

**ERCOT Annual Report Pursuant to P.U.C. SUBST. R. 25.507(g)  
Regarding Emergency Response Service for the  
Program Year February 1, 2018, through January 31, 2019**

**ERS History**

On March 20, 2007, the Commission approved Substantive Rule 25.507, *Electric Reliability Council of Texas (ERCOT) Emergency Interruptible Load Service (EILS)*,<sup>1</sup> requiring ERCOT to develop and administer EILS. Later that year, the Commission approved amendments to Rule 25.507 that eliminated the 500 MW procurement floor and increased the annual cost cap from \$20 million to \$50 million.<sup>2</sup>

On March 22, 2012, the Commission adopted an order repealing the rule and replaced it with a new Rule 25.507 that expanded the program to allow participation by generators and removed certain program restrictions.<sup>3</sup> To reflect the broader participation, the program was renamed “Emergency Response Service” (ERS).

Since 2007, the ERCOT Board of Directors (ERCOT Board) has approved a total of 28 Protocol revisions that pertain to ERS. During the 2018 program year covered by this report, one Protocol revision related to ERS—Nodal Protocol Revision Request (NPRR) 878, *ERS Obligation Report for TDSPs*—was approved. NPRR 878 requires that ERCOT post certain information regarding ERS obligations in TDSP’s and NOIE’s service areas on the ERCOT Market Information System (MIS) Certified Area.

**Procurement History and Analysis**

Under current Protocols, ERCOT procures ERS three times annually for four-month Standard Contract Terms. In each Standard Contract Term, ERCOT procures ERS according to two different response times—thirty minutes (“ERS-30”) and ten minutes (“ERS-10”). ERCOT can procure Weather-Sensitive and Non-Weather Sensitive ERS.

The ERS procurement methodology used during the 2018 program year has been in place since 2014. In 2018, however, the ERCOT Board approved Other Binding Document Revision Request (OBDRR) 004, *Updates to Emergency Response Service Procurement Methodology*, which revised the procurement methodology slightly by changing risk-weighting factors assigned to each ERS Time Period from a range of 1 to 10 to a range of 1 to 100. This change was made to improve the allocation of the \$50 million annual ERS budget by allowing for more

---

<sup>1</sup> PUC Rulemaking Concerning a Demand-Response Program for ERCOT Emergency Conditions, Project No. 33457.

<sup>2</sup> PUC Rulemaking to Amend ERCOT Emergency Interruptible Load Service, Project No. 34706.

<sup>3</sup> Rulemaking to Amend Substantive Rule § 25.507, Relating to Electric Reliability Council of Texas (ERCOT) Emergency Interruptible Load Service (EILS), Project No. 39948.

of the budget to be shifted from lower risk to higher risk time periods. The change in the risk-weighting factors went into effect on July 1, 2018; accordingly, the only Standard Contract Term of the 2018 program year in which the new risk-weighting factors were used was the October 2018 to January 2019 Standard Contract Term.

Except for the changes made to the risk-weighting factors for the October 2018 to January 2019 Standard Contract Term, there were only slight differences in the risk-weighting factors and capacity offered for each Standard Contract Term in the 2018 program year when compared to the 2017 program year. Accordingly, ERCOT observed relatively minimal differences in ERS procurement between the 2017 and 2018 program years, with the exception of Time Period 3 for the October 2018 to January 2019 Standard Contract Term. In that Time Period and Standard Contract Term, ERCOT procured significantly less ERS in the 2018 program year due to the application of the new risk-weighting factor scale. (See slides 4 to 13, Attachment B)

Weather-Sensitive ERS was implemented in 2014 to help utilize the considerable demand response potential from residential and commercial air conditioning loads in Texas. The greatest opportunity to utilize these loads for demand response occurs during the summer months. In the summer of 2018, ERCOT procured 11.85 MWs of Weather-Sensitive ERS in both Time Periods 3 and 4. While this was approximately 30% more than the amount of Weather-Sensitive ERS procured the summer of 2017, this amount was significantly less than what was procured in the summers of 2015 and 2016. ERCOT attributes this to increased competition from Transmission and Distribution Service Providers (TDSPs) Standard Offer Programs. More specifically, some TDSPs have recently modified their Standard Offer Programs to allow increased participation from residential loads; this served to reduce the amount of load that bids to serve as Weather-Sensitive ERS. To date, Weather-Sensitive ERS has only been procured as a 30-minute service.

Attachment B provides detailed results of ERCOT's procurement of ERS during the 2018 program year, including:

- Descriptions of Standard Contract Terms and Time Periods.
- Capacity procurements by Time Period and by Standard Contract Term, including the number of MW procured and the total number of MW offered.
- Number of procured ERS Resources.
- Number of individual Sites submitted to ERCOT for resource identification.
- Summary of final settlement costs of ERS, adjusted to account for payment reductions due to availability and testing results.
- Detailed tables with capacity procurements by Time Period and by Standard Contract Term for each ERS service type, including clearing price (in dollars per MW per hour).

### **Review of Effectiveness & Benefits**

ERCOT Protocols authorize the deployment of thirty-minute ERS (ERS-30) in Level 1 of an Energy Emergency Alert (EEA) and ten-minute ERS (ERS-10) in Level 2 of an Energy

Emergency Alert (EEA).<sup>4</sup> ERCOT did not declare an EEA during the 2018 program year, so there were no ERS deployment events during this period.

### Availability

The effectiveness of Non-Weather Sensitive ERS is ensured to a large degree by incentives that encourage resources to maintain a minimal level of availability for deployment. For a QSE's portfolio of Non-Weather Sensitive ERS Resources, the QSE must achieve a portfolio-level availability factor of at least 95% across committed Time Periods.<sup>5</sup> Portfolio-level availability factors are calculated after the end of the Standard Contract Term by aggregating availability factors across resources in each QSE's portfolio; resource-level availability factors are calculated using aggregated site-level interval meter data for each ERS Resource. Any QSE whose portfolio of Non-Weather Sensitive ERS Resources achieves an aggregate availability factor of less than 95% is subject to payment reductions for any individual ERS Resources that achieve an availability factor of less than 85%. For Weather-Sensitive ERS, a comparable evaluation is not a reasonable indicator of the portfolio's ability to provide the service, so ERCOT does not conduct an evaluation of availability.

All ERS Resources, regardless of service type, are subject to periodic Load-shed tests. Each Non-Weather Sensitive ERS Resource is subject to at least one annual unannounced Load-shed test, whereas each Weather-Sensitive ERS Resource is tested at least once, but no more than twice, each month during the Standard Contract Term for which it is obligated to provide the service. ERCOT conducts this testing by issuing a Verbal Dispatch Instruction (VDI) and an XML instruction to each QSE, just as ERCOT would do in an actual EEA event. Failed test performance may result in payment reductions to the QSE. For Weather-Sensitive ERS, test performance is the sole determinant of payment in the absence of an event deployment.

Through the end of the 2018 program year, payment reductions due to availability or testing results totaled \$ not available.

ERCOT maintains that the combination of performance metrics and payment reduction penalties for non-compliance—which are among the most stringent for any demand response program in North America—provide substantial integrity to the ERS product.

### Market Benefits

The Commission has previously recognized that a central purpose of ERS is to enable additional demand response participation in the ERCOT market:

The commission agrees . . . that one of the important values of this program is to establish the role of demand-response in providing reliability services in ERCOT by enlisting numerous customers as providers of demand-response, particularly customers in classes that have not participated in the [Load Resource] program. The commission also finds

---

<sup>4</sup> See Protocols § 6.5.9.4.2(2)(a)(ii).

<sup>5</sup> See Protocols § 8.1.3.1.3.1(1)(a).

value in having resources that have not participated in demand response programs being enabled to do so by this program. The commission encourages ERCOT to make an effort to attract such customers to the program.<sup>6</sup>

ERCOT's experience with ERS in the 2018 program year reflects that ERS is successfully meeting this Commission goal in the following manner:

- Participating Resources. The number of unique sites offering to provide ERS has steadily increased since the initial implementation of Weather-Sensitive ERS in 2014. (See slide 12, Attachment B). However, the number of ERS Resources offering into the program has remained relatively constant. (See slide 11, Attachment B). This is due to the fact that most new unique ERS sites are added to existing ERS Resources.
- Offer behavior. Since ERCOT adopted its current procurement methodology in 2014, the average unit cost per MW of ERS has remained relatively constant, with a slight downward trend being observed in the past few years. This can be attributed to a slight increase in the overall capacity participating in the service. In the 2018 program year, the unit cost per MW of ERS ranged from \$5.32 to \$8.17 per hour. (See slide 4, Attachment B). After taking into consideration the ERS Time Period risk factors, the unit cost during the 2018 program year was similar to the 2016 and 2017 program years. (See slide 14, Attachment B). During the 2018 program year, some offered capacity was not procured during each of the ERS Time Periods due to reaching the spend limit constraint established by the procurement methodology. During Time Period 3 of the October through January Standard Contract Term, there was a significant amount of offered capacity not procured. (See slide 7, Attachment B). This can be attributed to the change made to the risk-weighting factors in OBDRR 004 and allocation of the available ERS budget to this Time Period when it was assigned a risk factor of 1 on the 1 to 100 scale.

---

<sup>6</sup> *PUC Rulemaking to Amend ERCOT Emergency Interruptible Load Service*, Project No. 34706, Order at. 4-5 (November 8, 2007).



## **ERCOT Emergency Responsive Service (ERS)**

Report to the Public Utility Commission of Texas  
for the 2018 ERS Program Year

Project No. 27706  
Attachment B

**DRAFT**

## **Procurement Summary Trends**

- Capacity (MW) offered and procured
- Number of ERS Resources (All Service Types)
- Cumulative Individual Sites Participating in ERID Process

## **Detailed Procurement Results for the 2018 ERS Procurement Year**

## **Settlement Summary**

## Standard Contract Terms & Time Periods

### ERS is procured 3 times annually for 4-month Standard Contract Terms

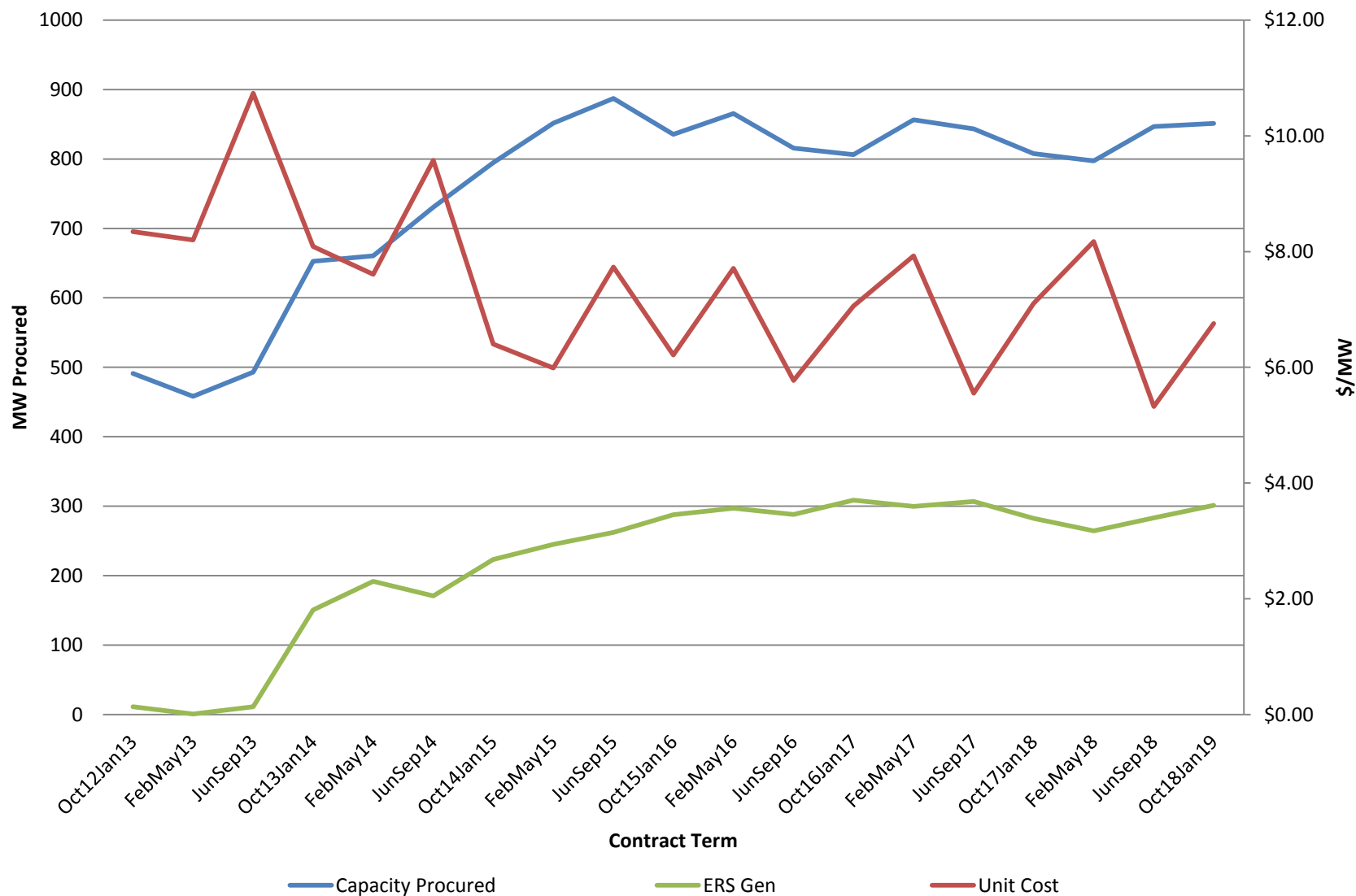
- February through May
- June through September
- October through January

### Participants may offer to provide ERS for one or more Time Periods:

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

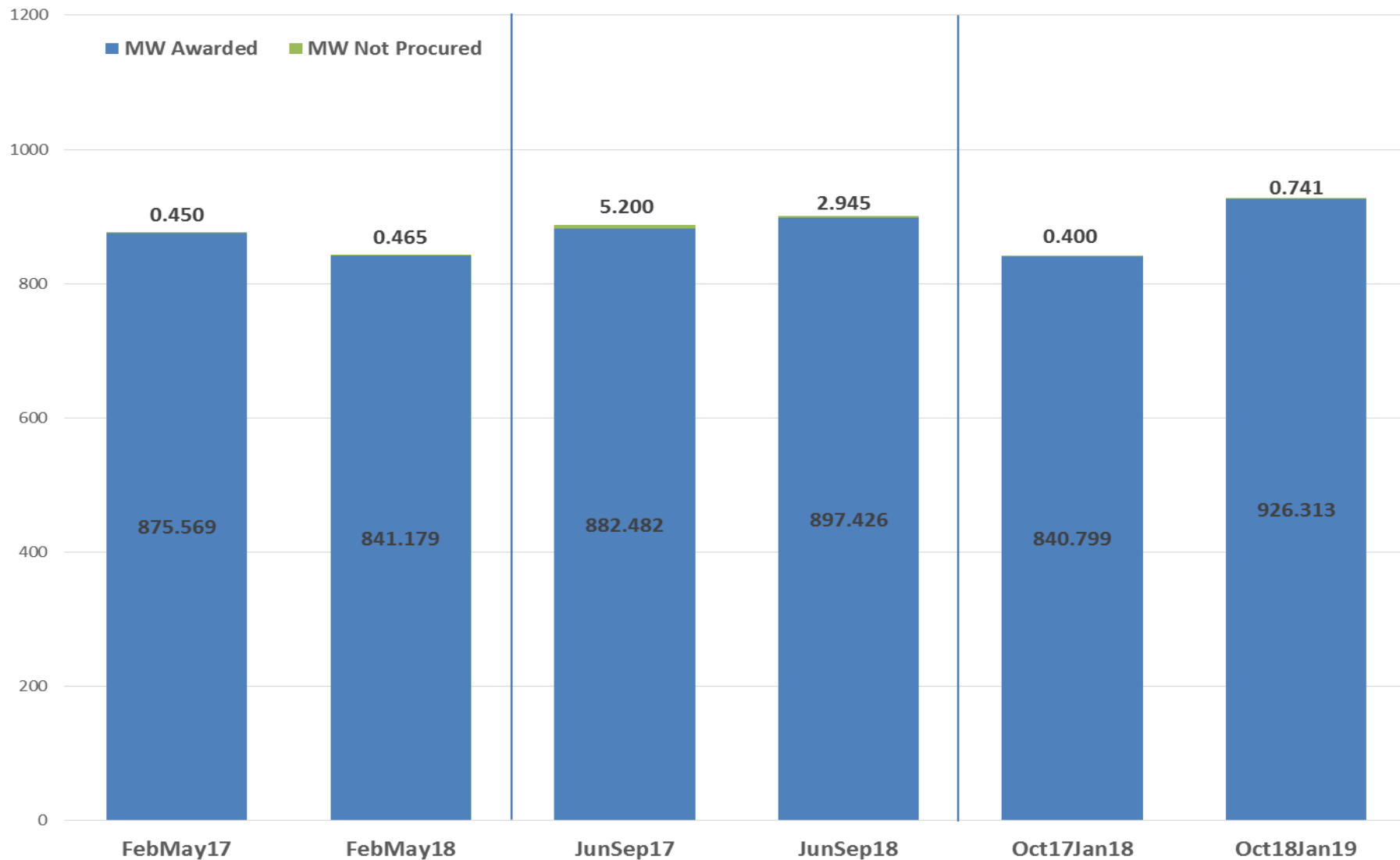
**Time Periods are designed to allow flexibility for customers during traditional business hours.**

# Emergency Response Service Trends

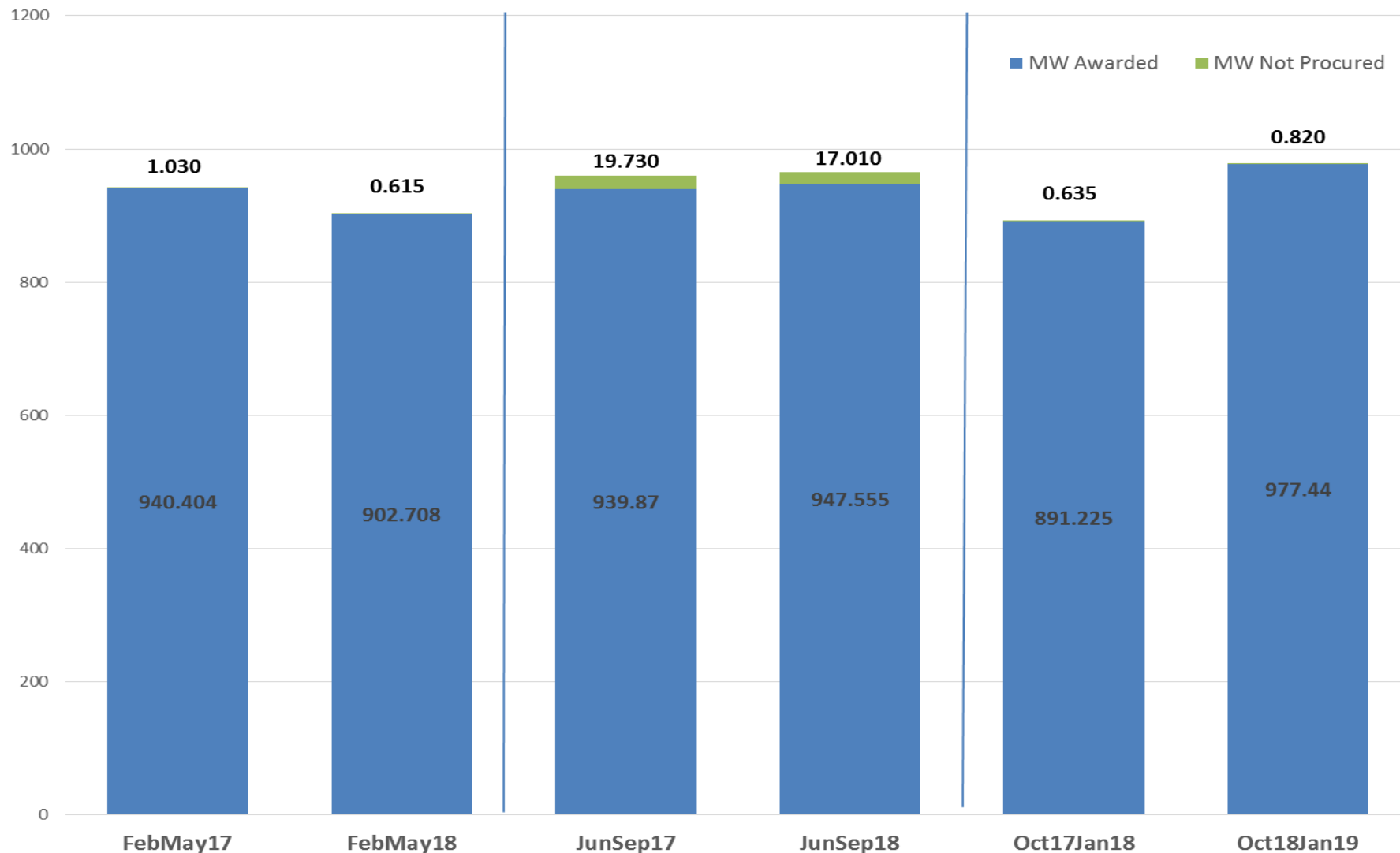




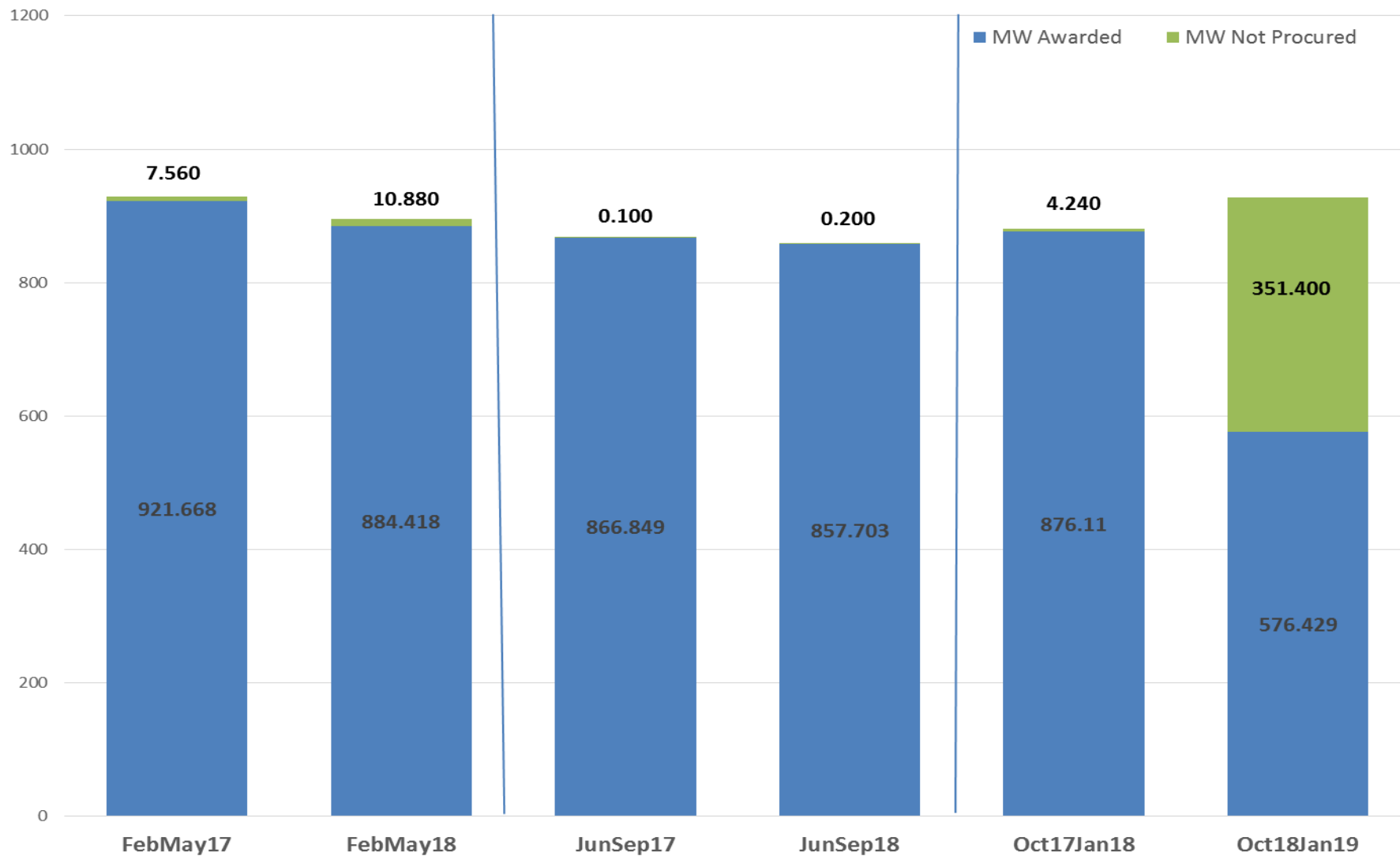
# ERS Capacity Procurement Trends (Time Period 1)



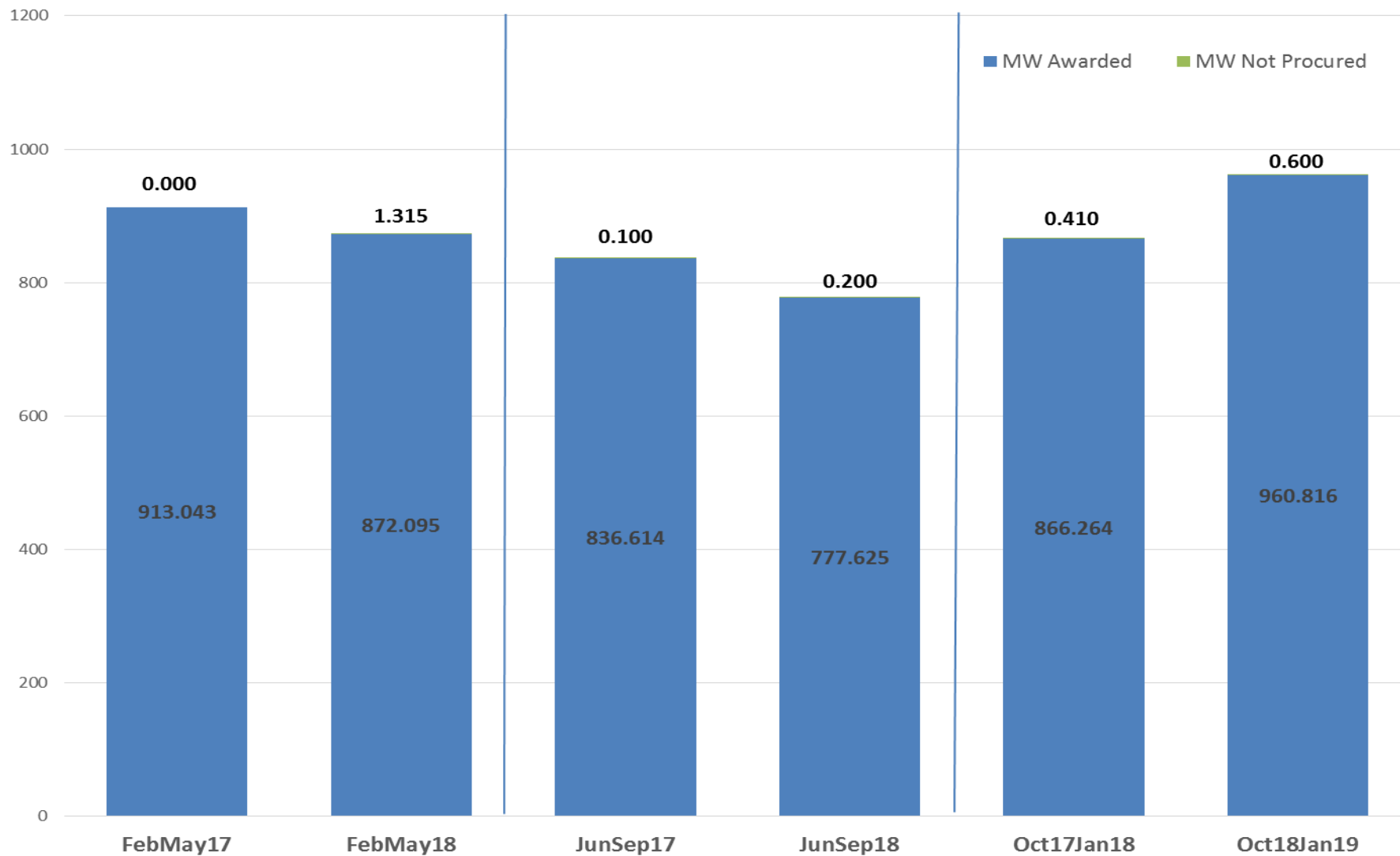
## ERS Capacity Procurement Trends (Time Period 2)



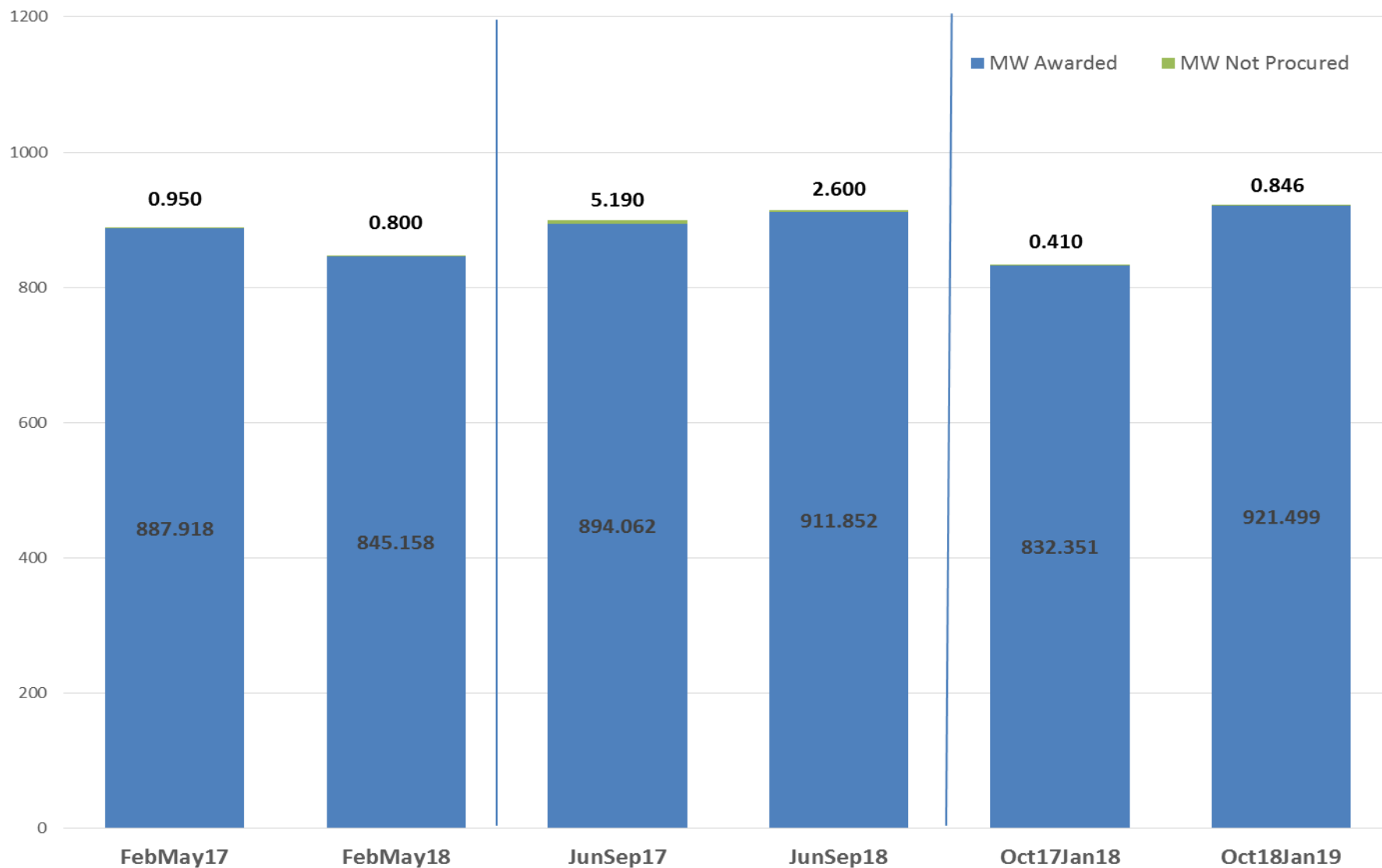
## ERS Capacity Procurement Trends (Time Period 3)



## ERS Capacity Procurement Trends (Time Period 4)



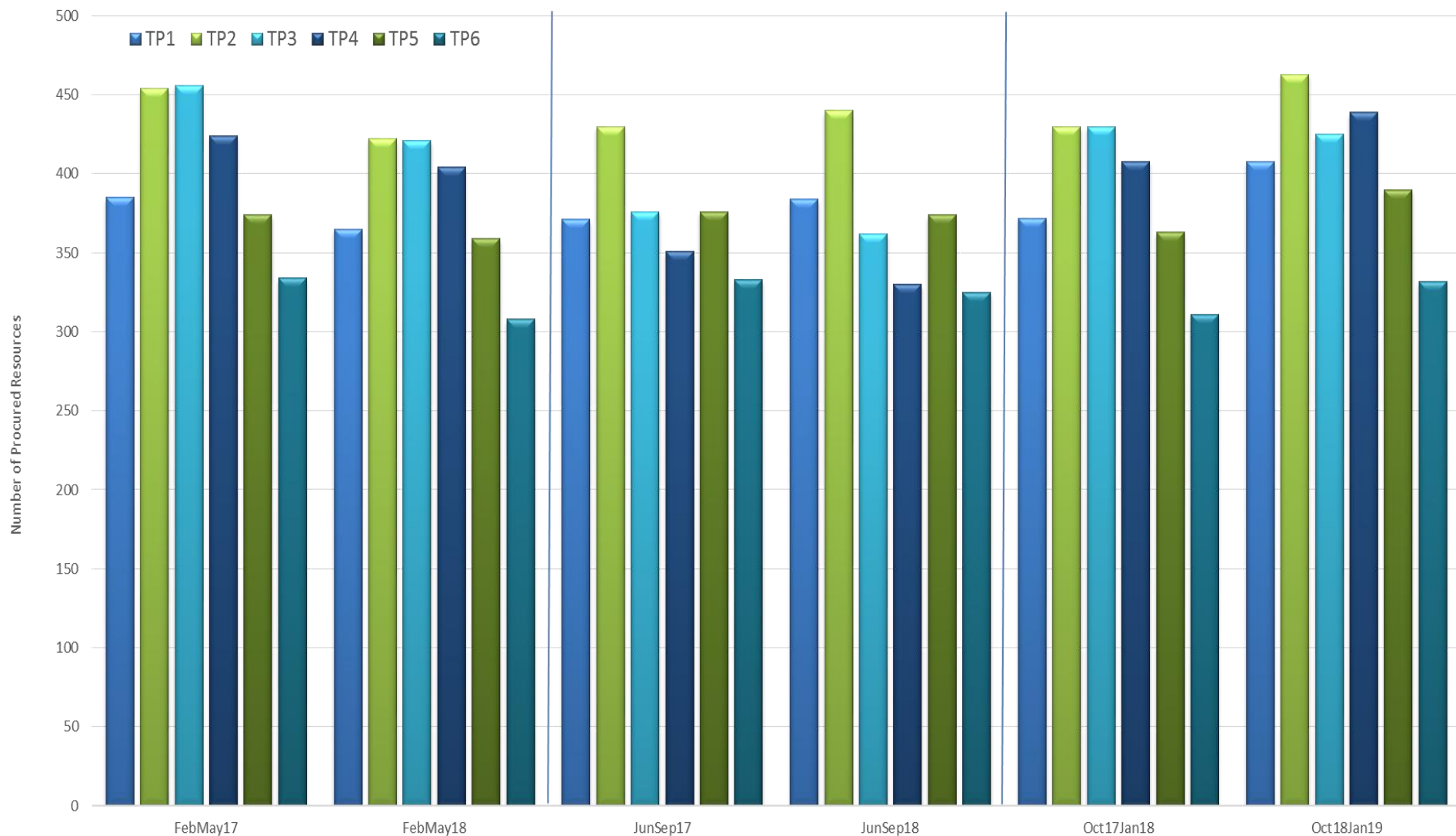
## ERS Capacity Procurement Trends (Time Period 5)



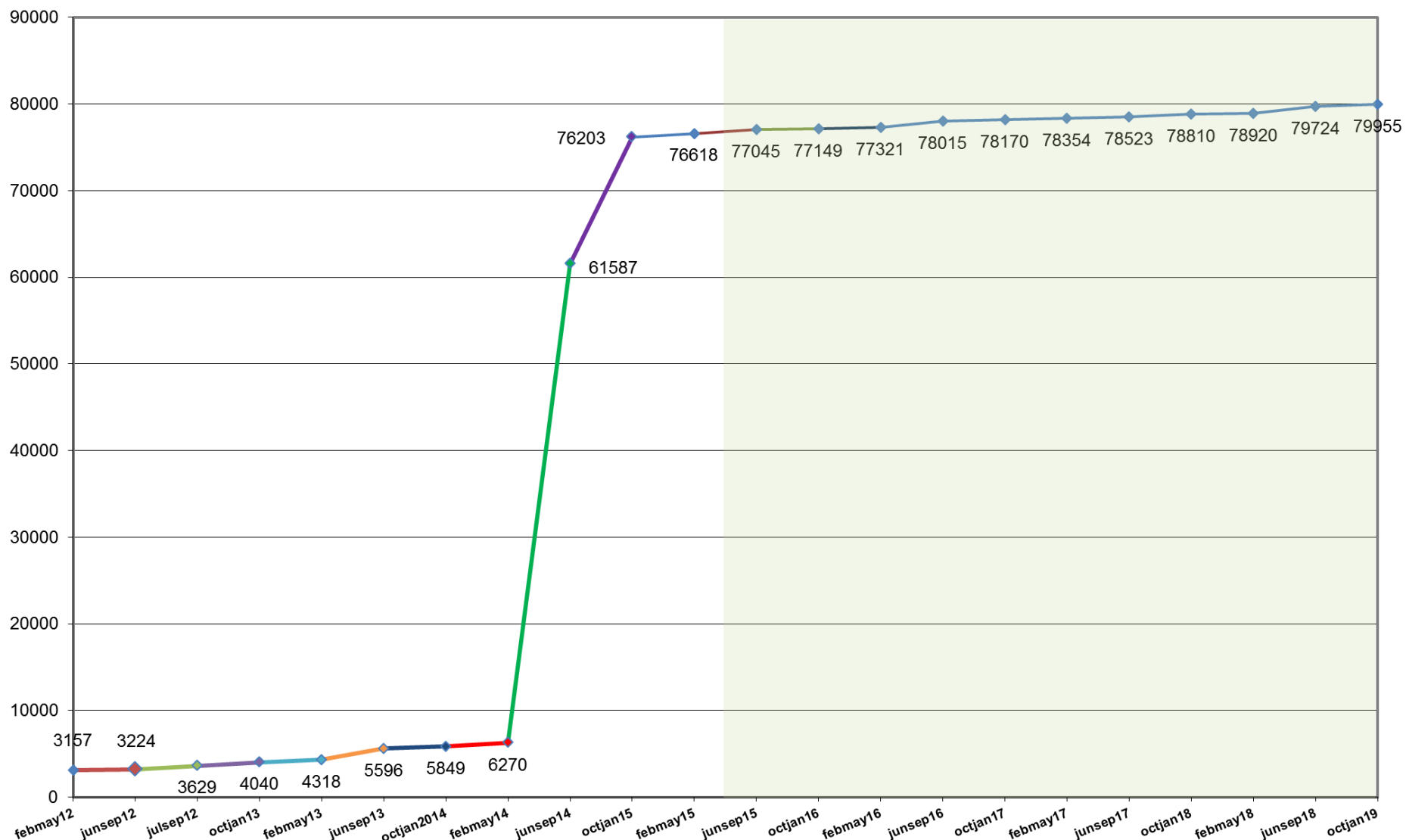
## ERS Capacity Procurement Trends (Time Period 6)



# ERS Procurement Trends (Number of Resources)

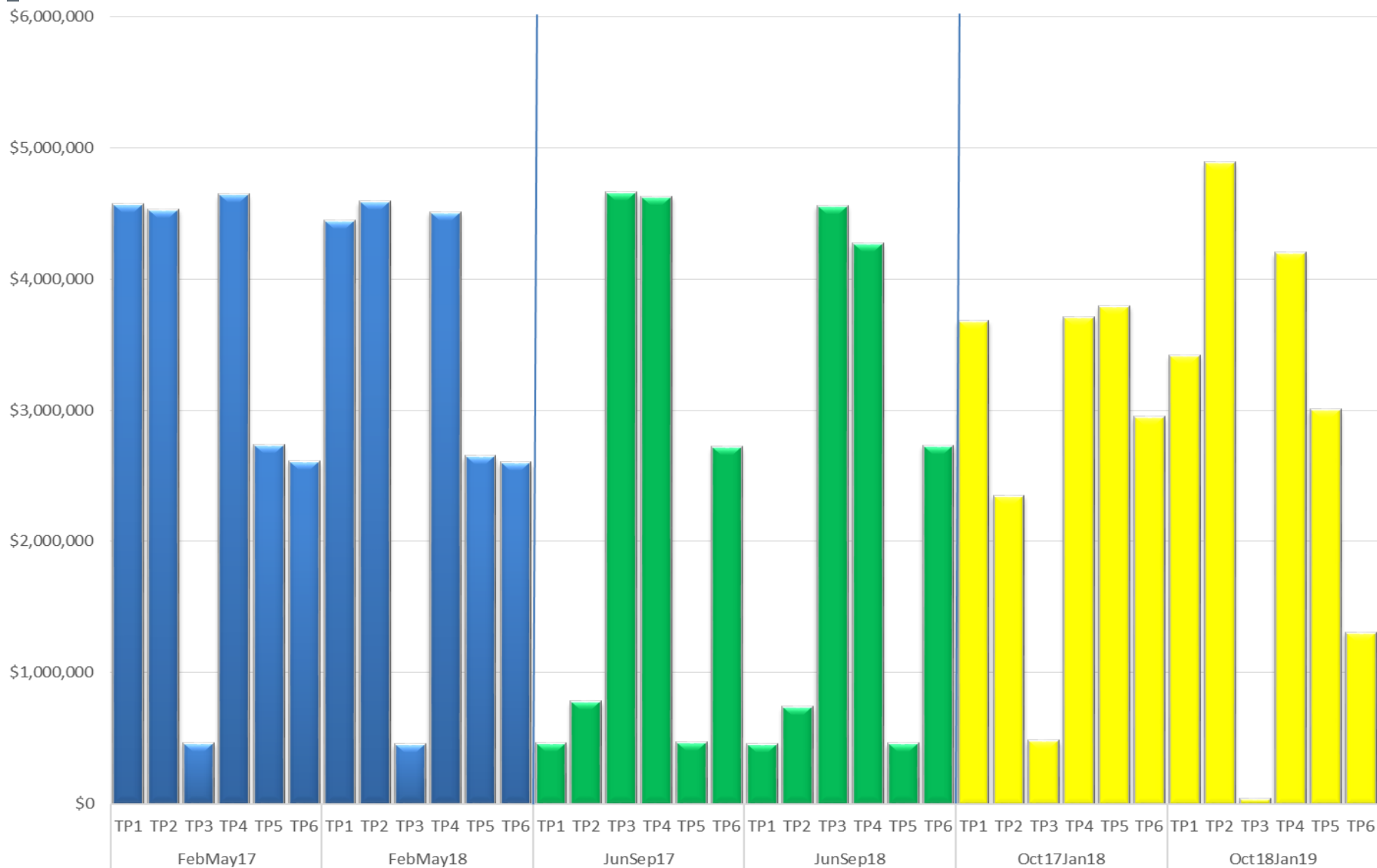


# Cumulative Sites (Unique) Participating in ERID Process

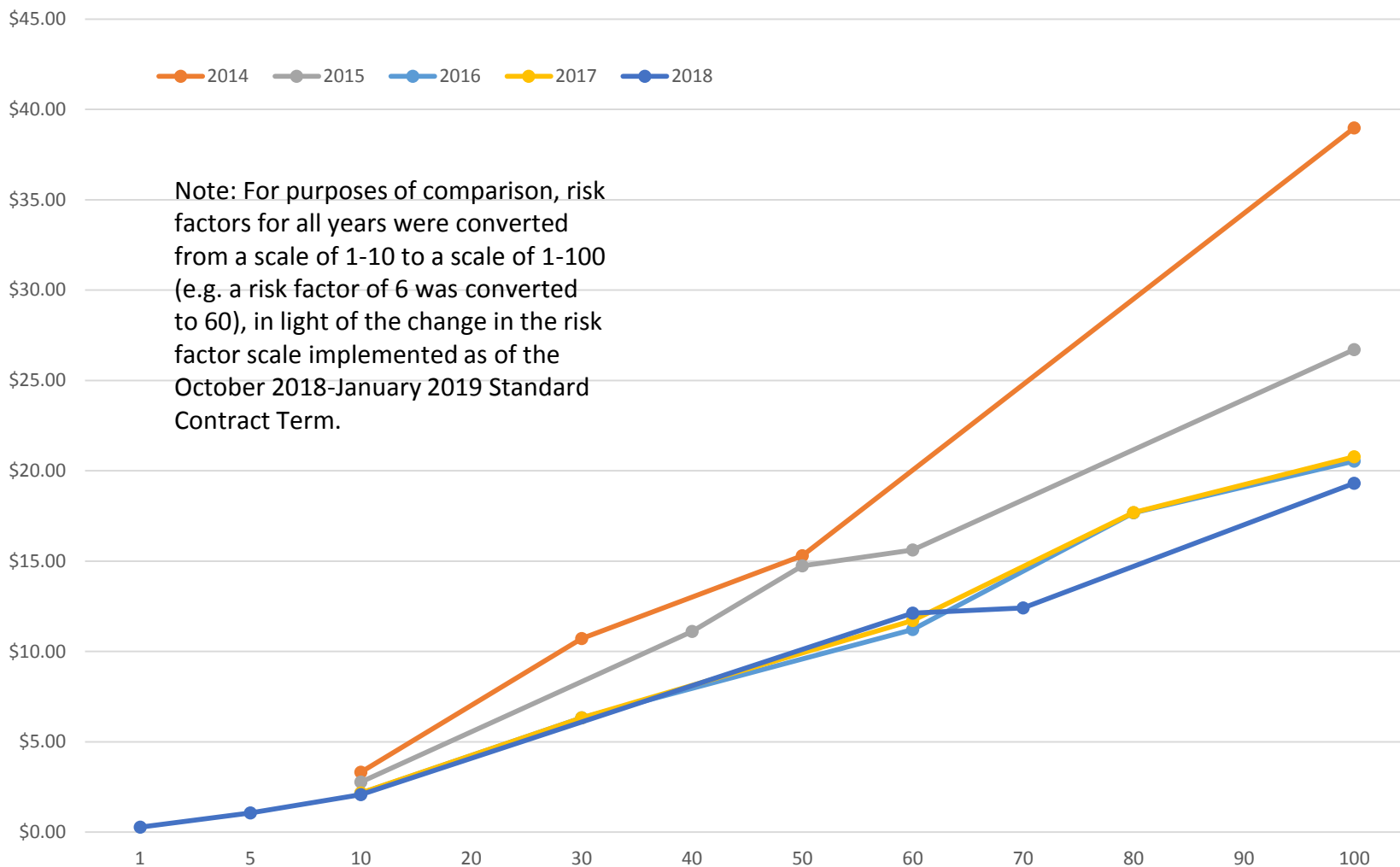




# ERS Cost Comparisons per Time Period



# Average Unit Cost (\$/MW/hr) vs Time Period Risk Factors



# 2018 ERS Procurement Results

# February-May 2018 Standard Contract Term

Values for the combined offer stack

	Capacity Procured (MWs)	Procurement Cost	Capacity Not Procured (MWs)	Clearing Price	Highest Offer Received (\$)
TP1	841.179	\$4,444,453.36	.465	\$20.72	\$22.97
TP2	902.708	\$4,584,628.26	.615	\$11.95	\$14.00
TP3	884.418	\$451,053.18	10.88	\$2.00	\$25.00
TP4	872.095	\$4,505,504.40	1.315	\$20.26	\$25.00
TP5	845.158	\$2,648,682.91	.80	\$12.29	\$14.00
TP6	761.702	\$2,599,627.99	.95	\$2.38	\$3.00

Non-Weather Sensitive **ERS-10 Minute**

	Capacity Procured (MWs)	Capacity Not Procured (MWs)
TP1	186.590	0.265
TP2	197.059	0
TP3	193.848	0.11
TP4	189.941	0.115
TP5	185.253	0.32
TP6	172.191	0

Weather Sensitive **ERS-10 Minute**

Capacity Procured (MWs)	Capacity Not Procured (MWs)
0	0
0	0
0	0
0	0

Non-Weather Sensitive **ERS-30 Minute**

	Capacity Procured (MWs)	Capacity Not Procured (MWs)
TP1	654.589	0.2
TP2	705.649	0.615
TP3	690.570	10.77
TP4	682.154	1.2
TP5	659.905	0.48
TP6	589.511	0.95

Weather Sensitive **ERS-30 Minute**

Capacity Procured (MWs)	Capacity Not Procured (MWs)
0	0
0	0
0	0
0	0

# June-September 2018 Standard Contract Term

Values for the combined offer stack

	Capacity Procured (MWs)	Projected Procurement Cost	Capacity Not Procured (MWs)	Clearing Price	Highest Offer Received (\$)
TP1	897.426	\$454,564.22	2.945	\$2.01	\$14.00
TP2	947.555	\$736,250.24	17.01	\$1.85	\$14.00
TP3	857.703	\$4,556,255.57	0.2	\$21.08	\$25.49
TP4	777.625	\$4,266,081.86	0.2	\$21.77	\$25.88
TP5	911.852	\$457,275.54	2.6	\$1.99	\$14.00
TP6	808.532	\$2,728,795.50	1.175	\$2.25	\$14.00

Non-Weather Sensitive **ERS-10** Minute

	Capacity Procured (MWs)	Capacity Not Procured (MWs)
TP1	160.562	0.115
TP2	165.996	0.11
TP3	143.324	0
TP4	140.708	0
TP5	156.699	0.12
TP6	151.138	0.11

Weather Sensitive **ERS-10** Minute

Capacity Procured (MWs)	Capacity Not Procured (MWs)
0	0
0	0

Non-Weather Sensitive **ERS-30** Minute

	Capacity Procured (MWs)	Capacity Not Procured (MWs)
TP1	736.864	2.83
TP2	781.559	16.9
TP3	702.529	0.2
TP4	625.067	0.2
TP5	755.153	2.48
TP6	657.394	1.065

Weather Sensitive **ERS-30** Minute

Capacity Procured (MWs)	Capacity Not Procured (MWs)
11.850	0
11.850	0

**Final Cost for this Standard Contract Term: \$13,163,166.10**

# October 2018-January 2019 Standard Contract Term

Values for the combined offer stack

	Capacity Procured (MWs)	Projected Procurement Cost	Capacity Not Procured (MWs)	Clearing Price	Highest Offer Received (\$)
TP1	926.313	\$3,415,093.72	0.741	\$14.63	\$21.84
TP2	977.440	\$4,885,245.12	0.82	\$11.90	\$14.16
TP3	576.429	\$39,220.23	351.4	\$0.27	\$14.00
TP4	960.816	\$4,198,458.46	0.6	\$17.34	\$20.54
TP5	921.499	\$3,000,253.30	0.846	\$12.92	\$15.00
TP6	805.522	\$1,302,126.31	15.070	\$1.06	\$14.00

Non-Weather Sensitive **ERS-10** Minute

	Capacity Procured (MWs)	Capacity Not Procured (MWs)
TP1	162.740	0.541
TP2	168.420	0.22
TP3	116.642	25.72
TP4	161.688	0.4
TP5	160.131	0.386
TP6	144.273	12.6

Weather Sensitive **ERS-10** Minute

Capacity Procured (MWs)	Capacity Not Procured (MWs)
0	0
0	0
0	0

Non-Weather Sensitive **ERS-30** Minute

	Capacity Procured (MWs)	Capacity Not Procured (MWs)
TP1	755.973	0.2
TP2	809.020	0.6
TP3	459.787	320.48
TP4	791.528	0.2
TP5	761.368	0.46
TP6	661.249	2.47

Weather Sensitive **ERS-30** Minute

Capacity Procured (MWs)	Capacity Not Procured (MWs)
7.600	0
0	5.2
7.600	0

\* First SCT using the new Risk Weighting Factors of 1-100.



**Projected Cost for this Standard Contract term: \$16,840,397.14**

## 2018 ERS Procurement Overview

Expenditure Limit for 2018	\$50,000,000.00
Amount Spent (Projected)	\$49,273,570.16
Unspent (Projected)	\$726,429.84

2018 ERS Cap	FebMay18 Total (Final)	JunSep18 Total (Final)	Oct18Jan19 Total (Projected)
\$50,000,000	\$18,645,509.96	\$13,163,166.10	\$16,840,397.14

## Settlement Summary (3 year look back)

Standard Contract Term	10M projected cost	10M Final	reduction amount	30M projected cost	30M Final	reduction amount	WS projected cost	WS Final	reduction amount
FebMay16	\$ 8,081,457.33	\$ 8,067,175.06	\$ 14,282.27	\$ 11,282,427.49	\$ 10,903,286.09	\$ 379,141.40			
JunSep16	\$ 4,779,935.72	\$ 4,700,109.22	\$ 79,826.50	\$ 8,756,997.06	\$ 8,493,991.72	\$ 263,005.34	\$ 253,062.26	\$ 178,582.78	74,479.48
Oct16Jan17	\$ 5,927,501.64	\$ 5,685,340.28	\$242,161.36	\$ 10,854,543.42	\$ 10,548,517.13	\$ 306,026.29	\$ 18,246.63	\$ 12,685.26	\$ 5,561.37
<b>Total 2016</b>	<b>\$ 18,788,894.69</b>	<b>\$ 18,452,624.56</b>	<b>\$336,270.13</b>	<b>\$ 30,893,967.97</b>	<b>\$ 29,945,794.94</b>	<b>\$ 948,173.03</b>	<b>\$ 271,308.89</b>	<b>\$ 191,268.04</b>	<b>80,040.85</b>
FebMay17	\$ 6,676,346.50	\$ 6,622,079.93	\$ 54,266.57	\$ 12,850,377.39	\$ 12,544,030.25	\$ 306,347.14	\$ 9,710.04	\$ 9,564.40	\$ 145.64
JunSep17	\$ 3,661,877.87	\$ 3,632,614.75	\$ 29,263.12	\$ 9,946,863.73	\$ 9,579,410.83	\$ 367,452.90	\$ 99,962.88	\$ 88,936.83	\$11,026.05
Oct17Jan18	\$ 4,147,990.11	\$ 4,078,739.01	\$ 69,251.10	\$ 12,750,162.78	\$ 12,285,664.75	\$ 464,498.03	\$ 47,886.44	\$ 37,590.86	\$10,295.58
<b>Total 2017</b>	<b>\$ 14,486,214.48</b>	<b>\$ 14,333,433.69</b>	<b>\$152,780.79</b>	<b>\$ 35,547,403.91</b>	<b>\$ 34,409,105.83</b>	<b>\$1,138,298.08</b>	<b>\$ 157,559.35</b>	<b>\$ 136,092.09</b>	<b>21,467.26</b>
FebMay18	\$ 4,235,082.74	\$ 4,080,832.34	\$154,250.40	\$ 14,998,867.37	\$ 14,564,677.62	\$ 434,189.75	\$ -	\$ -	\$ -
JunSep18	\$ 2,332,268.66	\$ 2,330,832.52	\$ 1,436.14	\$ 10,738,995.59	\$ 10,721,782.15	\$ 17,213.44	\$ 127,958.67	\$ 110,551.43	\$17,407.24
Oct18Jan19	\$ 2,910,785.84	Not available		\$ 13,868,382.35	Not available		\$ 61,228.94	Not available	
<b>Total 2018</b>	<b>\$ 9,478,137.23</b>	<b>Not available</b>		<b>\$ 39,606,245.31</b>	<b>Not available</b>		<b>\$ 189,187.61</b>	<b>Not available</b>	