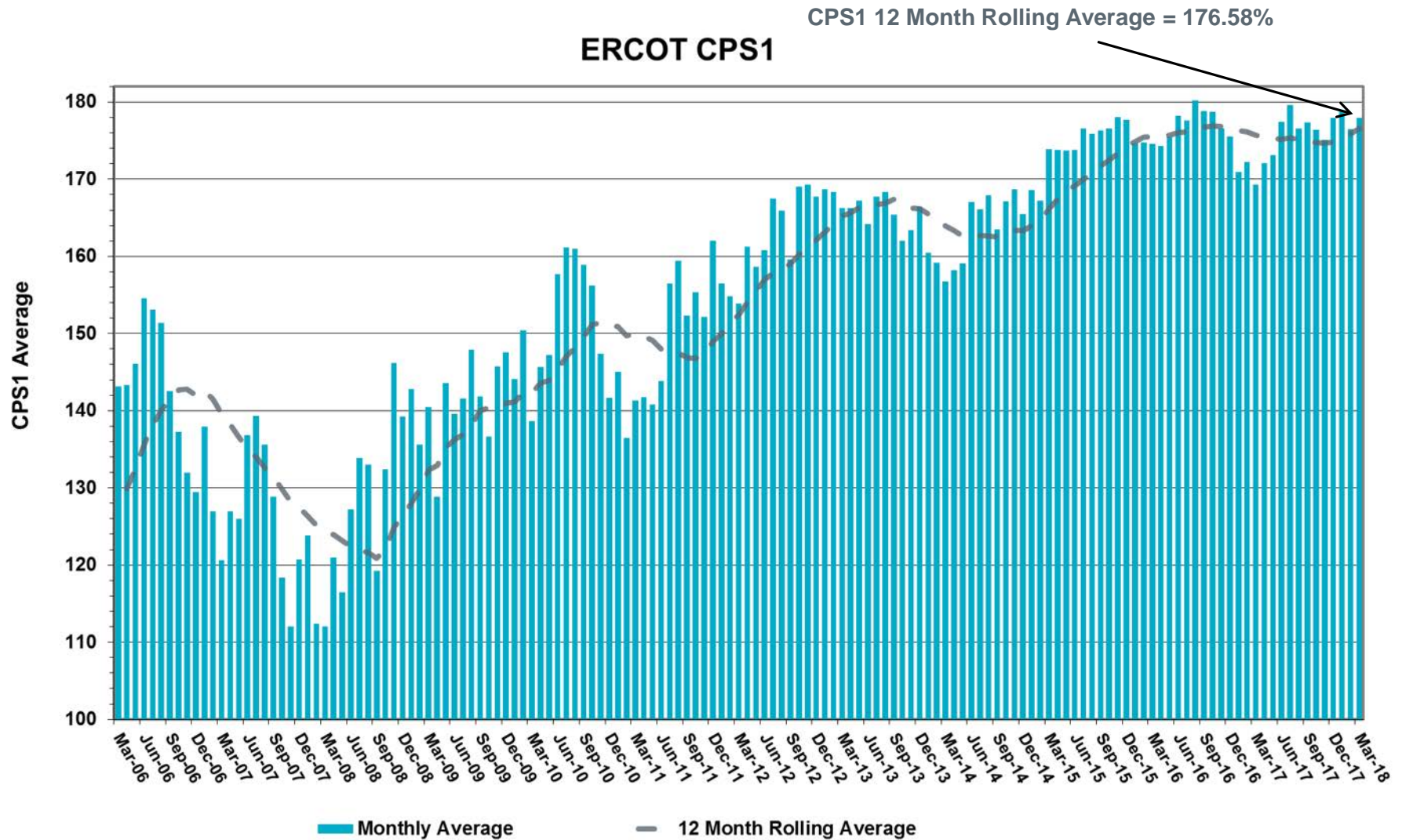
Daily Peak Demand: Hourly Average Actual vs. Forecast, Wind Day-Ahead COPs & On-Line Capacity at Peak – March 2018



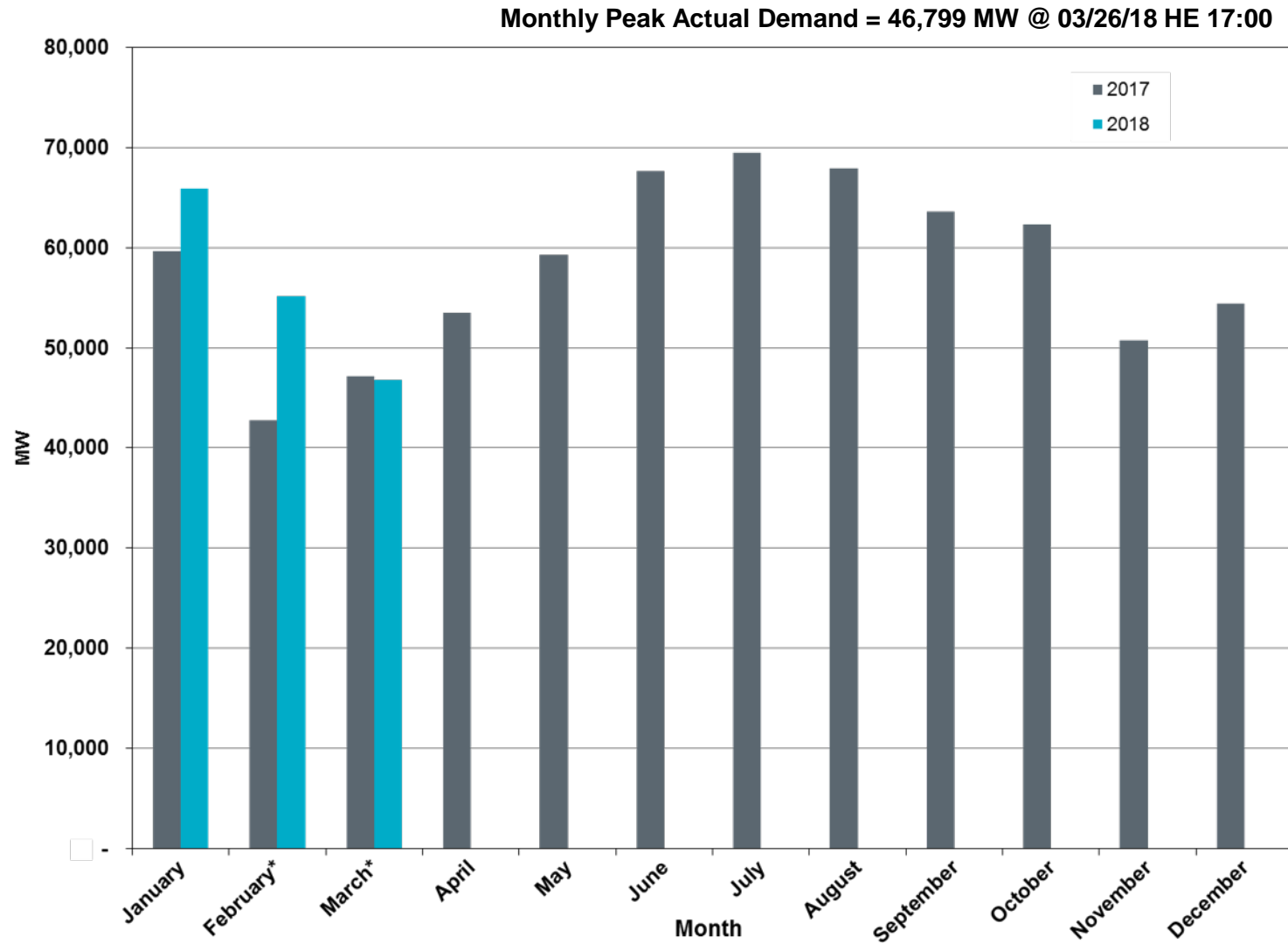
Actual Wind Output plus Curtailments vs. Wind Day-Ahead COPs for All Hours – March 2018



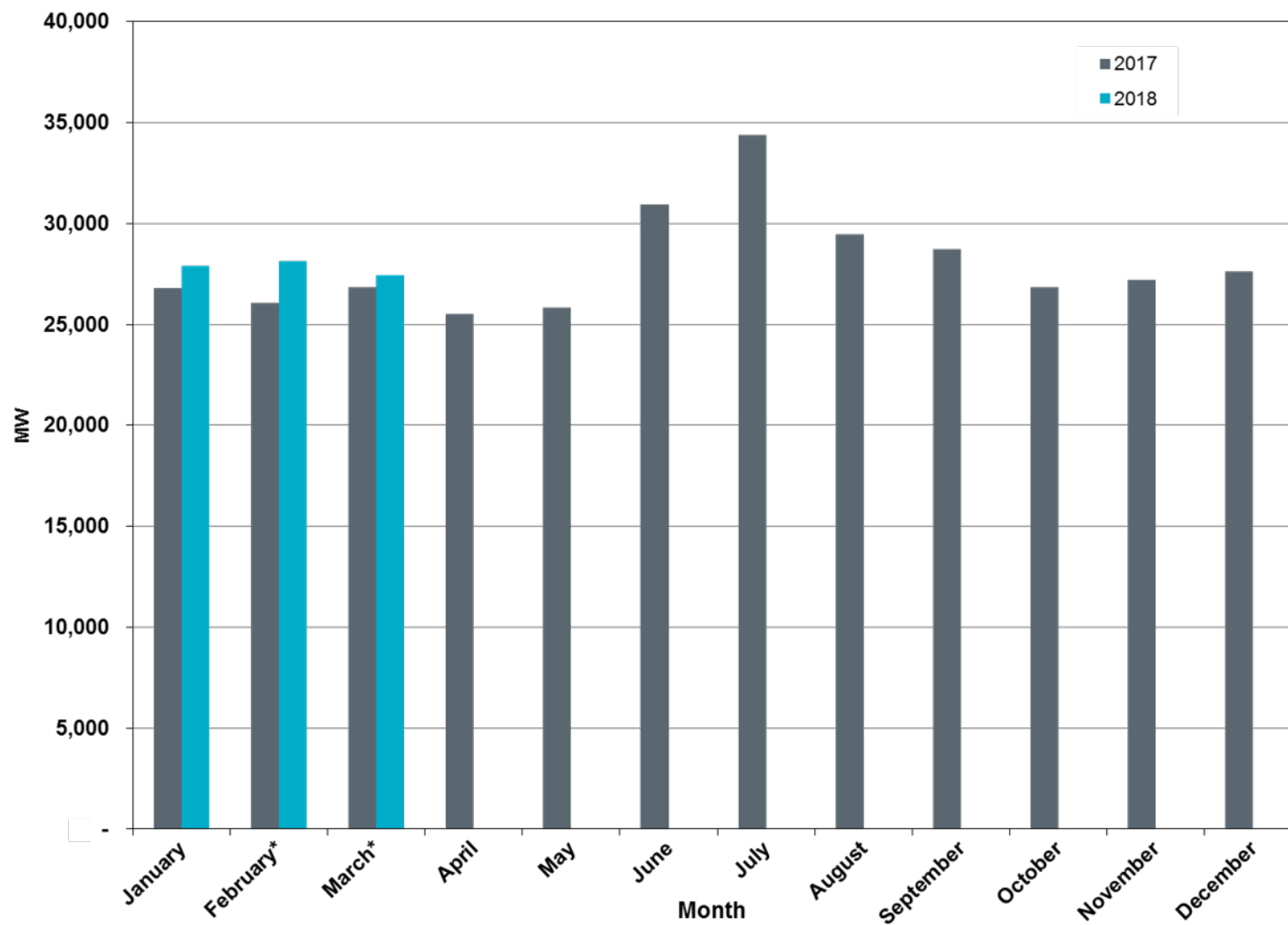
ERCOT's CPS1 Monthly Performance – March 2018



Monthly Peak Actual Demand – March 2018



Monthly Minimum Actual 15-Minute Demand – March 2018

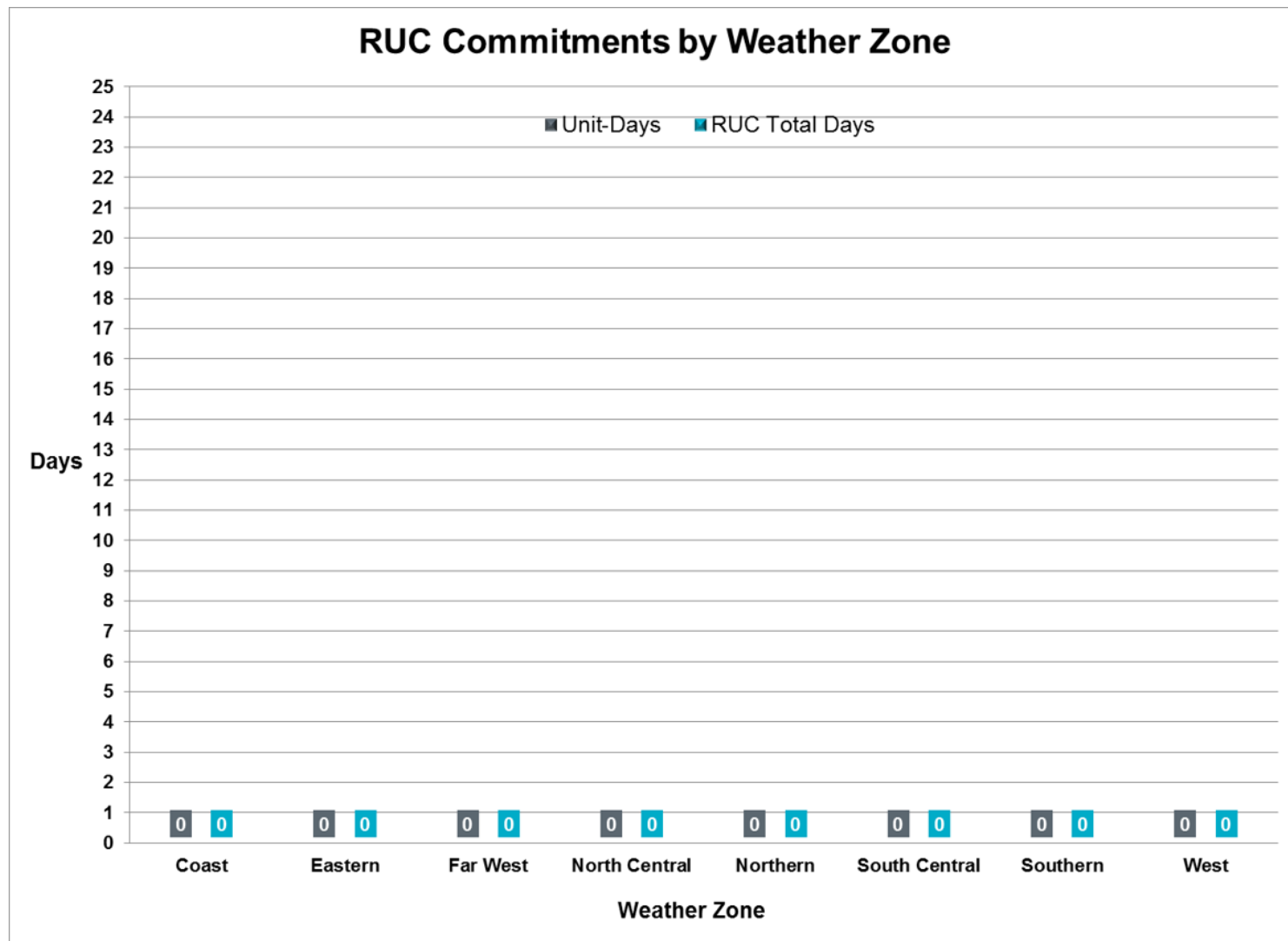


Day-Ahead Load Forecast Performance – March 2018

**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 | March 2018 MAPE | |
|-------------------------------------|--------------|--------------|--------------|--------------|-----------------------------------|----------------|
| Average Annual MAPE | 2.86 | 2.62 | 2.55 | 3.05 | 2.11 | |
| Lowest Monthly MAPE | 1.89 | 1.94 | 1.69 | 2.11 | Lowest Daily MAPE | 0.45 Mar 26 |
| Highest Monthly MAPE | 3.81 | 3.86 | 4.07 | 3.66 | Highest Daily MAPE | 3.68 Mar 25 |

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



Generic Transmission Constraints (GTCs) – March 2018

| GTCs | Mar-17 Days GTCs | Jan-18 Days GTCs | Feb-18 Days GTCs | Mar-18 Days GTCs | Last 12 Months Total Days (Apr 17 – Mar 18) |
|------------------------------|------------------------|------------------------|------------------------|------------------------|---------------------------------------------------|
| North – Houston | 0 | 0 | 0 | 2 | 9 |
| Valley Import | 1 | 5 | 0 | 1 | 14 |
| Panhandle | 29 | 24 | 27 | 29 | 275 |
| Red Tap | 0 | 0 | 0 | 0 | 0 |
| North Edinburg – Lobo | - | 0 | 0 | 0 | 1 |
| Nelson Sharpe – Rio Hondo | - | 11 | 13 | 16 | 51 |
| East Texas | - | 0 | 0 | 0 | 16 |

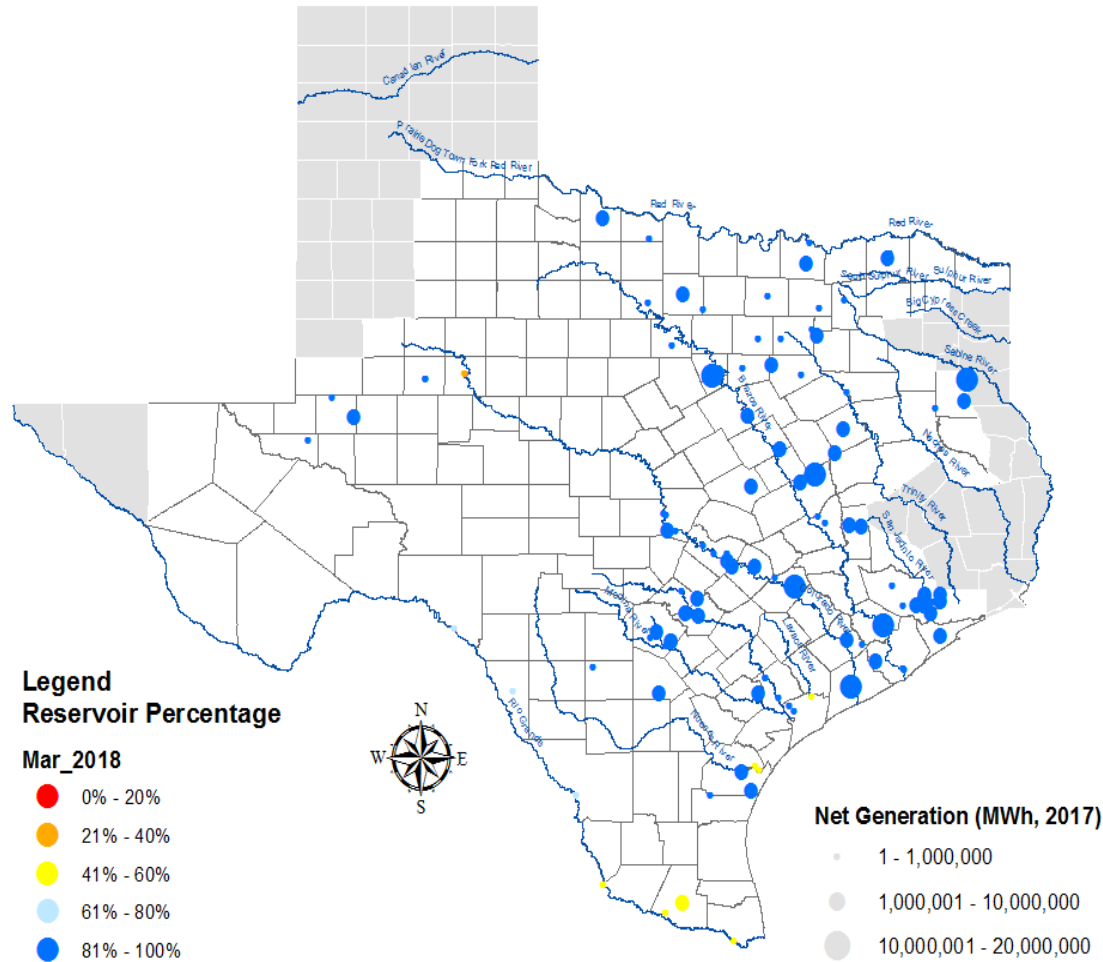
GTC: A transmission flow limit more constraining than a Transmission Element's normal limit established to constrain flow between geographic areas of the ERCOT Transmission System that is used to enforce stability and voltage constraints that cannot be modeled directly in ERCOT's transmission security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

- One Advisory issued for the delayed deadline for the posting of the DAM solution for operating day March 08, 2018 due to long solution time.
 - Issued 3/7
- One Advisory issued for the delayed deadline for the posting of the DAM solution for operating day March 10, 2018 due to long internal price validation processing time.
 - Issued 3/9
- Two Advisories issued due to ERCOT's Voltage Security Assessment Tool is unavailable.
 - Issued 3/19, 3/20
- One Watch issued due to a forced outage of Eagle Pass DC Tie.
 - Issued 3/10
- One Watch issued due to HRUC not completing for HE05 due to timeline deviation.
 - Issued 3/11
- Three Watches issued due to forced extension of Eagle Pass DC Tie.
 - Issued 3/13, 3/14, 3/15
- One Watch issued due to a post-contingency overload in Far West Texas.
 - Issued 3/18
- One Watch issued for the Rio Grande Valley due to local congestion in the Rio Grande Valley.
 - Issued 3/27

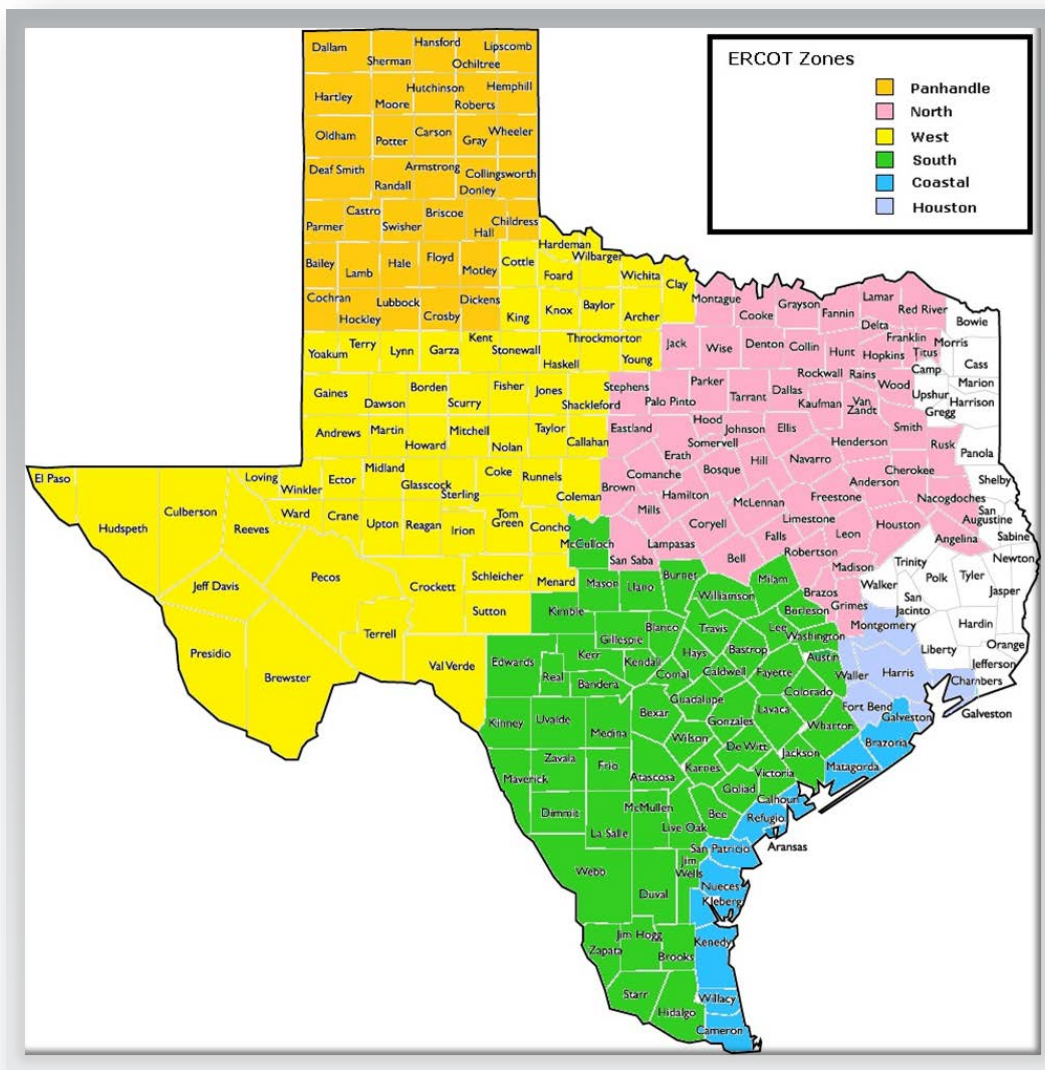
Lake Levels Update – April 1, 2018



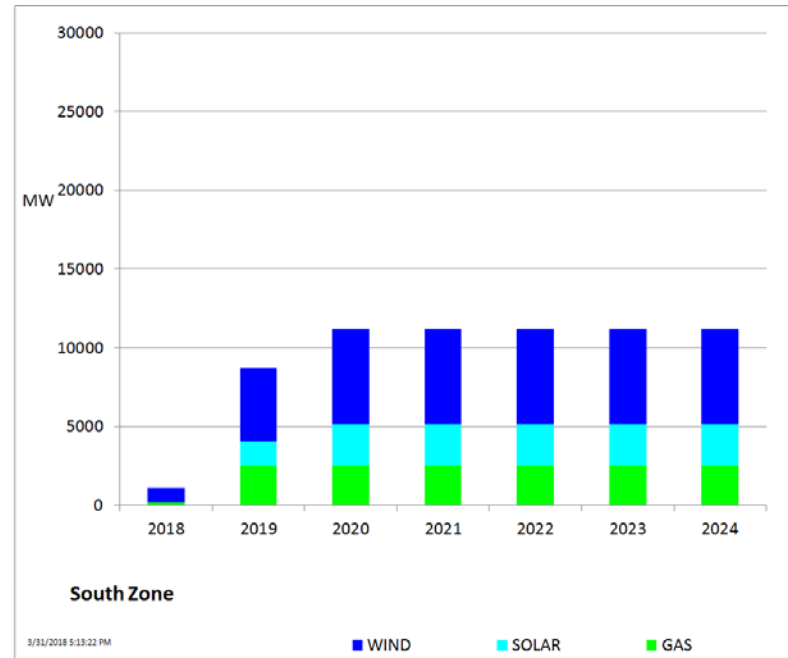
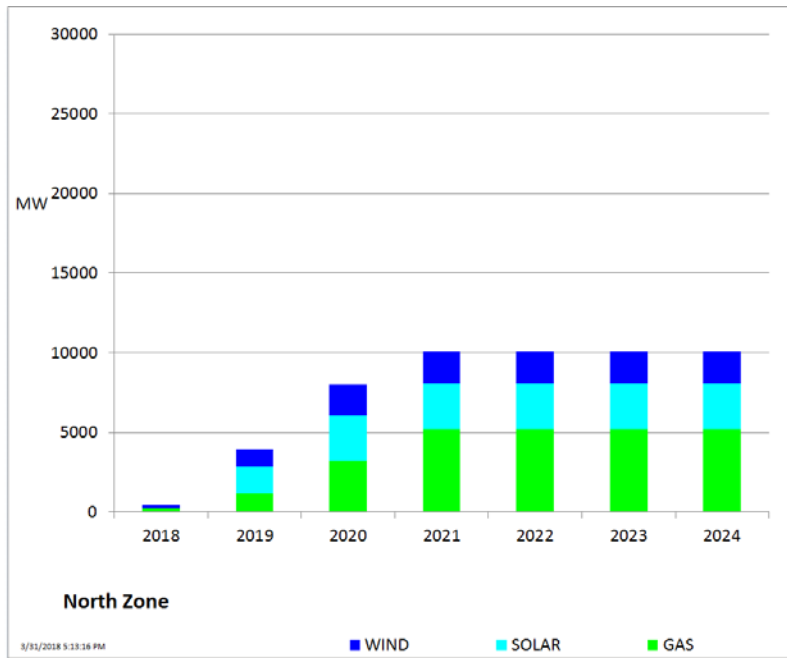
Planning Summary – March 2018

- ERCOT is currently tracking 340 active generation interconnection requests totaling 68,477 MW. This includes 32,897 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 \$7.21 billion (as of March 1, 2018).
- Transmission Projects energized in 2018 total about \$220.8 million (as of March 1, 2018).

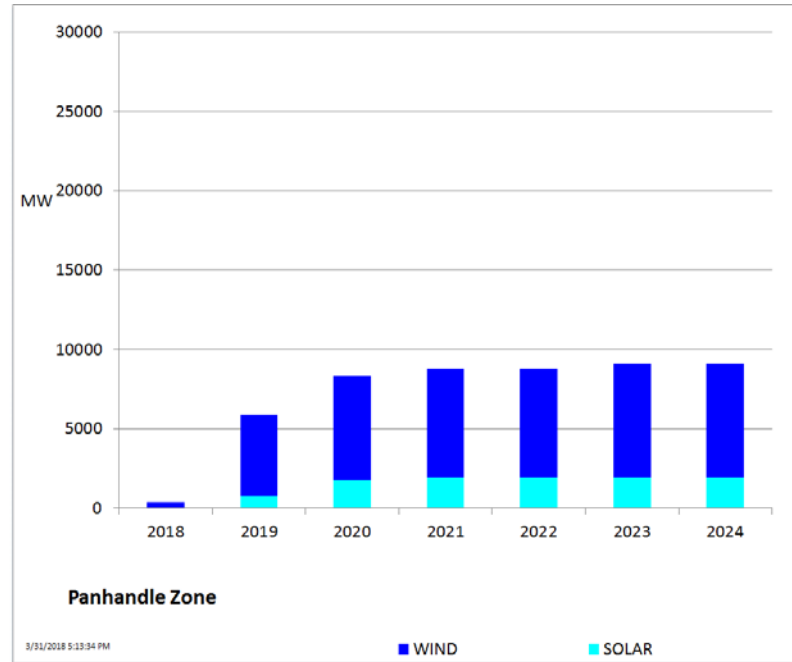
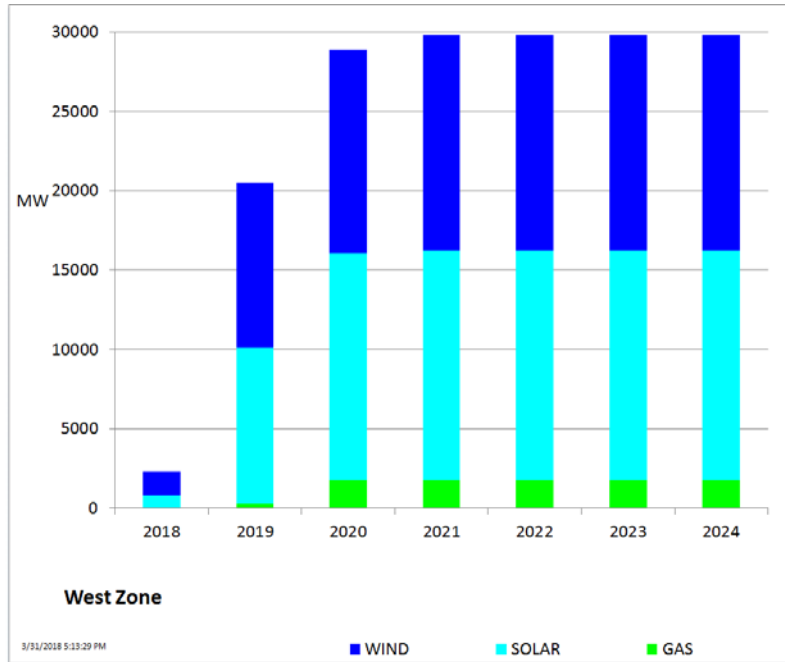
Mapping of Counties to ERCOT Zones – March 2018



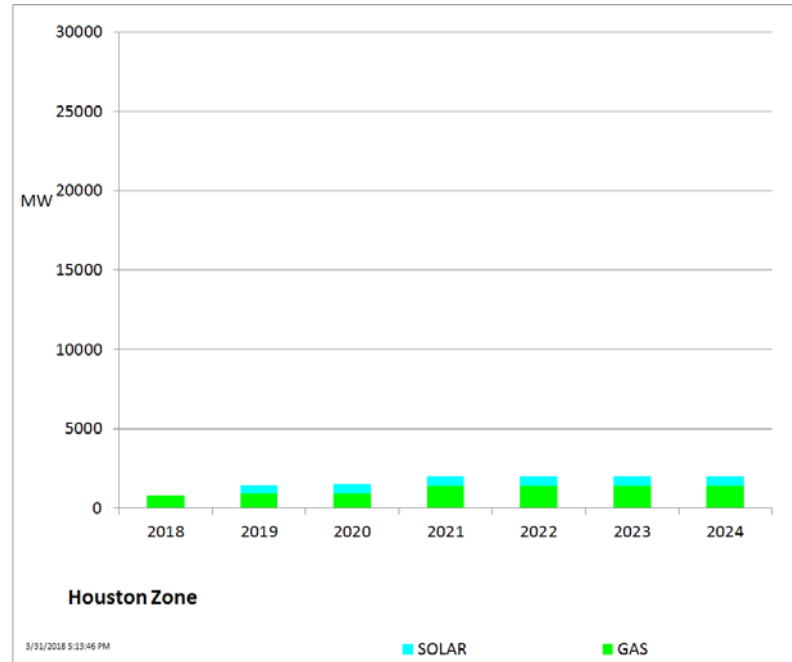
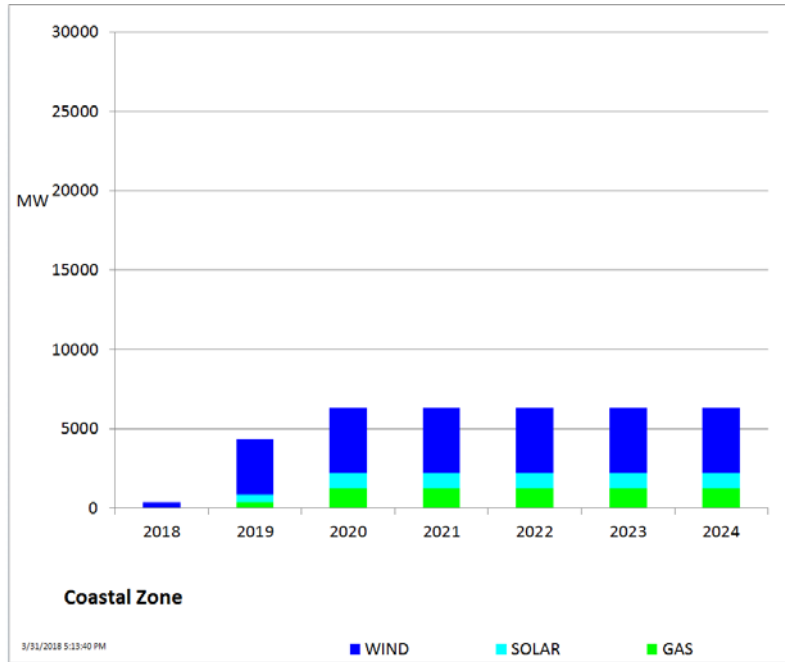
Cumulative MW Capacity of Interconnection Requests by Zone – March 2018



Cumulative MW Capacity of Interconnection Requests by Zone – March 2018

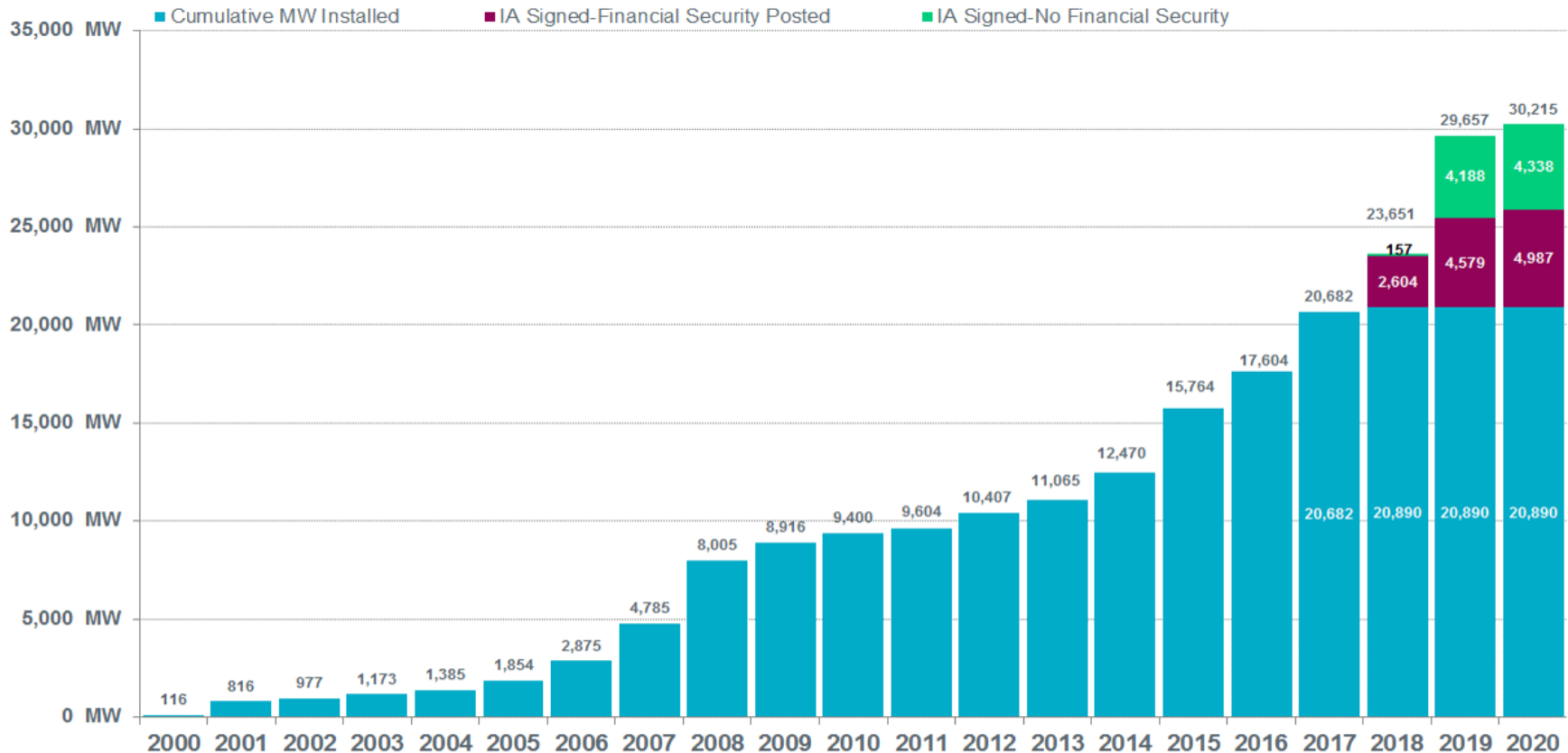


Cumulative MW Capacity of Interconnection Requests by Zone – March 2018



Wind Generation – March 2018

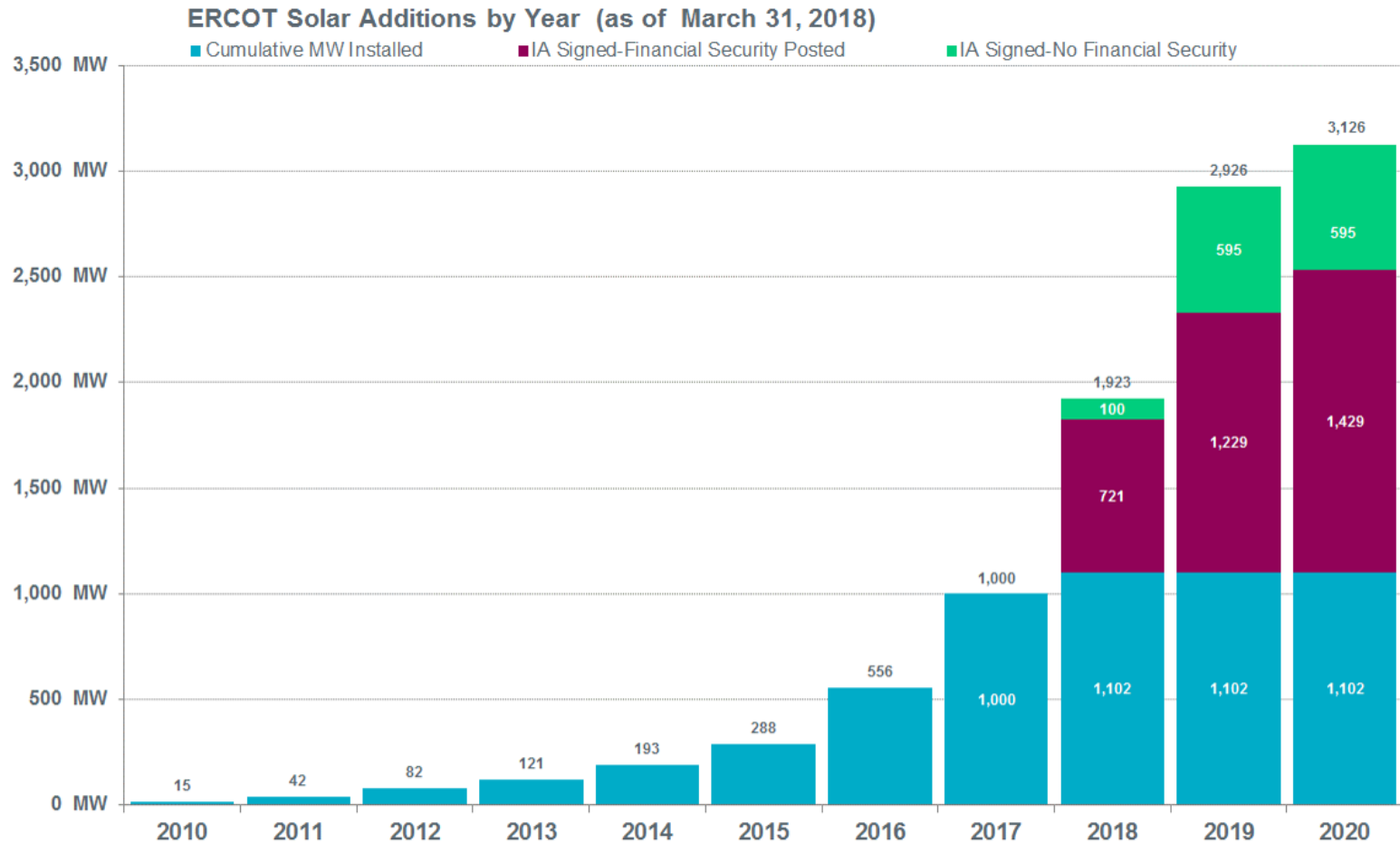
ERCOT Wind Additions by Year (as of March 31, 2018)



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 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.

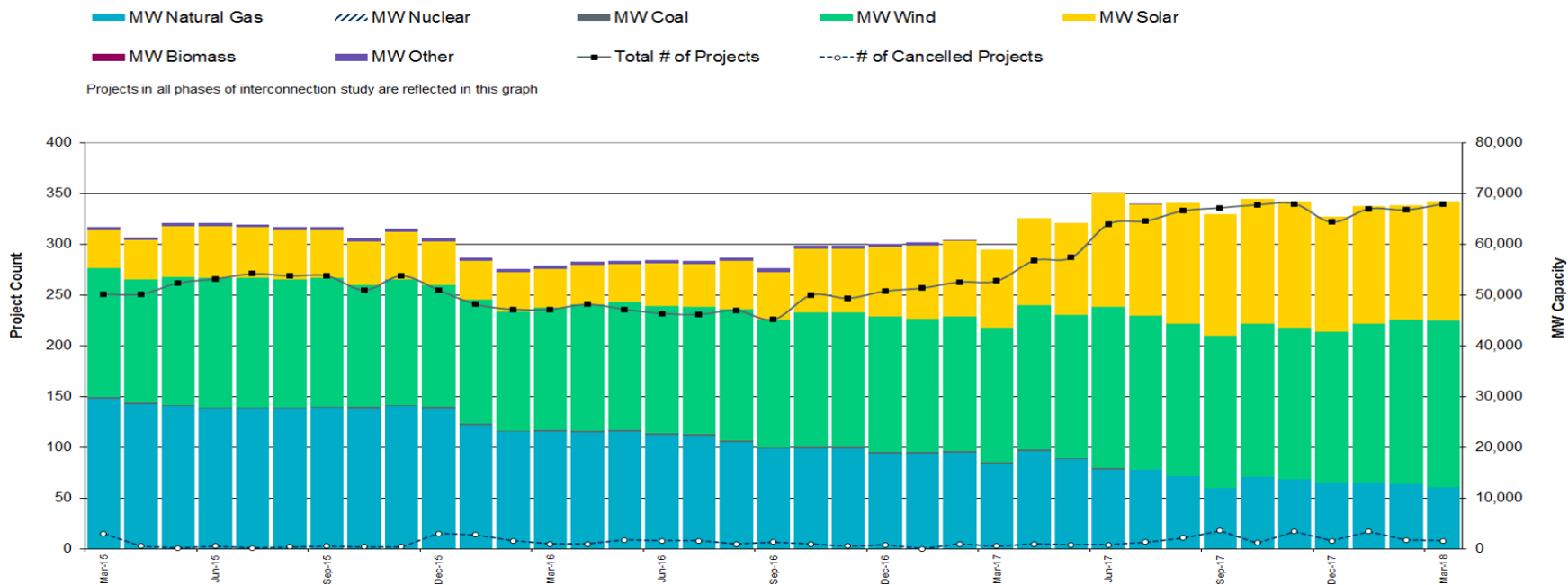
Solar Generation – March 2018



Notes:

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- 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.

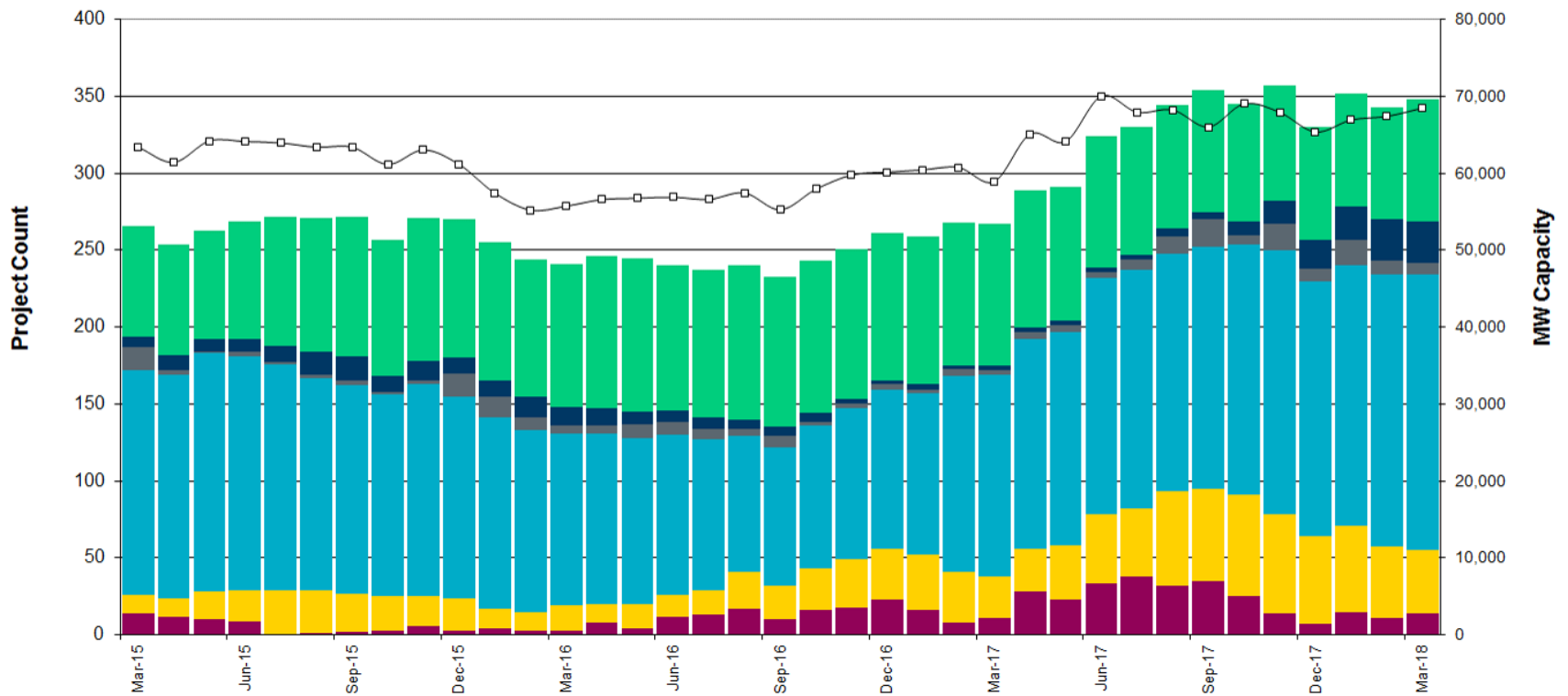
Generation Interconnection Activity by Fuel – March 2018



Generation Interconnection Activity by Project Phase – March 2018

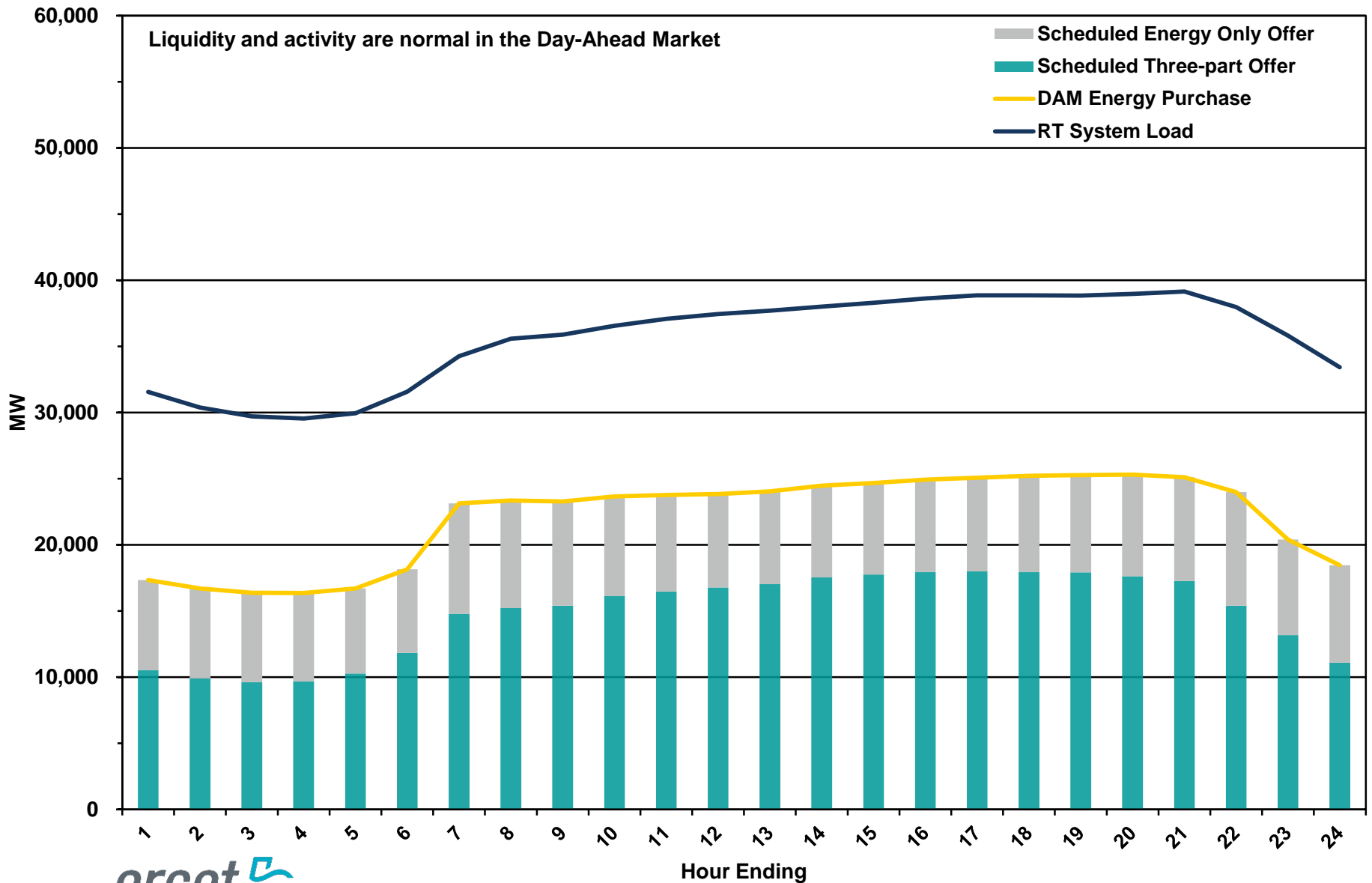
■ # Signed Interconnect Agreement
 ■ # Completed Full Study
 ■ # Projects Cancelled
 ■ # in Full Study
■ # Screening Study Complete
■ # Initial Screening Study
—□— MW Capacity Under Study *

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

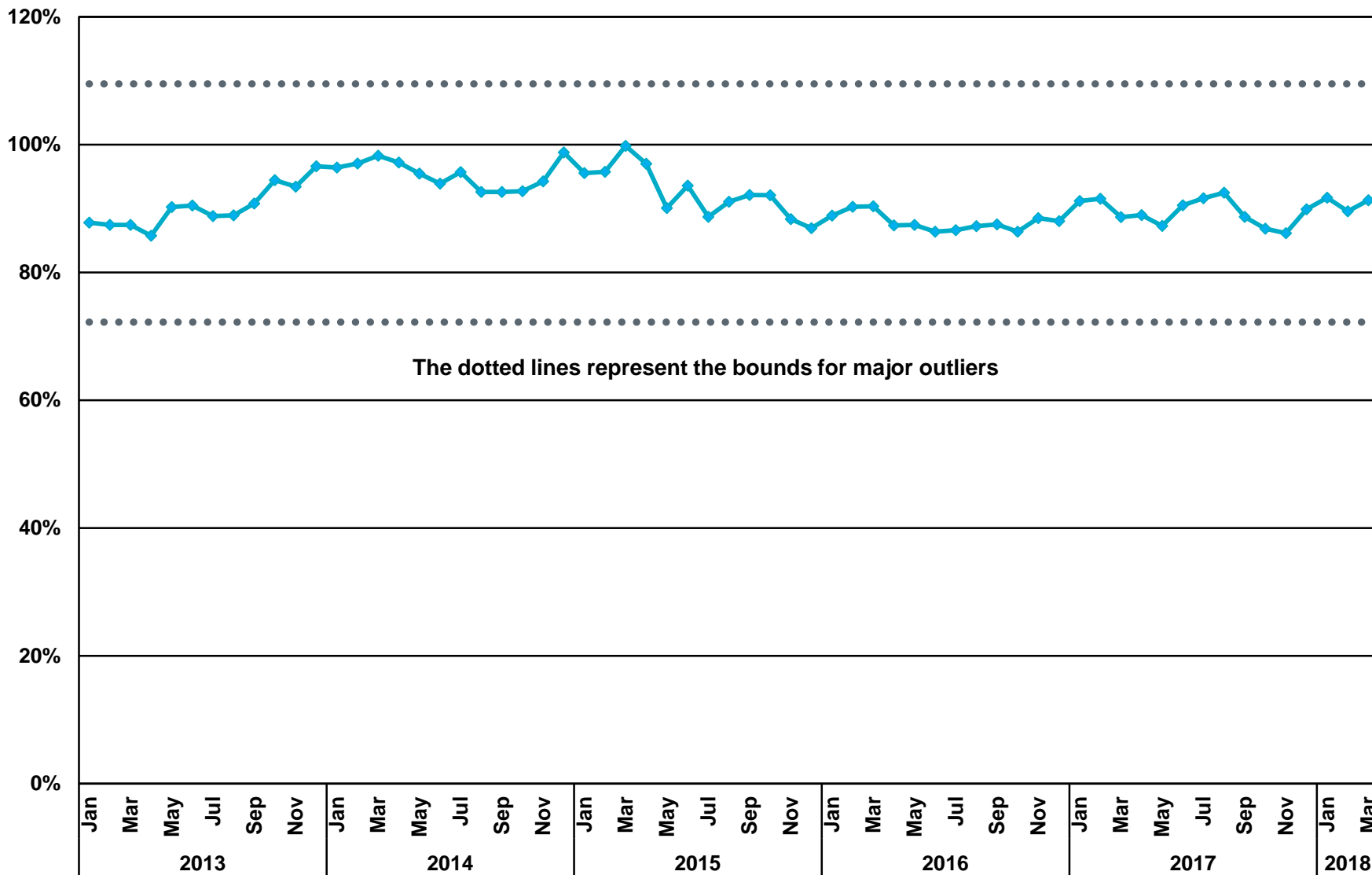


Market Operations

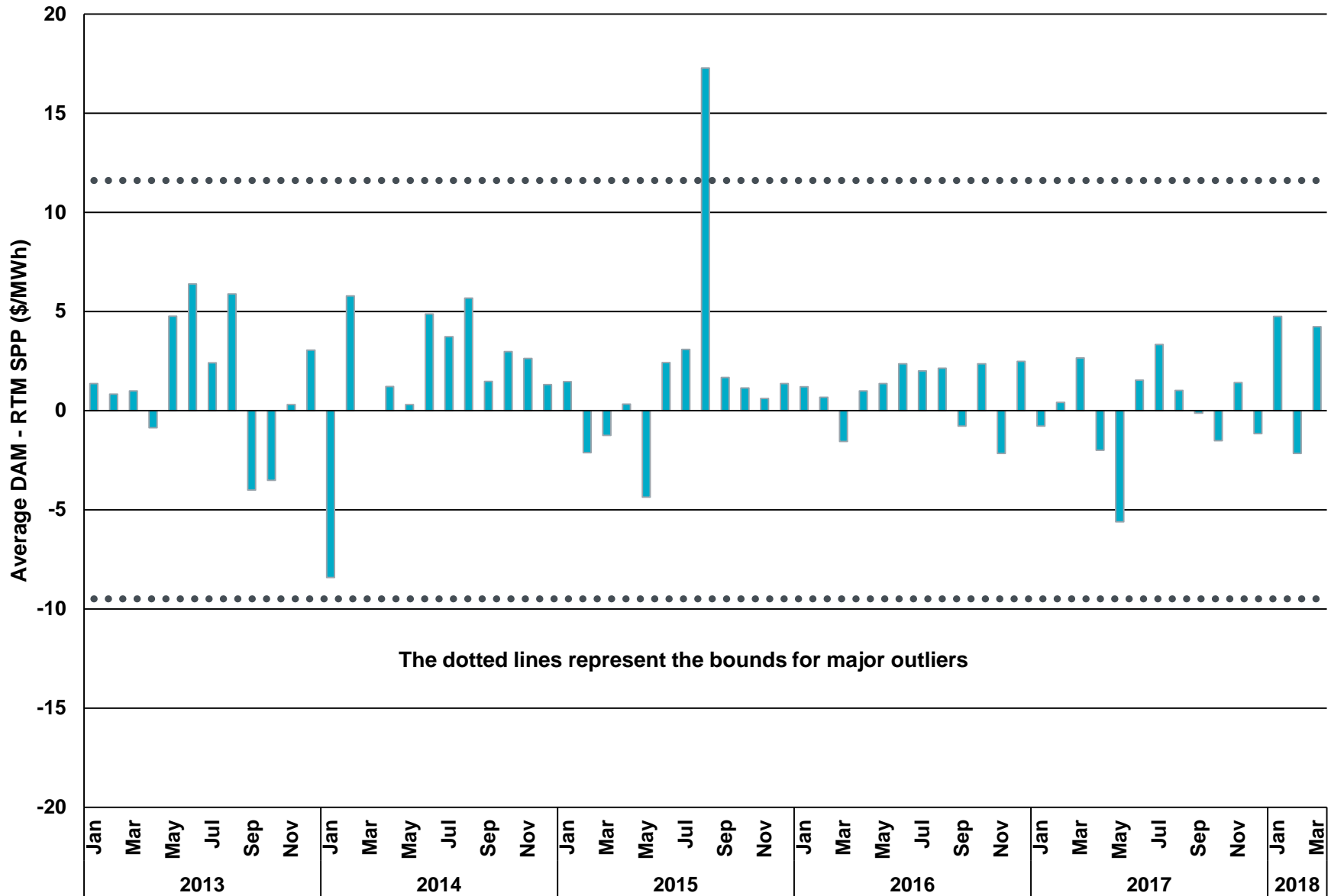
Day-Ahead Schedule (Hourly Average) – March 2018



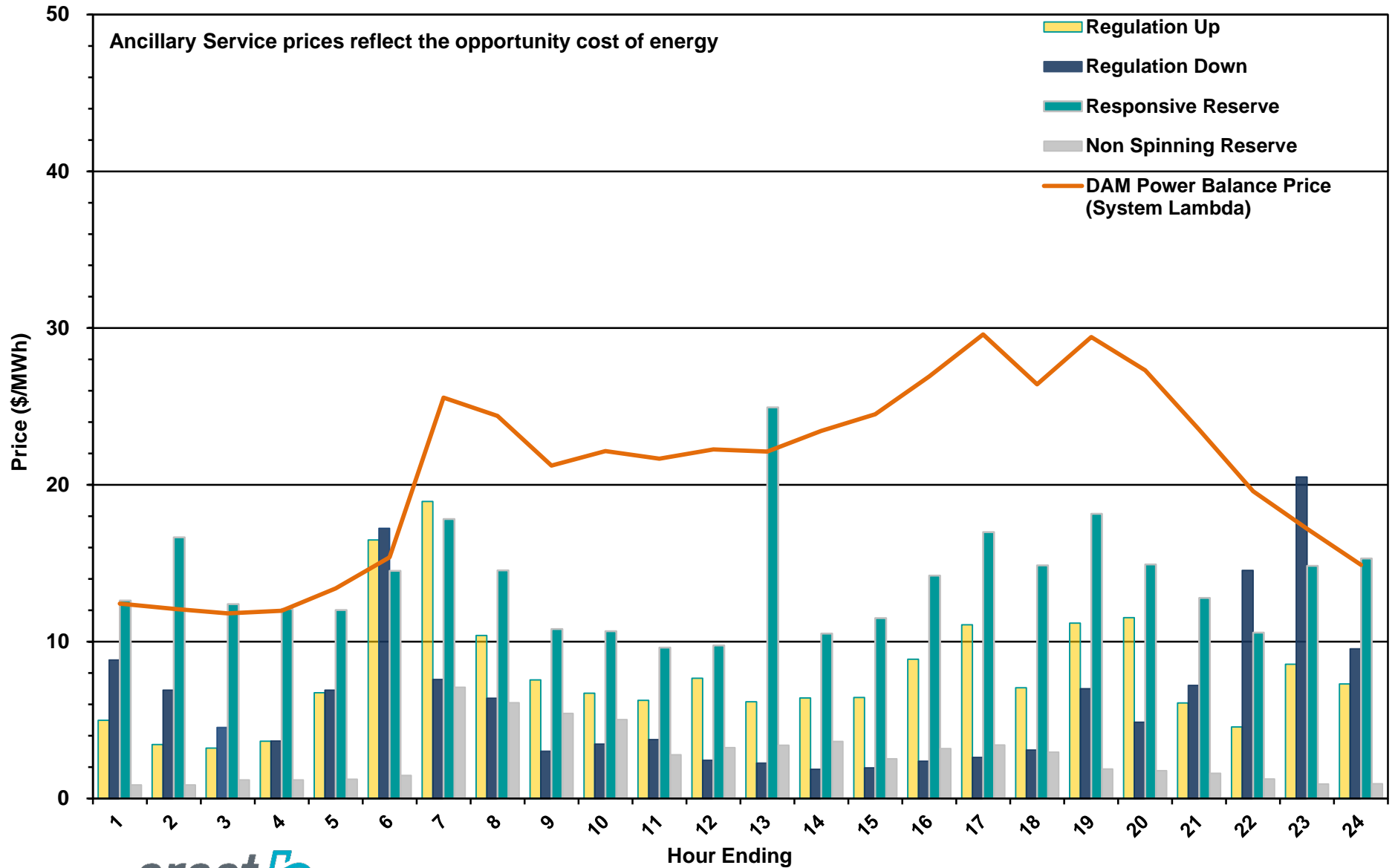
Percentage of Real-Time Load Hedged in the DAM (Counter-Party Level) – March 2018



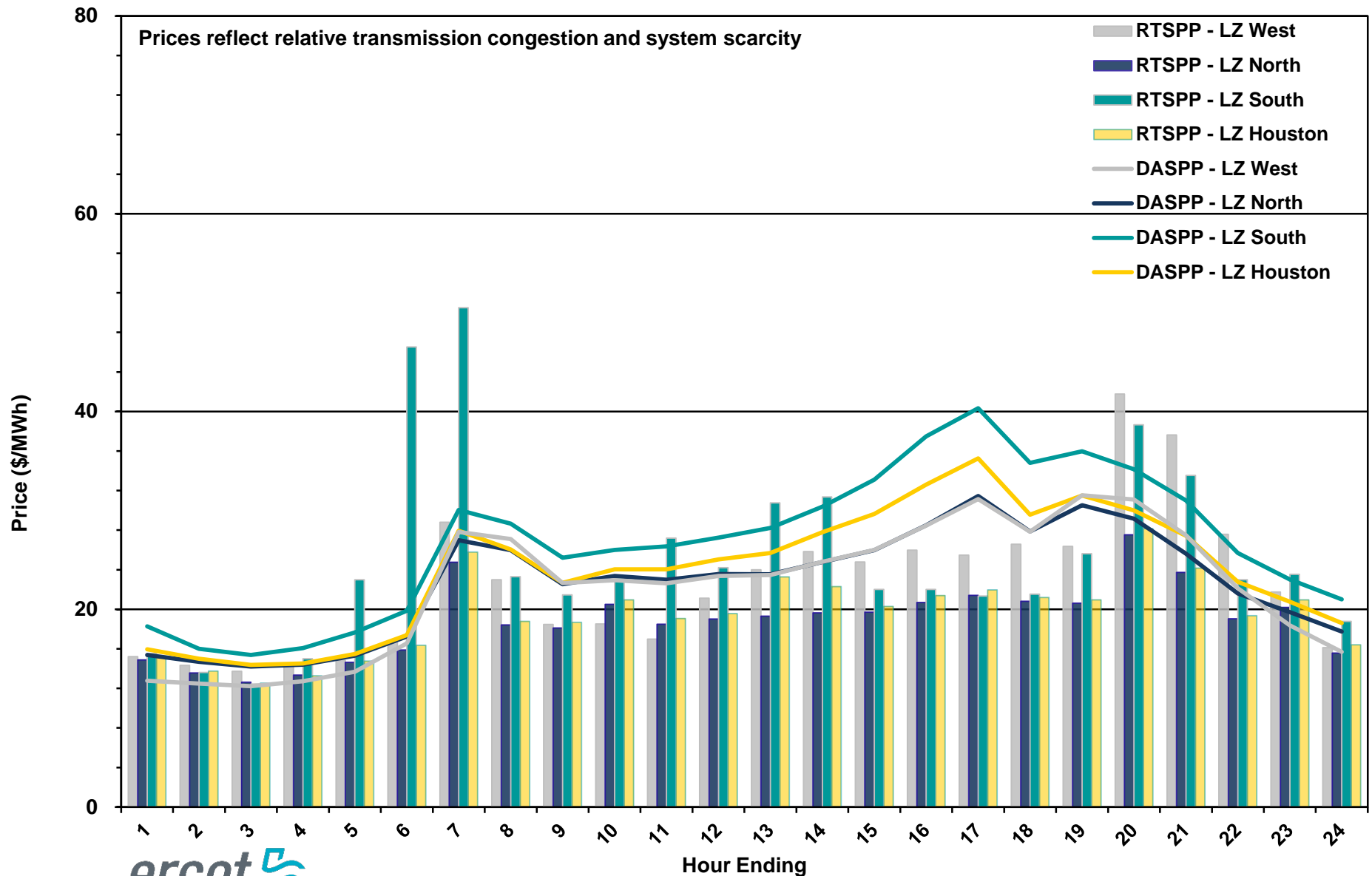
DAM and RTM Price Convergence – March 2018



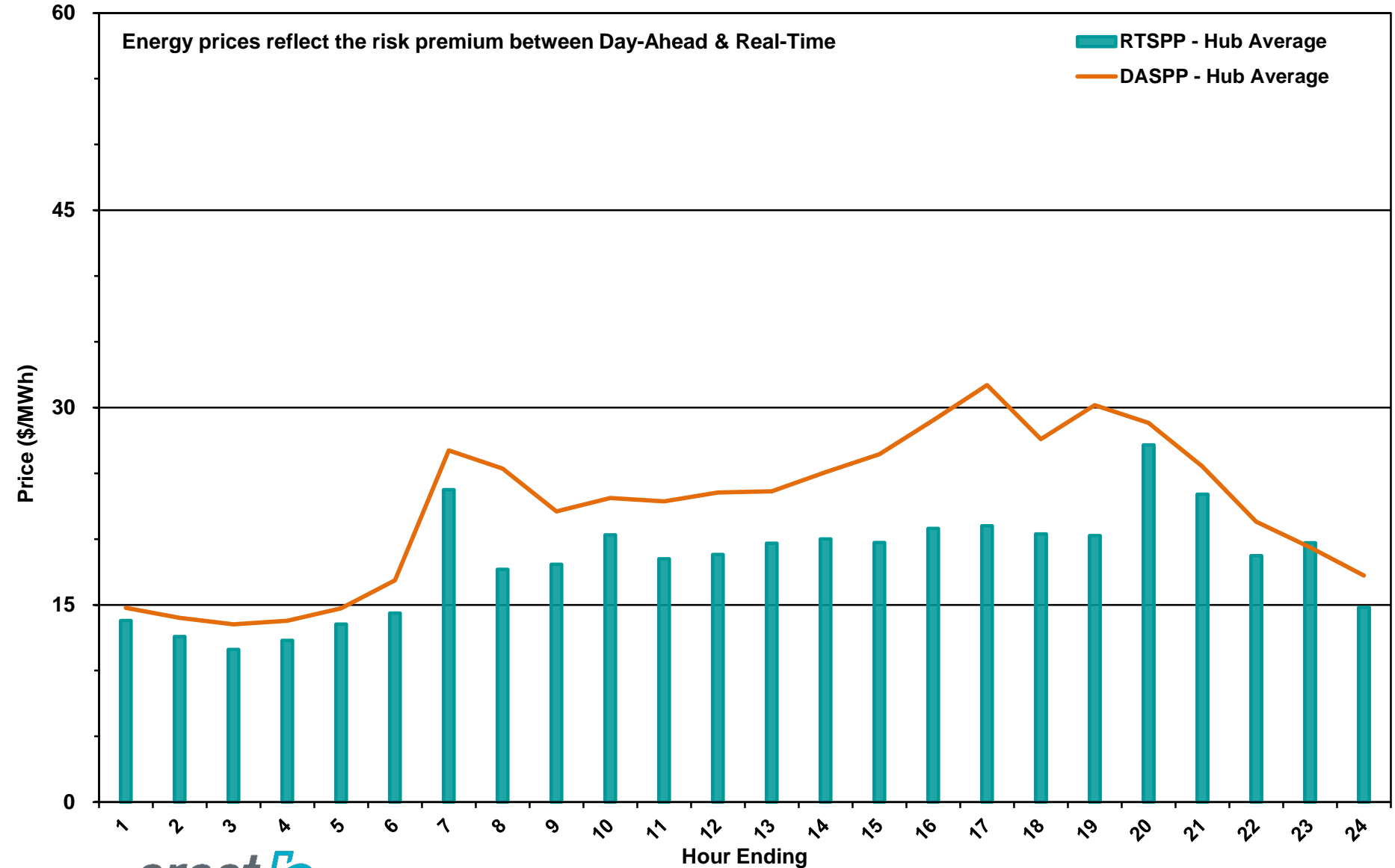
Day-Ahead Electricity and Ancillary Service Prices (Hourly Average) – March 2018



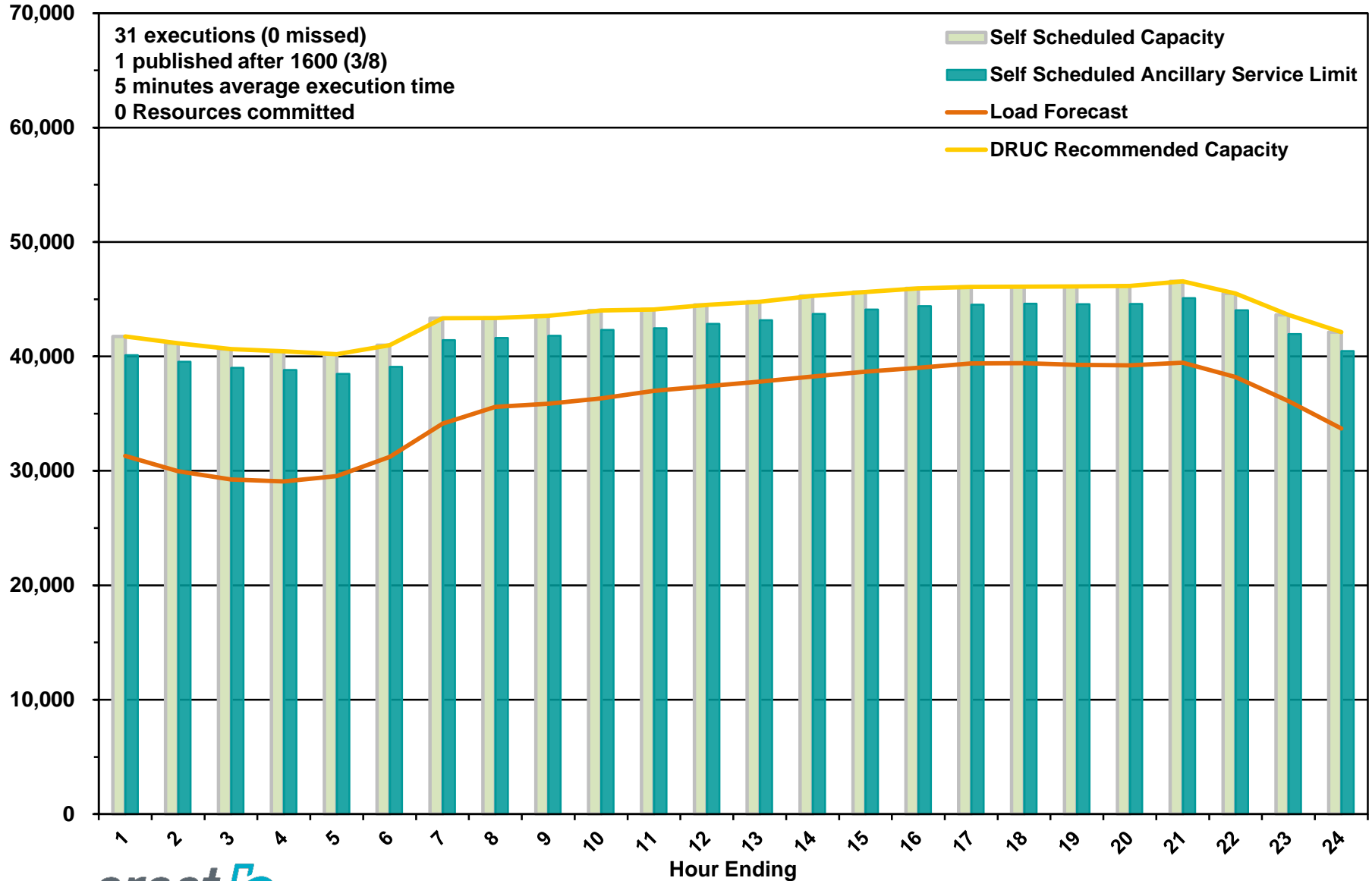
Day-Ahead vs Real-Time Load Zone SPP (Hourly Average) – March 2018



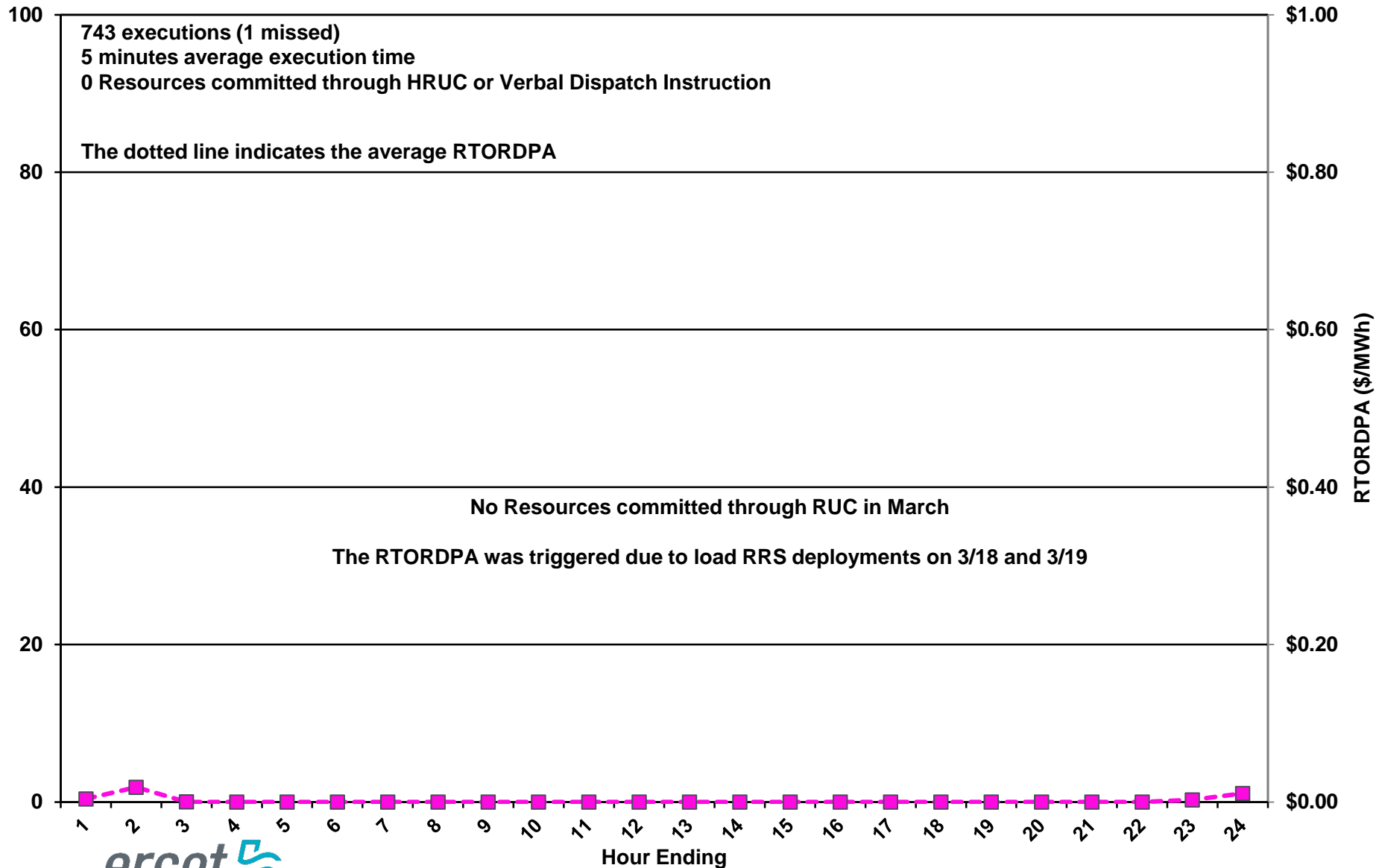
Day-Ahead vs Real-Time Hub Average SPP (Hourly Average) – March 2018



DRUC Monthly Summary (Hourly Average) – March 2018



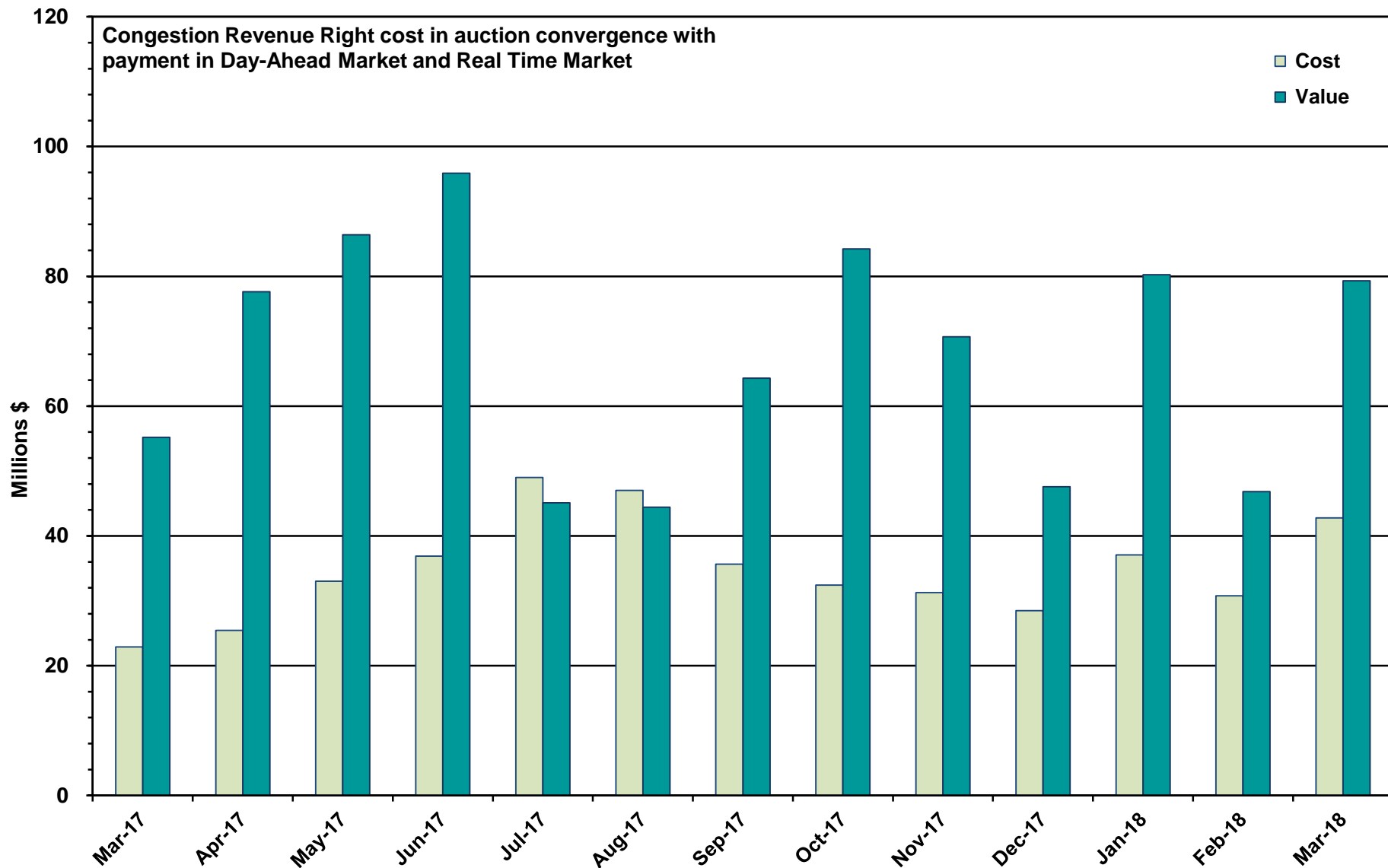
HRUC Monthly Summary and Real Time On-Line Reliability Deployment Price Adder (RTORDPA) (Hourly Average) – March 2018



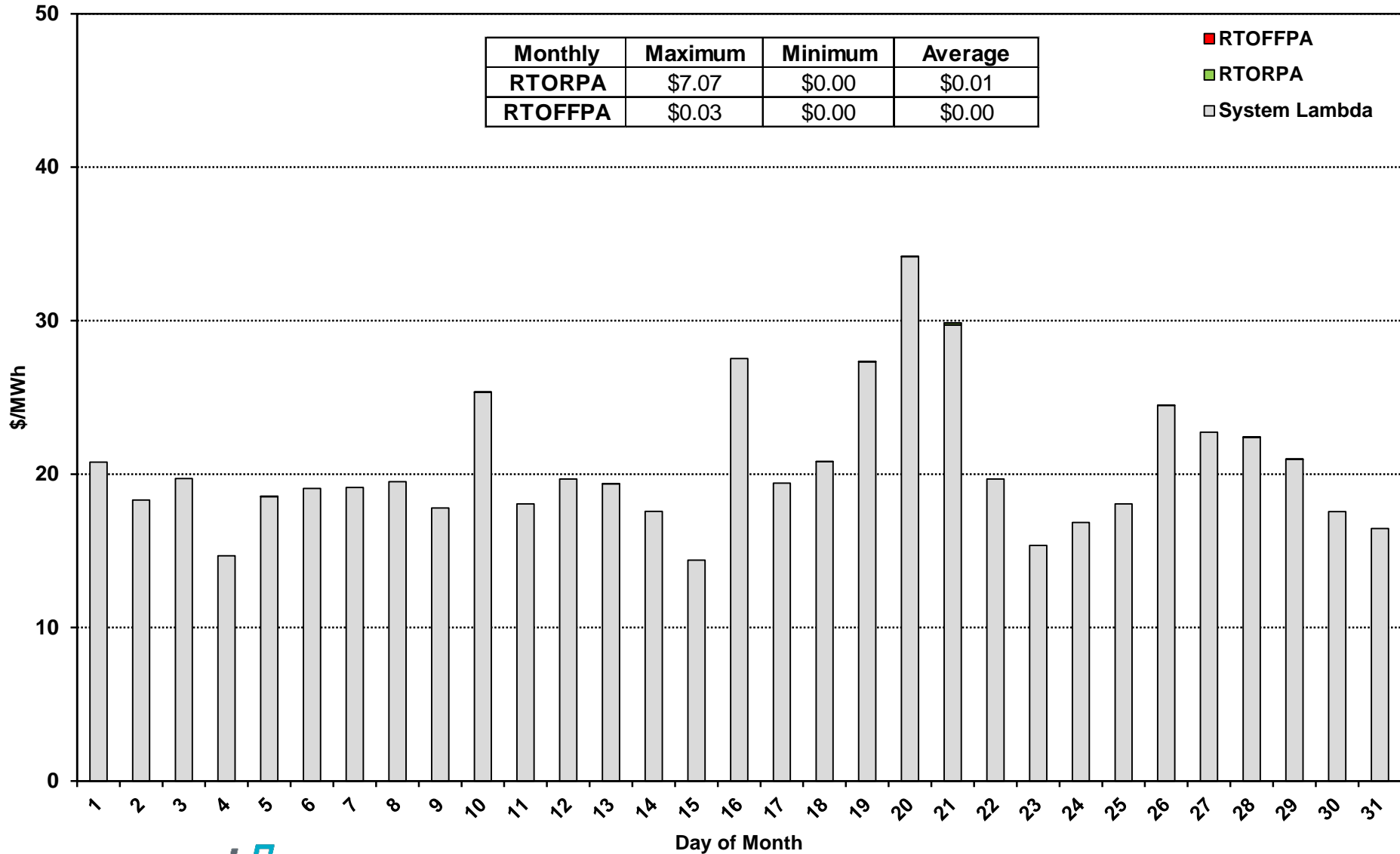
Non-Spinning Reserve Service Deployment – March 2018

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

CRR Price Convergence – March 2018



Daily Average System Lambda and ORDC Price Adders – March 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 |

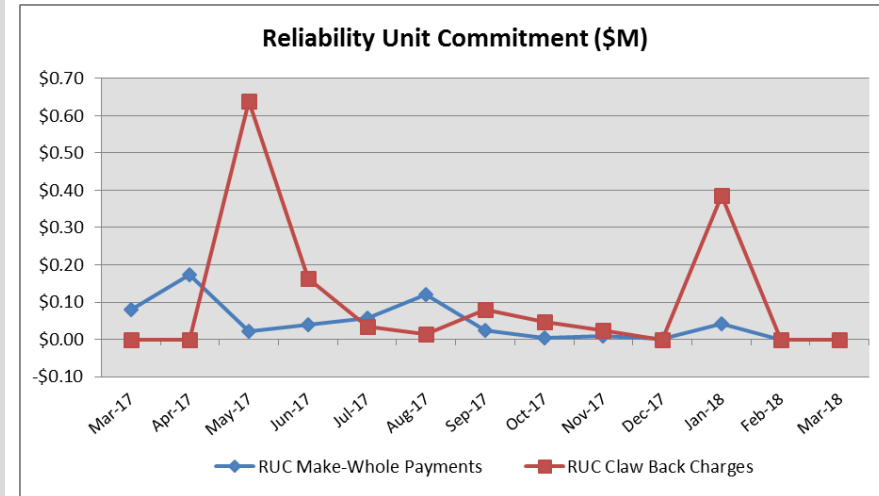
Time Period

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 – March 2018

| Reliability Unit Commitment (RUC) | \$ in Millions |
|---------------------------------------|----------------|
| RUC Make-Whole Payments | \$0.00 |
| RUC Clawback Charges | \$0.00 |
| RUC Commitment Settlement | \$0.00 |
| 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 | \$0.00 |



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

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

Ancillary and Other Services – March 2018

| Ancillary and Other Services | \$ in Millions |
|----------------------------------------|-----------------------|
| Regulation Up Service | \$1.92 |
| Regulation Down Service | \$1.62 |
| Responsive Reserve Service | \$22.68 |
| Non-Spinning Reserve Service | \$3.31 |
| Black Start Service | \$0.62 |
| Voltage Services - Reactive Power | \$0.00 |
| Voltage Services - Lost Opportunity | \$0.00 |
| Total Charges Allocated to Load | \$30.15 |

In March 2018, Ancillary and Other Services was a charge of \$30.15M, compared to:

- A charge of \$20.90M in February 2018
- A charge of \$25.34M in March 2017

Real-Time Ancillary Service Imbalance (ORDC) – March 2018

| Real-Time Ancillary Service Imbalance | \$ in Thousands |
|-----------------------------------------------|-----------------|
| Real-Time AS Imbalance | (\$7) |
| Real-Time Reliability Deployment AS Imbalance | (\$10) |
| Total RTASI Amount Allocated to Load | \$17 |

In March 2018, Real-Time Ancillary Service Imbalance was a charge to load of \$17K, compared to:

- A charge of \$23K in February 2018
- A charge of \$67K in March 2017

Energy Settlement – March 2018

| Day-Ahead Market Energy Settlement | \$ in Millions |
|---------------------------------------------|-----------------------|
| Energy Purchases | \$399.02 |
| Point to Point Obligation Purchases | \$62.27 |
| Energy Sales | (\$381.00) |
| Day-Ahead Congestion Rent | \$80.29 |
| | |
| Day-Ahead Market Make-Whole Payments | (\$0.56) |

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

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

| Real-Time Market Energy Settlement | \$ in Millions |
|----------------------------------------------------|-----------------------|
| Energy Imbalance at a Resource Node | (\$203.69) |
| Energy Imbalance at a Load Zone | \$446.32 |
| Energy Imbalance at a Hub | (\$176.37) |
| Net Real-Time Energy Imbalance | \$66.26 |
| Real Time Congestion from Self Schedules | \$0.75 |
| Block Load Transfers and DC Ties | (\$1.36) |
| Total Impact to Revenue Neutrality | \$65.65 |
| | |
| Load-Allocated Emergency Energy Payments | (\$0.09) |
| Load-Allocated Base Point Deviation Charges | \$0.18 |

Congestion Revenue Rights (CRR) – March 2018

| | \$ in Millions |
|---------------------------------------------|------------------|
| Annual Auction | (\$35.02) |
| Monthly Auction | (\$7.78) |
| Total Auction Revenue | (\$42.80) |
| Day-Ahead CRR Settlements | (\$79.31) |
| Day-Ahead CRR Short-Charges | \$2.89 |
| Day-Ahead CRR Short-Charges Refunded | (\$2.89) |
| Day-Ahead CRR Short-Charges Net | \$0.00 |
| Total CRR Funding | (\$79.31) |
| Day-Ahead Point-to-Point Obligations | \$62.27 |
| Real-Time Point-to-Point Obligations | (\$82.79) |
| Net Point-to-Point Obligations | (\$20.52) |

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

Point to Point Obligations settled with a net credit of \$20.52M compared to a net charge of \$2.15M last month.

CRR Balancing Account Fund – March 2018

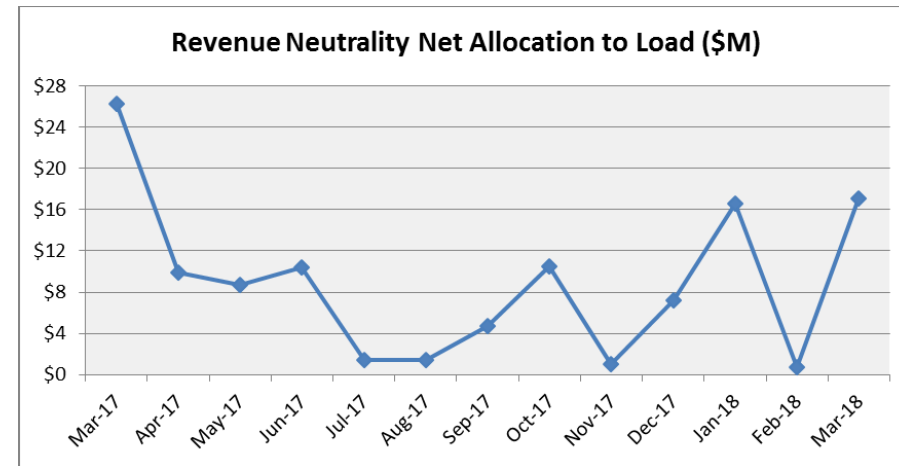
| CRR Balancing Account | \$ in Millions |
|---------------------------------------------|-----------------------|
| Monthly Day-Ahead Congestion Rent | \$80.29 |
| Monthly Day-Ahead CRR Settlements | (\$79.31) |
| Monthly Day-Ahead CRR Short -Charges | \$2.89 |
| CRR Balancing Account Credit Total | \$3.87 |
| | |
| Beginning Fund Balance for the Month | \$10.00 |
| CRR Balancing Account Credit Total | \$3.87 |
| Day-Ahead CRR Short-Charges Refunded | (\$2.89) |
| CRR PTP Option Award Charges | \$0.06 |
| Load-Allocated CRR Amount | (\$1.04) |
| Total Fund Amount | \$10.00 |

Revenue Neutrality – March 2018

| Revenue Neutrality | \$ in Millions |
|------------------------------------------|----------------|
| Real-Time Energy Imbalance | \$66.26 |
| Real-Time Point to Point Obligation | (\$82.79) |
| Real-Time Congestion from Self-Schedules | \$0.75 |
| DC Tie & Block Load Transfer | (\$1.36) |
| Allocation to Load | \$17.14 |

In March 2018, the Revenue Neutrality charge to load was \$17.14M compared to:

- A charge of \$0.74M in February 2018
- A charge of \$26.24M in March 2017

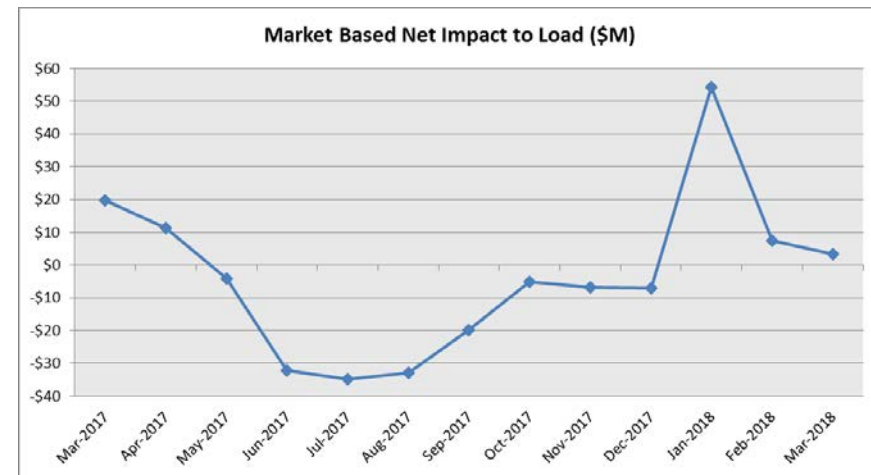


Net Allocation to Load – March 2018

| Market-Based Allocation | \$ in Millions |
|---------------------------------------|----------------|
| Reliability Unit Commitment | \$0.00 |
| Ancillary and Other Services | \$30.15 |
| Real-Time Ancillary Service Imbalance | \$0.02 |
| Emergency Energy | \$0.09 |
| Base Point Deviation | (\$0.18) |
| CRR Auction Revenue | (\$42.80) |
| CRR Balancing Account | (\$1.04) |
| Real-Time Revenue Neutrality | \$17.14 |
| Reliability Must Run | \$0.00 |
| Monthly Block Load Transfer | \$0.00 |
| Total | \$3.38 |
| Fee Allocation | |
| ERCOT Administrative Fee | \$14.62 |
| | |
| Net Allocated to Load | \$18.00 |

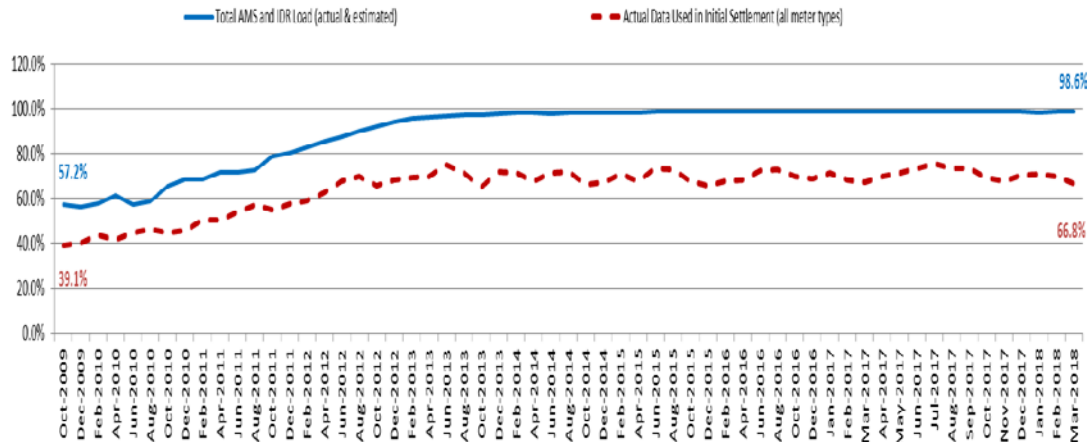
In March 2018, the Net Allocation to load was a charge of \$18.00M compared to:

- A charge of \$0.25M in February 2018
- A charge of \$34.14M in March 2017



Advanced Meter Settlement Impacts – March 2018

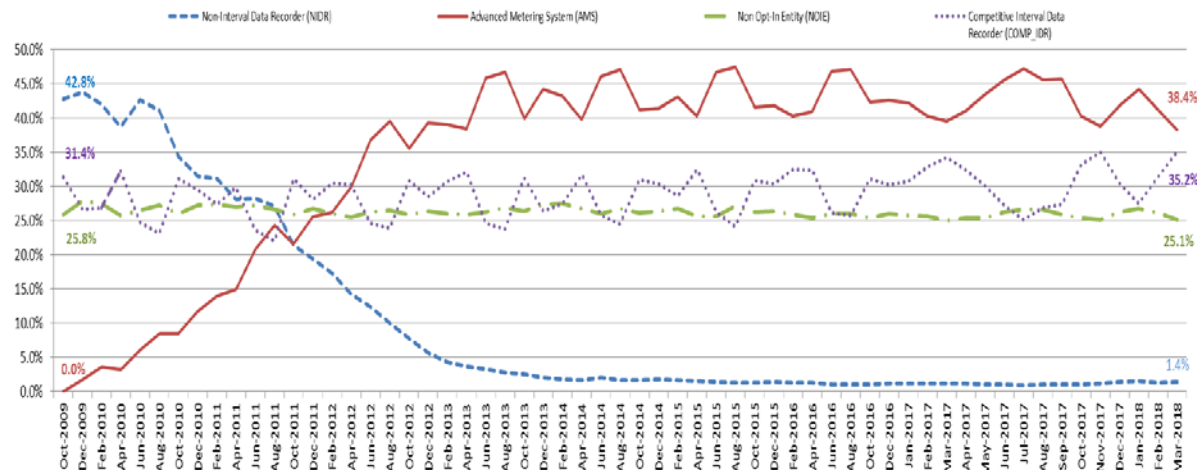
Percent Actual/Percent Interval Data Recorder (IDR)



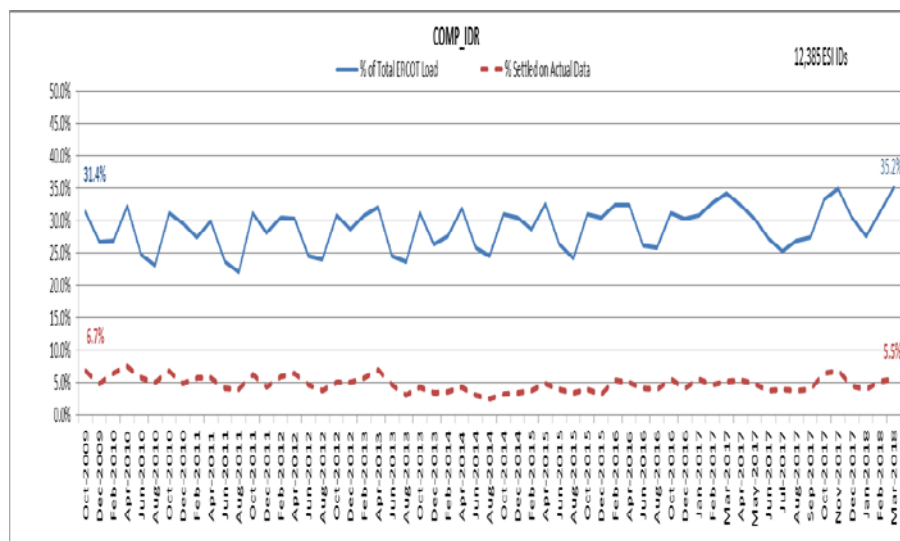
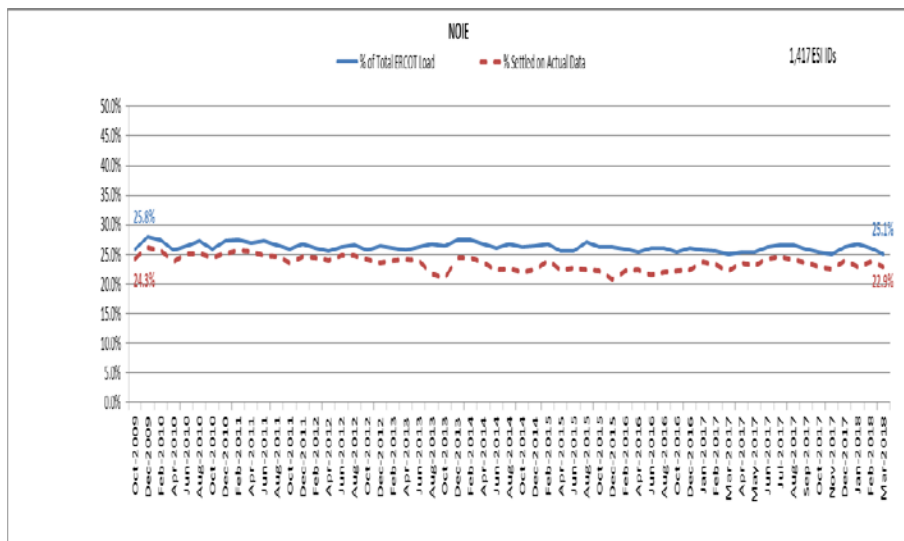
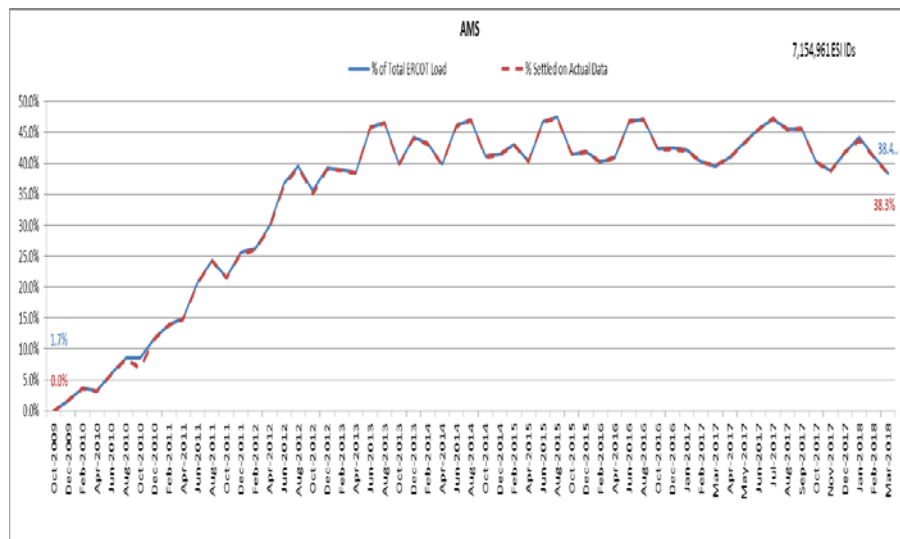
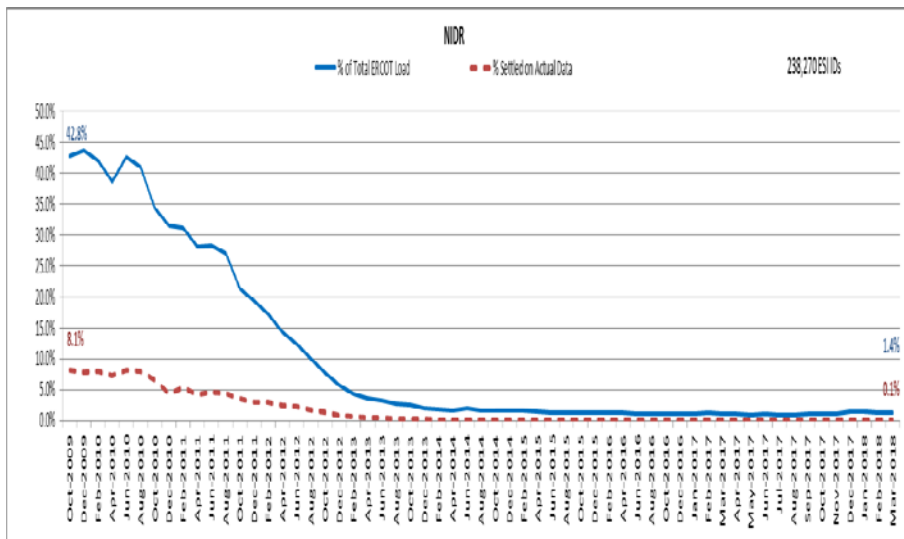
March 2018: At month end, settling 7.1M ESIIDs using Advanced Meter data.

March 2018: 98.6% 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 – March 2018

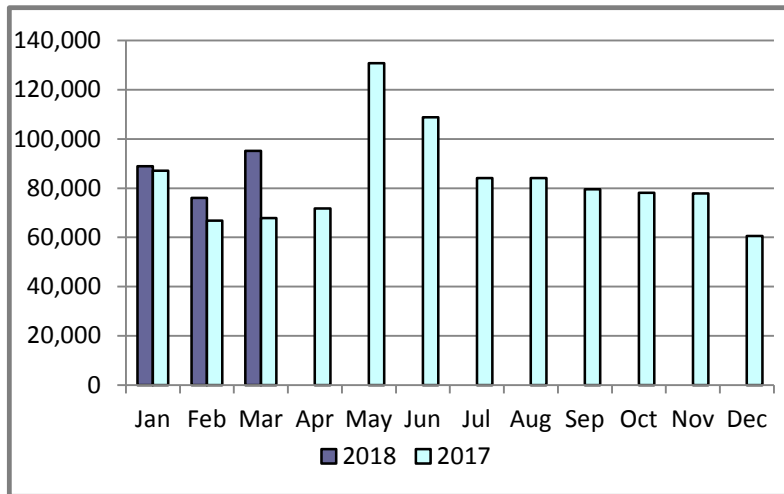


Retail Transaction Volumes – Summary – March 2018

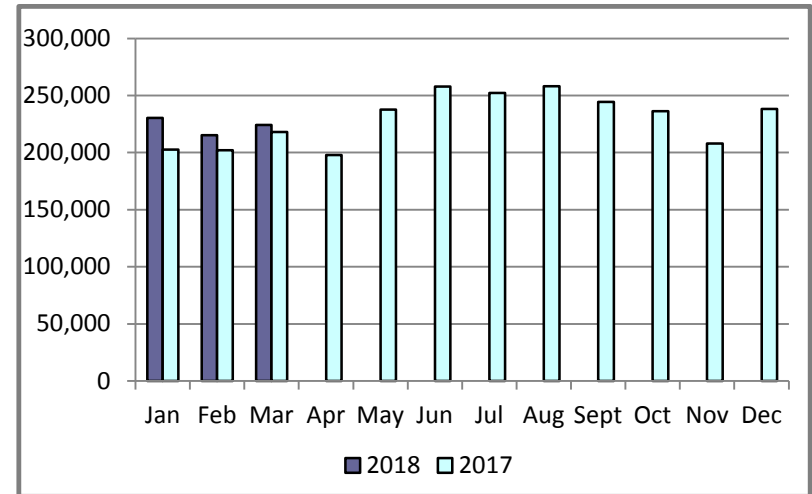
| | Year-To-Date | | Transactions Received | |
|-------------------------------------|------------------|------------------|-----------------------|----------------|
| Transaction Type | March 2018 | March 2017 | March 2018 | March 2017 |
| Switches | 260,211 | 221,860 | 95,159 | 67,845 |
| Acquisition | 0 | 0 | 0 | 0 |
| Move - Ins | 669,979 | 622,558 | 224,289 | 217,962 |
| Move - Outs | 320,701 | 312,851 | 108,753 | 111,459 |
| Continuous Service Agreements (CSA) | 139,047 | 104,903 | 46,720 | 21,791 |
| Mass Transitions | 0 | 0 | 0 | 0 |
| Total | 1,389,938 | 1,262,172 | 474,921 | 419,057 |
| | | | | |

Retail Transaction Volumes – Summary – March 2018

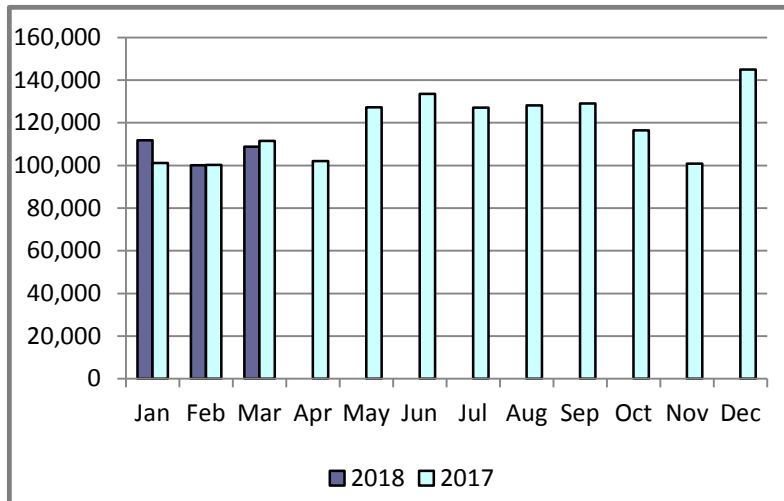
Switches/Acquisitions



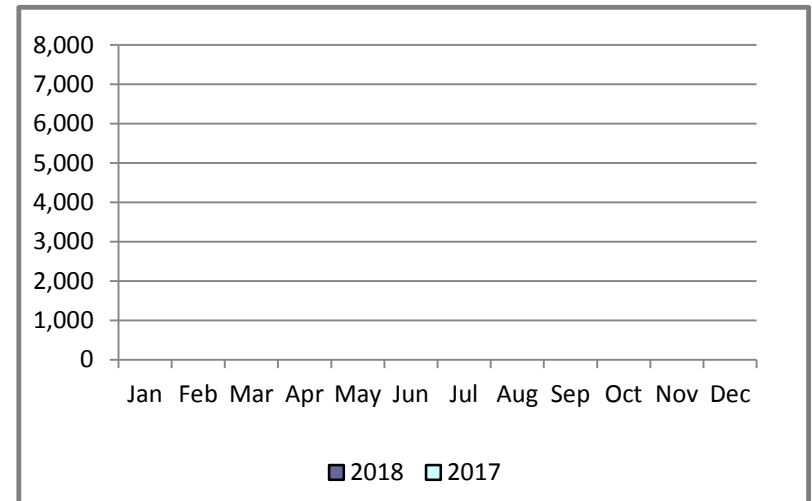
Move-Ins



Move-Outs

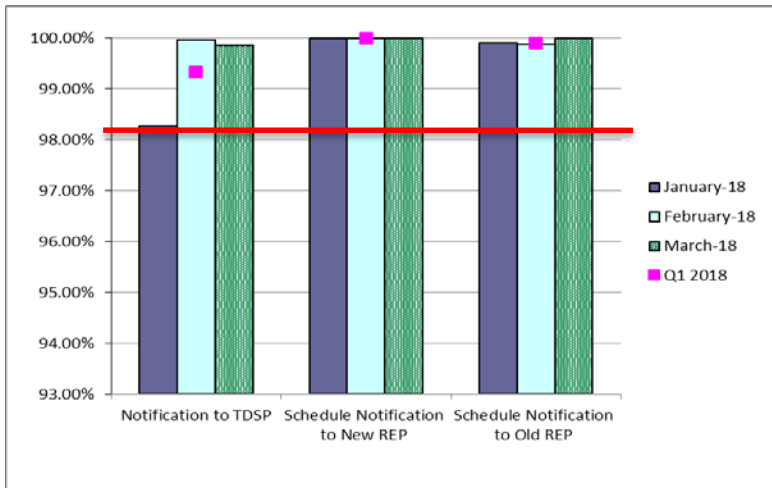


Mass Transition

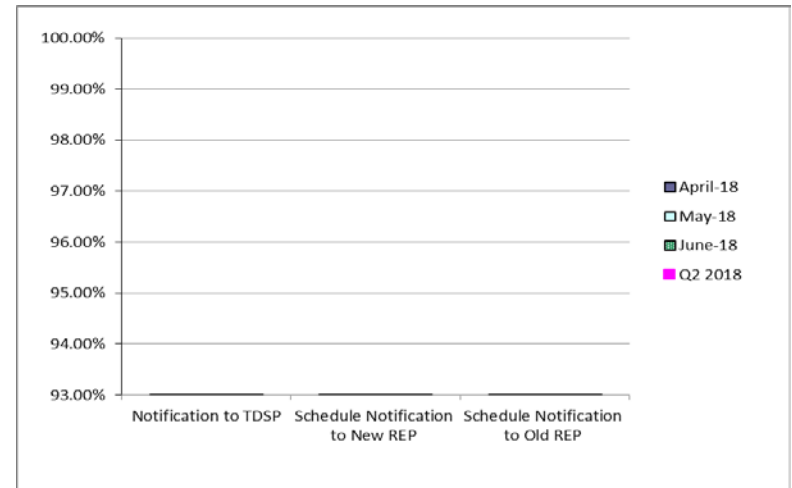


Retail Performance Measures – Switch – March 2018

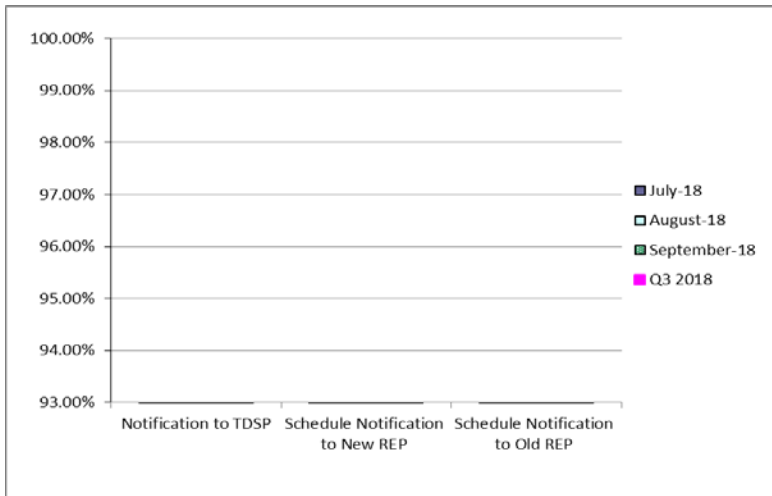
1st Quarter



2nd Quarter



3rd Quarter

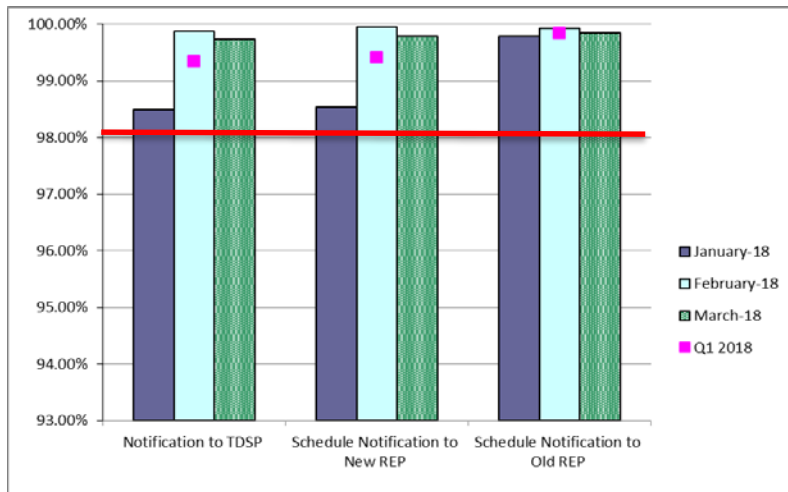


4th Quarter

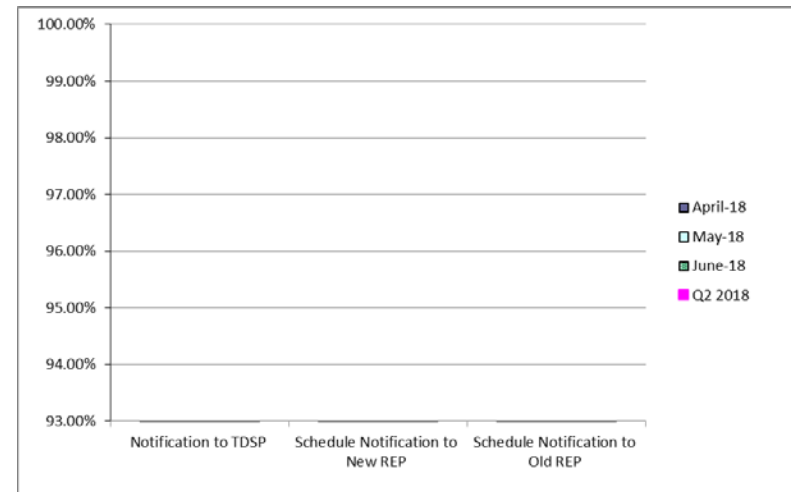


Retail Performance Measures – Same Day Move-In – March 2018

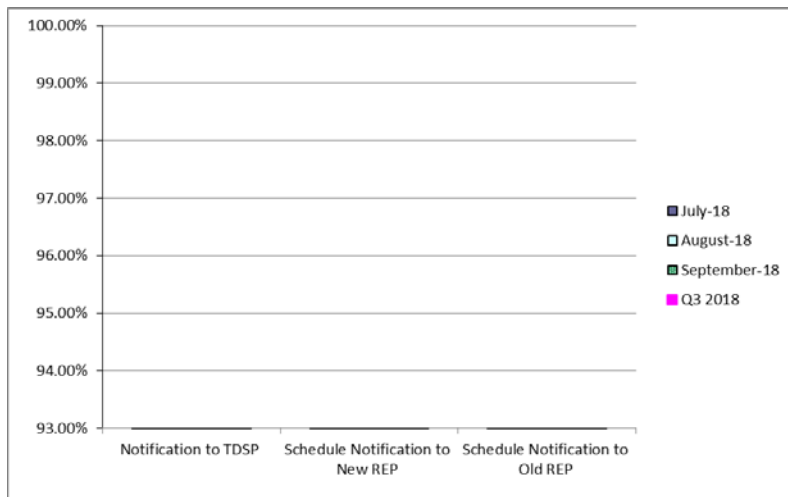
1st Quarter



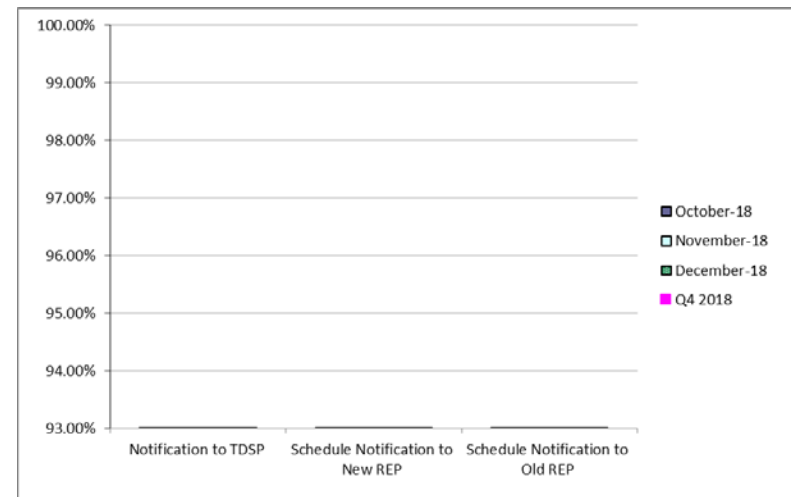
2nd Quarter



3rd Quarter

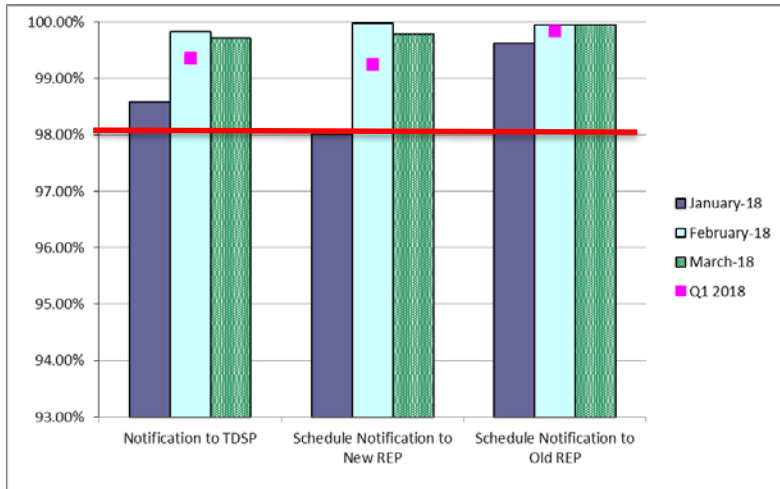


4th Quarter

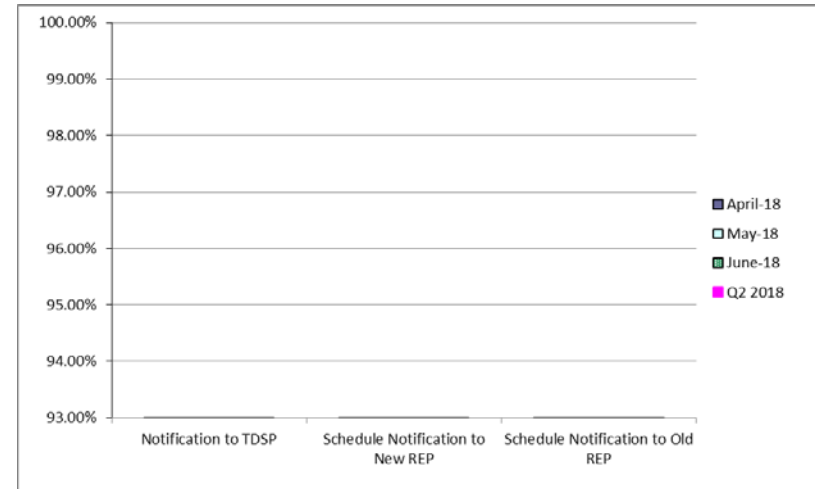


Retail Performance Measures – Standard Move-In – March 2018

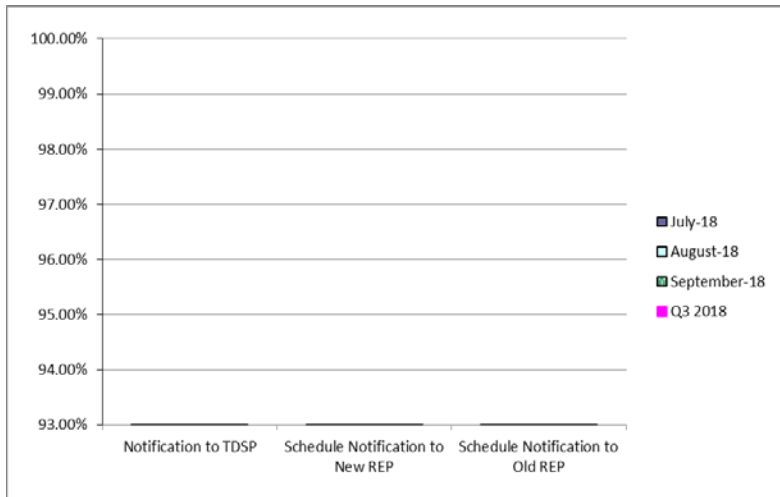
1st Quarter



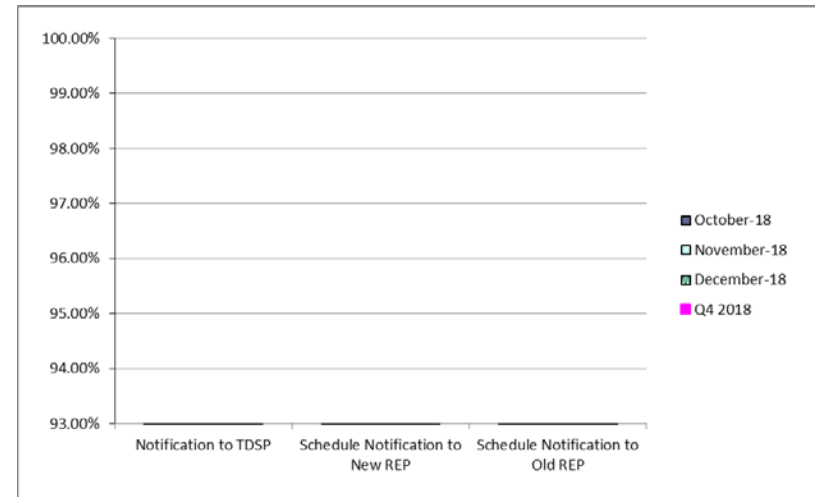
2nd Quarter



3rd Quarter



4th Quarter



Projects Report

ERCOT Portfolio Stoplight Report – March 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 = 93) | | \$ 19,137,507 |
| | Projects Not Yet Started (Count = 8) | | \$ 1,019,913 |
| | Projects Completed (Count = 23) | | \$ 102,391 |
| | Spending Reductions Required to Maintain Capital Budget | | \$ (259,811) |
| | TOTAL | | \$ 20,000,000 |

| Project Number | Projects in Initiation Phase (Count = 5) |
|----------------|------------------------------------------------------------------------------------|
| NPRR819 | Modification of Non-Price Error Resettlement Thresholds and Resettlement Clean-Ups |
| SCR789 | Update NMMS Topology Processor to PSSE 34 Capability |
| TBD | Privileged Account Management (PAM) Phase 2 |
| 209-02 | Weather Imaging and Line Observation (WILO) |
| 269-01 | Document Repository Redesign and Governance Implementation - Phase 1 |

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 – March 2018

| Project Number | Projects in Planning Phase (Count = 12) | 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 | 4/25/2018 | 1 | -81% | | 31% |
| 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% | | 1% |
| 242-01 | Portfolio Reporting Assessment | 11/8/2017 | 12/19/2018 | 12/19/2018 | TBD | 12/19/2018 | | 0% | | 7% |
| 245-01 | 2017 EPS Metering Enhancements | 12/13/2017 | 5/30/2018 | 5/30/2018 | TBD | 5/30/2018 | | 0% | | 25% |
| 260-01 | Information Governance Assessment | 10/18/2017 | 5/30/2018 | 5/30/2018 | TBD | 5/30/2018 | | 0% | | 23% |
| 271-01 | Issue Tracking and Resolution Tool Assessment | 12/13/2017 | 4/25/2018 | 4/25/2018 | TBD | 4/25/2018 | | 0% | | 0% |
| 279-01 | Security Information and Event Management (SIEM) Replacement | 4/11/2018 | 6/27/2018 | 6/27/2018 | TBD | 6/27/2018 | | 0% | | -3% |
| 282-01 | Synchronous Condenser Outage Modeling | 4/4/2018 | 5/16/2018 | 5/16/2018 | TBD | 5/16/2018 | | 0% | | 4% |
| NPRR484 | Revisions to Congestion Revenue Rights Credit Calculations and Payments - Phase 1b / 2 | 12/16/2015 | 8/17/2016 | TBD | TBD | TBD | | 0% | NA | See 2015 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 |
| SCR791 | Correction of 60-day SCED GRD Disclosure Report | 3/21/2018 | 4/25/2018 | 4/25/2018 | TBD | 4/25/2018 | | 0% | | 0% |
| | | | | | | | | | | |
| Project Number | Projects in Execution Phase (Count = 40) | 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% | | 3% |
| 173-02 | ERCOT Flight Certification Website | 11/15/2017 | 2/28/2019 | 2/28/2019 | 2/28/2019 | 5/31/2019 | | 0% | | 1% |
| 181-01 | CRR Framework Upgrade | 10/26/2016 | 10/2/2017 | 1/22/2018 | TBD | TBD | | 0% | | 0% |
| 183-01 | CMM Tech Refresh | 3/15/2017 | 5/19/2018 | 12/11/2018 | 12/11/2018 | 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% | | 10% |
| 196-01 | GINR Project Status Application Replacement | 12/21/2016 | 9/14/2017 | 8/30/2018 | 8/30/2018 | 9/5/2018 | | 0% | | 20% |
| 198-02 | Reactive Power Coordination PoC | 9/6/2017 | 6/16/2018 | 6/16/2018 | 6/13/2018 | 6/13/2018 | | 1% | | 55% |
| 209-01 | Multi Station Breaker to Breaker One Lines | 2/8/2017 | 3/9/2018 | 3/9/2018 | 4/16/2018 | 5/1/2018 | 1 | -9% | | 21% |
| 210-01 | REC Technology Refresh | 8/30/2017 | 3/18/2018 | 5/31/2018 | 5/31/2018 | 7/11/2018 | | 0% | | 0% |
| 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% |
| 238-01 | Application Authentication Tech Refresh | 9/6/2017 | 3/19/2018 | 4/9/2018 | 4/9/2018 | 9/5/2018 | | 0% | | 9% |
| 241-01 | AREA - Generation | 10/11/2017 | 3/30/2018 | 8/9/2018 | 8/9/2018 | 9/5/2018 | | 0% | | 0% |
| 244-01 | Corporate Wireless | 11/29/2017 | 3/28/2018 | 12/5/2018 | 12/5/2018 | 12/5/2018 | | 0% | | -2% |

ERCOT Portfolio Stoplight Report – March 2018

| Project Number | Projects in Execution Phase (Count = 40) | 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% | | 32% |
| 249-01 | Secondary Wind Forecasting Service | 8/30/2017 | 2/28/2018 | 8/9/2018 | 8/9/2018 | 9/5/2018 | | 0% | | 16% |
| 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% | 2 | -10% |
| 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% | | 26% |
| 258-01 | WD Kainos SMART Automation Testing Tool | 4/11/2018 | 6/4/2018 | 6/4/2018 | 6/4/2018 | 6/6/2018 | | 0% | | 13% |
| 259-01 | DC SCADA and Metering Upgrade | 10/25/2017 | 1/17/2018 | 5/11/2018 | 5/11/2018 | 6/30/2018 | | 0% | | 50% |
| 261-01 | Generic Transmission Constraint Calculation | 3/7/2018 | 12/13/2018 | 12/13/2018 | 12/13/2018 | 1/23/2019 | | 0% | | 6% |
| 263-01 | Market Simulator | 4/11/2018 | 12/13/2018 | 12/13/2018 | 12/13/2018 | 1/30/2019 | | 0% | | 17% |
| 265-01 | Real-Time Assessment Continuity | 1/31/2018 | 12/13/2018 | 12/13/2018 | 12/13/2018 | 1/30/2019 | | 0% | | 62% |
| 266-01 | Remote Email Access Enhancement | 12/13/2017 | 3/7/2018 | 4/30/2018 | 4/30/2018 | 5/16/2018 | | 0% | | -1% |
| 272-01 | Operator Training Simulator Black Start GE Effort | 12/6/2017 | 4/25/2018 | 4/25/2018 | 4/25/2018 | 4/25/2018 | | 0% | | 30% |
| 274-01 | Average Mid-Term Load Forecast | 3/7/2018 | 5/31/2018 | 5/31/2018 | 5/31/2018 | 6/27/2018 | | 0% | | 19% |
| 280-01 | Quest Software Portfolio Transition | 4/4/2018 | 6/27/2018 | 6/27/2018 | 6/27/2018 | 6/27/2018 | | 0% | | 22% |
| Various | 2015 CMM NPRRs | | | | | | | | | 3% |
| NPRR519 | Exemption of ERS-Only QSEs from Collateral and Capitalization Requirements | 3/15/2017 | 5/19/2018 | 12/11/2018 | 12/11/2018 | 12/31/2018 | | 0% | | 0% |
| 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 | 12/11/2018 | 12/11/2018 | 12/31/2018 | | 0% | NA | See 2015 CMM NPRRs |
| NPRR660 | Remove CRR State Change Adder | 3/15/2017 | 5/19/2018 | 12/11/2018 | 12/11/2018 | 12/31/2018 | | 0% | NA | See 2015 CMM NPRRs |
| NPRR741 | Clarifications to TPE and EAL Credit Exposure Calculations | 3/15/2017 | 5/19/2018 | 12/11/2018 | 12/11/2018 | 12/31/2018 | | 0% | NA | See 2015 CMM NPRRs |
| NPRR755 | Data Agent-Only QSE Registration | 3/15/2017 | 5/19/2018 | 12/11/2018 | 12/11/2018 | 12/31/2018 | | 0% | 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% | | 13% |
| NPRR776 | Voltage Set Point Communication | 9/20/2017 | 3/19/2018 | 4/5/2018 | 4/5/2018 | 6/27/2018 | | 0% | | 9% |
| NPRR815 | Revise the Limitation of Load Resources Providing Responsive Reserve (RRS) Service | 3/21/2018 | 5/31/2018 | 5/31/2018 | 5/31/2018 | 6/27/2018 | | 0% | | 19% |
| 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 |
| 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% | | 2% |
| SCR792 | Enhance Communications of BAAL Exceedances | 2/14/2018 | 4/5/2018 | 4/5/2018 | 4/5/2018 | 4/25/2018 | | 0% | | 65% |

ERCOT Portfolio Stoplight Report – March 2018

| Project Number | Expedited Projects in Execution (Count = 26) | | | | | | | | | | |
|----------------|------------------------------------------------------------------------------------|-----------------------|-------------------------|-------------------------|------------------------|----------------------------------|-----------------|-----|---------------|--------------------|--|
| | | | | | | | | | | | |
| Project Number | Projects in Stabilization (Count = 7) | 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 | 12/31/2018 | | 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 | 12/31/2018 | | 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 | 12/31/2018 | | 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 | 12/31/2018 | | 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 | 12/31/2018 | | 23% | NA | See 2015 CMM NPRRs | |
| 224-01 | TelAlert Replacement | 4/5/2017 | 6/27/2017 | 8/4/2017 | 8/4/2017 | 5/2/2018 | | 0% | | 8% | |
| 230-01 | SAS Technical Architecture Redesign | 3/1/2017 | 12/13/2017 | 12/13/2017 | 12/13/2017 | 4/30/2018 | | 0% | | 9% | |
| | | | | | | | | | | | |
| Project Number | Projects On Hold (Count = 3) | Forecast Start Date | Baseline Phase Finish | Approved Go-Live Target | Scheduled Go-Live Date | Scheduled Phase Finish | Schedule Health | | Budget Health | | |
| NPRR749 | Option Cost for Outstanding CRRs | | | | | | | | NA | See 2015 CMM NPRRs | |
| NPRR833 | Modify PTP Obligation Bid Clearing Change | | | | | | | | | 31% | |
| 228-01 | Enterprise Database Upgrade | | | | | | | | | 34% | |

ERCOT Portfolio Stoplight Report – March 2018

| Project Number | Projects Completed (Count = 15) | 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% |
| 233-32 | Application Automation Effort - Phase 2 | | | | | | 4 | NA | | 1% |
| 233-46 | VSS Tool Modification | | | | | | 4 | NA | | 0% |
| 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% | | 20% |
| 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 | 1/11/2018 | 2/14/2018 | | 0% | | 53% |
| 275-07 | CBCI Enhancements Pt1 | | | | | | 4 | NA | | 51% |
| 275-08 | CBCI Enhancements Pt2 | | | | | | 4 | NA | | 51% |
| 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 |
| NPRR830 | Revision of 4-Coincident Peak Methodology | 12/13/2017 | 2/6/2018 | 2/6/2018 | 2/6/2018 | 3/7/2018 | | 0% | | 85% |
| 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% |

| Project Number | Expedited Projects Completed (Count = 8) | |
|----------------|------------------------------------------|--|
|----------------|------------------------------------------|--|

| Project Number | 2018 Projects Not Yet Started (Count = 8) | Forecast Start Date |
|----------------|----------------------------------------------------------------------|---------------------|
| NPRR843 | Short-Term System Adequacy and AS Offer Disclosure Reports Additions | May-2018 |
| SCR794 | Update SCED Limit Calculation | Jun-2018 |
| NPRR842 | Study Area Load Information | Jul-2018 |
| TBD | Infrastructure Software Upgrade Assessment | Jul-2018 |
| NPRR817 | Create a Panhandle Hub | Sep-2018 |
| TBD | 2018 OS Enhancements | Oct-2018 |
| ECAP | ECAP - ECMS Implementation Phase 2 | Oct-2018 |
| TBD | Job Scheduler Update in CSI Framework | Oct-2018 |