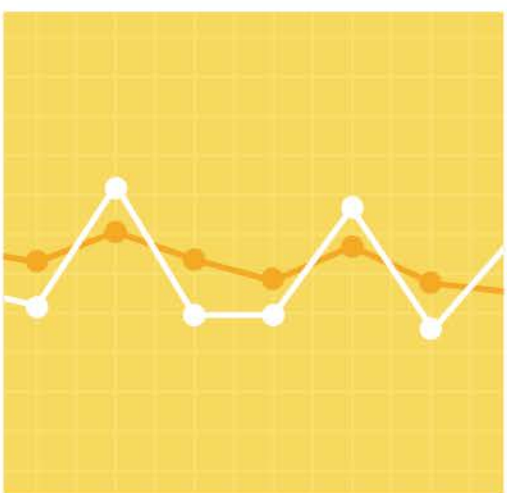
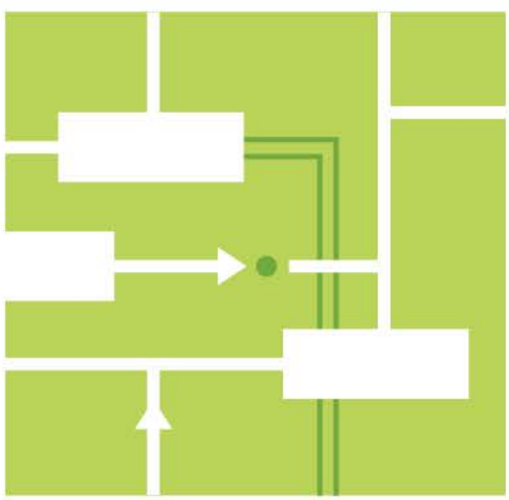
Monthly Market Operations Report June 2018

Market Analysis and Settlements

JULY 19, 2018

ISO-NE PUBLIC


1. Introduction

1.1 About ISO New England

Created in 1997, ISO New England Inc. (the ISO) is the not-for-profit regional transmission organization (RTO) responsible for the day-to-day reliable operation of New England's bulk power generation and transmission system, oversight and administration of the region's wholesale electricity markets, and management of a comprehensive regional bulk power system planning process.

1.2 Market Reporting

The ISO's FERC Electric Tariff No. 3, Section III – Market Rule 1 – Standard Market Design, Appendix A – Market Monitoring, Reporting and Market Power Mitigation Section III.A.11.2.1 requires the ISO to publish a monthly report, "which will be available to the public...containing an overview of the market's performance in the most recent period."

The ISO produces many reports that summarize the operations of New England's wholesale electricity markets. The weekly report provides summaries of key market activities for the trading week encompassing Monday-Sunday. This report, generally posted on Wednesdays, can be found on the ISO's web site here[1]. This report is also supplemented by a Mid-Week Market Update, generally posted on Fridays, that reports pricing and congestion highlights from Monday through Thursday. This update may be accessed here. There is also a summary of weekly Net Commitment Period Compensation (NCPC) credits posted here.

Monthly summaries of certain wholesale market concepts are reported monthly by the ISO's Chief Operating Officer at the NEPOOL Participants Committee Meeting. These summaries are posted on the ISO's web site here, under the heading entitled "Participants Committee Materials."

Additionally, in compliance with federal requirements, the ISO issues quarterly reports of key statistics for the region's wholesale electric power markets. These reports can be found on the ISO's web site here[2].

1.3 About This Report

This report summarizes aspects of New England's wholesale electricity markets that are generally not discussed in the first two reports noted above. There are many interrelationships between the various markets that the ISO administers – each of the concepts presented in this report may interact with others, and second order effects cannot be included here. Additional information can be found on the ISO's web site here.

[1] Select "Weekly Markets Reports" from the document type filter on the left hand side of the page.

[2] Select "Quarterly Markets Reports" from the document type filter on the left hand side of the page.

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3. Monthly Summary

Day-ahead and real-time LMPs at the New England Hub averaged $26.82/MWh and $26.02/MWh, respectively, during June 2018. Day-ahead and real-time prices at the Hub and in the Load Zones averaged 7% to 16% higher than May 2018 averages. In the aggregate, June 2018 day-ahead and real-time LMPs were approximately 7% higher during June 2018 than during June 2017. Average natural gas prices were 8% above the prior year's average prices, while residual fuel prices were up 53% over a year ago.

Overall, the average of the real-time LMPs at the Hub and in the Load Zones ranged between 4.7% lower than day-ahead in the Connecticut (CT) Load Zone to 3.0% lower than its day-ahead counterpart in the Hub Load Zone. In the Day-Ahead Market, Load Zone average LMPs ranged between 1.5% lower than the Hub average LMPs in the Maine (ME) Load Zone to 1.5% higher than the Hub in the CT Load Zone. In the Real-Time Market, Load Zone average LMPs ranged between 2.7% lower than the Hub average LMPs in the ME Load Zone to 0.4% higher than the Hub in the Western/Central Massachusetts (WCMA) Load Zone. Price differentials between on-peak and off-peak hours at the Hub and in the Load Zones ranged between 18% and 30% in both the Day-Ahead and Real-Time Markets.

The New England Control Area was a net importer of electricity in the Real-Time Market during June. In the Day-Ahead Energy Market, there were approximately 476,000 MWh of total exports and 2,082,000 MWh of imports, yielding a net import of approximately 1,606,000 MWh. In the Real-Time Energy Market, there were approximately 674,000 MWh of total exports and 2,290,000 MWh of imports, yielding a net import of approximately 1,616,000 MWh. This was about 70,000 MWh higher than a year ago.

The Monthly FTR Auction (June 2018) had 29 participants and the awarded value of FTRs in the auction totaled $1.3 million. This represented an increase of $87K over the previous month and an addition of about $591K over the prior year's monthly FTR auction. The allocation of FTR Auction Revenue for June 2018 resulted in $1.9 million awarded to eligible entities, with $182K allocated to Incremental Auction Revenue Rights (IARR).

The Marginal Loss Revenue Fund totaled $1.6 million for June, down $100K from its May 2018 total.

Total Forward Reserve Credits to eligible assets of $4.23 million were reduced by $85K in Failure to Reserve Penalties and $0 in Failure to Activate Penalties during June 2018. The net Forward Reserve Payment of $4.15 million represented 97% of the maximum possible payment of $4.29 million. Real-Time Reserve Prices occurred in 233 separate hours during the month, and those yielded real-time payments to designated assets of $701K. These payments were not reduced by any Forward Reserve Energy Obligation Charges, yielding a net compensation of $701K during the month.

Regulation Market Payments totaled $1.51 million during the month, a decrease of $267K from the May 2018 value of $1.77 million.

For the month of June 2018, Forward Capacity payments were made to a total of 35,002 MW of eligible capacity and totaled $335.2 million.

The Transitional Demand Response program was the method through which demand assets could participate in the Energy Market prior to the June 1, 2018 implementation of Price Responsive Demand (PRD) – Full Integration Implementation. The transitional program ended on May 31, 2018.

Beginning June 1, 2018, PRD replaced the Transitional Demand Response program, enabling Demand Response assets to fully participate in the Energy, Reserve, and Capacity Markets. Energy payments during June 2018 totaled $71K for reduction obligations associated with Day Ahead, along with a charge of $3K for reduction deviations associated with the Real Time, yielding a total PRD payment for the month of approximately $69K. These resources received $0 in the Forward Reserve Market, and $9 in the Real-Time Reserve Market.

Also on June 1, the ISO implemented FCM Pay-for-Performance (PFP) to incent resource availability during stressed system conditions. During June there were no Capacity Scarcity Conditions (CSC). The estimated balancing ratio, a key determinant of the amount of capacity that needs to be provided during a CSC, averaged 46%, and ranged between 32% and 68%, primarily due to mild weather conditions.

4. Locational Marginal Prices (LMPs)

For a discussion of LMPs in the New England markets, please visit the ISO website here. The following tables summarize Hub, zonal, and external node hourly (DA) and 5-minute (RT) LMPs during the month on an overall, on-peak, and off-peak basis. On-peak hours are weekdays between 7:00 a.m. and 11:00 p.m. Off-peak hours are weekdays between 11:00 p.m. and 7:00 a.m., Saturdays, Sundays, and North American Electric Reliability Council (NERC) holidays.

4.1 LMP Summary Statistics

The following tables show summary statistics for hourly DA and 5-minute RT LMPs for the Hub, eight internal Load Zones, and five external nodes for both the Day-Ahead and Real-Time Markets:

4.1.1 *All Intervals, June 2018*

Hub/Zone/ Ext. Node	Avg DA LMP ($/MWh)	Avg RT LMP ($/MWh)	Min DA LMP ($/MWh)	Min RT LMP ($/MWh)	Max DA LMP ($/MWh)	Max RT LMP ($/MWh)	DA % of Hub	RT % of Hub	RT % of DA	DA Std Dev	RT Std Dev	RT Std /DA Std
Hub	$26.82	$26.02	$5.00	-$152.63	$79.11	$241.04	105%	109%	97.0%	$8.42	$19.27	2.29
ME	$26.41	$25.31	$4.86	-$150.24	$75.46	$230.91	104%	106%	95.8%	$8.19	$18.39	2.24
NH	$26.88	$26.05	$4.94	-$151.42	$78.31	$239.57	105%	109%	96.9%	$8.41	$19.18	2.28
VT	$26.85	$25.88	$4.95	-$153.87	$78.39	$236.79	105%	108%	96.4%	$8.47	$19.05	2.25
CT	$27.22	$25.93	$4.99	-$152.70	$88.02	$242.14	107%	108%	95.3%	$9.10	$19.66	2.16
RI	$26.62	$25.50	$5.00	-$290.32	$77.92	$238.75	104%	107%	95.8%	$8.25	$20.63	2.50
SEMA	$26.87	$25.69	$5.01	-$318.48	$78.61	$241.65	105%	107%	95.6%	$8.38	$21.05	2.51
WCMA	$26.93	$26.11	$5.02	-$152.79	$78.94	$241.49	106%	109%	97.0%	$8.43	$19.29	2.29
NEMA	$26.87	$26.02	$4.97	-$151.64	$78.79	$240.87	105%	109%	96.8%	$8.41	$19.47	2.32
NB Ext	$25.35	$21.54	$4.68	-$148.74	$72.66	$214.90	99%	90%	85%	$8.19	$21.01	2.57
NYN Ext	$26.80	$26.07	$5.00	-$182.39	$77.19	$240.62	105%	109%	97%	$8.35	$19.27	2.31
HQ Ext	$26.45	$25.47	$4.91	-$149.12	$77.47	$236.49	104%	106%	96%	$8.25	$19.22	2.33
HG Ext	$25.03	$23.64	$4.61	-$151.55	$74.71	$217.49	98%	99%	94%	$8.26	$17.77	2.15
CSC Ext	$27.33	$26.49	$4.99	-$154.78	$108.22	$245.11	107%	111%	97%	$9.46	$19.52	2.06
NNC Ext	$27.85	$26.33	$5.00	-$153.09	$108.53	$244.86	109%	110%	95%	$10.45	$19.41	1.86

4.1.2 *On-Peak Intervals, June 2018*

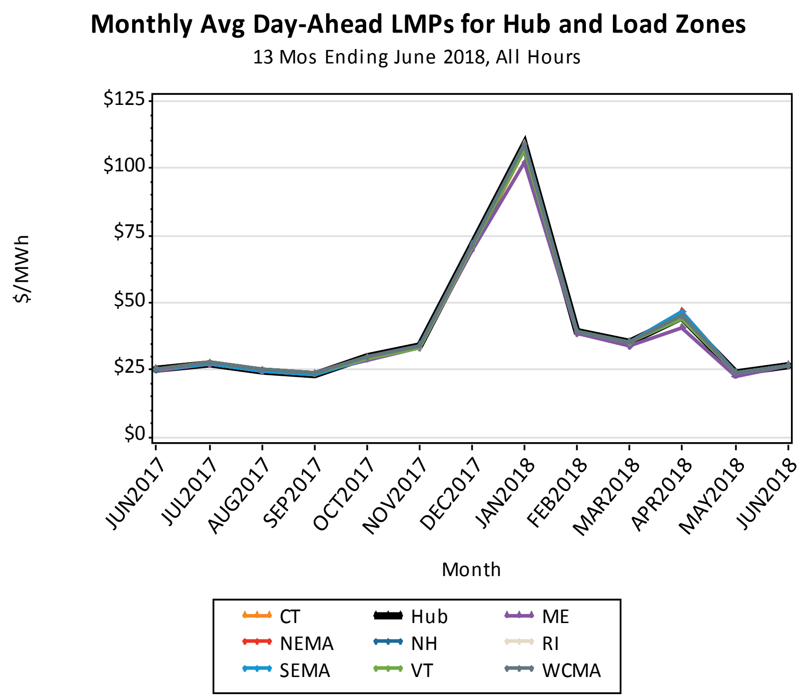
Hub/Zone/ Ext. Node	Avg DA LMP ($/MWh)	Avg RT LMP ($/MWh)	Min DA LMP ($/MWh)	Min RT LMP ($/MWh)	Max DA LMP ($/MWh)	Max RT LMP ($/MWh)	DA % of Hub	RT % of Hub	RT % of DA	DA Std Dev	RT Std Dev	RT Std /DA Std
Hub	$30.50	$28.32	$20.11	$14.92	$79.11	$107.50	101%	102%	93%	$8.66	$10.62	1.23
ME	$30.16	$27.94	$20.17	$7.50	$75.46	$105.03	100%	100%	93%	$8.18	$10.37	1.27
NH	$30.65	$28.42	$20.29	$14.80	$78.31	$107.78	101%	102%	93%	$8.54	$10.63	1.25
VT	$30.63	$28.24	$20.18	$14.93	$78.39	$107.48	101%	101%	92%	$8.63	$10.63	1.23
CT	$30.60	$28.39	$20.02	$14.92	$77.85	$108.26	101%	102%	93%	$8.65	$10.73	1.24
RI	$30.20	$28.06	$20.13	$14.88	$77.92	$106.54	100%	101%	93%	$8.51	$10.53	1.24
SEMA	$30.55	$28.35	$20.30	$14.97	$78.61	$107.86	101%	102%	93%	$8.58	$10.64	1.24
WCMA	$30.64	$28.42	$20.19	$14.95	$78.94	$107.99	101%	102%	93%	$8.63	$10.67	1.24
NEMA	$30.59	$28.44	$20.25	$14.86	$78.79	$108.00	101%	102%	93%	$8.59	$10.65	1.24
NB Ext	$29.16	$26.10	$13.69	-$83.20	$72.66	$99.45	96%	94%	90%	$7.99	$11.94	1.49
NYN Ext	$30.45	$28.30	$19.98	$10.09	$77.19	$106.97	101%	102%	93%	$8.49	$10.83	1.28
HQ Ext	$30.08	$27.78	$19.92	$14.62	$77.47	$105.33	100%	100%	92%	$8.44	$10.39	1.23
HG Ext	$28.74	$25.74	$16.17	-$2.79	$74.71	$100.32	95%	92%	90%	$8.30	$10.12	1.22
CSC Ext	$30.52	$28.81	$20.04	$15.11	$77.81	$109.87	101%	103%	94%	$8.55	$10.90	1.28
NNC Ext	$31.36	$28.58	$20.01	$14.99	$77.76	$109.34	104%	103%	91%	$9.76	$10.84	1.11

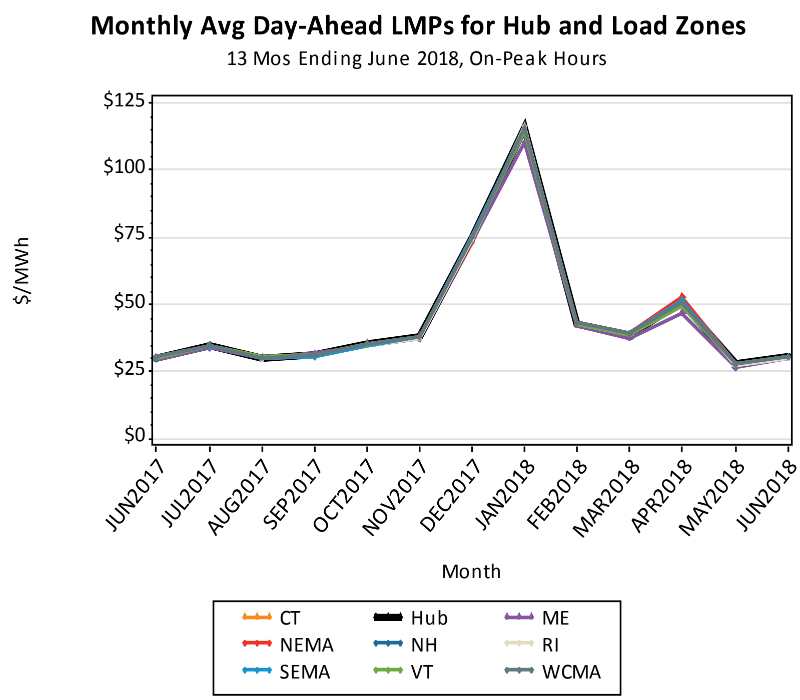
4.1.3 *Off-Peak Intervals, June 2018*

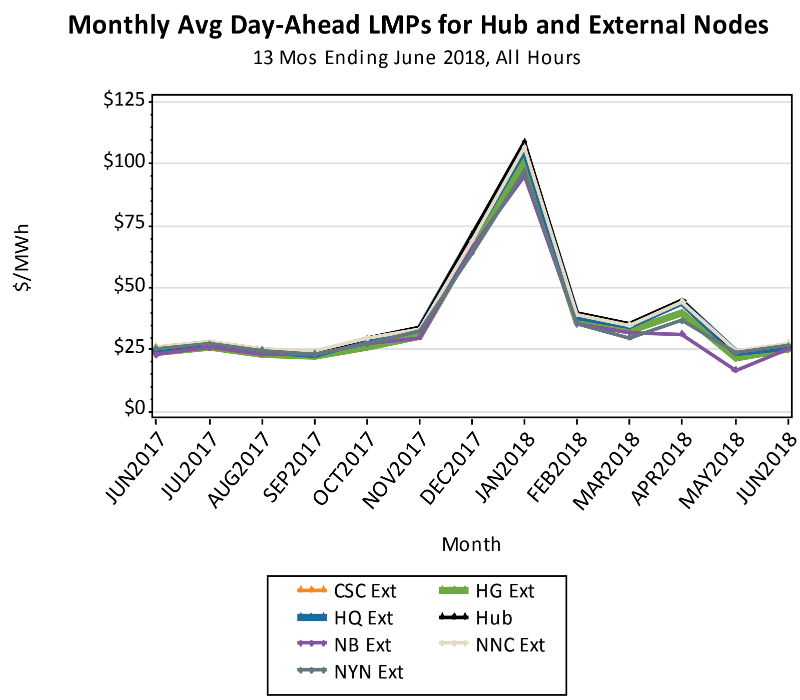
Hub/Zone/ Ext. Node	Avg DA LMP ($/MWh)	Avg RT LMP ($/MWh)	Min DA LMP ($/MWh)	Min RT LMP ($/MWh)	Max DA LMP ($/MWh)	Max RT LMP ($/MWh)	DA % of Hub	RT % of Hub	RT % of DA	DA Std Dev	RT Std Dev	RT Std /DA Std
Hub	$23.60	$24.01	$5.00	-$152.63	$52.80	$241.04	113%	119%	102%	$6.74	$24.27	3.60
ME	$23.12	$23.01	$4.86	-$150.24	$51.40	$230.91	110%	114%	100%	$6.66	$22.99	3.45
NH	$23.58	$23.99	$4.94	-$151.42	$52.16	$239.57	113%	119%	102%	$6.76	$24.12	3.57
VT	$23.54	$23.82	$4.95	-$153.87	$51.90	$236.79	112%	118%	101%	$6.80	$23.93	3.52
CT	$24.25	$23.77	$4.99	-$152.70	$88.02	$242.14	116%	118%	98%	$8.44	$24.78	2.93
RI	$23.48	$23.26	$5.00	-$290.32	$52.53	$238.75	112%	115%	99%	$6.58	$26.27	3.99
SEMA	$23.65	$23.37	$5.01	-$318.48	$53.09	$241.65	113%	116%	99%	$6.71	$26.85	4.00
WCMA	$23.69	$24.10	$5.02	-$152.79	$52.79	$241.49	113%	119%	102%	$6.76	$24.27	3.59
NEMA	$23.61	$23.90	$4.97	-$151.64	$52.87	$240.87	113%	118%	101%	$6.74	$24.54	3.64
NB Ext	$22.01	$17.54	$4.68	-$148.74	$49.94	$214.90	105%	87%	80%	$6.80	$25.86	3.80
NYN Ext	$23.61	$24.11	$5.00	-$182.39	$52.05	$240.62	113%	120%	102%	$6.78	$24.20	3.57
HQ Ext	$23.27	$23.45	$4.91	-$149.12	$51.97	$236.49	111%	116%	101%	$6.62	$24.27	3.67
HG Ext	$21.79	$21.80	$4.61	-$151.55	$49.19	$217.49	104%	108%	100%	$6.72	$22.26	3.31
CSC Ext	$24.55	$24.46	$4.99	-$154.78	$108.22	$245.11	117%	121%	100%	$9.34	$24.53	2.63
NNC Ext	$24.78	$24.36	$5.00	-$153.09	$108.53	$244.86	118%	121%	98%	$10.07	$24.39	2.42

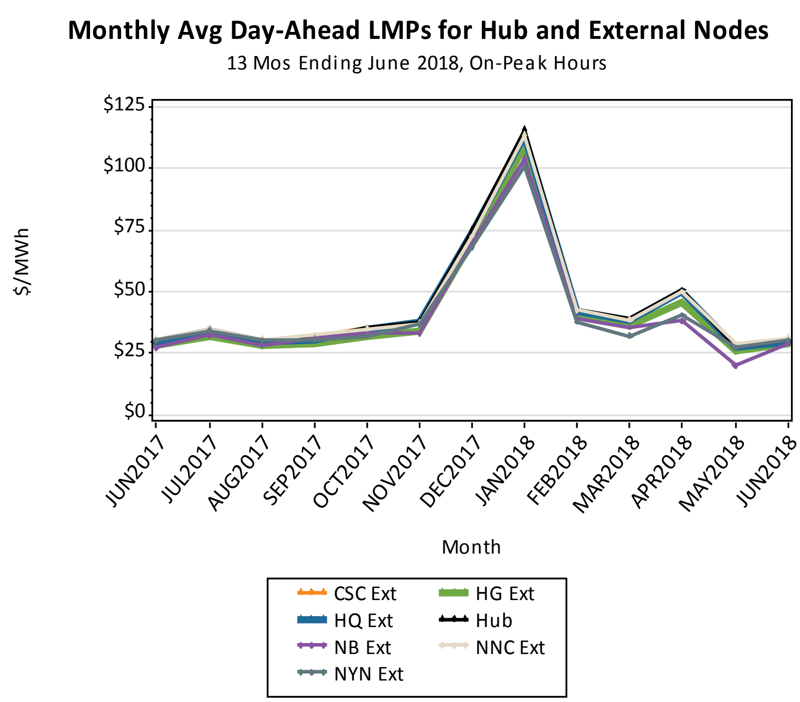
4.2 LMP Graphs, Day-Ahead Market, 13 Months Ending June 2018

The following four graphs show the 13 month history of average hourly Day-Ahead LMPs for the Hub, Load Zones, and External Nodes on an overall and on-peak basis.



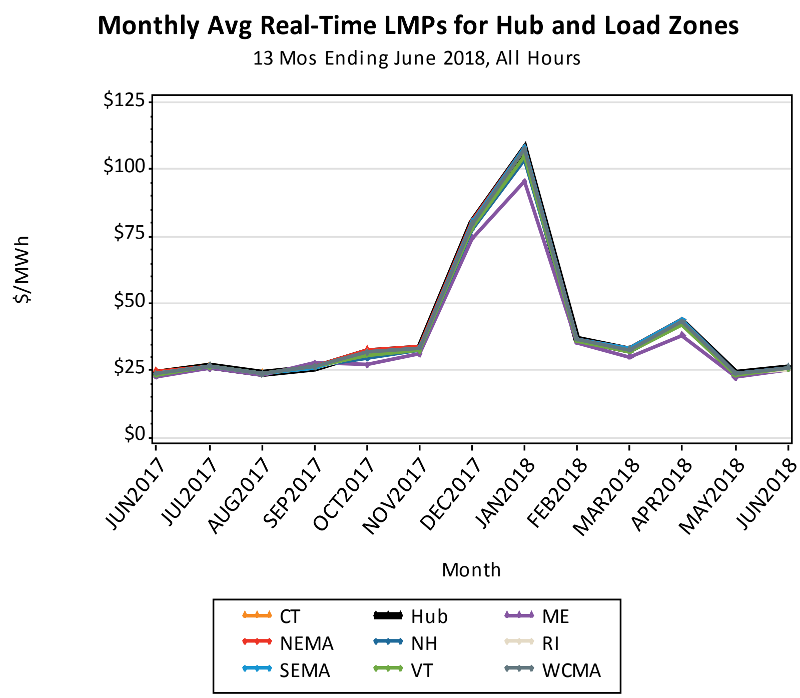


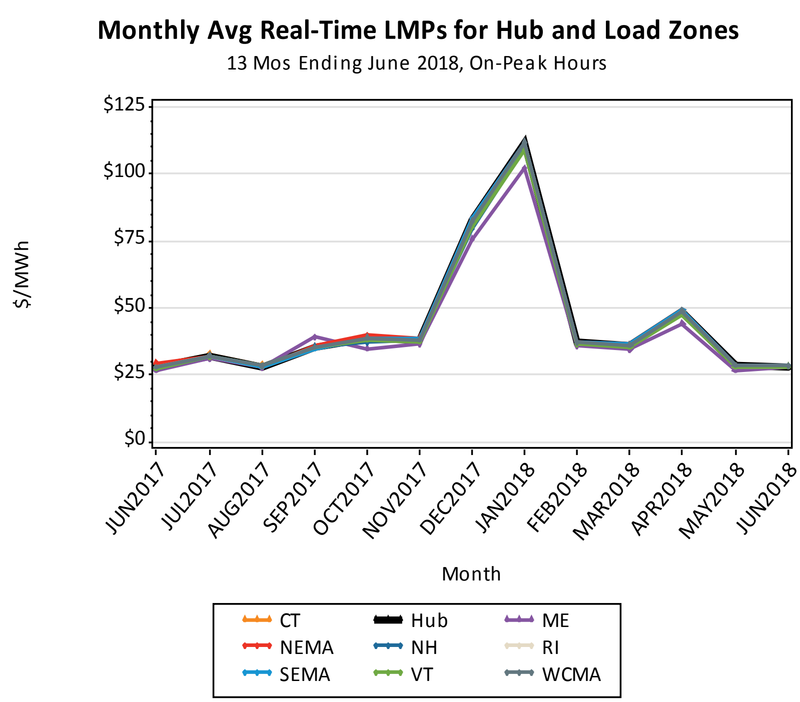

Monthly Avg Day-Ahead LMPs for Hub and External Nodes
13 Mos Ending June 2018, All Hours
$/MWh
$125
$100
$75
$50
$25
$0
JUN2017
JUL2017
AUG2017
SEP2017
OCT2017
NOV2017
DEC2017
JAN2018
FEB2018
MAR2018
APR2018
MAY2018
JUN2018
Month
CSC Ext
HG Ext
HQ Ext
Hub
NB Ext
NNC Ext
NYN Ext


Monthly Avg Day-Ahead LMPs for Hub and External Nodes
13 Mos Ending June 2018, On-Peak Hours
$/MWh
$125
$100
$75
$50
$25
$0
JUN2017
JUL2017
AUG2017
SEP2017
OCT2017
NOV2017
DEC2017
JAN2018
FEB2018
MAR2018
APR2018
MAY2018
JUN2018
Month
CSC Ext
HG Ext
HQ Ext
Hub
NB Ext
NNC Ext
NYN Ext

4.3 LMP Graphs, Real-Time Market, 13 Months Ending June 2018

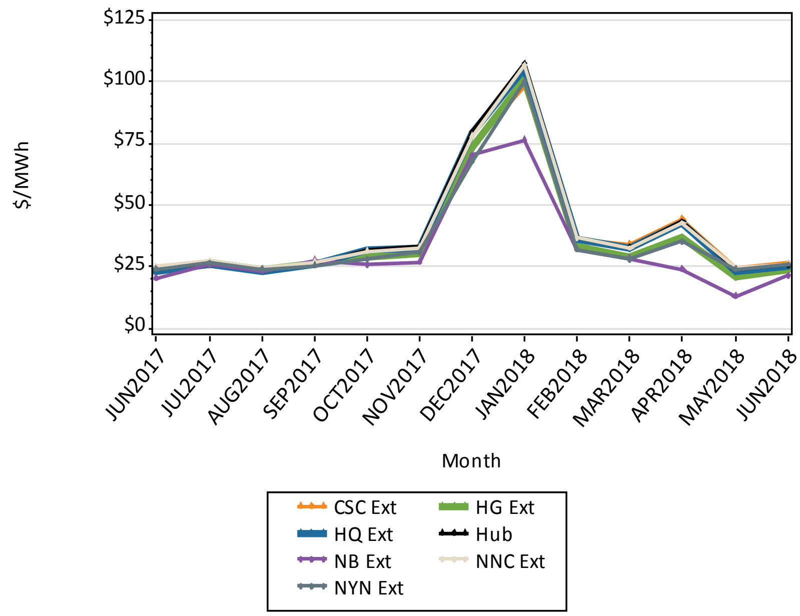
The following four graphs show the 13 month history of average hourly (and 5-minute) Real-Time LMPs for the Hub, Load Zones, and External Nodes on an overall and on-peak basis.





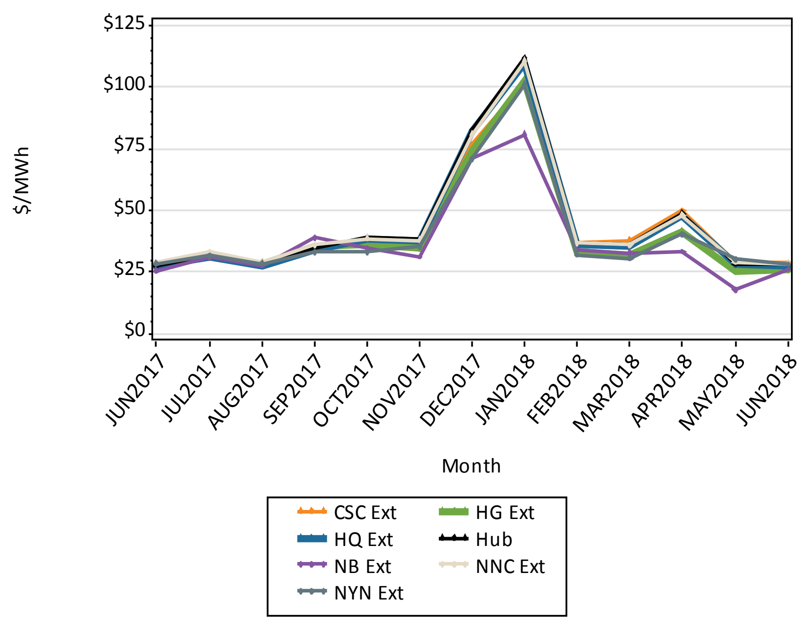
Monthly Avg Real-Time LMPs for Hub and External Nodes

13 Mos Ending June 2018, All Hours



Monthly Avg Real-Time LMPs for Hub and External Nodes

13 Mos Ending June 2018, On-Peak Hours



4.4 For More Information

The ISO provides a discussion of LMP results on a weekly basis in its Weekly Market Performance Report, located here[3].

The ISO also provides a discussion of LMP results on an annual basis in its Annual Market Performance Reports, located here[4].

Downloadable Hub and Load Zone weekly and monthly LMP indices are located here.

Customizable downloads of Day-Ahead and Real-Time Hourly and 5-minute LMPs can be performed here.

Current Day-Ahead and Real-Time LMPs for the Hub and Load Zones can be monitored here.

A discussion of the calculation of LMPs can be found in the ISO's Market Rule 1 located here.

[3] Select "Weekly Markets Reports" from the document type filter on the left hand side of the page

[4] Select "Annual Markets Reports" from the document type filter on the left hand side of the page

5. Imports and Exports

For more information on import and export scheduling, visit the ISO website here.

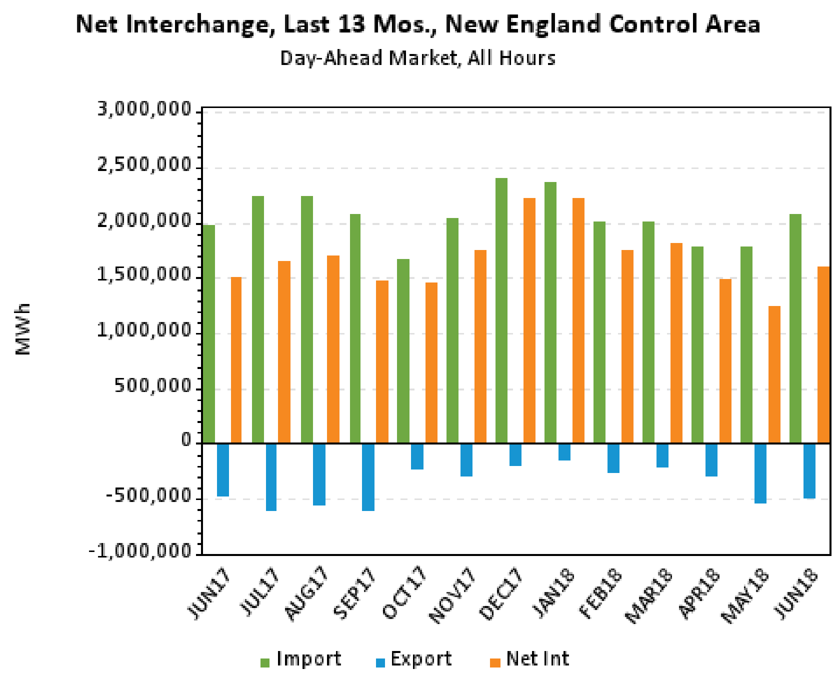
5.1 Net Interchange Summary, June 2018

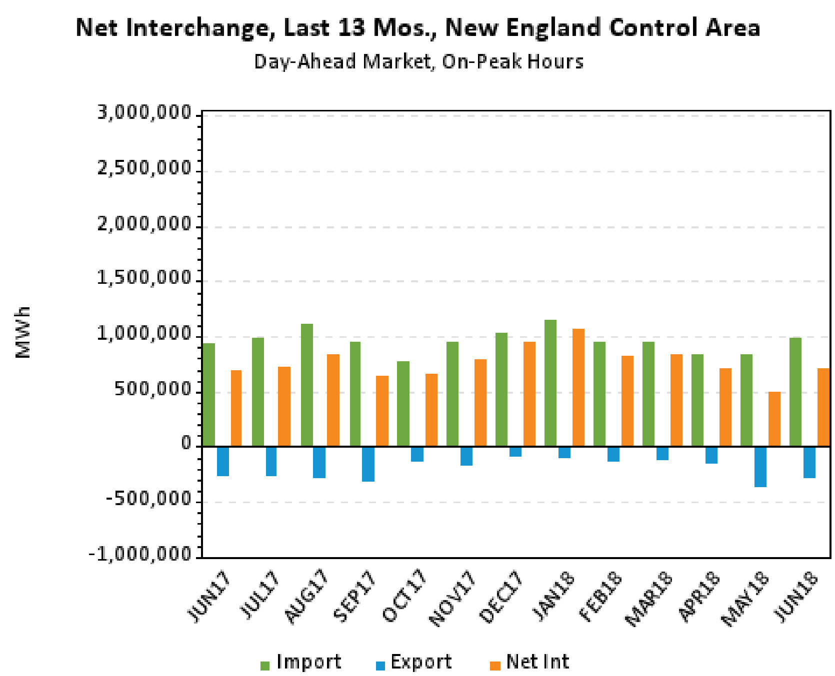
The following tables show summary statistics for scheduled imports and exports on the six external interfaces for both the Day-Ahead and Real-Time Markets:

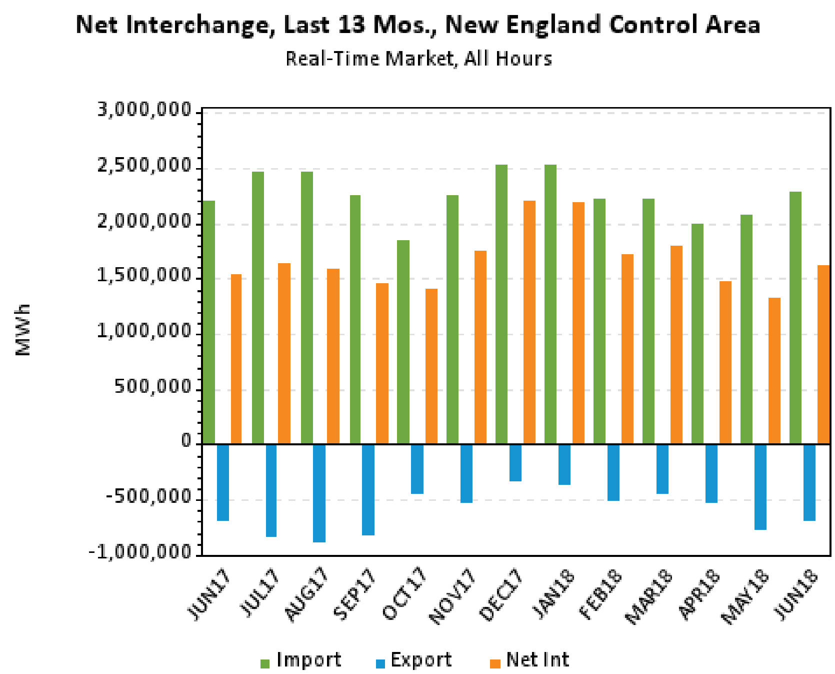
5.1.1 *Day-Ahead and Real-Time Market Summary by Interface*

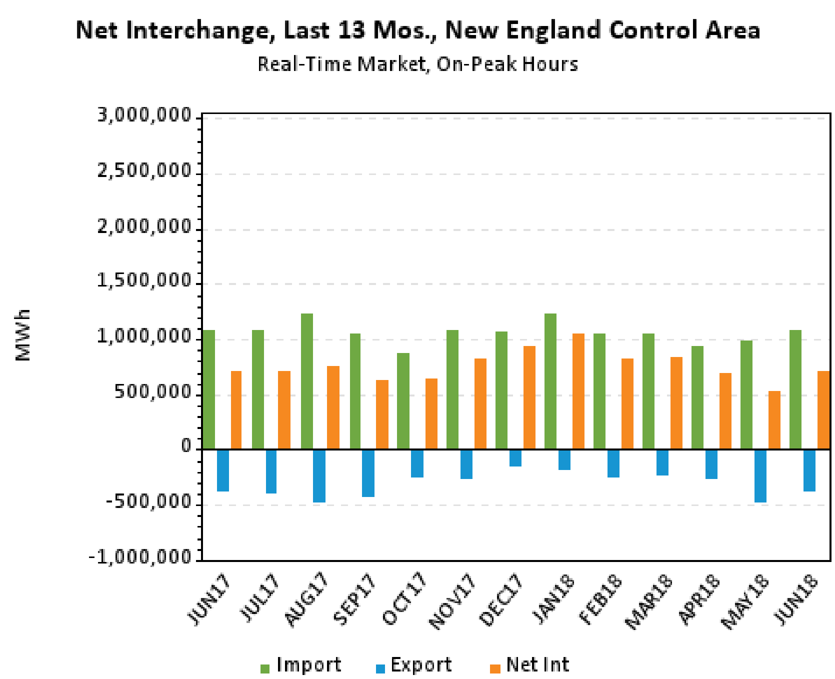
On/Off Peak	Interface	DA Total Exports (MWh)	DA Total Imports (MWh)	DA Net Int (MWh)	RT Total Exports (MWh)	RT Total Imports (MWh)	RT Net Int (MWh)
All Hours	NNC	-45,215	674	-44,541	-49,083	2,074	-47,009
	NY-CSC	-174,191	0	-174,191	-171,029	0	-171,029
	HQ HG	0	161,405	161,405	-1,431	161,847	160,416
	HQ I/II	0	1,026,411	1,026,411	-4,282	1,128,360	1,124,078
	NY-N AC	-233,887	461,782	227,895	-393,777	561,731	167,954
	NB	-22,439	431,255	408,816	-54,622	436,302	381,680
Total	**All Hours**	**-475,733**	**2,081,527**	**1,605,794**	**-674,224**	**2,290,314**	**1,616,090**
Off-Peak	NNC	-15,401	542	-14,859	-18,631	1,346	-17,285
	NY-CSC	-80,719	0	-80,719	-78,418	0	-78,418
	HQ HG	0	85,805	85,805	-1,431	86,247	84,816
	HQ I/II	0	530,458	530,458	-4,282	576,520	572,238
	NY-N AC	-95,786	248,582	152,796	-171,934	303,500	131,566
	NB	-8,848	238,715	229,867	-26,831	245,665	218,834
Total	Off-Peak	-200,754	1,104,102	903,348	-301,527	1,213,277	911,750
On-Peak	NNC	-29,815	132	-29,683	-30,452	728	-29,724
	NY-CSC	-93,472	0	-93,472	-92,611	0	-92,611
	HQ HG	0	75,600	75,600	0	75,600	75,600
	HQ I/II	0	495,953	495,953	0	551,841	551,841
	NY-N AC	-138,101	213,200	75,099	-221,843	258,230	36,388
	NB	-13,591	192,540	178,949	-27,791	190,637	162,846
Total	On-Peak	-274,979	977,425	702,447	-372,697	1,077,036	704,339

5.2 Day-Ahead and Real-Time Net Interchange Summary, Last 13 Months

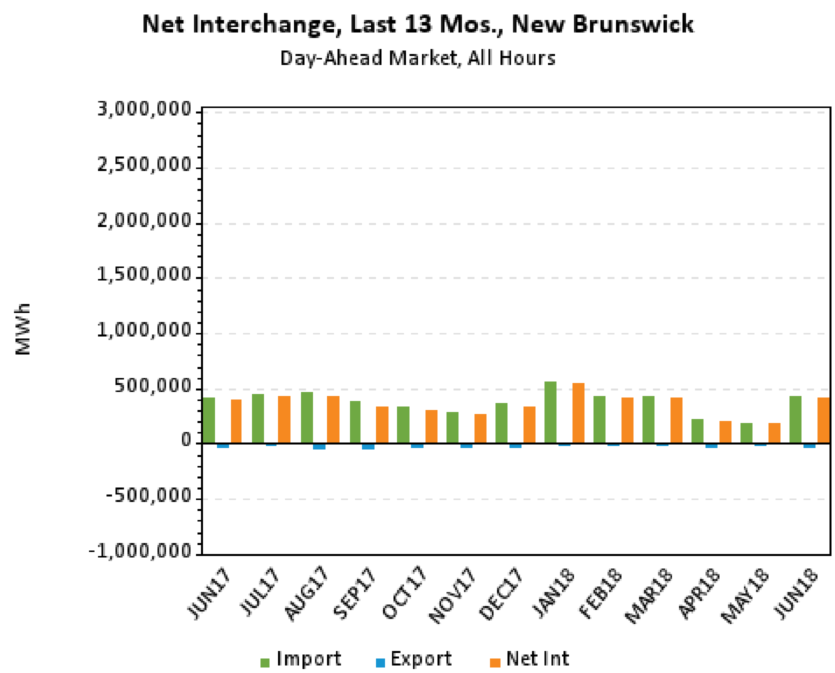


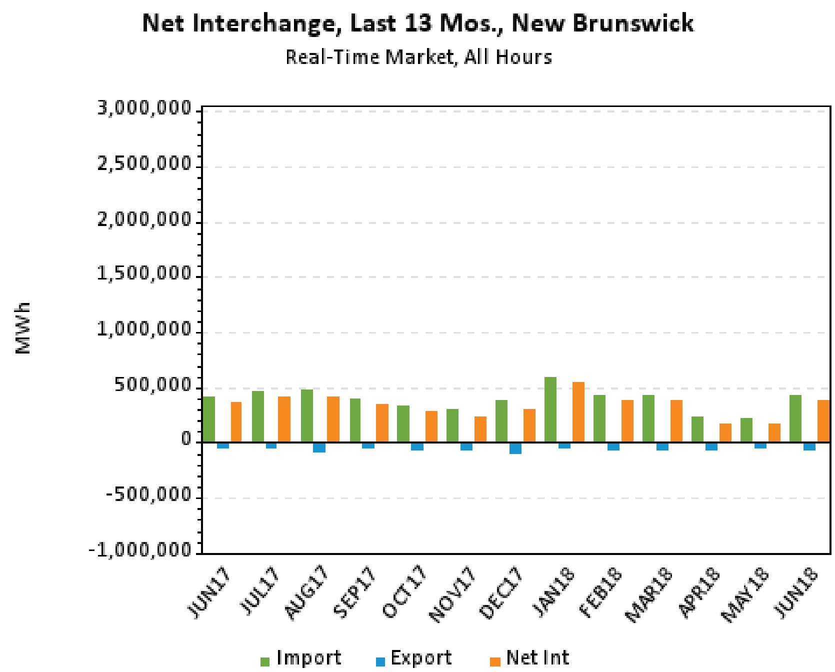



Net Interchange, Last 13 Mos., New England Control Area
Real-Time Market, All Hours
MWh
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
-500,000
-1,000,000
JUN17
JUL17
AUG17
SEP17
OCT17
NOV17
DEC17
JAN18
FEB18
MAR18
APR18
MAY18
JUN18
Import
Export
Net Int

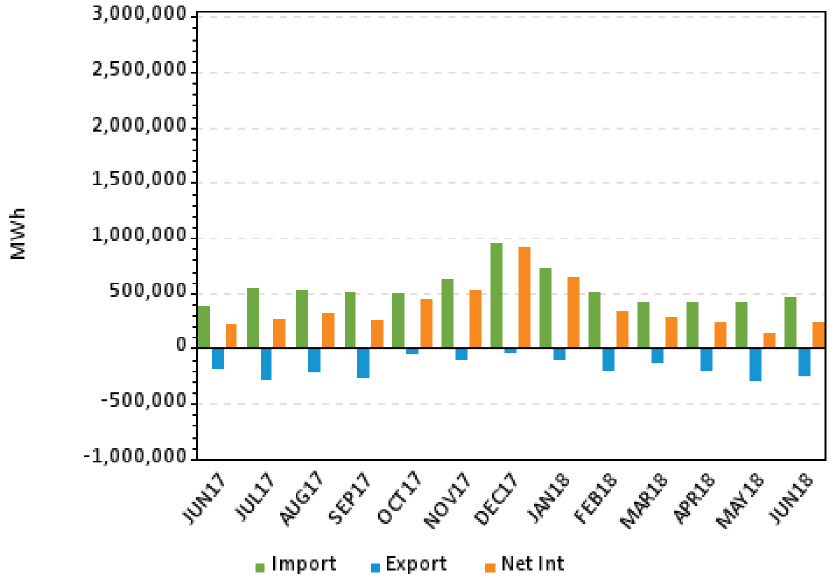

Net Interchange, Last 13 Mos., New England Control Area
Real-Time Market, On-Peak Hours
MWh
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
-500,000
-1,000,000
JUN17
JUL17
AUG17
SEP17
OCT17
NOV17
DEC17
JAN18
FEB18
MAR18
APR18
MAY18
JUN18
Import
Export
Net Int

5.3 Net Interchange Summary by Interface, Last 13 Months

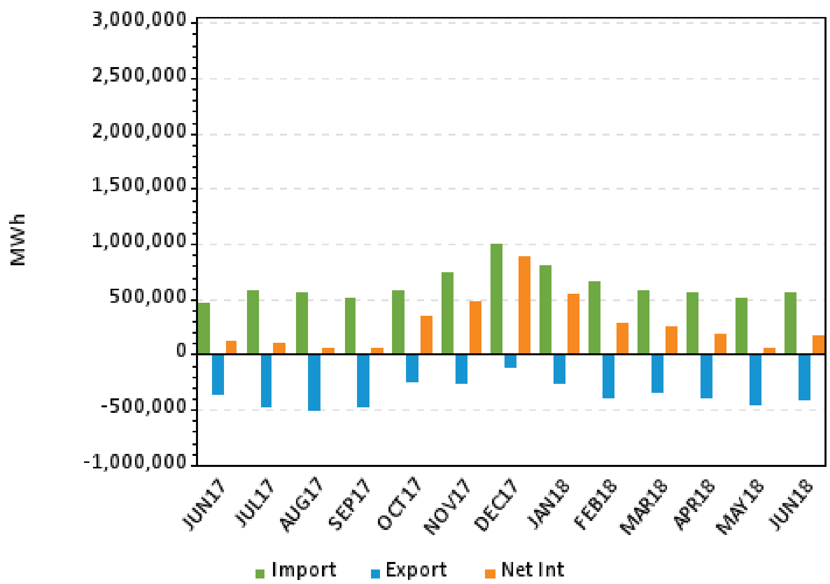


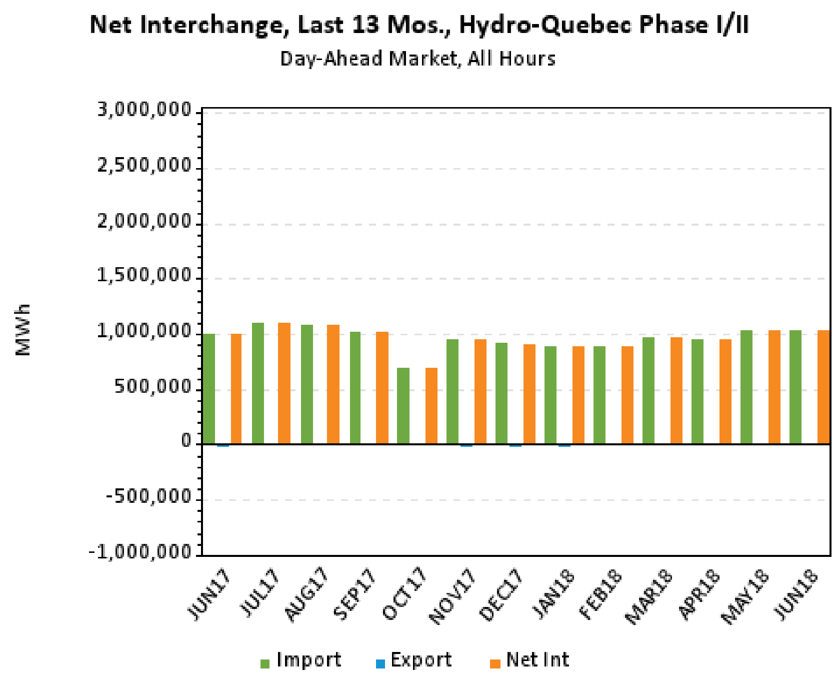


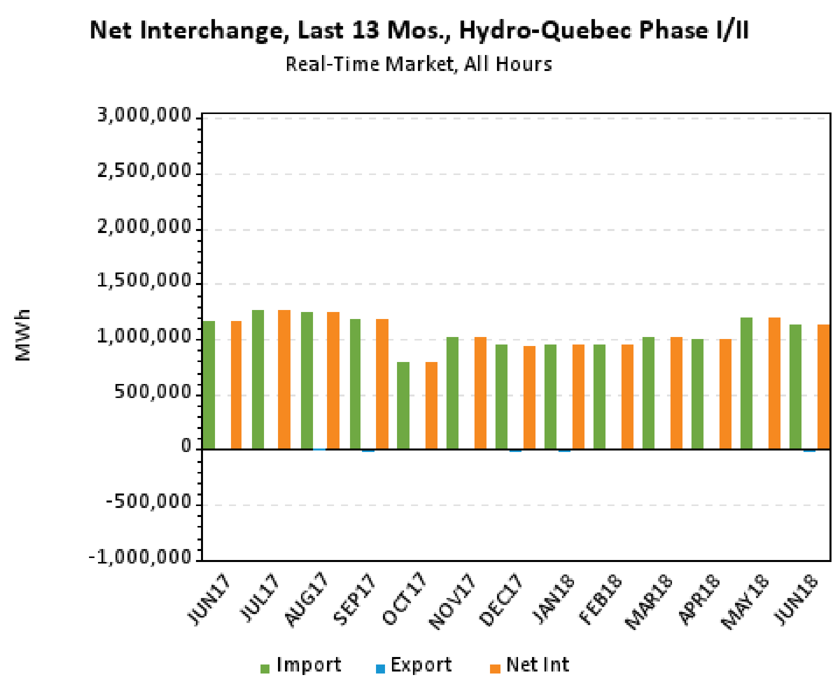
Net Interchange, Last 13 Mos., New York N-AC Ties
Day-Ahead Market, All Hours

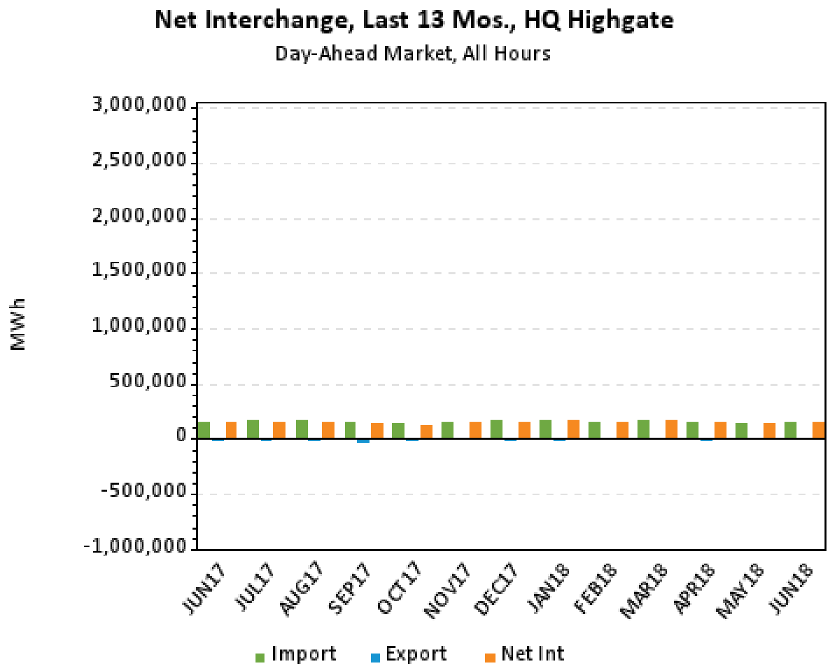


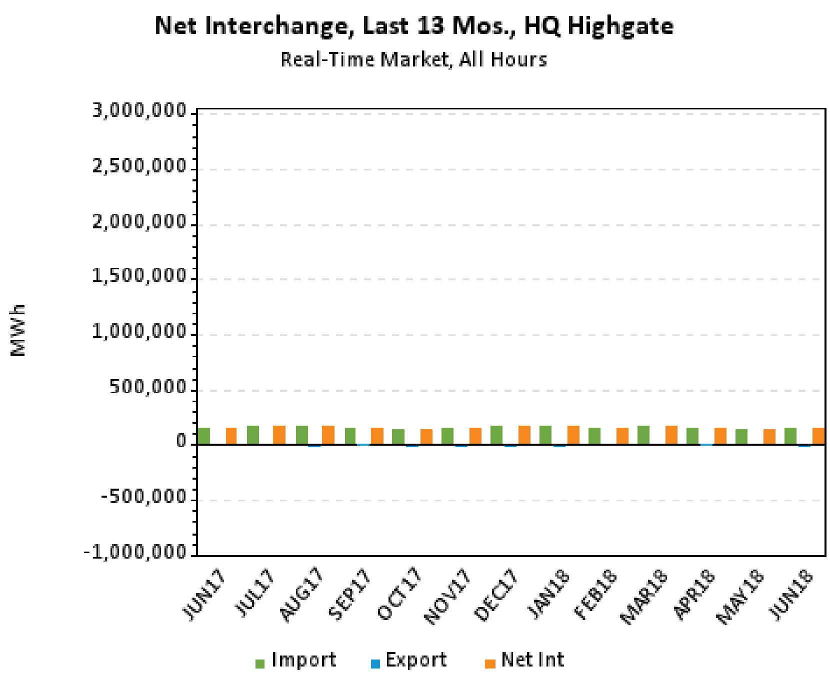
Net Interchange, Last 13 Mos., New York N-AC Ties
Real-Time Market, All Hours

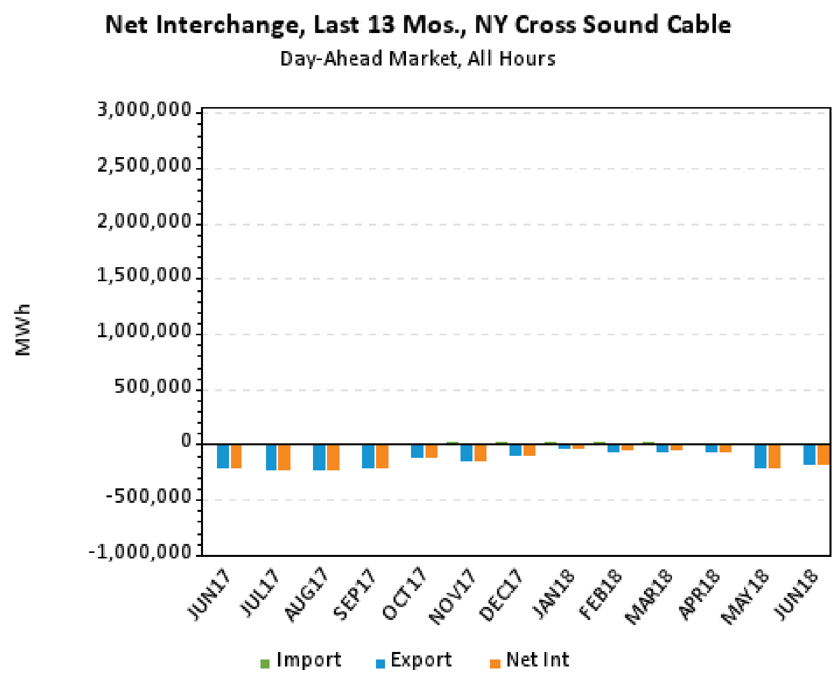



Net Interchange, Last 13 Mos., Hydro-Quebec Phase I/II
Day-Ahead Market, All Hours
MWh
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
-500,000
-1,000,000
JUN17
JUL17
AUG17
SEP17
OCT17
NOV17
DEC17
JAN18
FEB18
MAR18
APR18
MAY18
JUN18
Import
Export
Net Int

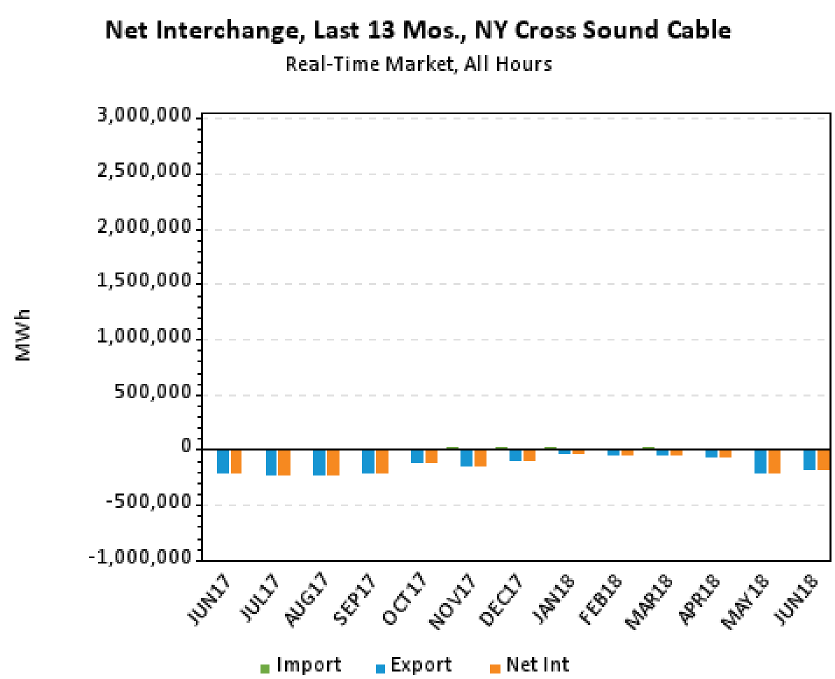

Net Interchange, Last 13 Mos., Hydro-Quebec Phase I/II
Real-Time Market, All Hours
MWh
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
-500,000
-1,000,000
JUN17
JUL17
AUG17
SEP17
OCT17
NOV17
DEC17
JAN18
FEB18
MAR18
APR18
MAY18
JUN18
Import
Export
Net Int


Net Interchange, Last 13 Mos., HQ Highgate
Day-Ahead Market, All Hours
MWh
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
-500,000
-1,000,000
JUN17
JUL17
AUG17
SEP17
OCT17
NOV17
DEC17
JAN18
FEB18
MAR18
APR18
MAY18
JUN18
Import
Export
Net Int

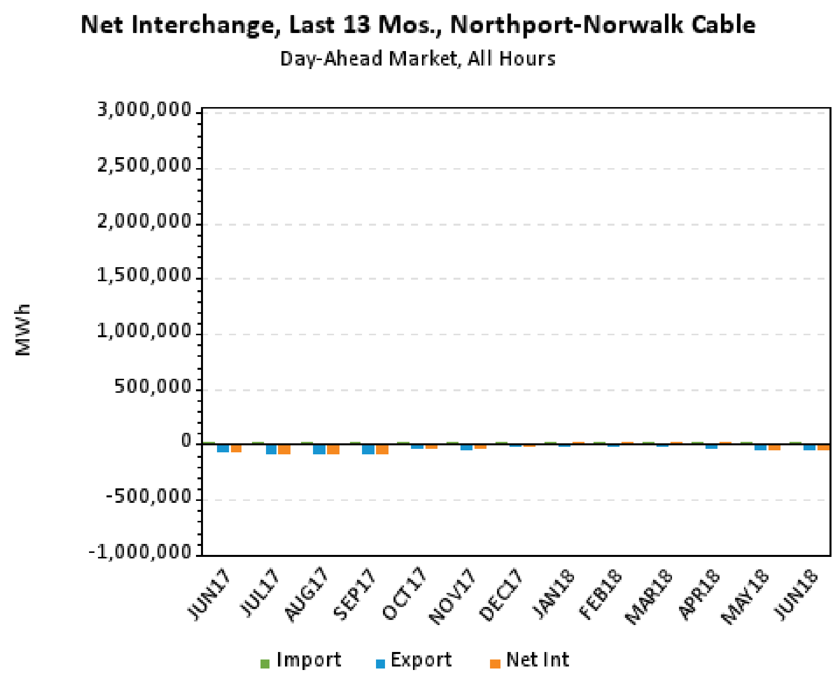

Net Interchange, Last 13 Mos., HQ Highgate
Real-Time Market, All Hours
MWh
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
-500,000
-1,000,000
JUN17
JUL17
AUG17
SEP17
OCT17
NOV17
DEC17
JAN18
FEB18
MAR18
APR18
MAY18
JUN18
Import
Export
Net Int

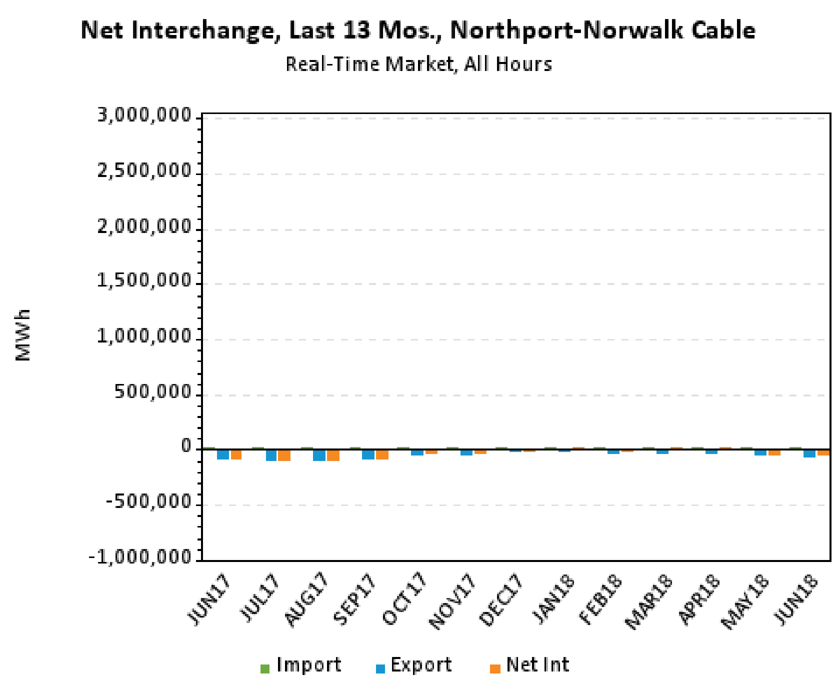


Net Interchange, Last 13 Mos., NY Cross Sound Cable
Day-Ahead Market, All Hours
MWh
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
-500,000
-1,000,000
JUN17
JUL17
AUG17
SEP17
OCT17
NOV17
DEC17
JAN18
FEB18
MAR18
APR18
MAY18
JUN18
Import
Export
Net Int



Net Interchange, Last 13 Mos., NY Cross Sound Cable
Real-Time Market, All Hours
MWh
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
-500,000
-1,000,000
JUN17
JUL17
AUG17
SEP17
OCT17
NOV17
DEC17
JAN18
FEB18
MAR18
APR18
MAY18
JUN18
Import
Export
Net Int


Net Interchange, Last 13 Mos., Northport-Norwalk Cable
Day-Ahead Market, All Hours
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
-500,000
-1,000,000
MWh
JUN17
JUL17
AUG17
SEP17
OCT17
NOV17
DEC17
JAN18
FEB18
MAR18
APR18
MAY18
JUN18
Import
Export
Net Int


Net Interchange, Last 13 Mos., Northport-Norwalk Cable
Real-Time Market, All Hours
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
-500,000
-1,000,000
MWh
JUN17
JUL17
AUG17
SEP17
OCT17
NOV17
DEC17
JAN18
FEB18
MAR18
APR18
MAY18
JUN18
Import
Export
Net Int

5.4 For More Information

Selectable historical hourly net interchange for the New England Control can be found on the ISO's website here.

Monthly, daily, and hourly summaries of New England Control Area net interchange can be found on the ISO's web site here.

The market rules governing the scheduling of external transactions can be found in Section III.1.10 "Scheduling" of the ISO's Market Rule 1 located here.

The business rules and procedures for external transactions can be found in Section 6.5, "External Transactions" in the ISO's Manual 11 – Market Operations located here.

A history of emergency purchases and sales from and to neighboring control areas can be found here.

6. Financial Transmission Rights (FTR) Auctions

FTRs are financial instruments that entitle the holder to a share of congestion collections in the Day-Ahead Market, and are awarded via auction. For more information, visit the ISO website here.

6.1 FTR Auction Results

The results of the monthly FTR auction and any applicable long-term FTR auction are shown below.

6.1.1 *Monthly Auction Summary, June 2018*

Bids to Buy or Offers to Sell	On-Peak or Off-Peak	No. of Bids or Offers	Bid or Offered MW-Mos.	Bid or Offered Dollars	No. of Awards	Awarded MW-Mos.	Awarded Dollars
Buy	Off	9,918	50,419	$3,554,434	4,156	14,129	$680,923
Buy	On	10,464	52,378	$3,493,368	4,068	14,603	$680,658
Buy	Buy Total	20,382	102,797	$7,047,801	8,224	28,732	$1,361,581
Sell	Off	913	2,939	$3,747,886	34	309	-$23,731
Sell	On	870	3,032	$4,639,572	40	313	-$10,222
Sell	Sell Total	1,783	5,971	$8,387,458	74	622	-$33,953
Grand Total	Grand Total	22,165	108,768	$15,435,259	8,298	29,354	$1,327,628

6.1.2 *Number of Auction Participants, June 2018*

Auction Period	Monthly or Long-Term	No. of Bidders
Jun 2018	MO	29

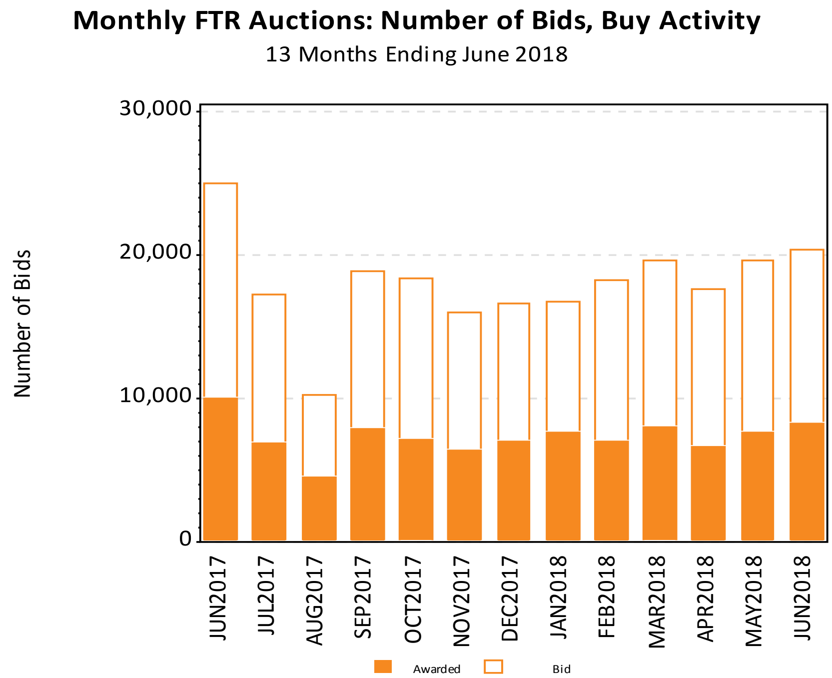
6.1.3 *Monthly FTR Auction Results, Last 13 Months*

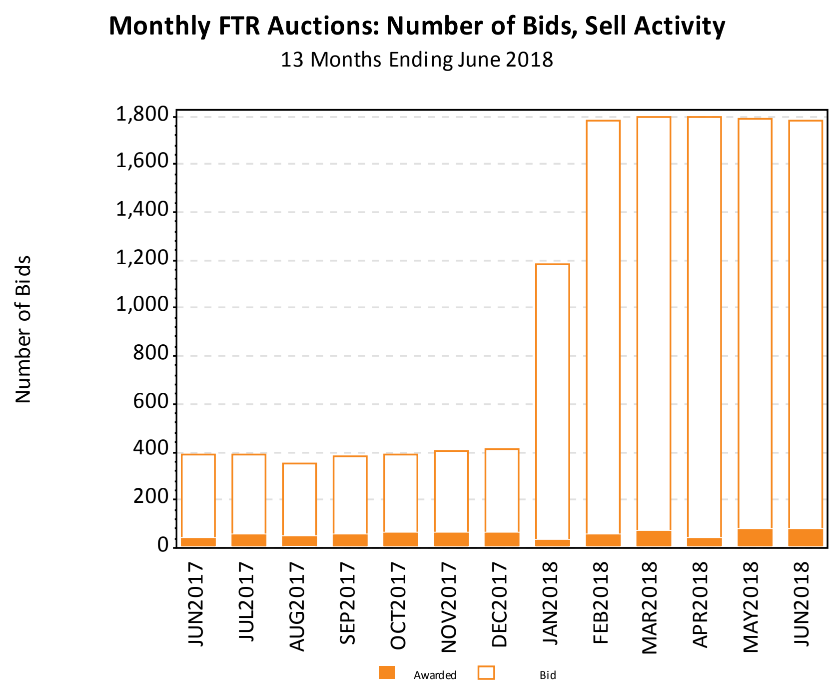
Auction Month	Bids to Buy or Offers to Sell	No. of Bids or Offers	Bid or Offered MW-Mos.	Bid or Offered Dollars	No. of Awards	Awarded MW-Mos.	Awarded Dollars
JUN 2017	Buy	25,005	96,841	$2,947,687	9,942	29,162	$750,204
JUN 2017	Sell	392	5,258	$1,712,923	37	411	-$13,573
JUN 2017	Tot	25,397	102,099	$4,660,609	9,979	29,573	$736,631
JUL 2017	Buy	17,269	99,998	$4,094,403	6,808	31,748	$978,393
JUL 2017	Sell	390	5,229	$1,806,734	51	465	-$43,262
JUL 2017	Tot	17,659	105,227	$5,901,137	6,859	32,213	$935,130
AUG 2017	Buy	10,252	63,147	$3,082,545	4,468	27,014	$690,729
AUG 2017	Sell	354	4,942	$1,555,677	44	489	-$20,766
AUG 2017	Tot	10,606	68,089	$4,638,222	4,512	27,503	$669,964
SEP 2017	Buy	18,794	97,555	$2,810,876	7,834	29,943	$805,600
SEP 2017	Sell	382	5,102	$1,707,832	52	556	-$13,927
SEP 2017	Tot	19,176	102,657	$4,518,708	7,886	30,499	$791,673
OCT 2017	Buy	18,314	94,564	$4,702,142	7,100	25,199	$949,033

Auction Month	Bids to Buy or Offers to Sell	No. of Bids or Offers	Bid or Offered MW-Mos.	Bid or Offered Dollars	No. of Awards	Awarded MW-Mos.	Awarded Dollars
OCT 2017	Sell	391	5,293	$1,705,622	60	649	-$39,396
OCT 2017	Tot	18,705	99,857	$6,407,763	7,160	25,848	$909,637
NOV 2017	Buy	15,947	92,688	$3,119,343	6,405	29,217	$856,419
NOV 2017	Sell	402	5,513	$2,019,274	58	569	-$10,076
NOV 2017	Tot	16,349	98,202	$5,138,617	6,463	29,786	$846,342
DEC 2017	Buy	16,611	100,291	$4,183,314	7,018	29,363	$951,979
DEC 2017	Sell	408	5,428	$2,245,239	56	551	-$14,836
DEC 2017	Tot	17,019	105,719	$6,428,553	7,074	29,914	$937,143
JAN 2018	Buy	16,672	97,611	$3,478,914	7,656	34,291	$992,563
JAN 2018	Sell	1,180	6,354	$7,189,784	29	377	-$29,791
JAN 2018	Tot	17,852	103,964	$10,668,698	7,685	34,667	$962,772
FEB 2018	Buy	18,242	107,907	$6,765,316	7,007	29,727	$1,417,625
FEB 2018	Sell	1,782	5,167	$6,580,102	55	230	-$32,908
FEB 2018	Tot	20,024	113,074	$13,345,418	7,062	29,957	$1,384,717
MAR 2018	Buy	19,541	114,951	$6,384,086	7,983	35,019	$1,515,604
MAR 2018	Sell	1,800	5,802	$6,864,017	68	341	-$21,028
MAR 2018	Tot	21,341	120,753	$13,248,103	8,051	35,360	$1,494,576
APR 2018	Buy	17,573	94,475	$6,265,626	6,590	27,497	$1,273,531
APR 2018	Sell	1,799	5,723	$6,725,587	39	251	-$18,068
APR 2018	Tot	19,372	100,197	$12,991,213	6,629	27,748	$1,255,463
MAY 2018	Buy	19,611	111,640	$6,199,170	7,616	34,706	$1,279,779
MAY 2018	Sell	1,792	5,820	$6,964,990	77	316	-$38,721
MAY 2018	Tot	21,403	117,460	$13,164,160	7,693	35,021	$1,241,058
JUN 2018	Buy	20,382	102,797	$7,047,801	8,224	28,732	$1,361,581
JUN 2018	Sell	1,783	5,971	$8,387,458	74	622	-$33,953
JUN 2018	Tot	22,165	108,768	$15,435,259	8,298	29,354	$1,327,628

6.2 Monthly FTR Auction Results, Last 13 Months

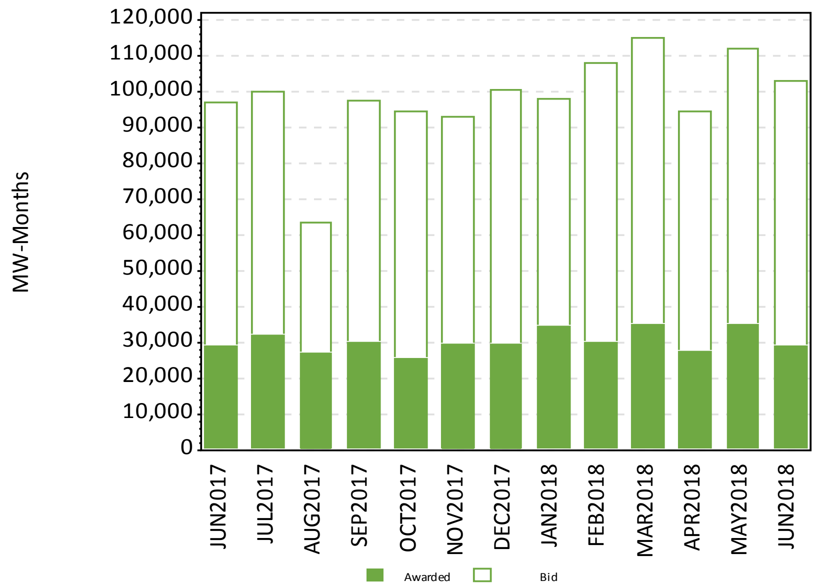
The next series of graphs show summaries of FTR Auction activity over the last 13 months, including bids to buy monthly FTRs and offers to sell long-term FTRs into each monthly auction.


Monthly FTR Auctions: Number of Bids, Buy Activity
13 Months Ending June 2018
Number of Bids
30,000
20,000
10,000
0
JUN2017
JUL2017
AUG2017
SEP2017
OCT2017
NOV2017
DEC2017
JAN2018
FEB2018
MAR2018
APR2018
MAY2018
JUN2018
Awarded
Bid


Monthly FTR Auctions: Number of Bids, Sell Activity
13 Months Ending June 2018
Number of Bids
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
JUN2017
JUL2017
AUG2017
SEP2017
OCT2017
NOV2017
DEC2017
JAN2018
FEB2018
MAR2018
APR2018
MAY2018
JUN2018
Awarded
Bid

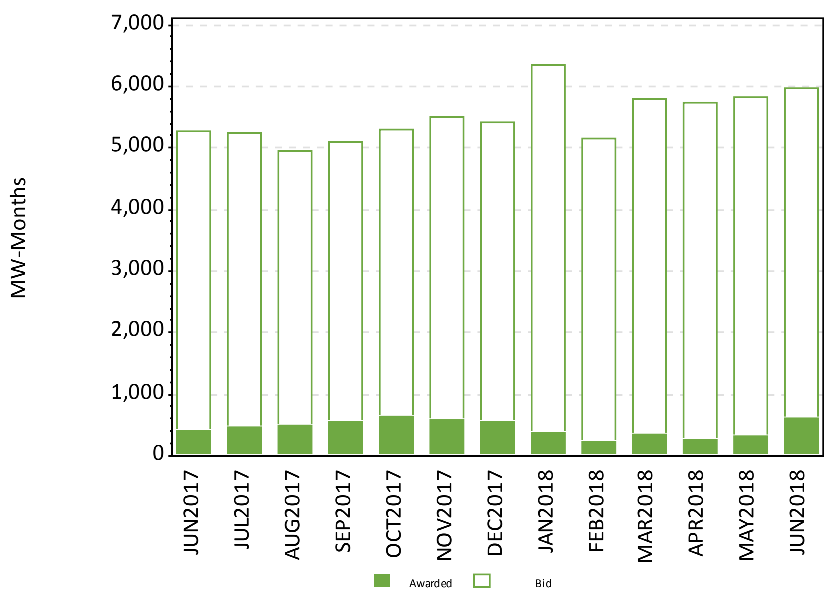
Monthly FTR Auctions: MW-Months, Buy Activity

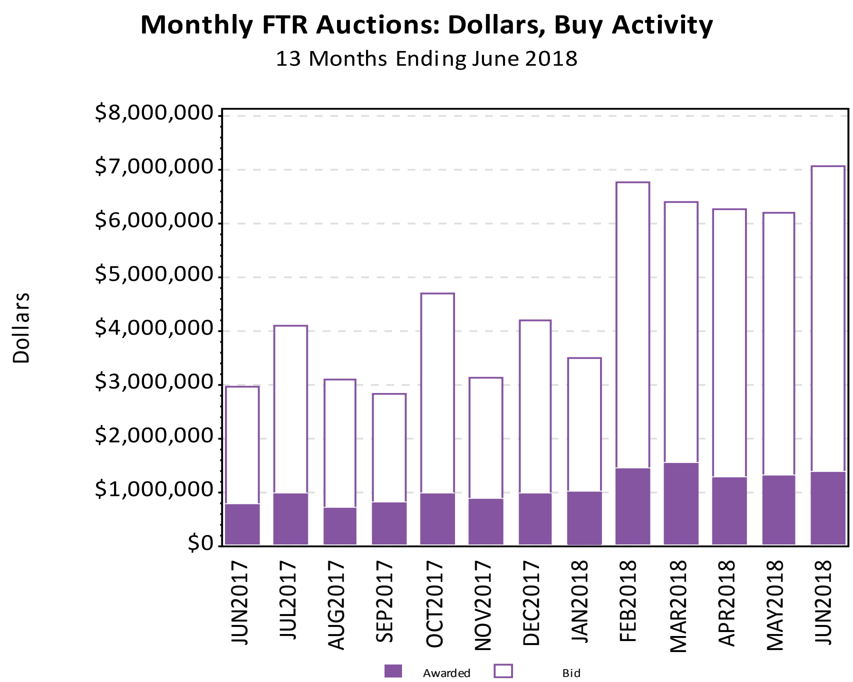
13 Months Ending June 2018



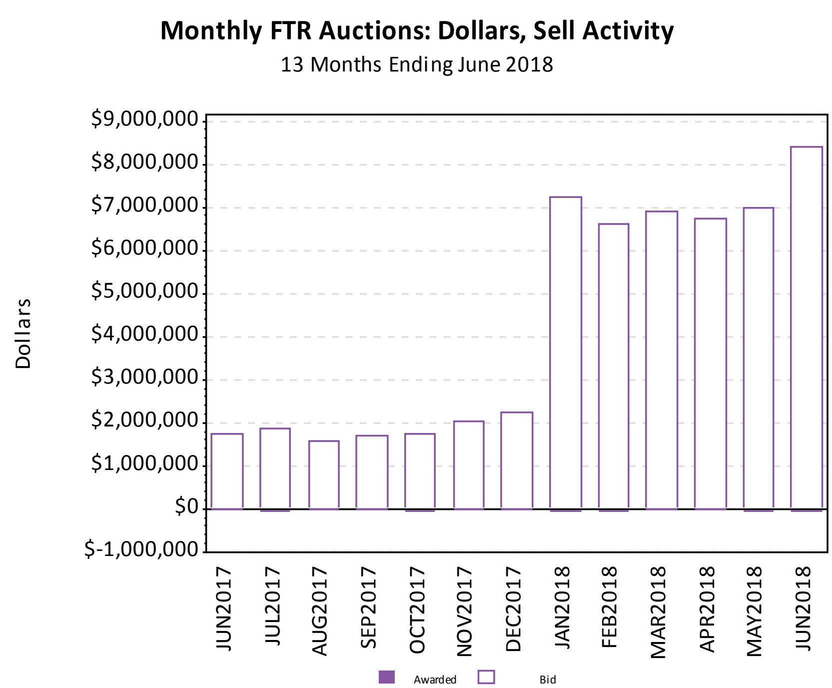
Monthly FTR Auctions: MW-Months, Sell Activity

13 Months Ending June 2018





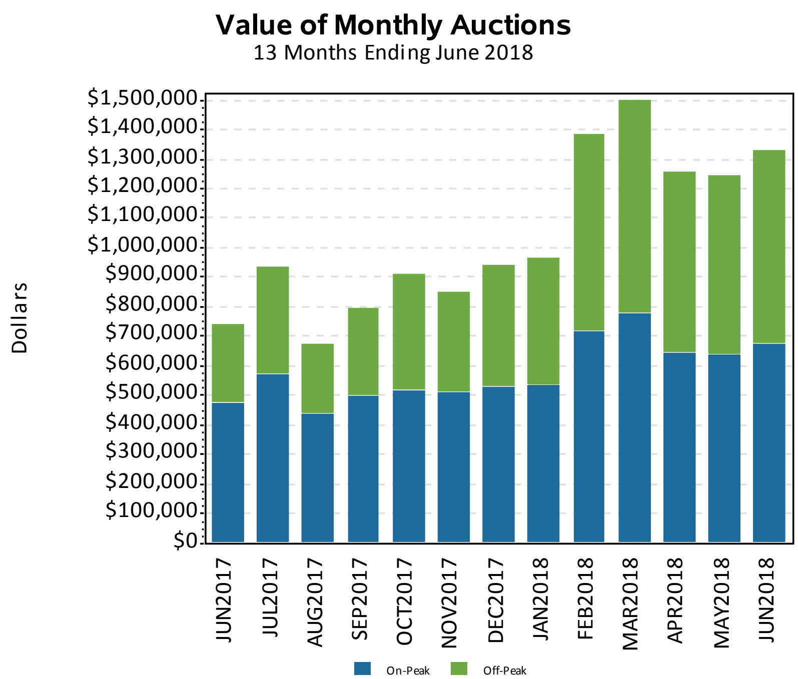
Monthly FTR Auctions: Dollars, Buy Activity
13 Months Ending June 2018
$8,000,000
$7,000,000
$6,000,000
$5,000,000
$4,000,000
$3,000,000
$2,000,000
$1,000,000
$0
Dollars
JUN2017
JUL2017
AUG2017
SEP2017
OCT2017
NOV2017
DEC2017
JAN2018
FEB2018
MAR2018
APR2018
MAY2018
JUN2018
Awarded
Bid

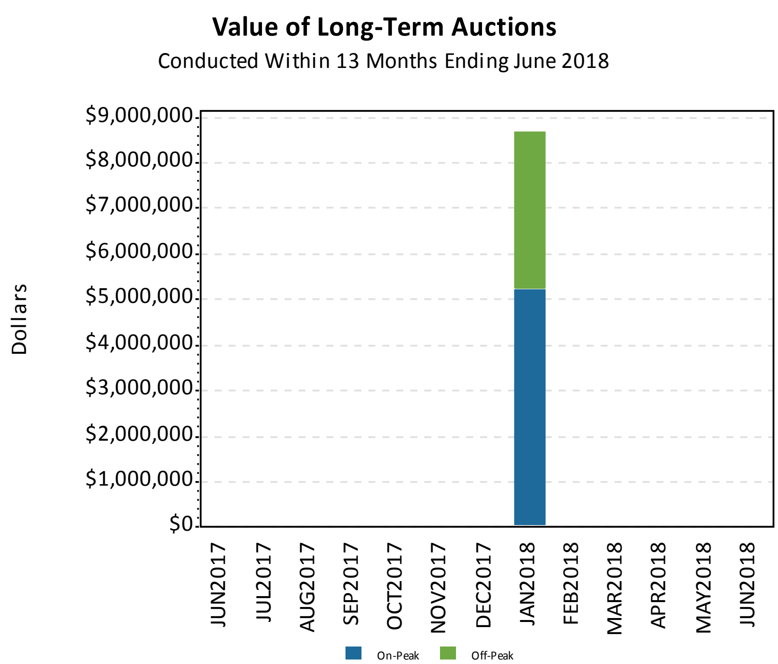


Monthly FTR Auctions: Dollars, Sell Activity
13 Months Ending June 2018
$9,000,000
$8,000,000
$7,000,000
$6,000,000
$5,000,000
$4,000,000
$3,000,000
$2,000,000
$1,000,000
$0
$-1,000,000
Dollars
JUN2017
JUL2017
AUG2017
SEP2017
OCT2017
NOV2017
DEC2017
JAN2018
FEB2018
MAR2018
APR2018
MAY2018
JUN2018
Awarded
Bid

6.3 Auction Value, Last 13 Months

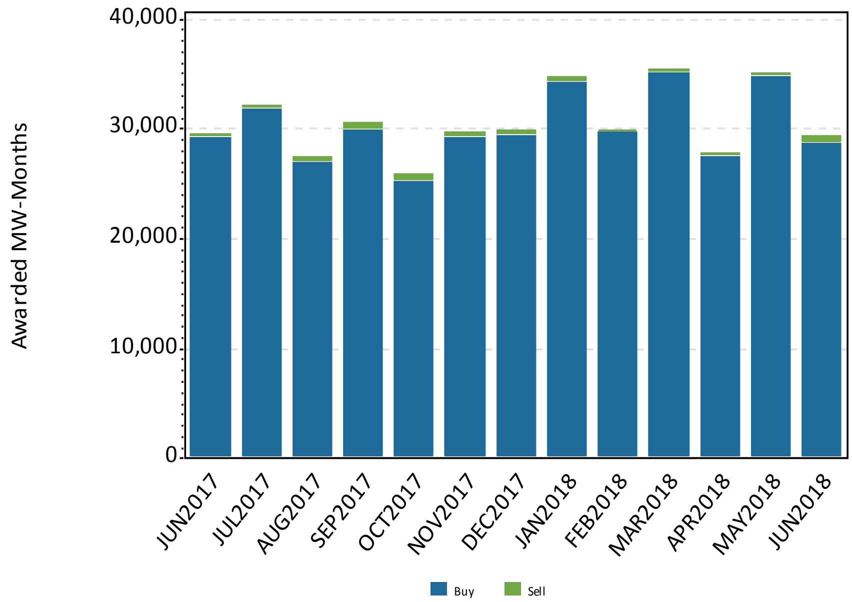
The next series of graphs show summaries of FTR Auction value and on/off-peak activity over the last 13 months.





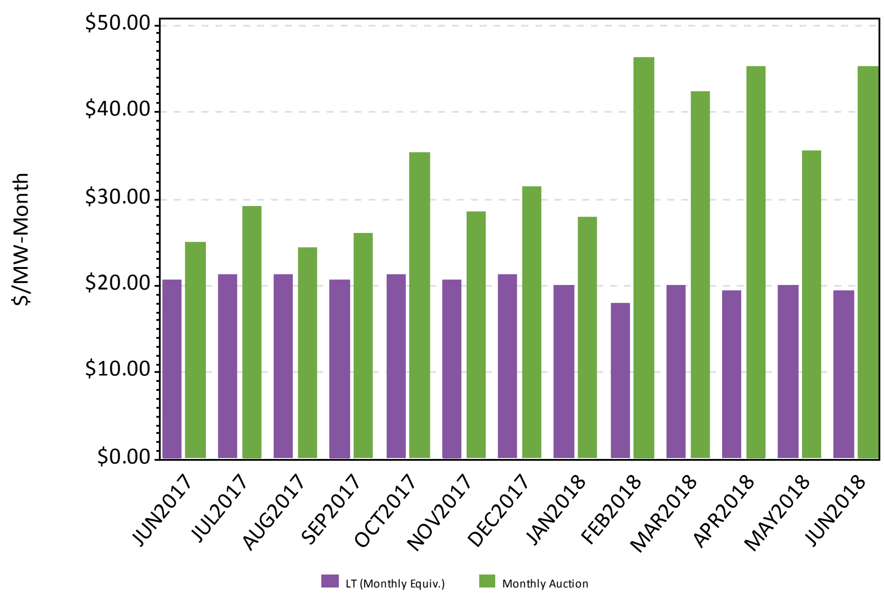
Awarded MW-Months, Monthly FTR Auctions

Buy/Sell Activity, 13 Mos. Ending June 2018



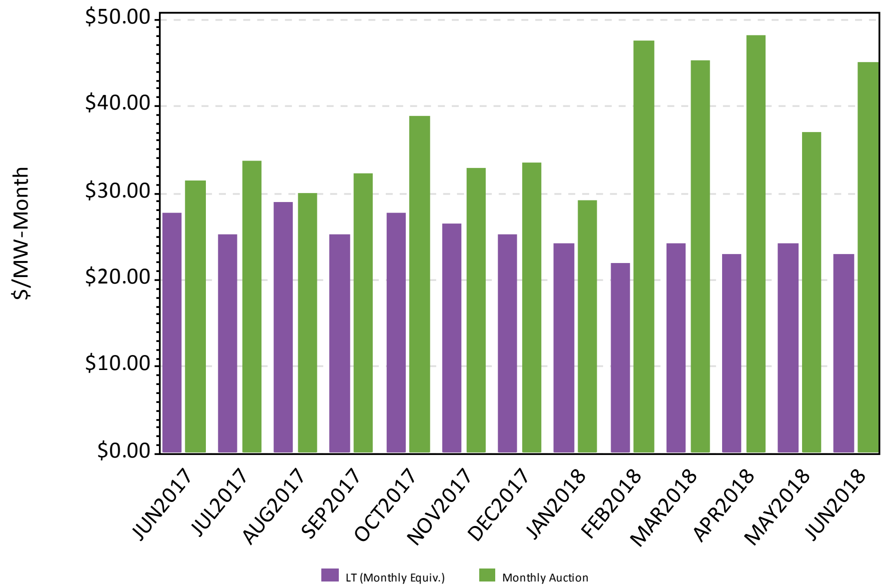
Monthly and Long-Term FTR Auctions

Aggregate Equivalent Cost to Procure, All Hours



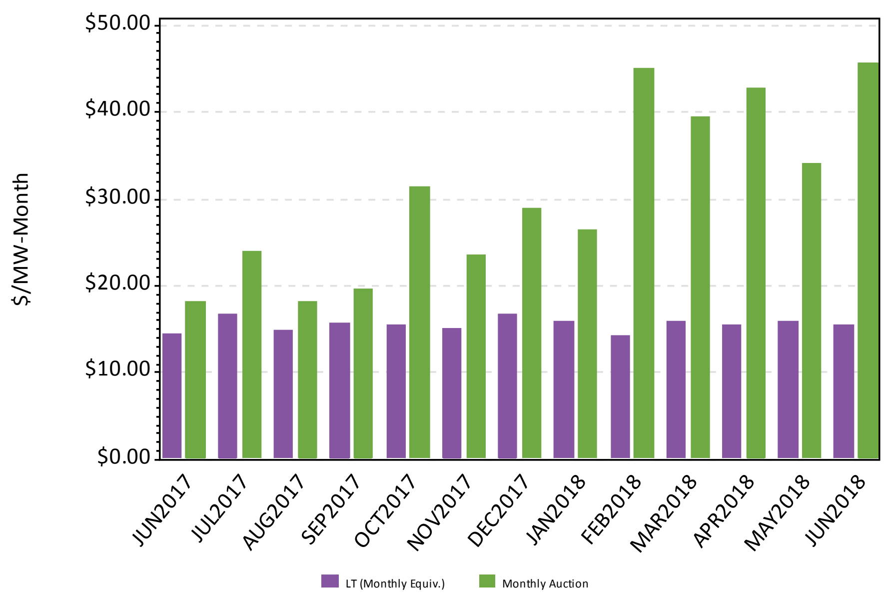
Monthly and Long-Term FTR Auctions

Aggregate Equivalent Cost to Procure, On-Peak Hours



Monthly and Long-Term FTR Auctions

Aggregate Equivalent Cost to Procure, Off-Peak Hours



6.4 For More Information

The market rules governing the FTR auctions can be found in Section III.7 "Financial Transmission Rights Auctions" of the ISO's Market Rule 1 located here.

The business rules and procedures for FTRs can be found in Section 6.5, "External Transactions" in the ISO's Manual 6 – Financial Transmission Rights located here.

Information about the monthly and long-term FTR auctions can be found on the ISO's web site here.

7. Auction Revenue Rights

Auction Revenue is allocated to two main categories. First, it is allocated in the form of Incremental Auction Revenue Rights (IARRs) to entities, which, by paying for transmission upgrades, have increased the transfer capability of the NEPOOL transmission system and have enabled more FTRs to be available in the FTR auction. Second, it is allocated through the Auction Revenue Rights (ARR) process, where it is primarily received by congestion paying load-serving entities (LSEs). The majority of auction revenue is allocated through the ARR process. For more information, see the ISO website here.

The following table provides a detailed view of how auction revenues are allocated through the ARR and IARR process by including the dollars allocated to each component of the ARR process for each of the last 13 months.

Month	Net FTR Auction Revenue	NEMA Contracts	Load Share	Total ARR Allocation	IARR Allocation	Total Auction Distribution
Jun-17	-$1,605,693	$57,103	$1,458,146	$1,515,248	$90,445	$1,605,693
Jul-17	-$1,833,162	$68,947	$1,678,415	$1,747,362	$85,800	$1,833,162
Aug-17	-$1,567,995	$56,515	$1,441,176	$1,497,692	$70,303	$1,567,995
Sep-17	-$1,660,736	$66,604	$1,526,858	$1,593,462	$67,274	$1,660,736
Oct-17	-$1,807,668	$88,487	$1,640,256	$1,728,743	$78,925	$1,807,668
Nov-17	-$1,715,405	$63,037	$1,571,357	$1,634,394	$81,011	$1,715,405
Dec-17	-$1,835,174	$60,366	$1,692,066	$1,752,432	$82,743	$1,835,174
Jan-18	-$1,698,200	$43,135	$1,556,863	$1,599,998	$98,202	$1,698,200
Feb-18	-$2,048,975	$47,958	$1,894,240	$1,942,198	$106,776	$2,048,975
Mar-18	-$2,230,004	$41,812	$2,069,857	$2,111,669	$118,336	$2,230,004
Apr-18	-$1,967,168	$44,180	$1,781,844	$1,826,024	$141,144	$1,967,168
May-18	-$1,976,485	$40,553	$1,710,608	$1,751,161	$225,325	$1,976,485
Jun-18	-$2,039,333	$51,073	$1,805,968	$1,857,041	$182,291	$2,039,333

The following tables display the total distribution of On- and Off-Peak ARR dollars to the various Load Zones for each of the last 13 months. The sum across zones totals to the 'Total ARR Allocation' column in the preceding table.

On Peak								
Month	ME	NH	VT	CT	RI	SEMA	WCMA	NEMA
Jun-17	$31,314	$47,461	$9,538	$93,390	$68,526	$186,098	$42,239	$487,609
Jul-17	$33,946	$50,835	$11,113	$105,567	$73,631	$204,766	$43,580	$557,541
Aug-17	$27,881	$39,909	$9,237	$84,253	$70,150	$182,757	$37,252	$499,483
Sep-17	$24,470	$38,259	$8,467	$70,582	$62,671	$176,385	$35,760	$586,465
Oct-17	$29,144	$40,041	$9,161	$64,984	$55,337	$145,052	$40,158	$644,460
Nov-17	$30,980	$42,775	$9,993	$79,729	$61,509	$162,663	$44,176	$572,704
Dec-17	$38,992	$52,281	$12,074	$134,580	$89,762	$179,103	$45,569	$488,336
Jan-18	$61,793	$61,728	$18,509	$142,144	$62,943	$131,782	$68,285	$369,646
Feb-18	$52,677	$62,213	$24,632	$199,191	$82,450	$145,094	$106,446	$383,816
Mar-18	$66,306	$77,423	$27,190	$210,750	$93,964	$160,606	$111,922	$404,058
Apr-18	$56,657	$65,695	$19,300	$177,447	$82,353	$132,298	$85,110	$372,764
May-18	$48,929	$54,406	$19,709	$169,042	$71,263	$144,190	$73,199	$387,841
Jun-18	$45,913	$58,630	$21,658	$170,178	$69,112	$133,089	$93,176	$423,985

Off Peak								
Month	ME	NH	VT	CT	RI	SEMA	WCMA	NEMA
Jun-17	$26,753	$28,425	$6,484	$57,601	$52,456	$126,576	$31,661	$219,119
Jul-17	$30,908	$32,339	$8,382	$76,532	$68,522	$164,679	$38,024	$246,998
Aug-17	$33,237	$23,831	$6,799	$59,494	$65,855	$128,672	$29,604	$199,279
Sep-17	$21,748	$24,745	$7,926	$59,480	$49,260	$123,080	$30,672	$273,494
Oct-17	$25,784	$24,637	$7,816	$52,100	$43,860	$102,377	$31,904	$411,927
Nov-17	$29,658	$30,371	$10,222	$68,644	$50,847	$121,533	$41,744	$276,847
Dec-17	$42,109	$38,208	$13,292	$86,949	$57,441	$139,043	$49,399	$285,294
Jan-18	$48,361	$51,985	$16,046	$113,451	$52,683	$110,221	$63,753	$226,666
Feb-18	$54,019	$61,321	$26,494	$181,440	$69,407	$126,389	$105,412	$261,198
Mar-18	$67,429	$75,030	$27,315	$193,831	$79,739	$138,466	$107,308	$270,331
Apr-18	$61,070	$66,079	$23,024	$164,705	$64,523	$111,979	$87,572	$255,449
May-18	$51,212	$62,308	$21,864	$149,138	$61,773	$121,658	$77,752	$236,878
Jun-18	$49,518	$61,728	$22,307	$145,661	$59,968	$126,965	$95,852	$279,301

7.1 For More Information

The market rules governing the FTR auctions can be found in Section III.7 "Financial Transmission Rights Auctions" of the ISO's Market Rule 1 located here.

The business rules and procedures for FTR Auction Revenue Settlement can be found in Section 7 and the Incremental Auction Revenue Rights procedures can be found in Section 8 of the ISO's Manual 6 – Financial Transmission Rights located here.

The methodology for and details of ARR Contracts can be found here.

8. Reserve Markets

The twenty-first Forward Reserve Market Auction, covering the Summer 2018 Procurement Period (June-September) cleared on April 26, 2018. The results may be found on the ISO's website here. For the month of June 2018, the threshold price ranged between $48.62/MWh and $73.48/MWh, and averaged $57.22/MWh.

8.1 Forward Reserve Market Results

Each month, the ISO calculates an individual hourly Forward Reserve Payment Rate for each reserve product and reserve zone. Payments will be reduced by any Failure-to-Reserve or Failure-to-Activate Penalties[5]. FRM payments by reserve zone made during the month are shown in the following table. These figures are preliminary and subject to revision during the Settlement process.

8.1.1 *FRM Payment Summary by Reserve Zone, June 2018*

Reserve Zone	Reserve Product	Max FRM Payment	Final FRM Credits	Failure to Reserve Penalties	Failure to Activate Penalties	Total FRM Performance	Pct. of Max.
SYSTEM	TMNSR	$2,678,466	$2,649,029	-$44,147	$0	$2,604,883	97%
SYSTEM	TMOR	$1,612,967	$1,585,481	-$41,218	$0	$1,544,263	96%
SYSTEM	TOTAL	$4,291,432	$4,234,510	-$85,364	$0	$4,149,146	97%
ROS	TMNSR	$2,102,288	$2,078,193	-$36,132	$0	$2,042,061	97%
ROS	TMOR	$823,264	$816,565	-$10,035	$0	$806,530	98%
ROS	TOTAL	$2,925,552	$2,894,758	-$46,167	$0	$2,848,591	97%
SWCT	TMNSR	$0	$0	$0	$0	$0	n/a
SWCT	TMOR	$334,256	$316,117	-$27,208	$0	$288,909	86%
SWCT	TOTAL	$334,256	$316,117	-$27,208	$0	$288,909	86%
CT	TMNSR	$576,178	$570,836	-$8,015	$0	$562,821	98%
CT	TMOR	$181,499	$181,353	-$221	$0	$181,132	100%
CT	TOTAL	$757,677	$752,189	-$8,236	$0	$743,953	98%
NEMABSTN	TMNSR	$0	$0	$0	$0	$0	n/a
NEMABSTN	TMOR	$273,948	$271,446	-$3,753	$0	$267,693	98%
NEMABSTN	TOTAL	$273,948	$271,446	-$3,753	$0	$267,693	98%

[5] Prior to market rule changes effective on June 1, 2016, the auction clearing price was reduced by the Forward Capacity Auction clearing price for the capacity zone associated with the reserve zone in question which was in effect for that month. After June 1, 2016, the FCM clearing price is not subtracted from the FRM clearing price.

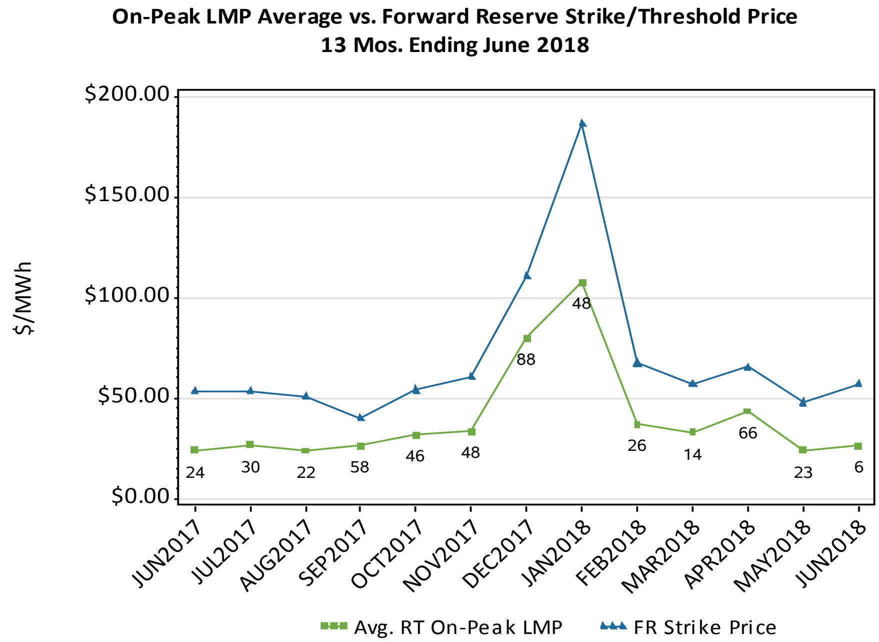
The ISO allocates Forward Reserve Credits, net of Forward Reserve Failure-to-Reserve Penalties and Forward Reserve Failure-to-Activate Penalties, to each Load Zone. Forward Reserve Credits are allocated based upon System Requirements (Step 1) and Remaining Forward Reserve Credit (Step 2), if applicable. The System Requirements include the cost of procuring TMNSR and TMOR to meet the minimum requirements for the New England Control Area (Market Rule 1, Section III.9.2.1). The remaining Forward Reserve Credit includes the Incremental Cost associated with procuring Forward Reserves above the System Requirements. See Market Rule 1, Section III.9.9 Forward Reserve Charges and Manual 28, Section 2.6.2 Forward Reserve Charges for details on the two-step cost allocation approach.

FRM charges allocated to each Load Zone during the prior month are shown in the following table. These figures are also preliminary and subject to revision during the Settlement process.

8.1.2 *FRM Charge Summary by Load Zone, June 2018*

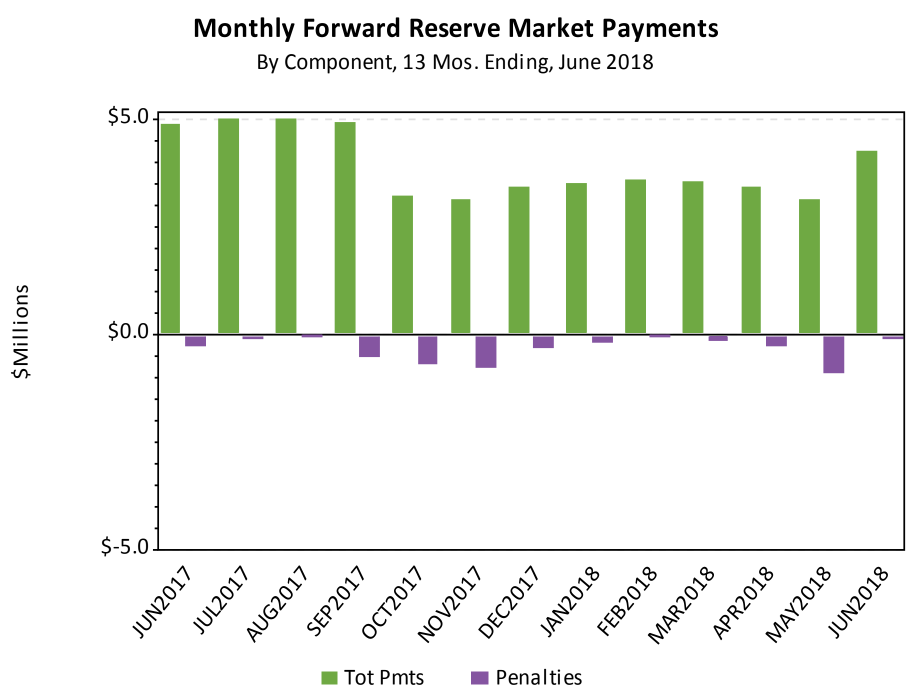
Load Zone	FRM Charge
ME	$377,006
NH	$400,831
VT	$161,723
CT	$1,049,622
RI	$278,356
SEMA	$481,341
WCMA	$559,198
NEMA	$841,069
ALL	$4,149,146

8.2 Real-Time On-Peak LMP vs. Forward Reserve Threshold Price, Last 13 Mos.



Number of times hourly RT LMP exceeded strike/threshold price during on-peak hours noted

8.3 Composition of Forward Reserve Market Payments, Last 13 Mos.



8.4 Real-Time Reserve Markets

Resources that are providing Real-Time Reserves are designated in the ISO's Energy Management System. When reserves are ample, the Real-Time Reserve price is $0. However, if there is a shortage of available reserves in a reserve zone or system-wide or reserve requirements are met through a re-dispatch of the system, non-zero Real-Time Reserve prices can result.

During the month, there were non-zero real-time reserve prices in 233 separate hours. On a reserve zone basis, non-zero prices occurred thus: CT-233 hours; NEMABSTN-233 hours; ROS-233 hours; SWCT-233 hours. The total compensation paid to assets providing real-time reserves during June 2018, and reductions in those payments for the Forward Reserve Obligation Charge are shown in the following table:

Reserve Zone	Real-Time Reserve Credits	Fwd Reserve Obligation Charges	Net Real-Time Reserve Payments
SYSTEM	$701,216	$0	$701,216
ROS	$493,927	$0	$493,927
SWCT	$72,663	$0	$72,663
CT	$83,508	$0	$83,508
NEMABSTN	$51,119	$0	$51,119

Asset Related Demand, Generator, and Demand Response Resource assets all participate in the in the Real-Time Reserve market. Here is a breakdown of the payments by type:

Asset Type	Real-Time TMSR Credits	Real-Time TMNSR Credits	Real-Time TMOR Credits
Asset Related Demand	$6,558	$0	$0
Demand Response Resource	$9	$0	$0
Generator	$694,649	$0	$0

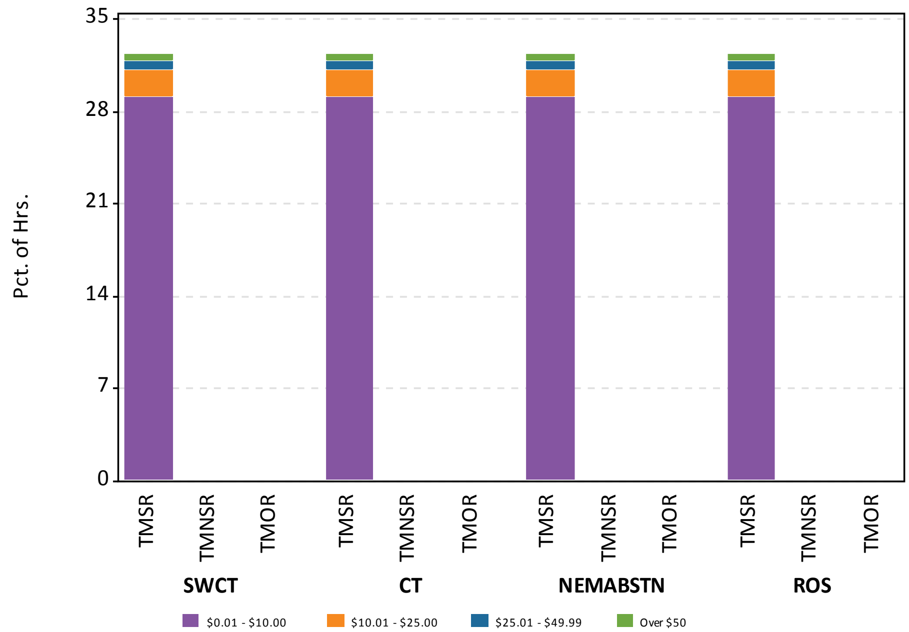
The ISO allocates Real Time Reserve Credits, net of Forward Reserve Energy Obligation Charges, to each Load Zone. The Real Time Reserve charges allocated to each Load Zone during the month are shown in the following table. These figures are also preliminary and subject to revision during the Settlement process.

Load Zone	Reserve Product	RT Reserve Charge
ME	TMSR	$59,861
ME	TMNSR	$0
ME	TMOR	$0
ME	ALL	$59,861
NH	TMSR	$66,878
NH	TMNSR	$0
NH	TMOR	$0
NH	ALL	$66,878

Load Zone	Reserve Product	RT Reserve Charge
VT	TMSR	$25,694
VT	TMNSR	$0
VT	TMOR	$0
VT	ALL	$25,694
CT	TMSR	$183,434
CT	TMNSR	$0
CT	TMOR	$0
CT	ALL	$183,434
RI	TMSR	$47,280
RI	TMNSR	$0
RI	TMOR	$0
RI	ALL	$47,280
SEMA	TMSR	$83,082
SEMA	TMNSR	$0
SEMA	TMOR	$0
SEMA	ALL	$83,082
WCMA	TMSR	$95,387
WCMA	TMNSR	$0
WCMA	TMOR	$0
WCMA	ALL	$95,387
NEMA	TMSR	$139,600
NEMA	TMNSR	$0
NEMA	TMOR	$0
NEMA	ALL	$139,600

The following chart shows the frequency (in percent of total hours in the month) that there were non-zero reserve market prices by reserve zone and market product.

Real-Time Reserve Price Frequency, June 2018



8.5 For More Information

The market rules governing the Forward Reserve Market can be found in Section III.9 "Forward Reserve Market" of the ISO's Market Rule 1 located here.

The market rules governing Real-Time Reserve can be found in Section III.10 "Real-Time Reserve" of the ISO's Market Rule 1 located here.

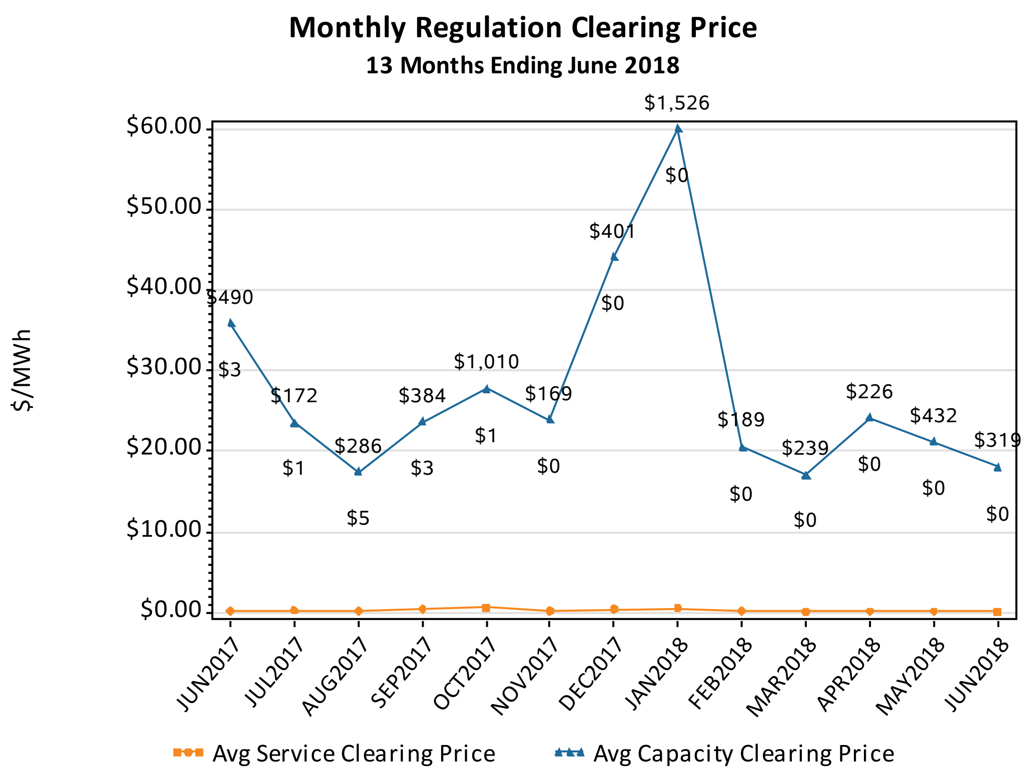
The business rules and procedures for forward and real-time reserve can be found in the ISO's Manual 28 –Market Rule 1 Accounting located here.

Information about the monthly forward reserve auctions and assumptions can be found on the ISO's web site located here.

9. Regulation Market

Regulation, or Automatic Generation Control (AGC), is necessary to balance supply levels against second-to-second variations in demand. Effective December 1, 2017, ISO New England moved from hourly to sub-hourly (5-minute) settlements for both the service and capacity components of regulation. [6]

9.1 Monthly Average of Regulation Market Clearing Price, Last 13 Months



NOTE: Starting on December 1, 2017, Average Clearing Prices above, along with the Min and Max Labels are calculated based on 5-minute settlement values.

9.2 Monthly Regulation Market Clearing Price Statistics, Last 13 Months

	On-Peak Service Clearing Price Statistics				Off-Peak Service Clearing Price Statistics			
Month	Mean	Max	Min	StdDev	Mean	Max	Min	StdDev
Jun-17	$0.24	$10.00	$0.00	$0.59	$0.26	$7.49	$0.00	$0.56
Jul-17	$0.50	$10.00	$0.00	$1.62	$0.15	$5.00	$0.00	$0.37
Aug-17	$0.26	$10.00	$0.00	$0.85	$0.12	$1.47	$0.00	$0.19
Sep-17	$0.54	$10.00	$0.01	$1.69	$0.36	$10.00	$0.01	$0.91
Oct-17	$0.92	$10.00	$0.00	$2.35	$0.36	$10.00	$0.00	$1.19
Nov-17	$0.25	$10.00	$0.01	$0.67	$0.26	$9.19	$0.00	$0.59

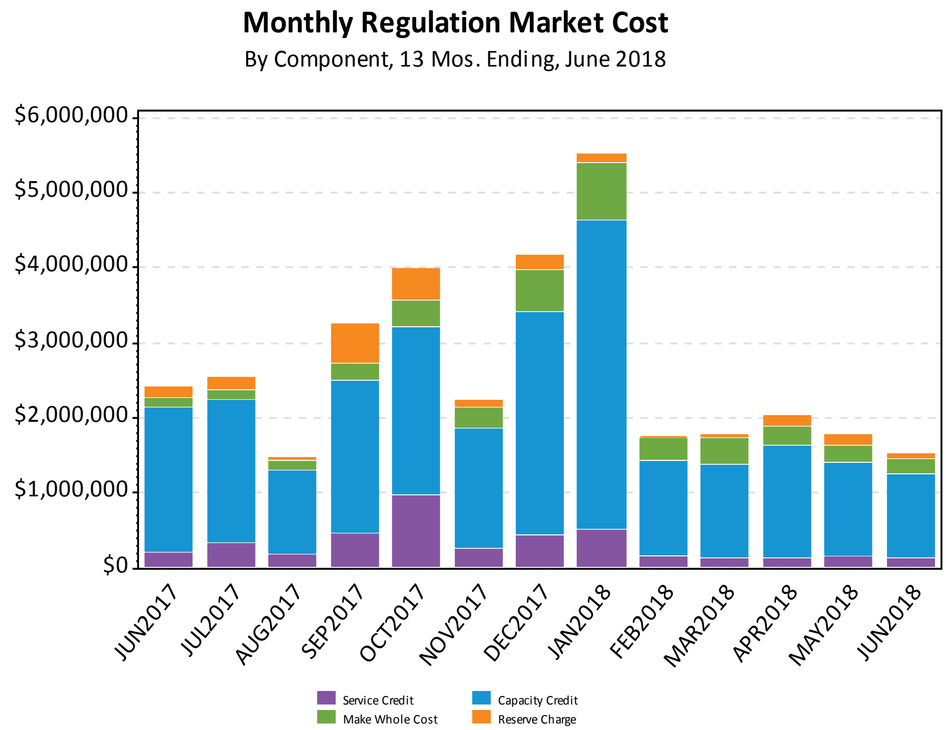
[6] To accommodate the change from hourly to sub-hourly settlements for Regulation, clearing price statistics shown in these exhibits prior to the December 1, 2017 boundary reflect the average of hourly prices, while price averages subsequent to that are derived from 5-minute values.

Month	On-Peak Service Clearing Price Statistics				Off-Peak Service Clearing Price Statistics			
	Mean	Max	Min	StdDev	Mean	Max	Min	StdDev
Dec-17	$0.42	$10.00	$0.00	$1.26	$0.45	$10.00	$0.00	$1.24
Jan-18	$0.58	$10.00	$0.00	$1.77	$0.56	$10.00	$0.00	$1.99
Feb-18	$0.10	$2.07	$0.00	$0.19	$0.29	$5.00	$0.00	$0.78
Mar-18	$0.16	$4.41	$0.00	$0.43	$0.11	$4.16	$0.00	$0.35
Apr-18	$0.19	$4.00	$0.00	$0.48	$0.13	$4.00	$0.00	$0.27
May-18	$0.20	$5.00	$0.00	$0.33	$0.15	$1.62	$0.00	$0.29
Jun-18	$0.12	$1.65	$0.00	$0.16	$0.13	$5.00	$0.00	$0.41

Month	On-Peak Capacity Clearing Price Statistics				Off-Peak Capacity Clearing Price Statistics			
	Mean	Max	Min	StdDev	Mean	Max	Min	StdDev
Jun-17	$23.16	$238.87	$5.28	$27.69	$47.95	$490.46	$3.33	$62.78
Jul-17	$27.38	$172.15	$1.37	$29.71	$20.70	$106.53	$2.84	$17.00
Aug-17	$20.66	$285.93	$4.92	$24.55	$14.36	$95.41	$5.39	$10.34
Sep-17	$31.56	$384.36	$3.22	$53.16	$17.29	$259.13	$2.80	$24.66
Oct-17	$36.01	$1010.16	$4.10	$66.93	$20.33	$449.12	$1.20	$34.35
Nov-17	$28.47	$168.92	$3.01	$27.54	$19.91	$125.11	$0.00	$15.33
Dec-17	$43.39	$399.08	$0.00	$50.41	$44.64	$400.68	$0.00	$46.14
Jan-18	$52.47	$521.08	$0.00	$57.65	$66.62	$1525.61	$0.00	$72.73
Feb-18	$17.74	$176.60	$6.63	$14.27	$23.02	$188.82	$0.00	$21.91
Mar-18	$16.82	$174.47	$0.00	$13.95	$17.31	$238.86	$0.00	$15.17
Apr-18	$23.12	$225.86	$0.00	$26.42	$25.11	$136.39	$0.00	$20.34
May-18	$20.88	$432.13	$0.00	$27.74	$21.52	$137.02	$0.00	$19.93
Jun-18	$19.02	$186.66	$0.00	$17.32	$17.14	$318.68	$0.00	$21.48

* Starting on December 1, 2017, statistics based on 5-minute settlement values

9.3 Components of Monthly Regulation Market Cost, Last 13 Months



Month	Regulation Service Cost	Regulation Capacity Cost	Regulation Make Whole Cost	Regulation Up Reserve Charge	Total Regulation Cost
Jun-17	$184,960	$1,930,419	$128,472	$156,469	$2,400,320
Jul-17	$326,832	$1,889,859	$132,196	$190,680	$2,539,567
Aug-17	$163,156	$1,132,783	$124,199	$53,077	$1,473,214
Sep-17	$459,670	$2,026,075	$236,395	$520,168	$3,242,307
Oct-17	$945,874	$2,252,936	$355,302	$415,117	$3,969,229
Nov-17	$253,960	$1,593,261	$276,351	$108,565	$2,232,136
Dec-17	$434,316	$2,960,474	$550,239	$206,712	$4,151,741
Jan-18	$499,605	$4,125,081	$766,106	$128,113	$5,518,904
Feb-18	$148,444	$1,275,071	$283,983	$47,602	$1,755,100
Mar-18	$116,459	$1,239,536	$357,667	$48,381	$1,762,043
Apr-18	$124,352	$1,485,036	$272,472	$150,050	$2,031,910
May-18	$144,939	$1,244,084	$231,847	$151,670	$1,772,540
Jun-18	$104,696	$1,139,044	$201,381	$60,098	$1,505,220

9.4 For More Information

The market rules governing the Regulation Market can be found in Section III.1.11.5 “Regulation” of the ISO’s Market Rule 1 located here.

The business rules and procedures for the Regulation Market can be found in the ISO's Manual 11 – Market Operations located here:

Information about current regulation clearing prices can be found on the ISO's web site here.

Selectable hourly historical regulation clearing prices can be found on the ISO's web site here.

10. Marginal Loss Revenue Fund

The Marginal Loss Revenue Fund is allocated back to customers hourly in a pro-rata format based on customer share of the Pool's RT Adjusted Load Obligation. It consists of six components, as displayed in the following formula:

*Monthly Marginal Loss Revenue = (-1) * [Loss Revenue (DA+RT) + Energy Settlement (DA+RT) + RT Inadvertent Energy Cost + RT Emergency Energy Sales]*

The following table shows the contribution of each component to the Marginal Loss Revenue Fund and the fund total for last thirteen months.

10.1 Marginal Loss Revenue Fund by Month, 13 Mos. Ending June 2018

Month	Day-Ahead Energy Stlmnt	Real-Time Energy Stlmnt	Day-Ahead Loss Rev	Real-Time Loss Rev	Real-Time Inadvrt Energy	Real-Time Emergency Energy	Day-Ahead Marginal Loss Total	Real-Time Marginal Loss Total	Marg Loss Rev Fund Total
Jun-17	$4,170,662	$589,131	-$5,726,199	-$350,553	$217,988	$0	$1,555,538	-$456,566	$1,098,972
Jul-17	$5,001,257	$924,063	-$6,669,502	-$371,068	-$172,151	$0	$1,668,245	-$380,843	$1,287,402
Aug-17	$4,364,078	$724,175	-$5,815,048	-$246,690	-$129,098	$0	$1,450,970	-$348,387	$1,102,584
Sep-17	$3,741,478	$568,098	-$5,175,493	-$294,329	$152,523	$0	$1,434,015	-$426,291	$1,007,724
Oct-17	$4,221,707	$627,260	-$5,645,540	-$200,629	-$197,569	$0	$1,423,834	-$229,062	$1,194,771
Nov-17	$4,990,328	$649,410	-$6,860,317	-$242,964	-$59,155	$0	$1,869,989	-$347,291	$1,522,698
Dec-17	$12,864,091	$160,140	-$17,430,035	-$889,540	$535,411	$0	$4,565,944	$193,989	$4,759,932
Jan-18	$21,427,241	-$372,739	-$28,340,875	-$941,841	$36,977	$0	$6,913,634	$1,277,602	$8,191,236
Feb-18	$5,645,947	$375,208	-$7,681,806	-$155,470	$16,901	$0	$2,035,859	-$236,639	$1,799,221
Mar-18	$5,481,589	$368,417	-$7,479,317	-$103,504	$110,964	$0	$1,997,728	-$375,878	$1,621,851
Apr-18	$6,124,006	$983,705	-$8,547,232	-$399,833	-$939,466	$0	$2,423,226	$355,595	$2,778,821
May-18	$3,464,656	$448,332	-$4,730,008	-$279,139	-$569,212	$0	$1,265,351	$400,019	$1,665,370
Jun-18	$4,225,038	$203,803	-$5,158,669	-$220,898	-$617,764	$0	$933,631	$634,859	$1,568,490

10.2 For More Information

Rules governing the calculation of the Marginal Loss Revenue Fund can be found in Section III.3.2.1 Accounting and Billing of the ISO's Market Rule 1 located here.

11. Forward Capacity Market

The Forward Capacity Market (FCM) is an auction based approach to meeting New England's forecasted capacity requirements for a future year. A portfolio of supply and demand resources is selected to provide this capacity through a competitive Forward Capacity Auction (FCA) process. Resources clearing in the FCA are paid the market clearing price for capacity and acquire a capacity supply obligation (CSO), a financially binding obligation to provide the cleared amount of capacity.

For the 2018-19 Capacity Year, the capacity zones consist of Rest-of-Pool (ROP), Connecticut (CT), Northeastern Massachusetts (NEMA), and Southeast Massachusetts/Rhode Island (SEMA-RI). ROP includes Western/Central Massachusetts (WCMA), New Hampshire (NH), Vermont (VT), and Maine (ME), while SEMA-RI consists of Southeast Massachusetts and Rhode Island.

11.1 FCM Auction Results and Monthly Modifications

The outcome of the Forward Capacity Auction (FCA) determines the initial CSOs for Resources. In the event that the Capacity Clearing Price Floor condition is reached in the FCA, the ISO will adjust (prorate) the per-MW rate of each CSO to adjust the over-purchased capacity. After the FCA is finalized, Lead Participants of obligated Resources may have the option to leave the CSO of these resources based upon the default proration (full CSO with a reduced payment rate - referred to as 'price proration') or opt to prorate the CSO MWs and receive the full CCP (described as 'MW proration'). The proration elections chosen by resources will not have an effect on the total amount of charges to load. The following table shows the aggregated CSO values by resource type from FCA 9, the 2018-2019 commitment period, with prorated amounts and change from the FCA for each resource type.

Each month, CSO values can change for a variety of reasons, which are referred to below as CSO modifications. Typically, changes result from the monthly or annual Reconfiguration Auctions. Additional examples of CSO modifications include ISO participation in annual reconfiguration auctions and termination of resource supply obligations. The table below displays the CSO modifications for the current month.

CSO Modifications for June 2018

Capacity Zone	Resource Type	Balance Net CSO MW for Multiyear Offer MW	Existing Capacity Obligation MW	Multi-Year Existing Capacity Obligation MW	New Capacity Obligation MW	Retained for Reliability Capacity Obligation MW	Self-Supply Capacity Obligation MW	Reconfig/ Bilateral MW	Total MW
Rest-of-Pool	Demand Resource	0.00	-24.67	0.00	0.00	0.00	0.00	-11.73	-36.40
Connecticut	Demand Resource	0.00	-13.38	0.00	0.00	0.00	0.00	52.87	39.49
NEMA-Boston	Demand Resource	0.00	-10.66	-0.29	0.00	0.00	0.00	90.63	79.69
SEMA-RI	Demand Resource	0.00	-11.91	0.00	0.00	0.00	0.00	56.55	44.64
Rest-of-Pool	Generator	0.00	-29.77	-0.41	-1.00	0.00	0.00	203.95	172.77
Connecticut	Generator	0.00	-27.58	0.00	0.00	0.00	0.00	20.86	-6.72
NEMA-Boston	Generator	0.00	0.00	0.00	0.00	0.00	-0.96	-132.61	-133.56
SEMA-RI	Generator	0.00	0.00	0.00	-0.01	0.00	0.00	-56.93	-56.94
Rest-of-Pool	Import	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	0.00	-117.96	-0.70	-1.01	0.00	-0.96	427.59	306.96

The table below displays a summary of the prorated CSO MW and dollars from the FCA, along with the CSO modifications for the current month. The CSO modification MWs are totaled for each Resource and Capacity Zone from the table above. These CSO modifications are used in the calculation of the final CSO MW and Dollars.

Final CSO MW and Dollars for June 2018

Capacity Zone	Resource Type	CSO MW	CSO Dollars	CSO Modification MW	CSO Modification Dollars	Final CSO MW	Final CSO Dollars
Rest-of-Pool	Demand Resource	1,014	$9,614,641	-36	-$475,895	977	$9,138,746
Connecticut	Demand Resource	550	$4,962,094	39	$117,154	589	$5,079,248
NEMA-Boston	Demand Resource	626	$6,108,646	80	$305,031	705	$6,413,677
SEMA-RI	Demand Resource	614	$7,733,674	45	$71,194	659	$7,804,868
Rest-of-Pool	Generator	11,262	$99,447,870	173	$1,347,105	11,434	$100,794,975
Connecticut	Generator	9,252	$87,535,555	-7	$70,891	9,245	$87,606,446
NEMA-Boston	Generator	3,301	$35,550,082	-134	-$476,406	3,168	$35,073,676
SEMA-RI	Generator	6,478	$70,360,857	-57	-$47,635	6,421	$70,313,222
Rest-of-Pool	Import	149	$1,650,920	0	$0	149	$1,650,920
	Total	34,695	$333,878,237	307	$1,639,610	35,002	$335,517,847

11.2 FCM Payments and Charges

Supply Credit is the total credit paid to customer resources for incurring a CSO and is the sum of the following types of CSO-related payments: Forward Capacity Auction (FCA) Credits, Bilateral Dollars, and Reconfiguration Auction (RA) Dollars. The following table shows total Supply Credit and its aforementioned components by Capacity Zone for the last thirteen months.

Month	Capacity Zone	FCA Credit	Bilateral Dollars	Reconfiguration Auction Dollars	Supply Credit
Jun-17	Rest-of-Pool	$111,108,827	$205,402	$2,409,098	$113,723,327
Jun-17	Connecticut	$56,442,135	-$154,741	-$225,091	$56,062,303
Jun-17	NEMA-Boston	$55,962,557	-$47,858	$971,367	$56,886,065
Jun-17	Maine	$27,379,548	-$2,803	$1,749,263	$29,126,008
Jul-17	Rest-of-Pool	$111,108,827	$519,151	$3,848,374	$115,476,352
Jul-17	Connecticut	$56,442,135	-$154,741	-$203,281	$56,084,113
Jul-17	NEMA-Boston	$55,962,557	-$361,607	$27,850	$55,628,800
Jul-17	Maine	$27,379,548	-$2,803	$1,325,495	$28,702,240
Aug-17	Rest-of-Pool	$111,108,827	$529,351	$3,890,848	$115,529,026
Aug-17	Connecticut	$56,442,135	-$154,741	-$213,006	$56,074,388
Aug-17	NEMA-Boston	$55,962,557	-$371,807	-$56,313	$55,534,437
Aug-17	Maine	$27,379,548	-$2,803	$1,376,909	$28,753,654
Sep-17	Rest-of-Pool	$111,108,827	$549,976	$4,717,069	$116,375,872
Sep-17	Connecticut	$56,442,135	-$154,741	-$224,325	$56,063,069
Sep-17	NEMA-Boston	$55,962,557	-$371,807	-$661,432	$54,929,318

Month	Capacity Zone	FCA Credit	Bilateral Dollars	Reconfiguration Auction Dollars	Supply Credit
Sep-17	Maine	$27,379,548	-$23,428	$1,040,766	$28,396,886
Oct-17	Rest-of-Pool	$112,211,530	-$50,271	$4,626,776	$116,788,035
Oct-17	Connecticut	$56,585,487	$489,535	$219,803	$57,294,825
Oct-17	NEMA-Boston	$55,986,122	-$436,462	-$135,442	$55,414,218
Oct-17	Maine	$28,174,955	-$2,803	$287,301	$28,459,453
Nov-17	Rest-of-Pool	$112,211,530	-$22,465	$4,496,665	$116,685,730
Nov-17	Connecticut	$56,585,487	$327,582	-$24,123	$56,888,947
Nov-17	NEMA-Boston	$55,986,122	-$436,462	-$712,045	$54,837,616
Nov-17	Maine	$28,174,955	$131,344	$276,214	$28,582,513
Dec-17	Rest-of-Pool	$112,330,939	-$180,096	$4,454,134	$116,604,978
Dec-17	Connecticut	$56,581,912	$455,433	-$10,574	$57,026,771
Dec-17	NEMA-Boston	$56,038,277	-$285,650	-$699,784	$55,052,843
Dec-17	Maine	$28,236,291	$10,313	$343,823	$28,590,427
Jan-18	Rest-of-Pool	$112,330,939	-$180,096	$4,360,114	$116,510,958
Jan-18	Connecticut	$56,581,912	$455,433	$21,407	$57,058,751
Jan-18	NEMA-Boston	$56,038,277	-$285,650	$103,135	$55,855,762
Jan-18	Maine	$28,236,291	$10,313	$228,875	$28,475,479
Feb-18	Rest-of-Pool	$112,330,939	-$166,279	$4,258,119	$116,422,779
Feb-18	Connecticut	$56,581,912	$455,433	-$77,530	$56,959,815
Feb-18	NEMA-Boston	$56,038,277	-$299,467	$217,899	$55,956,709
Feb-18	Maine	$28,159,038	$10,313	$195,190	$28,364,541
Mar-18	Rest-of-Pool	$112,330,939	-$227,711	$4,212,134	$116,315,362
Mar-18	Connecticut	$56,581,912	$448,911	-$112,804	$56,918,019
Mar-18	NEMA-Boston	$56,038,277	-$336,913	-$1,018,413	$54,682,951
Mar-18	Maine	$28,159,038	$115,713	$230,411	$28,505,162
Apr-18	Rest-of-Pool	$112,211,530	-$382,893	$4,273,219	$116,101,855
Apr-18	Connecticut	$56,585,487	$466,515	-$48,972	$57,003,030
Apr-18	NEMA-Boston	$55,986,122	-$80,820	-$1,655,168	$54,250,134
Apr-18	Maine	$28,094,794	-$2,803	$230,552	$28,322,543
May-18	Rest-of-Pool	$112,211,530	$117,310	$4,285,513	$116,614,352
May-18	Connecticut	$56,585,487	$165,492	$32,231	$56,783,210
May-18	NEMA-Boston	$55,986,122	-$448,750	-$991,098	$54,546,274
May-18	Maine	$28,094,794	$165,947	$244,657	$28,505,398
Jun-18	Rest-of-Pool	$119,445,747	$574,208	$1,555,835	$121,575,789
Jun-18	Connecticut	$92,106,421	$90,453	$488,820	$92,685,694
Jun-18	NEMA-Boston	$41,552,448	-$7,051	-$58,044	$41,487,353
Jun-18	SEMA-RI	$79,615,947	-$657,610	$810,673	$79,769,010

The initial supply credit paid for the CSO, as shown above, can be further adjusted based upon computed values for Peak Energy Rent (PER), the participation of the ISO in reconfiguration auctions, and actual resource performance. PER is a downward adjustment of FCM payments to reflect energy market revenues earned during high priced hours. In reconfiguration auctions, credits are reduced by the sale of excess CSO by the ISO or increased by the purchase of additional CSO. Resource availability during shortage events (generator and import resources) or performance during dispatch events and performance hours (demand resources) result in additional penalties and credits. The supply credit adjusted for reasons just stated results in the pool of money called the Net Regional Clearing Price (NRCP) Credit, which is the basis for charges for capacity allocated to real-time load obligation. Additional credits may be earned by resources retained for reliability and their cost is allocated to Regional Network Load through the Open-Access Transmission Tariff rather than to Capacity Load Obligation (CLO).

The following table shows the various credit adjustments and total payments in the FCM made over the last 13 obligation months.

Month	Capacity Zone	CSO MW	Supply Credit (A)	PER Adjustment (B)	Excess DR Penalties (C)	NRCP Credit (D=A+B+C)	Reliability Credit (E)	Total Payment (F=D+E)
Jun-17	Rest-of-Pool	16,793	$113,723,327	-$4,451,198	$0	$109,272,129	$0	$109,272,129
Jun-17	Connecticut	9,053	$56,062,303	-$2,415,204	$0	$53,647,100	$0	$53,647,100
Jun-17	NEMA-Boston	3,897	$56,886,065	-$1,271,860	$0	$55,614,205	$0	$55,614,205
Jun-17	Maine	3,951	$29,126,008	-$996,974	$0	$28,129,034	$0	$28,129,034
Jul-17	Rest-of-Pool	17,016	$115,476,352	-$4,523,341	$0	$110,953,011	$0	$110,953,011
Jul-17	Connecticut	9,053	$56,084,113	-$2,415,204	$0	$53,668,909	$0	$53,668,909
Jul-17	NEMA-Boston	3,702	$55,628,800	-$1,197,798	$0	$54,431,002	$0	$54,431,002
Jul-17	Maine	3,923	$28,702,240	-$993,993	$0	$27,708,247	$0	$27,708,247
Aug-17	Rest-of-Pool	17,022	$115,529,026	-$4,523,917	$0	$111,005,109	$0	$111,005,109
Aug-17	Connecticut	9,049	$56,074,388	-$2,415,204	$0	$53,659,184	$0	$53,659,184
Aug-17	NEMA-Boston	3,674	$55,534,437	-$1,188,112	$0	$54,346,325	$0	$54,346,325
Aug-17	Maine	3,948	$28,753,654	-$997,706	$0	$27,755,947	$0	$27,755,947
Sep-17	Rest-of-Pool	17,253	$116,375,872	-$111,698	$0	$116,264,174	$0	$116,264,174
Sep-17	Connecticut	9,042	$56,063,069	-$37,043	$0	$56,026,026	$0	$56,026,026
Sep-17	NEMA-Boston	3,452	$54,929,318	-$198,930	$0	$54,730,388	$0	$54,730,388
Sep-17	Maine	3,947	$28,396,886	$0	$0	$28,396,886	$0	$28,396,886
Oct-17	Rest-of-Pool	17,375	$116,788,035	-$125,157	$0	$116,662,878	$0	$116,662,878
Oct-17	Connecticut	9,188	$57,294,825	-$46,364	$0	$57,248,460	$0	$57,248,460
Oct-17	NEMA-Boston	3,604	$55,414,218	-$213,565	$0	$55,200,653	$0	$55,200,653
Oct-17	Maine	3,831	$28,459,453	-$3,579	$0	$28,455,875	$0	$28,455,875
Nov-17	Rest-of-Pool	17,528	$116,685,730	-$253,188	$0	$116,432,542	$0	$116,432,542
Nov-17	Connecticut	9,171	$56,888,947	-$115,031	$0	$56,773,915	$0	$56,773,915
Nov-17	NEMA-Boston	3,438	$54,837,616	-$225,317	$0	$54,612,299	$0	$54,612,299
Nov-17	Maine	3,860	$28,582,513	-$36,395	$0	$28,546,118	$0	$28,546,118
Dec-17	Rest-of-Pool	17,497	$116,604,978	-$252,052	$0	$116,352,925	$0	$116,352,925
Dec-17	Connecticut	9,174	$57,026,771	-$115,898	$0	$56,910,873	$0	$56,910,873
Dec-17	NEMA-Boston	3,445	$55,052,843	-$225,150	$0	$54,827,693	$0	$54,827,693
Dec-17	Maine	3,913	$28,590,427	-$36,194	$0	$28,554,233	$0	$28,554,233
Jan-18	Rest-of-Pool	17,505	$116,510,958	-$251,148	$0	$116,259,810	$0	$116,259,810
Jan-18	Connecticut	9,242	$57,058,751	-$117,141	$0	$56,941,610	$0	$56,941,610
Jan-18	NEMA-Boston	3,445	$55,855,762	-$224,420	$0	$55,631,342	$0	$55,631,342

Month	Capacity Zone	CSO MW	Supply Credit (A)	PER Adjustment (B)	Excess DR Penalties (C)	NRCP Credit (D=A+B+C)	Reliability Credit (E)	Total Payment (F=D+E)
Jan-18	Maine	3,837	$28,475,479	-$35,637	$0	$28,439,841	$0	$28,439,841
Feb-18	Rest-of-Pool	17,554	$116,422,779	-$252,753	$0	$116,170,027	$0	$116,170,027
Feb-18	Connecticut	9,196	$56,959,815	-$116,447	$0	$56,843,367	$0	$56,843,367
Feb-18	NEMA-Boston	3,491	$55,956,709	-$224,227	$0	$55,732,482	$0	$55,732,482
Feb-18	Maine	3,768	$28,364,541	-$35,102	$0	$28,329,439	$0	$28,329,439
Mar-18	Rest-of-Pool	17,515	$116,315,362	-$252,120	$0	$116,063,242	$0	$116,063,242
Mar-18	Connecticut	9,134	$56,918,019	-$115,806	$0	$56,802,213	$0	$56,802,213
Mar-18	NEMA-Boston	3,510	$54,682,951	-$224,650	$0	$54,458,301	$0	$54,458,301
Mar-18	Maine	3,849	$28,505,162	-$36,040	$0	$28,469,122	$0	$28,469,122
Apr-18	Rest-of-Pool	17,532	$116,101,855	-$252,004	$0	$115,849,852	$0	$115,849,852
Apr-18	Connecticut	9,238	$57,003,030	-$116,612	$0	$56,886,417	$0	$56,886,417
Apr-18	NEMA-Boston	3,379	$54,250,134	-$225,220	$0	$54,024,915	$0	$54,024,915
Apr-18	Maine	3,825	$28,322,543	-$35,576	$0	$28,286,968	$0	$28,286,968
May-18	Rest-of-Pool	17,399	$116,614,352	-$252,512	$0	$116,361,840	$0	$116,361,840
May-18	Connecticut	9,244	$56,783,210	-$115,295	$0	$56,667,916	$0	$56,667,916
May-18	NEMA-Boston	3,512	$54,546,274	-$225,279	$0	$54,320,995	$0	$54,320,995
May-18	Maine	3,820	$28,505,398	-$36,026	$0	$28,469,373	$0	$28,469,373
Jun-18	Rest-of-Pool	13,923	$121,575,789	-$124,245	$0	$121,451,545	$0	$121,451,545
Jun-18	Connecticut	9,816	$92,685,694	-$92,462	$0	$92,593,232	$0	$92,593,232
Jun-18	NEMA-Boston	3,879	$41,487,353	-$31,514	$0	$41,455,840	$0	$41,455,840
Jun-18	SEMA-RI	7,383	$79,769,010	-$63,562	$0	$79,705,448	$0	$79,705,448

For each month and Capacity Zone, Load Serving Entities (LSEs) have capacity requirements which are calculated as their share of the total CSO purchased, based on their contribution to the system peak load from the previous year. Customers pay for capacity based on CLO. A customer's CLO is equivalent to its capacity requirement, adjusted for any Hydro-Quebec Installed Capacity Credits (HQICC), self-supply MWs, and CLO bilateral contracts. CLO bilateral contracts provide a means of transferring a capacity load obligation between two customers. Note that any customer, not just LSEs, can take on or shed CLO through a CLO bilateral contract.

The Net Regional Clearing Price is the rate at which load pays for capacity. It is calculated as:

*NRCP ($/kW-month) = NRCP Credit / (CLO MW * 1000)*

Where: *CLO MW = CSO MW – Self Supply MW – Excess RTEG MW*

Excess RTEG MW is composed of the CSO MW of Real Time Emergency Generation purchased in the Forward Capacity Auction in excess of 600 MW.

Charges are calculated as the product of a customer's CLO and the NRCP.

The following table provides details on aggregate FCM charges to load.

Month	CSO MW (A)	CLO Bilat MW	HQICC MW (B)	Excess RTEG MW (C)	Self Supply MW (D)	Capacity Req MW (E=A+B-C)	Peak Contrib MW	CLO MW (F=A-C-D)	Net Regional Clearing Price ($/kW-month)	Capacity Load Obligation Charge
Jun-17	33,694	1,543	1,108	0	3,328	34,802	25,111	30,365	$8.123148	$267,240,428
Jul-17	33,694	1,541	1,108	0	3,328	34,802	25,111	30,365	$8.126398	$270,554,214
Aug-17	33,694	1,554	1,108	0	3,328	34,802	25,111	30,365	$8.126576	$271,145,913
Sep-17	33,694	1,542	1,108	0	3,328	34,802	25,111	30,365	$8.411470	$284,625,396
Oct-17	33,997	1,556	1,108	0	3,328	35,105	25,111	30,669	$8.398426	$283,795,399
Nov-17	33,997	1,864	1,108	0	3,328	35,105	25,111	30,669	$8.359201	$286,362,232
Dec-17	34,030	1,865	1,108	0	3,328	35,138	25,111	30,701	$8.359454	$286,631,635
Jan-18	34,030	1,844	1,108	0	3,328	35,138	25,111	30,701	$8.379872	$287,936,066
Feb-18	34,009	1,844	1,108	0	3,328	35,117	25,111	30,680	$8.379202	$286,576,919
Mar-18	34,009	1,842	1,108	0	3,328	35,117	25,111	30,680	$8.337402	$283,766,776
Apr-18	33,975	1,845	1,108	0	3,328	35,083	25,111	30,647	$8.322205	$285,531,031
May-18	33,975	1,845	1,108	0	3,328	35,083	25,111	30,647	$8.347395	$283,447,438
Jun-18	35,002	208	1,030	0	1,286	36,032	23,508	33,716	$9.942064	$340,437,794

The calculations below describe how the Capacity Requirement and the Capacity Load Obligations are calculated for each Capacity Zone.

Capacity Requirement $_{\text{Capacity Zone}}$ = (Peak Contribution MW (CCP-2) $_{\text{Capacity Zone}}$ / Peak Contribution (CCP-2) $_{\text{Pool}}$) * (CSO $_{\text{Pool}}$ + HQICC MW $_{\text{pool}}$) * (-1)

CLO $_{\text{Capacity Zone}}$ = Capacity Requirement $_{\text{Capacity Zone}}$ - HQICC MW $_{\text{Capacity Zone}}$ - CLO Self-Supply MW $_{\text{Capacity Zone}}$

There are two aspects to a self-supply agreement – the generator supplying the MW and the entity using the MW to reduce its capacity requirement. For example, during the 2018/2019 commitment period, with multiple capacity zones, a generator in Connecticut can have self-supply designations in both the Rest-of-Pool (ROP) and Connecticut, as well as other capacity zones. (The detailed requirements for self-supplied FCA resources are available here in III.13.1.6.2). The NRCP is the per MW cost of capacity in a capacity zone. Self-supply MW used in the NRCP calculation are based on where the generator supplying the MWs resides and is presented in that manner below.

The following table provides details on FCM charges to load at the Capacity Zone level.

Month	Capacity Zone	CSO MW	HQICC MW	Self Supply MW	Capacity Req MW	Peak Contrib MW	CLO MW	Net Regional Clearing Price ($/kW-month)	Capacity Load Obligation Charge
Jun-17	Rest-of-Pool	16,793	1,108	2,237	16,167	11,644	12,058	$7.492748	$90,344,913
Jun-17	Connecticut	9,053	0	1,017	9,065	6,436	9,065	$6.695276	$60,691,366
Jun-17	NEMA-Boston	3,897	0	61	7,125	5,265	6,811	$14.509771	$98,828,454
Jun-17	Maine	3,951	0	14	2,445	1,766	2,432	$7.145310	$17,375,696
Jul-17	Rest-of-Pool	17,016	1,108	2,237	16,167	11,644	12,058	$7.472346	$90,098,911

Month	Capacity Zone	CSO MW	HQICC MW	Self Supply MW	Capacity Req MW	Peak Contrib MW	CLO MW	Net Regional Clearing Price ($/kW-month)	Capacity Load Obligation Charge
Jul-17	Connecticut	9,053	0	1,017	9,065	6,436	9,065	$6.698104	$60,716,995
Jul-17	NEMA-Boston	3,702	0	61	7,125	5,265	6,811	$15.049281	$102,503,143
Jul-17	Maine	3,923	0	14	2,445	1,766	2,432	$7.087520	$17,235,164
Aug-17	Rest-of-Pool	17,022	1,108	2,237	16,167	11,644	12,058	$7.471826	$90,092,647
Aug-17	Connecticut	9,049	0	1,017	9,065	6,436	9,065	$6.699441	$60,729,120
Aug-17	NEMA-Boston	3,674	0	61	7,125	5,265	6,811	$15.146917	$103,168,164
Aug-17	Maine	3,948	0	14	2,445	1,766	2,432	$7.054959	$17,155,982
Sep-17	Rest-of-Pool	17,253	1,108	2,237	16,167	11,644	12,058	$7.706103	$92,917,467
Sep-17	Connecticut	9,042	0	1,017	9,065	6,436	9,065	$7.000943	$63,462,173
Sep-17	NEMA-Boston	3,452	0	61	7,125	5,265	6,811	$16.249278	$110,676,526
Sep-17	Maine	3,947	0	14	2,445	1,766	2,432	$7.224896	$17,569,230
Oct-17	Rest-of-Pool	17,375	1,108	2,237	16,307	11,644	12,198	$7.710024	$94,050,704
Oct-17	Connecticut	9,188	0	1,017	9,144	6,436	9,144	$6.946353	$63,515,931
Oct-17	NEMA-Boston	3,604	0	61	7,187	5,265	6,873	$15.704189	$107,938,693
Oct-17	Maine	3,831	0	14	2,467	1,766	2,453	$7.455999	$18,290,071
Nov-17	Rest-of-Pool	17,528	1,108	2,237	16,307	11,644	12,198	$7.615792	$92,901,213
Nov-17	Connecticut	9,171	0	1,017	9,144	6,436	9,144	$6.922501	$63,297,833
Nov-17	NEMA-Boston	3,438	0	61	7,187	5,265	6,873	$16.301031	$112,040,930
Nov-17	Maine	3,860	0	14	2,467	1,766	2,453	$7.387589	$18,122,256
Dec-17	Rest-of-Pool	17,497	1,108	2,237	16,323	11,644	12,214	$7.636409	$93,268,599
Dec-17	Connecticut	9,174	0	1,017	9,152	6,436	9,152	$6.920713	$63,340,372
Dec-17	NEMA-Boston	3,445	0	61	7,194	5,265	6,880	$16.286540	$112,050,265
Dec-17	Maine	3,913	0	14	2,469	1,766	2,455	$7.319650	$17,972,399
Jan-18	Rest-of-Pool	17,505	1,108	2,237	16,323	11,644	12,214	$7.626173	$93,143,577
Jan-18	Connecticut	9,242	0	1,017	9,152	6,436	9,152	$6.867215	$62,850,738
Jan-18	NEMA-Boston	3,445	0	61	7,194	5,265	6,880	$16.524027	$113,684,154
Jan-18	Maine	3,837	0	14	2,469	1,766	2,455	$7.435803	$18,257,597
Feb-18	Rest-of-Pool	17,554	1,108	2,237	16,313	11,644	12,204	$7.595299	$92,692,084
Feb-18	Connecticut	9,196	0	1,017	9,147	6,436	9,147	$6.894394	$63,061,614
Feb-18	NEMA-Boston	3,491	0	61	7,189	5,265	6,876	$16.335026	$112,313,311
Feb-18	Maine	3,768	0	14	2,468	1,766	2,454	$7.543115	$18,509,909
Mar-18	Rest-of-Pool	17,515	1,108	2,237	16,313	11,644	12,204	$7.611453	$92,889,220
Mar-18	Connecticut	9,134	0	1,017	9,147	6,436	9,147	$6.942176	$63,498,672
Mar-18	NEMA-Boston	3,510	0	61	7,189	5,265	6,876	$15.887759	$109,238,080
Mar-18	Maine	3,849	0	14	2,468	1,766	2,454	$7.392699	$18,140,804
Apr-18	Rest-of-Pool	17,532	1,108	2,237	16,297	11,644	12,188	$7.599050	$92,619,732
Apr-18	Connecticut	9,238	0	1,017	9,138	6,436	9,138	$6.862637	$62,711,330
Apr-18	NEMA-Boston	3,379	0	61	7,183	5,265	6,869	$16.306402	$112,004,790
Apr-18	Maine	3,825	0	14	2,465	1,766	2,452	$7.421969	$18,195,179

Month	Capacity Zone	CSO MW	HQICC MW	Self Supply MW	Capacity Req MW	Peak Contrib MW	CLO MW	Net Regional Clearing Price ($/kW-month)	Capacity Load Obligation Charge
May-18	Rest-of-Pool	17,399	1,108	2,237	16,297	11,644	12,188	$7.666901	$93,446,725
May-18	Connecticut	9,244	0	1,017	9,138	6,436	9,138	$6.867639	$62,757,039
May-18	NEMA-Boston	3,512	0	61	7,183	5,265	6,869	$15.871235	$109,015,735
May-18	Maine	3,820	0	14	2,465	1,766	2,452	$7.435332	$18,227,940
Jun-18	Rest-of-Pool	13,923	1,030	881	11,913	7,712	10,163	$9.268322	$94,195,461
Jun-18	Connecticut	9,816	0	87	9,234	6,089	9,234	$9.507663	$87,796,122
Jun-18	NEMA-Boston	3,879	0	62	7,555	5,003	7,241	$10.860167	$78,637,519
Jun-18	SEMA-RI	7,383	0	256	7,329	4,704	7,078	$11.276207	$79,808,692

11.3 Capacity Transfer Rights

CTRs are a mechanism to distribute excess revenue that results from differences in payment rates between Capacity Zones; a CTR fund will be calculated for each constrained capacity zone. There are two types of CTRs: Specifically Allocated CTRs (defined in Market Rule 1 and always paid), and Residual CTRs (remaining funds or shortfall of funds after Specifically Allocated CTRs are paid). Residual CTRs will be allocated to the load serving entities with CLO on the import-constrained side of the interface. For the 2018/2019 Capacity Commitment Period (CCP), Connecticut, Northeastern Massachusetts and Southeastern Massachusetts/Rhode Island are import-constrained. Payments from these import-constrained zones will be made to the Rest-of-Pool Capacity Zone. The FCM Charge above can change depending on the CTRs associated with the Capacity Zone. The Specifically Allocated Capacity Transfer Rights Fund consists of the following:

- Pool Planned Unit CTRs for certain municipal utilities
- Maine Export Interface CTRs for Casco Bay
- Provisions for Transmission Upgrade CTRs

The following table provides detail, by month and capacity zone, of the Capacity Transfer Rights Dollars, the Specifically Allocated CTR MW and Dollars, along with the Residual CTR MW and Dollars.

Month	Import Constrained Capacity Zone	CTR Fund Dollars	Specifically Allocated CTR MW	Specifically Allocated CTR Dollars	Residual CTR MW	Residual CTR Dollars
Jun-17	Connecticut	-$820,609	0	$0	-9,065	-$820,609
Jun-17	NEMA-Boston	$20,875,557	5	$39,462	-6,806	$20,836,094
Jun-17	Maine	$523,013	325	$0	-27,934	$523,013
Jul-17	Connecticut	-$796,811	0	$0	-9,065	-$796,811
Jul-17	NEMA-Boston	$24,021,055	5	$39,462	-6,806	$23,981,593
Jul-17	Maine	$568,801	325	$0	-27,934	$568,801
Aug-17	Connecticut	-$797,260	0	$0	-9,065	-$797,260
Aug-17	NEMA-Boston	$24,550,104	5	$39,462	-6,806	$24,510,641
Aug-17	Maine	$626,503	325	$0	-27,934	$626,503
Sep-17	Connecticut	-$733,409	0	$0	-9,065	-$733,409

Month	Import Constrained Capacity Zone	CTR Fund Dollars	Specifically Allocated CTR MW	Specifically Allocated CTR Dollars	Residual CTR MW	Residual CTR Dollars
Sep-17	NEMA-Boston	$29,218,606	5	$39,462	-6,806	$29,179,143
Sep-17	Maine	$722,725	325	$0	-27,934	$722,725
Oct-17	Connecticut	-$742,854	0	$0	-9,144	-$742,854
Oct-17	NEMA-Boston	$26,623,943	5	$39,462	-6,868	$26,584,481
Oct-17	Maine	$346,443	325	$0	-28,216	$346,443
Nov-17	Connecticut	-$686,180	0	$0	-9,144	-$686,180
Nov-17	NEMA-Boston	$30,365,602	5	$39,462	-6,868	$30,326,140
Nov-17	Maine	$317,936	325	$0	-28,216	$317,936
Dec-17	Connecticut	-$711,995	0	$0	-9,152	-$711,995
Dec-17	NEMA-Boston	$30,240,422	5	$39,462	-6,875	$30,200,960
Dec-17	Maine	$457,484	325	$0	-28,246	$457,484
Jan-18	Connecticut	-$703,405	0	$0	-9,152	-$703,405
Jan-18	NEMA-Boston	$31,106,448	5	$39,462	-6,875	$31,066,985
Jan-18	Maine	$260,420	325	$0	-28,246	$260,420
Feb-18	Connecticut	-$678,467	0	$0	-9,147	-$678,467
Feb-18	NEMA-Boston	$30,112,211	5	$39,462	-6,871	$30,072,749
Feb-18	Maine	$67,860	325	$0	-28,226	$67,860
Mar-18	Connecticut	-$688,866	0	$0	-9,147	-$688,866
Mar-18	NEMA-Boston	$28,360,567	5	$39,462	-6,871	$28,321,105
Mar-18	Maine	$302,197	325	$0	-28,226	$302,197
Apr-18	Connecticut	-$675,117	0	$0	-9,138	-$675,117
Apr-18	NEMA-Boston	$30,917,150	5	$39,462	-6,864	$30,877,688
Apr-18	Maine	$240,846	325	$0	-28,195	$240,846
May-18	Connecticut	-$727,917	0	$0	-9,138	-$727,917
May-18	NEMA-Boston	$28,041,437	5	$39,462	-6,864	$28,001,975
May-18	Maine	$313,794	325	$0	-28,195	$313,794
Jun-18	Connecticut	-$118,483	0	$0	-9,234	-$118,483
Jun-18	NEMA-Boston	$5,448,926	5	$0	-7,236	$5,448,926
Jun-18	SEMA-RI	-$98,712	129	$1,053,938	-6,949	-$1,152,650

11.4 PER Adjustment

As stated above, PER is a payment adjustment made to reflect revenues earned by resources during high priced hours in the Energy markets. Generation and Import resources with a CSO are subject to PER adjustments (excluding self-supply CSO MWs). Demand resources are not subject to PER adjustments.

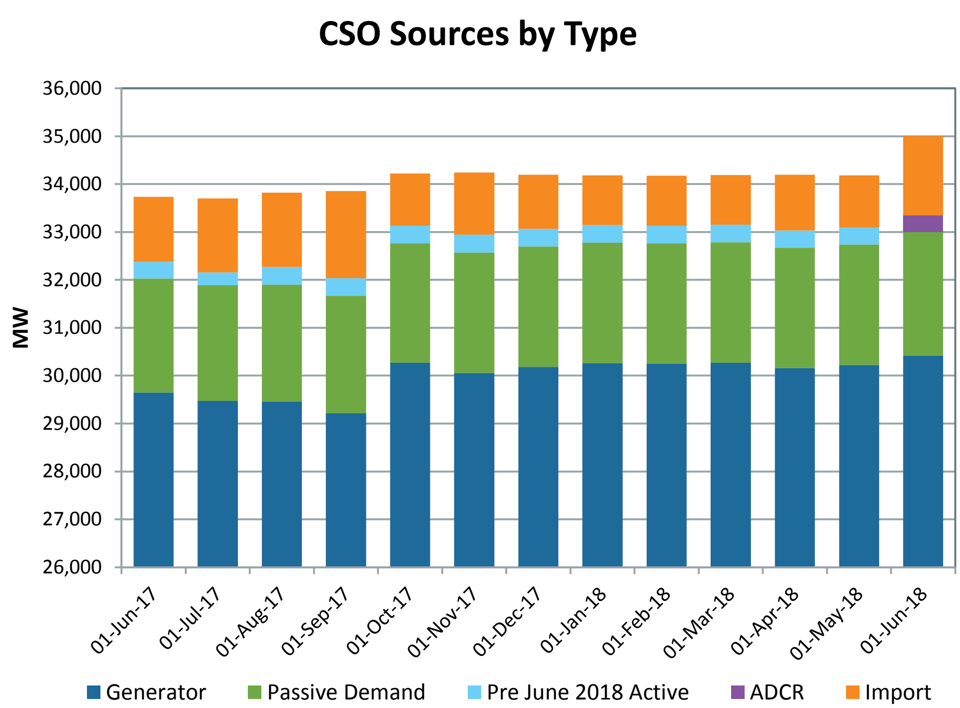
The following table provides detail, by month and capacity zone, of the CSO subject to PER, the rate at which these CSO are charged, and the total PER adjustment. It is important to note that individual resources are subject to an overall PER cap. Therefore, the product of the CSO and the rate in the table below will not necessarily equal the total PER adjustment.

Month	Capacity Zone	PER CSO MW	Average PER ($/kW-month)	Total PER Adjustment
Jun-17	Connecticut	7,409	0.326	$2,415,204
Jun-17	Maine	3,679	0.271	$996,974
Jun-17	NEMA-Boston	3,125	0.407	$1,271,860
Jun-17	Rest-of-Pool	13,488	0.330	$4,451,198
Jul-17	Connecticut	7,409	0.326	$2,415,204
Jul-17	Maine	3,668	0.271	$993,993
Jul-17	NEMA-Boston	2,943	0.407	$1,197,798
Jul-17	Rest-of-Pool	13,707	0.330	$4,523,341
Aug-17	Connecticut	7,409	0.326	$2,415,204
Aug-17	Maine	3,682	0.271	$997,706
Aug-17	NEMA-Boston	2,919	0.407	$1,188,112
Aug-17	Rest-of-Pool	13,709	0.330	$4,523,917
Sep-17	Connecticut	7,409	0.005	$37,043
Sep-17	Maine	3,683	0.000	$0
Sep-17	NEMA-Boston	2,688	0.074	$198,930
Sep-17	Rest-of-Pool	13,962	0.008	$111,698
Oct-17	Connecticut	7,727	0.006	$46,364
Oct-17	Maine	3,579	0.001	$3,579
Oct-17	NEMA-Boston	2,848	0.075	$213,565
Oct-17	Rest-of-Pool	13,906	0.009	$125,157
Nov-17	Connecticut	7,669	0.015	$115,031
Nov-17	Maine	3,640	0.010	$36,395
Nov-17	NEMA-Boston	2,682	0.084	$225,317
Nov-17	Rest-of-Pool	14,066	0.018	$253,188
Dec-17	Connecticut	7,726	0.015	$115,898
Dec-17	Maine	3,619	0.010	$36,194
Dec-17	NEMA-Boston	2,680	0.084	$225,150
Dec-17	Rest-of-Pool	14,003	0.018	$252,052
Jan-18	Connecticut	7,809	0.015	$117,141
Jan-18	Maine	3,564	0.010	$35,637
Jan-18	NEMA-Boston	2,672	0.084	$224,420
Jan-18	Rest-of-Pool	13,953	0.018	$251,148
Feb-18	Connecticut	7,763	0.015	$116,447
Feb-18	Maine	3,510	0.010	$35,102
Feb-18	NEMA-Boston	2,669	0.084	$224,227
Feb-18	Rest-of-Pool	14,042	0.018	$252,753
Mar-18	Connecticut	7,720	0.015	$115,806
Mar-18	Maine	3,604	0.010	$36,040
Mar-18	NEMA-Boston	2,674	0.084	$224,650

Month	Capacity Zone	PER CSO MW	Average PER ($/kW-month)	Total PER Adjustment
Mar-18	Rest-of-Pool	14,007	0.018	$252,120
Apr-18	Connecticut	7,774	0.015	$116,612
Apr-18	Maine	3,558	0.010	$35,576
Apr-18	NEMA-Boston	2,681	0.084	$225,220
Apr-18	Rest-of-Pool	14,000	0.018	$252,004
May-18	Connecticut	7,686	0.015	$115,295
May-18	Maine	3,603	0.010	$36,026
May-18	NEMA-Boston	2,682	0.084	$225,279
May-18	Rest-of-Pool	14,028	0.018	$252,512
Jun-18	Connecticut	9,246	0.010	$92,462
Jun-18	NEMA-Boston	3,151	0.010	$31,514
Jun-18	Rest-of-Pool	12,424	0.010	$124,245
Jun-18	SEMA-RI	6,356	0.010	$63,562

11.5 Sources of Capacity

The following graph shows, in MW, the amount of capacity procured by type in New England for each of the last 13 months. The subsequent table displays the data underlying the graph.



Month	Passive Demand Resource MW	RT Emergency & RT Demand Resource MW (Pre June 2018 Active)	Active Demand Capacity Resource MW (ADCR)	Generation MW	Import MW	Total MW
Jun-17	2,384	345	N/A	29,647	1,358	33,693
Jul-17	2,416	267	N/A	29,475	1,545	33,693
Aug-17	2,448	365	N/A	29,456	1,555	33,693
Sep-17	2,451	369	N/A	29,214	1,821	33,693
Oct-17	2,489	369	N/A	30,273	1,090	33,997
Nov-17	2,514	369	N/A	30,059	1,301	33,997
Dec-17	2,514	367	N/A	30,183	1,134	34,029
Jan-18	2,514	367	N/A	30,263	1,040	34,029
Feb-18	2,513	367	N/A	30,252	1,040	34,008
Mar-18	2,513	364	N/A	30,273	1,040	34,008
Apr-18	2,513	360	N/A	30,158	1,163	33,975
May-18	2,513	360	N/A	30,222	1,087	33,975
Jun-18	2,578	N/A	353	30,418	1,653	35,002

11.6 Capacity Imports

The following table shows the monthly CSO MW resulting from imports for each of the last 13 months.

Month	Capacity Zone	NY AC Ties	New Brunswick	HQ Phase I/II	HQ Highgate	Total
Jun-17	Rest-of-Pool	480	0	273	129	882
Jun-17	Maine	0	476	0	0	476
Jul-17	Rest-of-Pool	672	0	278	129	1,080
Jul-17	Maine	0	465	0	0	465
Aug-17	Rest-of-Pool	667	0	288	129	1,084
Aug-17	Maine	0	471	0	0	471
Sep-17	Rest-of-Pool	928	0	288	129	1,345
Sep-17	Maine	0	476	0	0	476
Oct-17	Rest-of-Pool	504	0	263	116	882
Oct-17	Maine	0	208	0	0	208
Nov-17	Rest-of-Pool	685	0	292	116	1,093
Nov-17	Maine	0	208	0	0	208
Dec-17	Rest-of-Pool	492	0	292	116	900
Dec-17	Maine	0	234	0	0	234
Jan-18	Rest-of-Pool	424	0	292	116	832
Jan-18	Maine	0	208	0	0	208
Feb-18	Rest-of-Pool	424	0	292	116	832
Feb-18	Maine	0	208	0	0	208

Month	Capacity Zone	NY AC Ties	New Brunswick	HQ Phase I/II	HQ Highgate	Total
Mar-18	Rest-of-Pool	424	0	292	116	832
Mar-18	Maine	0	208	0	0	208
Apr-18	Rest-of-Pool	547	0	292	116	955
Apr-18	Maine	0	208	0	0	208
May-18	Rest-of-Pool	471	0	292	116	879
May-18	Maine	0	208	0	0	208
Jun-18	Rest-of-Pool	1,054	177	370	52	1,653

11.7 Pre-June 1, 2018 Performance

All capacity resources with a CSO were subject to evaluation during each obligation month of a commitment period to ensure they could deliver the capacity for which they were paid. Generation and Import resources were evaluated for performance during shortage events. Demand resources were evaluated during dispatch events and performance hours.

11.7.1 *Generation and Import Resource Availability*

Month	Hours with Shortage Events	Total Duration of Shortage Events (Minutes)	Resource Type	SAB MW (Sold)	SAB MW (purchased)	Shortage Event Penalty
There were no shortage events over the previous 13 months. Effective June 1, 2018, Shortage Events have been replaced by Capacity Scarcity Conditions. (See next section.)						

11.7.2 *Demand Resource Performance*

The following table displays a pool-level summary of Demand Resource performance by type for the period that ended May 31, 2018.

Month	DR Type	Performance Hours	CSO MW	Capacity Value (MW)	Negative Capacity Variance (MW)	Positive Capacity Variance (MW)	Performance Penalty ($)	Performance Incentive ($)
Jun-17	ON_PEAK	88	1,825.23	2,063.17	-7.61	245.55	-$63,573	$500,205
Jun-17	REAL_TIME	0	355.64	372.77	-49.56	66.69	-$468,804	$155,351
Jun-17	REAL_TIME_EG	0	1.50	0.18	-1.33	0.00	-$9,315	$0
Jun-17	SEASONAL_PEAK	0	506.85	509.51	-28.37	31.03	-$177,335	$63,471
Jul-17	ON_PEAK	80	1,835.29	2,090.01	-7.15	261.88	-$61,250	$762,087
Jul-17	REAL_TIME	0	324.88	288.04	-119.56	82.72	-$886,776	$231,296
Jul-17	REAL_TIME_EG	0	1.50	0.18	-1.33	0.00	-$9,315	$0
Jul-17	SEASONAL_PEAK	0	512.63	513.90	-23.98	25.25	-$149,886	$113,844
Aug-17	ON_PEAK	92	1,823.81	2,114.03	-5.83	296.04	-$59,665	$308,276
Aug-17	REAL_TIME	0	344.66	393.56	-28.97	77.87	-$248,300	$101,545
Aug-17	REAL_TIME_EG	0	1.50	0.18	-1.33	0.00	-$9,315	$0
Aug-17	SEASONAL_PEAK	0	512.63	517.39	-21.38	26.14	-$133,628	$41,086

Month	DR Type	Performance Hours	CSO MW	Capacity Value (MW)	Negative Capacity Variance (MW)	Positive Capacity Variance (MW)	Performance Penalty ($)	Performance Incentive ($)
Sep-17	ON_PEAK	0	1,848.68	2,091.21	-3.94	246.47	-$28,960	$251,753
Sep-17	REAL_TIME	0	296.17	351.40	-21.73	76.96	-$203,355	$99,127
Sep-17	REAL_TIME_EG	0	1.50	0.18	-1.33	0.00	-$9,315	$0
Sep-17	SEASONAL_PEAK	0	512.63	513.60	-24.58	25.55	-$153,618	$44,368
Oct-17	ON_PEAK	0	1,850.64	2,092.72	-4.09	246.16	-$29,999	$148,243
Oct-17	REAL_TIME	0	275.11	351.67	-8.89	85.44	-$78,056	$71,415
Oct-17	REAL_TIME_EG	0	0.17	0.18	0.00	0.01	$0	$35
Oct-17	SEASONAL_PEAK	0	506.85	513.60	-24.58	31.33	-$153,618	$41,981
Nov-17	ON_PEAK	0	1,851.40	2,092.72	-4.34	245.66	-$31,445	$143,656
Nov-17	REAL_TIME	0	273.26	351.67	-7.79	86.20	-$70,315	$71,645
Nov-17	REAL_TIME_EG	0	0.17	0.18	0.00	0.01	$0	$35
Nov-17	SEASONAL_PEAK	0	512.63	513.60	-24.58	25.55	-$153,618	$40,043
Dec-17	ON_PEAK	40	1,840.04	2,340.10	-8.01	508.07	-$65,665	$311,604
Dec-17	REAL_TIME	0	365.53	375.35	-38.19	48.01	-$316,896	$43,968
Dec-17	REAL_TIME_EG	0	0.85	0.63	-0.45	0.00	-$3,126	$0
Dec-17	SEASONAL_PEAK	21	506.85	554.35	0.00	47.50	$0	$30,114
Jan-18	ON_PEAK	44	1,869.56	2,373.01	-8.01	511.46	-$64,856	$285,610
Jan-18	REAL_TIME	0	362.27	376.65	-35.49	49.87	-$294,854	$42,117
Jan-18	REAL_TIME_EG	0	1.28	0.63	-0.87	0.00	-$6,133	$0
Jan-18	SEASONAL_PEAK	33	493.00	551.94	0.00	58.94	$0	$38,115
Feb-18	ON_PEAK	0	1,869.18	2,358.52	-6.57	495.91	-$53,140	$242,320
Feb-18	REAL_TIME	0	353.05	376.57	-25.73	49.25	-$243,290	$24,522
Feb-18	REAL_TIME_EG	0	0.85	0.63	-0.45	0.00	-$3,126	$0
Feb-18	SEASONAL_PEAK	0	493.00	553.14	0.00	60.14	$0	$32,714
Mar-18	ON_PEAK	0	1,869.44	2,348.31	-6.68	485.54	-$58,087	$75,355
Mar-18	REAL_TIME	0	317.58	360.11	-2.44	44.97	-$22,063	$3,992
Mar-18	REAL_TIME_EG	0	1.28	0.63	-0.87	0.00	-$6,126	$0
Mar-18	SEASONAL_PEAK	0	506.85	554.53	0.00	47.68	$0	$6,929
Apr-18	ON_PEAK	0	1,849.48	2,051.86	-24.78	227.16	-$195,759	$298,986
Apr-18	REAL_TIME	0	291.83	341.60	-13.15	62.92	-$119,884	$113,137
Apr-18	REAL_TIME_EG	0	0.17	0.18	0.00	0.01	$0	$52
Apr-18	SEASONAL_PEAK	0	512.63	513.13	-25.70	26.20	-$160,663	$64,131
May-18	ON_PEAK	0	1,860.37	2,052.52	-24.21	216.36	-$192,686	$269,507
May-18	REAL_TIME	0	289.79	341.60	-13.12	64.93	-$119,645	$142,570
May-18	REAL_TIME_EG	0	0.17	0.18	0.00	0.01	$0	$67
May-18	SEASONAL_PEAK	0	515.63	513.13	-28.70	26.20	-$179,588	$79,775

11.7.3 *Pay for Performance*

Under Pay for Performance (PFP), a Capacity Scarcity Condition (CSC) exists in a Capacity Zone in any five-minute interval when the real-time energy price includes a Reserve Constraint Penalty Factor triggered by (1) a violation of the system minimum 30-minute reserve requirement, (2) a violation of the system 10-minute reserve requirement, or (3) a violation of the zonal 30-minute reserve requirements.

A balancing ratio, equal to the required capacity divided by the total Capacity Supply Obligation on the system (or in a capacity zone), is computed for each CSC. A Performance Score, equal to the Actual Capacity Provided (MW) – (Balancing Ratio (MW) x CSO (MW)), is then calculated for each Resource. Resources are required to provide an amount of capacity equal to their CSO multiplied by the Balancing Ratio. Resources that provide more than that value during the CSC are eligible to receive a payment, while those that provide less than that value will incur a charge. This payment/charge is determined by multiplying the Resources Performance Score by the Performance Payment Rate in effect for the Capacity Commitment Period (CCP) when the CSC occurs. Units that do not have a CSO are eligible to receive a payment for the capacity that they provide during a CSC, but do not incur a charge.

PFP includes both a monthly and an annual Stop-Loss mechanism to limit losses a Resource may incur during a given month, or over the course of the CCP. Once the total credits and charges are calculated, including any values associated with Stop Loss, any over collection or under collection, referred to as the Balancing Fund Dollars, is distributed/charged to all suppliers with a CSO (pro rata) at the end of each month.

A Resource with a positive Performance Score in an interval may sell all or part of its score to any Resource impacted by the same CSC. This mechanism replaces the Supplemental Availability Bilateral agreements in place prior to PFP.

Local Thirty-Minute Operating Reserve Violation

Capacity Zone	CSC Interval	CSO	Balancing Ratio	Actual Capacity Provided	Capacity Performance Score	Performance Payment Rate	Performance Payment Dollars	Not Charged Due to Stop Loss Dollars	Balancing Fund Dollars
There were no Local Thirty-Minute Operating Reserve Violations over the previous 13 months.									

System-Wide Thirty-Minute Operating Reserve Violation

Capacity Zone	CSC Interval	CSO	Balancing Ratio	Actual Capacity Provided	Capacity Performance Score	Performance Payment Rate	Performance Payment Dollars	Not Charged Due to Stop Loss Dollars	Balancing Fund Dollars
There were no System-Wide Thirty-Minute Operating Reserve Violations over the previous 13 months.									

System-Wide Ten-Minute Non-Spinning Reserve Violation

Capacity Zone	CSC Interval	CSO	Balancing Ratio	Actual Capacity Provided	Capacity Performance Score	Performance Payment Rate	Performance Payment Dollars	Not Charged Due to Stop Loss Dollars	Balancing Fund Dollars
There were no System-Wide Ten-Minute Non-Spinning Reserve Violations over the previous 13 months.									

11.8 For More Information

Detailed information on the FCM, including information on the qualification process, auction results, and FERC filings and orders can be found here.

Detailed information about FCM Charge calculation summaries can be found here.

Detailed information about charges to Network Load can be found here.

12. Energy Market Payments to Demand Assets

Through May 31, 2018, Energy Market payments to demand assets were administered through the Transitional Demand Response (TDR) program. The TDR program ended with the inception of PRD on June 1, 2018.

12.1 Transitional Demand Response

The following table summarizes TDR results for the applicable period.

Transitional Demand Response Settlement MW							Other Statistics	
Month	DA Demand Reduction Obligation MWh (A)	RT Demand Reduction MWh (B)	RT Demand Reduction Obligation MW (C)=(B)*1.065	RT Demand Reduction Deviation Set to Zero MWh (D)	RT Demand Reduction Deviation MWh (E)=(C)-(A)+(D)	Average Pool Demand Response Charge Allocation MWh	FCM/ Audit Demand Reduction MWh
Jun-17	1,264	1,640	1,730	-19	447	16,126	179
Jul-17	899	1,228	1,295	-17	379	17,083	164
Aug-17	1,672	2,523	2,662	-170	820	17,126	19
Sep-17	1,548	2,185	2,305	-93	664	15,936	2
Oct-17	1,172	1,255	1,324	0	152	13,885	0
Nov-17	884	842	888	-4	0	14,472	0
Dec-17	1,510	2,052	2,165	-47	608	16,167	248
Jan-18	1,347	1,459	1,539	-9	183	16,905	61
Feb-18	550	554	584	-18	16	15,598	0
Mar-18	197	196	206	-27	-18	13,788	0
Apr-18	449	270	285	-5	-169	13,214	0
May-18	889	945	997	-57	50	13,408	0

In the above table the RT Demand Reduction Deviation Set to Zero MWh column is the difference between DA Demand Reduction Obligation MW and RT Demand Reduction Obligation MW when the RT Demand Reduction Deviation MWh has been set to zero in the settlement, which occurred when the following is true:

- Control Room denied interruption of an Asset
- DA Demand Reduction Obligation MW > 0, Load Zone Real-Time Net Benefit Hour Flag = N, and RT Demand Reduction MWh > DA Demand Reduction Obligation MW

The following table displays Day-Ahead payments, Real-Time Payment Dollars, Total Payment (sum of total Day-Ahead and Real-Time Payments), and the Charge per MWh.

Month	DA Payment Dollars	RT Payment Dollars	FCM Audit Demand Reduction Dollars	Total Payment (Charge) Dollars	Charge per MWh
Jun-17	$42,604	$17,475	$6,478	$66,557	$0.00
Jul-17	$36,193	$13,877	$4,590	$54,660	$0.00
Aug-17	$58,562	$30,986	$392	$89,940	$0.00
Sep-17	$62,193	$46,755	$26	$108,975	$0.00

Month	DA Payment Dollars	RT Payment Dollars	FCM Audit Demand Reduction Dollars	Total Payment (Charge) Dollars	Charge per MWh
Oct-17	$43,002	$12,409	$0	$55,412	$0.00
Nov-17	$36,798	$573	$0	$37,371	$0.00
Dec-17	$144,257	$77,360	$15,527	$237,144	$0.00
Jan-18	$183,805	$35,384	$4,626	$223,815	$0.00
Feb-18	$36,264	$3,617	$0	$39,881	$0.00
Mar-18	$11,196	$2,016	$0	$13,212	$0.00
Apr-18	$30,819	-$8,877	$0	$21,942	$0.00
May-18	$26,514	$5,895	$0	$32,409	$0.00

12.2 For More Information:

Rules governing the calculation of the Transitional Demand Response can be found in Section III.13 Market Rule 1 and Section III, Appendix E located here.

13. Price Responsive Demand

Price Responsive Demand expands opportunities for demand response in the energy and reserves markets. All Demand Response Resources (DRRs) can participate in the Day-Ahead and Real-Time Energy Market and Real-Time Reserve Market via offers made in the eMarket system. DRRs can also participate in the Forward Reserves Market.

13.1 Demand Response participation in the Energy Market

All Demand Response Resources can participate in the Day-Ahead and Real-Time Energy Market.

13.1.1 *Price Responsive Demand Payments*

- A DRR Asset with an offer that clears in the Day-Ahead Energy Market clearing will receive a payment for its Day-Ahead Demand Reduction Obligation at the applicable Day-Ahead Locational Marginal Price (LMP) and will be paid or charged for the difference between its Real-Time Demand Reduction Obligation and its Day-Ahead Demand Reduction Obligation in Real-Time at the applicable Real-Time LMP. Day-Ahead cleared and Real-Time reduction MWh are subject to a gross up due to avoided distribution losses.

The following table includes Day-Ahead Cleared Demand Reduction MWh, Day-Ahead Demand Reduction Obligation MWh (Day-Ahead Cleared Demand Reduction MWh, plus 5.5% gross up), Real-Time Demand Reduction Energy Quantity MWh, Real-Time Demand Reduction Net Supply Energy Quantity MWh, Real-Time Demand Reduction Obligation MWh (Real-Time Demand Reduction Energy Quantity MWh, plus 5.5% gross up, added to Real-Time Demand Reduction Net Supply Energy Quantity MWh), and Real-Time Demand Reduction Deviation MWh

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*DA Demand Reduction Obligation MWh = DA Cleared MWh * 1.055*

RT Demand Reduction Obligation MWh = RT Demand Reduction Energy Quantity MWh 1.055 + RT Demand Reduction Net Supply Energy Quantity MW*

RT Demand Reduction Deviation MW = RT Demand Reduction Obligation MWh - DA Demand Reduction Obligation MWh

Month	DA Cleared Demand Reduction MWh (A)	DA Demand Reduction Obligation MWh (B)=(A)*1.055	RT Reduction Energy Quantity MWh (C)	RT Net Supply Energy Quantity MWh (D)	RT Demand Reduction Obligation MWh (E)=(C)*1.055+(D)	RT Demand Reduction Deviation MWh (F)=(E)-(B)
Jun-18	1,701	1,795	1,685	69	1,846	51

The following table displays Day-Ahead payments, Real-Time Payment Dollars, Total Payment (sum of total Day-Ahead and Real-Time Payments).

Month	DA Payment Dollars	RT Payment Dollars	Total Payment Dollars
Jun-18	$71,410	-$2,729	$68,681

13.2 Demand Response participation in the Reserve Market

A DRR may be designated for reserves based on its registration and offer parameters as well as its past performance. For more statistics about DRR performance in the Reserve Markets, see "Section 9. Reserve Markets."

13.3 Demand Response participation in the Forward Capacity Market

DRRs support an obligation in the Forward Capacity Market's base payment if they are mapped to an Active Demand Capacity Resource (ADCR) with a CSO. DRRs mapped to an ADCR with a non-zero CSO are required to offer in the Day-Ahead and Real-Time Energy Market at the minimum of their availability or net CSO. DRRs support a pay for performance incentive or charge for its associated ADCR based on the energy and/or reserves provided by a DRR during a scarcity condition. If a DRR is not associated with an ADCR, it can earn FCM incentives through pay for performance. For more statistics about DRR performance in the Forward Capacity Market, see "Section 11. Forward Capacity Market".

13.4 For More Information:

Rules governing the calculation of the Price Responsive Demand – Full Integration can be found in Section III.13 Market Rule 1 and Section III, Appendix E located here.

14. Document History

Date	Version	Description
7/19/2018	Original Posting	