

2024 Demand Response Operations Markets Activity Report: March 2025

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PJM Demand Side Response Operations

March 7, 2025



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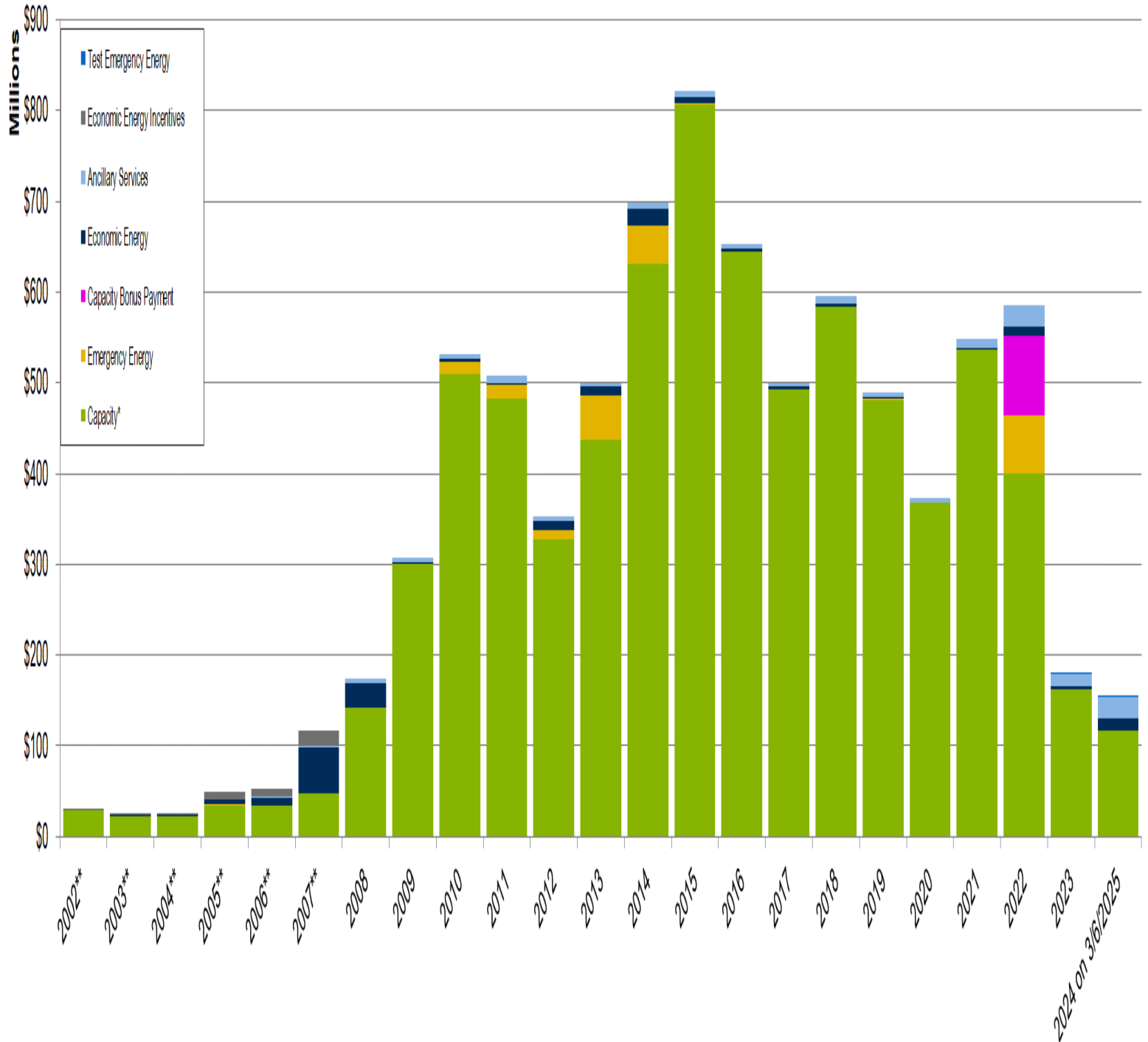
Figure 1: DY 24/25 Active Participants in DR Programs

Zone	Economic		Load Management		Unique	
	Locations	MW	Locations	MW	Locations	MW
AECO	10	5.7	169	36.8	173	40.1
AEP	500	710.7	1,704	1,653.8	1,747	1,885.3
APS	62	309.0	1,219	537.0	1,232	558.0
ATSI	54	570.6	1,325	666.9	1,354	1,049.6
BGE	29	28.7	799	202.0	802	202.3
COMED	88	68.1	2,531	992.6	2,578	1,001.4
DAY	14	15.4	198	174.0	201	179.7
DEOK	17	163.1	427	207.0	429	247.9
DOM	88	150.8	1,230	660.4	1,280	760.8
DPL	125	33.8	573	143.4	574	143.5
DUQ	15	136.0	493	99.0	502	121.0
EKPC			22	320.6	22	320.6
JCPL	14	45.0	302	102.4	305	142.6
METED	16	104.5	545	143.0	551	232.6
PECO	60	77.5	1,230	339.4	1,242	377.0
PENELEC	14	116.1	609	267.0	614	330.8
PEPCO	20	33.6	627	161.8	637	167.3
PPL	472	95.3	1,400	426.1	1,583	468.1
PSEG	23	43.0	936	278.7	947	295.0
RECO			16	2.2	16	2.2
Total	1,621	2,707	16,355	7,414	16,789	8,526

Note:

- 1) Data as of March 1, 2025.
- 2) Load Management MW are ICAP and include FRR values.
- 3) Economic MW are CSP reported Load Reduction values.
- 4) Residential Locations reported as one location not a total number of end use customers in that program.
- 5) Unique MW: represents total estimated demand reduction assuming full Load Management and Economic reductions.
- 6) For the winter period of DY24/25, Total DR Commitment Value is 7,100 MW (includes FRR value of 457 MW).

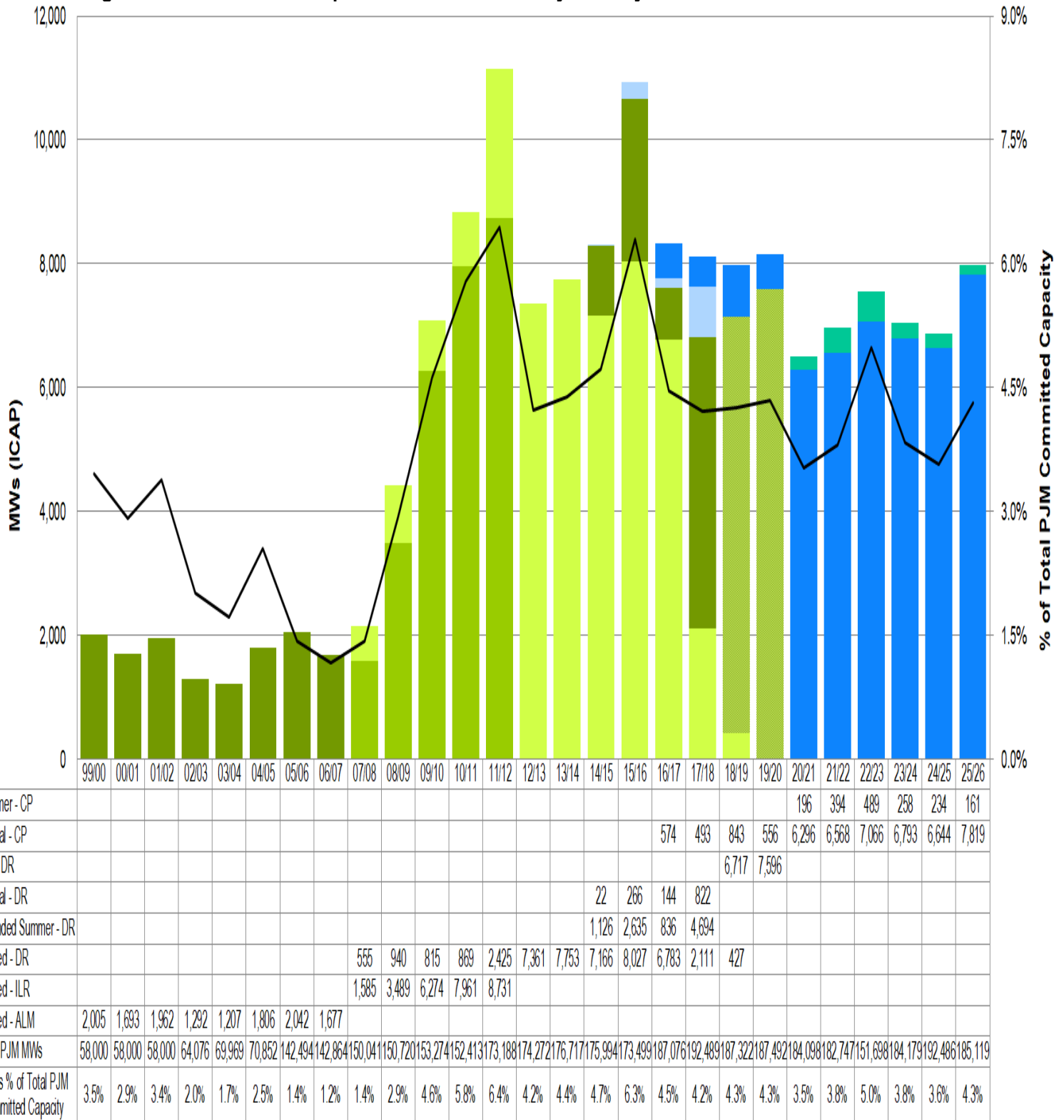
Figure 2: PJM Estimated Revenue for Economic and Load Management DR by Wholesale Markets



* Capacity Net Revenue inclusive of Capacity Credits and Charges. From 2020 on this value also includes Price Responsive Demand Credits.

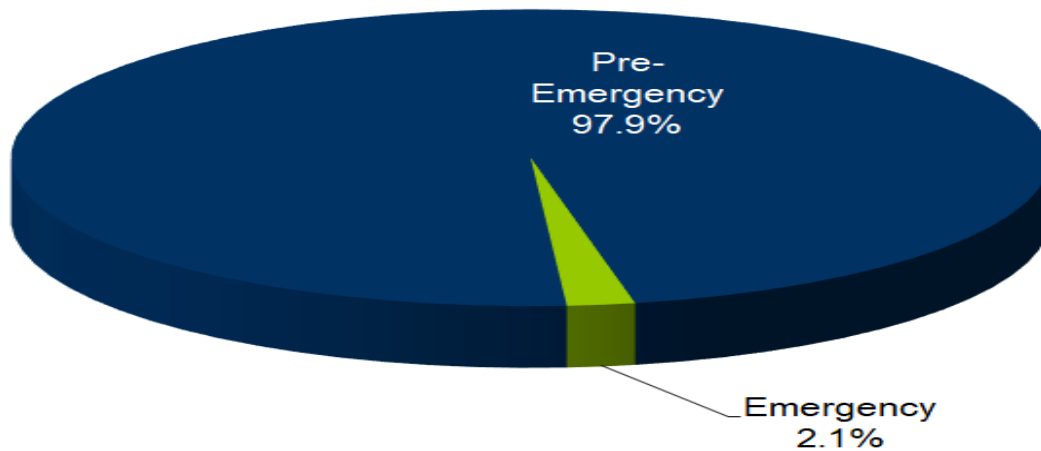
** PJM assumes capacity value at \$50 MW Day (PJM does not know the value of capacity credits in the forward market prior to RPM; only a portion of capacity was purchased through the daily capacity market at the time).

Note: Capacity Bonus Payments include payments for Load Management, Economic (includes Ancillary Services) and Price Responsive Demand registrations.

Figure 3: PJM Demand Response Committed MWs by Delivery Year

Notes:

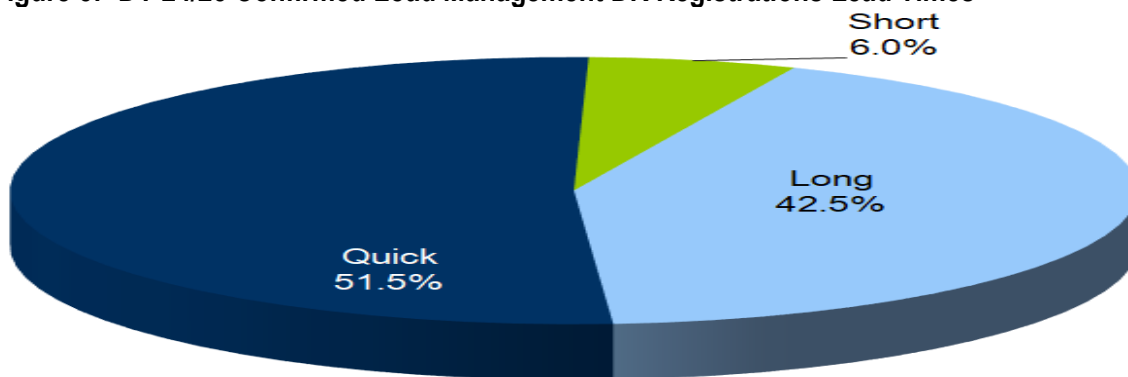
- 1) Data represents net commitment ICAP value (for each product) as of 8/8/2024. Does not include FRR values.
- 2) DY 25/26 MWs includes data from the Base Residual Auction.
- 3) RPM was implemented DY 07/08.
- 4) ALM MWs are seasonal averages for Delivery Years before 07/08.

Figure 4: DY 24/25 Confirmed Load Management DR Registrations by Resource



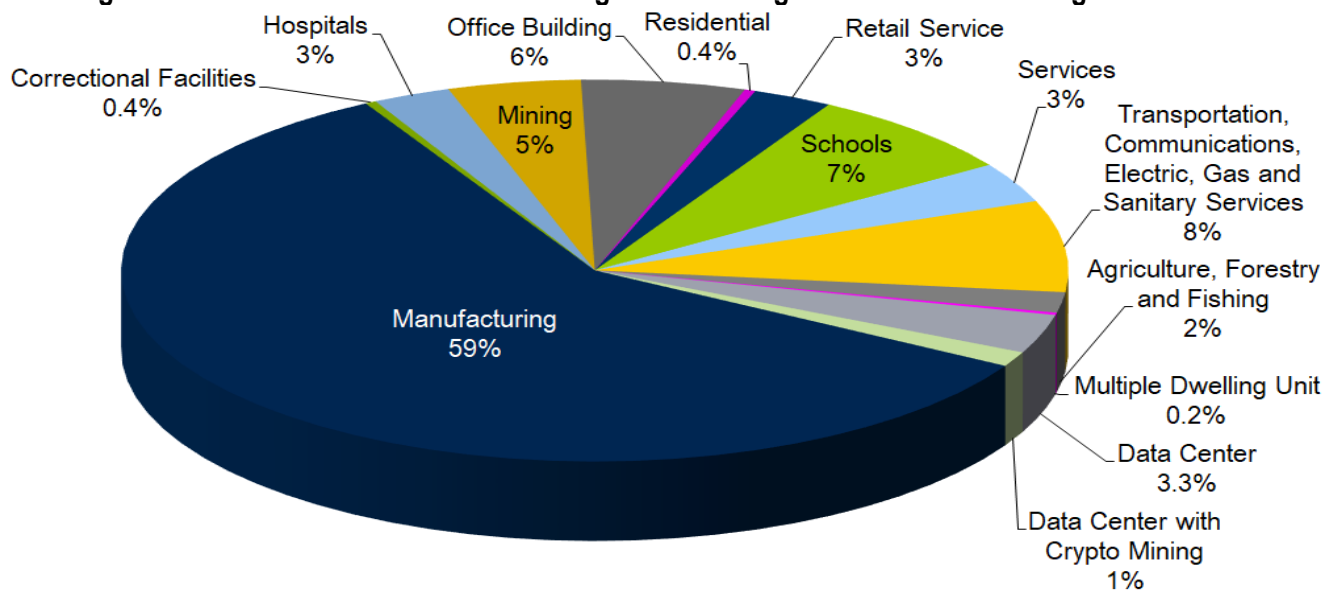
Note: Percent of Winter Nominated Capacity (MWs) based on Figure 1 Load Management MW Total.

Figure 5: DY 24/25 Confirmed Load Management DR Registrations Lead Times



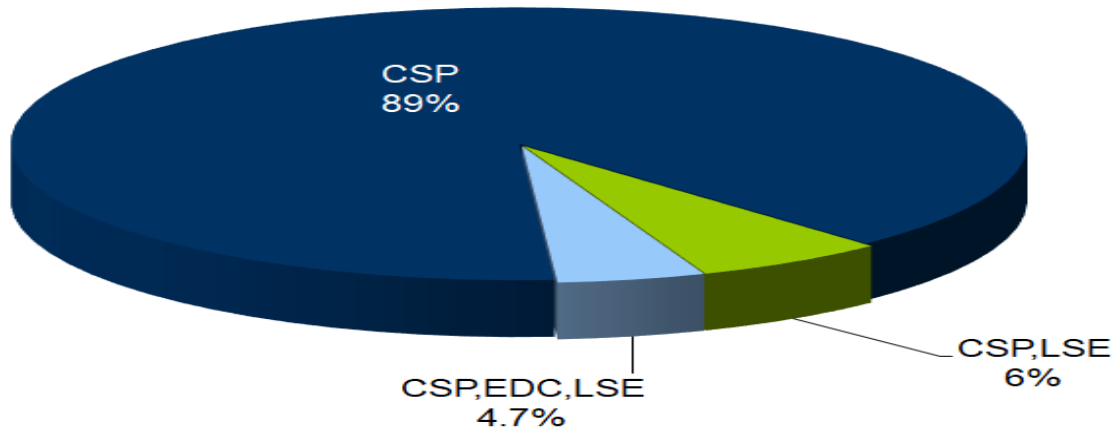
Note: Percent of Winter Nominated Capacity (MWs) based on Figure 1 Load Management MW Total.

Figure 6: DY 24/25 Confirmed Load Management DR Registrations Business Segments



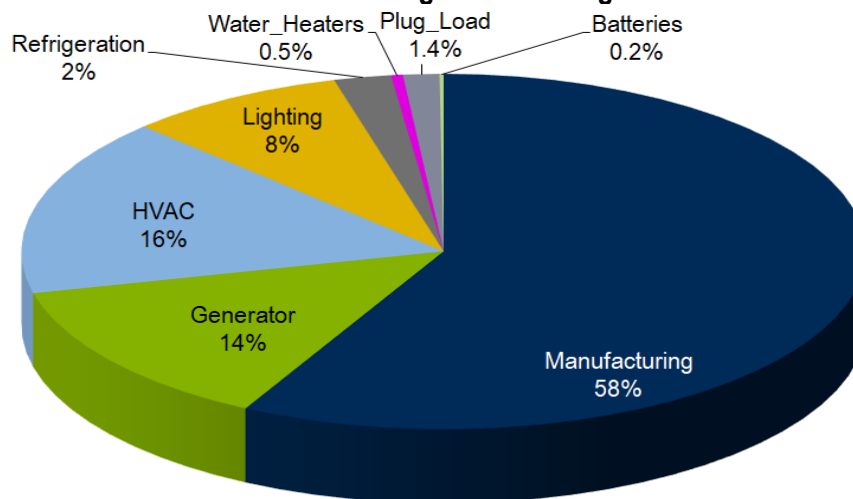
Note: Percent of Winter Nominated Capacity (MWs) based on Figure 1 Load Management MW Total.

Figure 7: DY 24/25 Confirmed Load Management DR Registrations Owner/Company Type



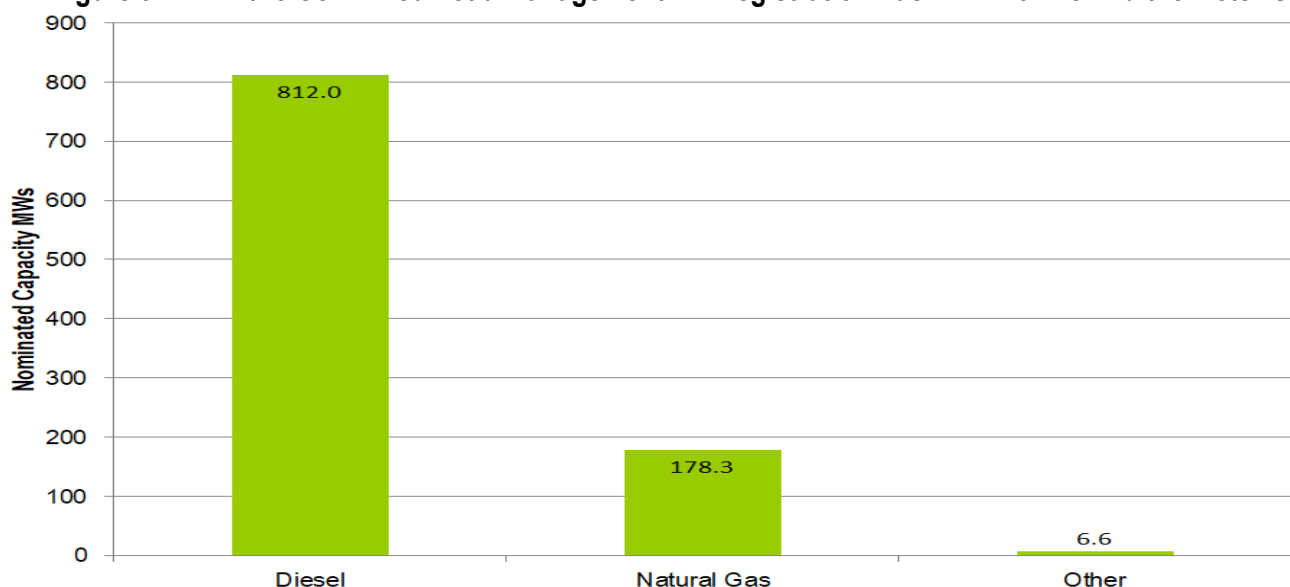
Note: Percent of Winter Nominated Capacity (MWs) based on Figure 1 Load Management MW Total.

Figure 8: DY 24/25 Confirmed Load Management DR Registrations Customer Load Reduction Methods



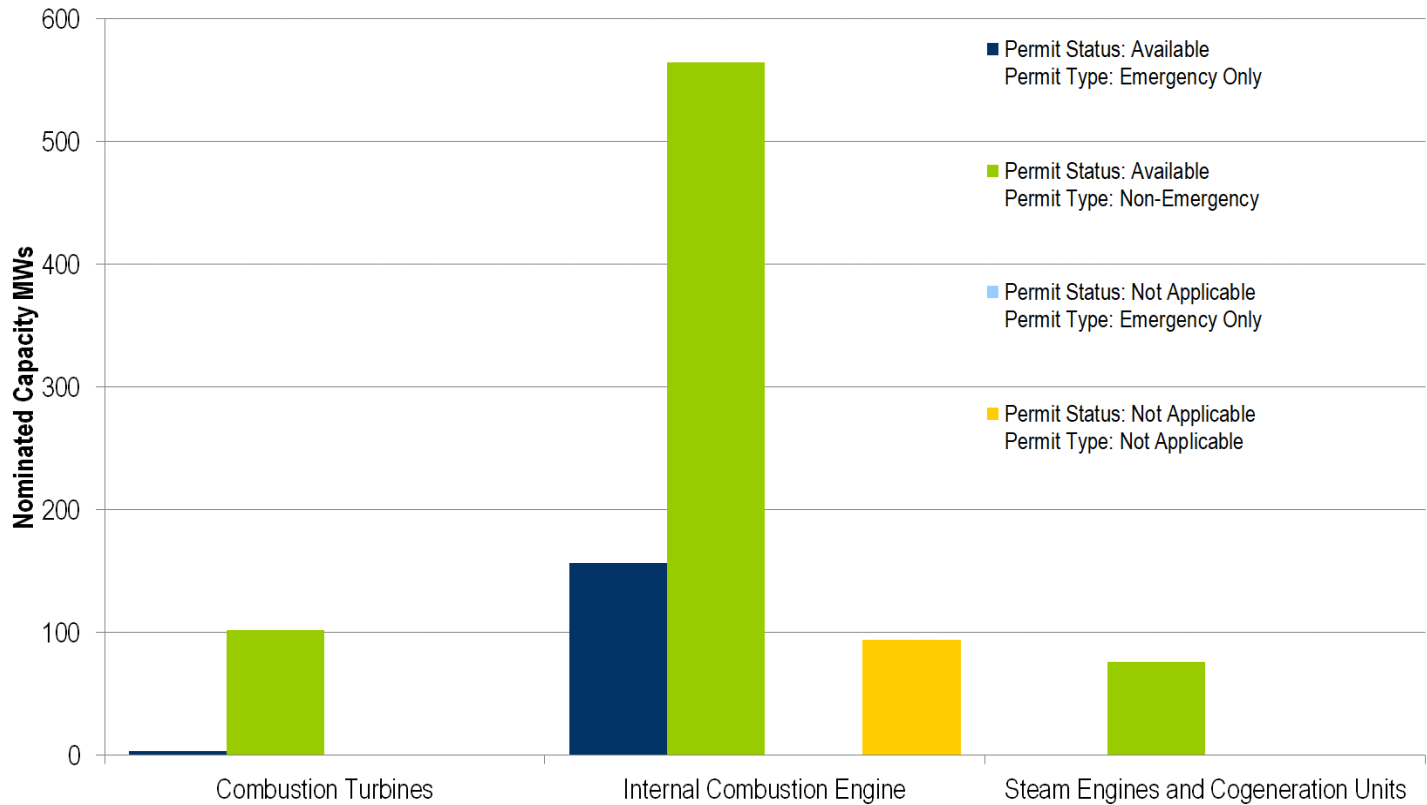
Note: Percent of Winter Nominated Capacity (MWs) based on Figure 1 Load Management MW Total. Plug Load includes nominated capacity from Data Centers with Crypto Mining.

Figure 9: DY 24/25 Confirmed Load Management DR Registration Fuel Mix with Behind the Meter Generation



Note: Portion of Winter Nominated Capacity (MWs) based on Figure 1 Load Management MW Total. The category "Other" includes Oil, Propane, Waste Products and Coal

Figure 10: DY 24/25 Confirmed Load Management DR Registrations Generator and Permit Type



Note: Portion of Winter Nominated Capacity (MWs) based on Figure 1 Load Management MW Total.

Figure 11: DY 24/25 Confirmed Load Management Full DR Registrations Energy Supply Curve:

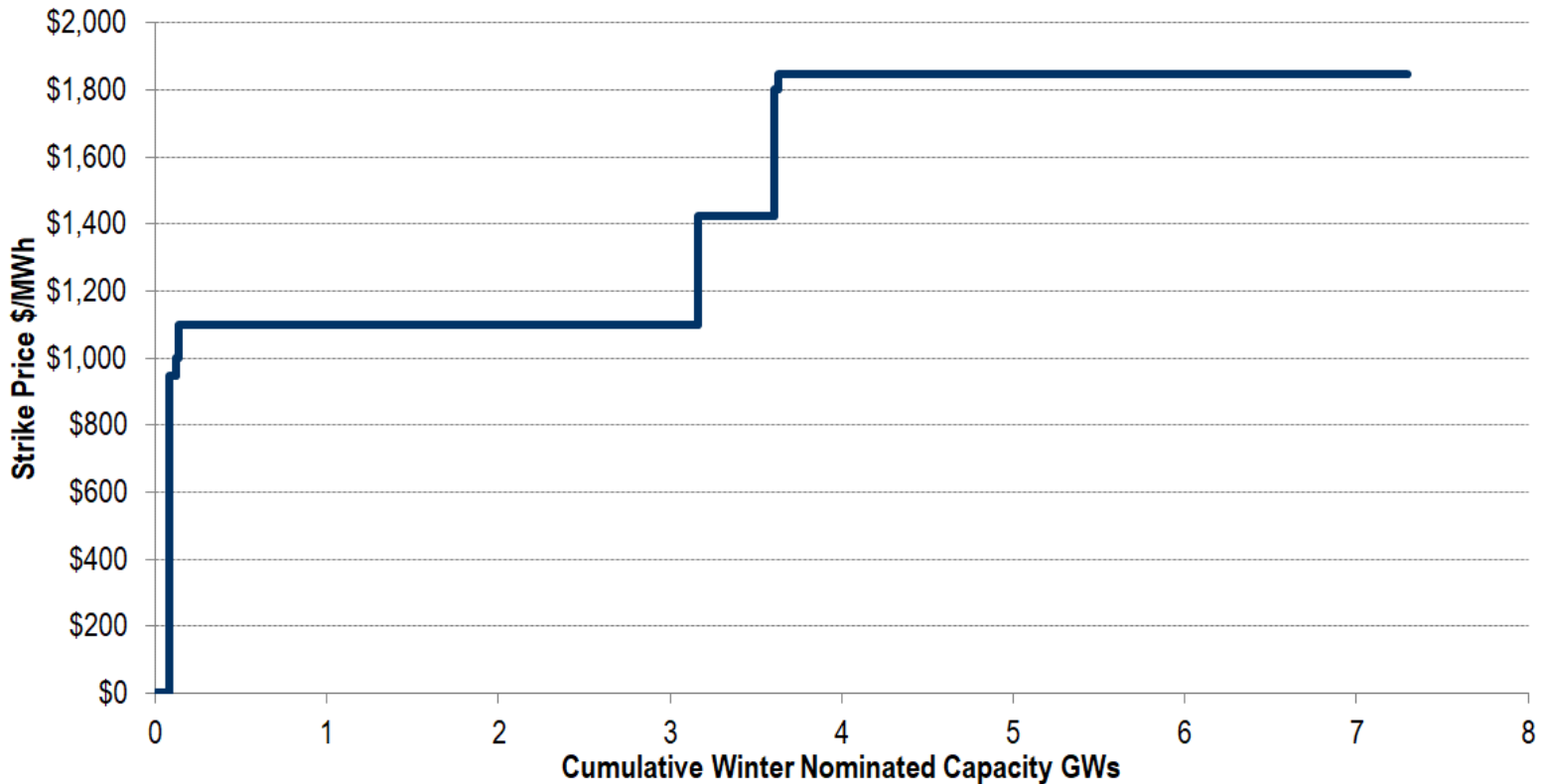
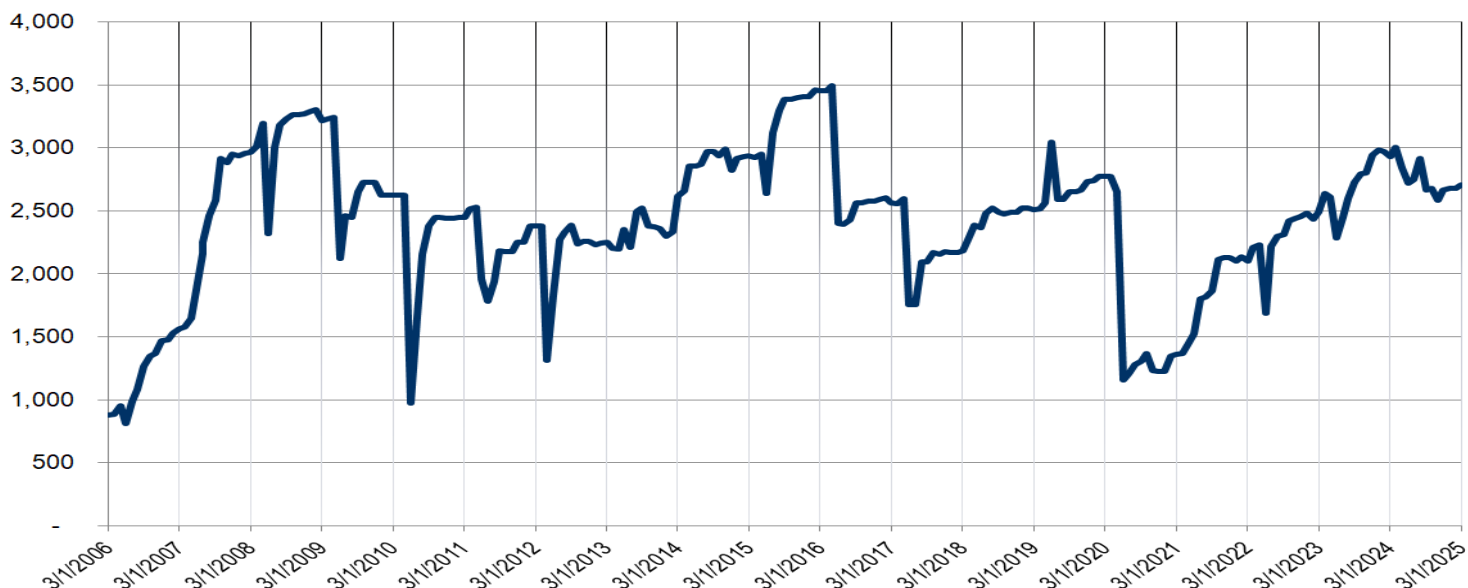


Figure 12: 2024 Load Management Demand Response Monthly Capacity Revenue from RPM

Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
AECO	\$84,687	\$79,224	\$84,687	\$81,956	\$84,687	\$107,414	\$110,995	\$110,995	\$107,414	\$110,995	\$107,414	\$110,995
AEP	\$1,351,740	\$1,264,531	\$1,351,740	\$1,308,135	\$1,351,740	\$949,875	\$981,538	\$981,538	\$949,875	\$981,538	\$949,875	\$981,538
APS	\$757,761	\$708,873	\$757,761	\$733,317	\$757,761	\$554,841	\$573,335	\$573,335	\$554,841	\$573,335	\$554,841	\$573,335
ATSI	\$976,187	\$913,207	\$976,187	\$944,697	\$976,187	\$599,203	\$619,177	\$619,177	\$599,203	\$619,177	\$599,203	\$619,177
BGE	\$365,167	\$341,608	\$365,167	\$353,388	\$365,167	\$433,839	\$448,300	\$448,300	\$433,839	\$448,300	\$433,839	\$448,300
COMED	\$1,169,652	\$1,094,191	\$1,169,652	\$1,131,922	\$1,169,652	\$1,224,155	\$1,264,960	\$1,264,960	\$1,224,155	\$1,264,960	\$1,224,155	\$1,264,960
DAY	\$221,445	\$207,159	\$221,445	\$214,302	\$221,445	\$168,930	\$174,561	\$174,561	\$168,930	\$174,561	\$168,930	\$174,561
DEOK	\$185,579	\$173,606	\$185,579	\$179,592	\$185,579	\$640,670	\$662,025	\$662,025	\$640,670	\$662,025	\$640,670	\$662,025
DOM	\$845,472	\$790,925	\$845,472	\$818,198	\$845,472	\$703,256	\$726,698	\$726,698	\$703,256	\$726,698	\$703,256	\$726,698
DPL	\$258,481	\$241,805	\$258,481	\$250,143	\$258,481	\$757,919	\$783,183	\$783,183	\$757,919	\$783,183	\$757,919	\$783,183
DUQ	\$125,059	\$116,991	\$125,059	\$121,025	\$125,059	\$104,632	\$108,120	\$108,120	\$104,632	\$108,120	\$104,632	\$108,120
EKPC	\$285,562	\$267,139	\$285,562	\$276,351	\$285,562	\$250,736	\$259,094	\$259,094	\$250,736	\$259,094	\$250,736	\$259,094
JCPL	\$184,870	\$172,943	\$184,870	\$178,907	\$184,870	\$211,934	\$218,999	\$218,999	\$211,934	\$218,999	\$211,934	\$218,999
METED	\$331,692	\$310,293	\$331,692	\$320,993	\$331,692	\$323,368	\$334,147	\$334,147	\$323,368	\$334,147	\$323,368	\$334,147
PECO	\$580,538	\$543,084	\$580,538	\$561,811	\$580,538	\$587,563	\$607,149	\$607,149	\$587,563	\$607,149	\$587,563	\$607,149
PENELEC	\$448,444	\$419,512	\$448,444	\$433,978	\$448,444	\$466,048	\$481,583	\$481,583	\$466,048	\$481,583	\$466,048	\$481,583
PEPCO	\$245,777	\$229,921	\$245,777	\$237,849	\$245,777	\$217,212	\$224,452	\$224,452	\$217,212	\$224,452	\$217,212	\$224,452
PPL	\$895,046	\$837,301	\$895,046	\$866,174	\$895,046	\$895,868	\$925,730	\$925,730	\$895,868	\$925,730	\$895,868	\$925,730
PSEG	\$418,374	\$391,382	\$418,374	\$404,878	\$418,374	\$459,406	\$474,719	\$474,719	\$459,406	\$474,719	\$459,406	\$474,719
RECO	\$3,375	\$3,158	\$3,375	\$3,266	\$3,375	\$4,342	\$4,486	\$4,486	\$4,342	\$4,486	\$4,342	\$4,486
Total	\$9,734,911	\$9,106,852	\$9,734,911	\$9,420,882	\$9,734,911	\$9,661,211	\$9,983,251	\$9,983,251	\$9,661,211	\$9,983,251	\$9,661,211	\$9,983,251

Total Capacity Credits: \$116,649,104

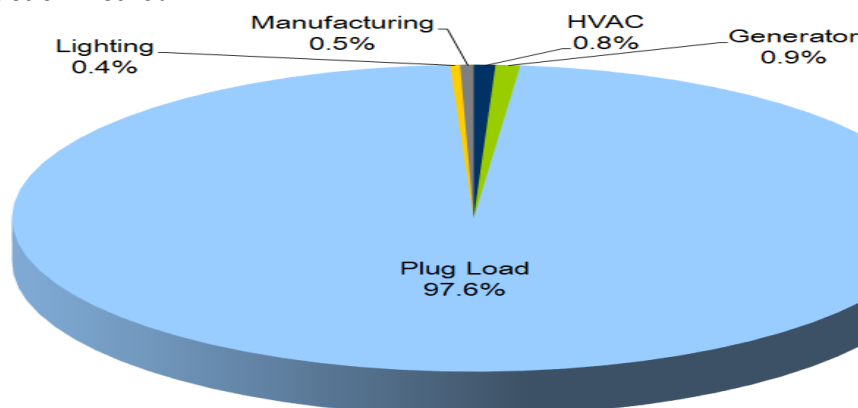
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Figure 13: PJM Economic Demand Response Capability in Energy Market (3/1/2006-3/1/2025)


Capability represents total amount that may be offered. Actual offered and cleared volume may be significantly lower and is represented in subsequent figures/tables in report.

Figure 14: 2024 Economic Demand Response Total Energy Market Summary (Dispatch/Cleared vs Settled)

Time		Zone		MWh			Registration Hours			Credits
Year	Month	Dispatched/Cleared	Settled	Dispatched/Cleared	Settled	%	Dispatched/Cleared	Settled	%	\$
2024	1	9	9	24,576	25,484	104%	1,617	1,617	100%	\$2,621,636
2024	2	4	4	1,295	1,468	113%	271	271	100%	\$67,555
2024	3	4	4	1,169	1,210	104%	224	224	100%	\$75,606
2024	4	4	4	2,557	2,654	104%	409	409	100%	\$103,731
2024	5	6	6	20,866	20,775	100%	1,246	1,246	100%	\$936,194
2024	6	8	8	14,242	13,712	96%	1,433	1,433	100%	\$550,521
2024	7	9	9	25,777	27,057	105%	2,174	2,174	100%	\$1,433,761
2024	8	10	10	32,155	33,506	104%	2,608	2,608	100%	\$1,405,979
2024	9	8	8	36,019	37,341	104%	2,669	2,669	100%	\$1,553,796
2024	10	9	9	38,397	36,503	95%	2,839	2,839	100%	\$1,636,862
2024	11	8	8	20,414	18,748	92%	1,785	1,785	100%	\$722,411
2024	12	9	9	23,970	23,321	97%	2,190	2,186	100%	\$1,019,913
YTD Totals				241,435	241,780	100%	19,465	19,461	100%	\$12,127,963
YTD Average		7	7							

Figure 15: 2024 Economic Demand Response Energy Market Year to Date Total Settled MWh by Load Reduction Method


Note: Pie chart based on YTD Totals for MWh Settled based on Figure 14. Plug Load includes reductions from Data Centers with Crypto Mining.

Figure 16: 2024 Economic Demand Response Dispatched vs Settled Real-Time Energy Market Summary

Time		Zone		MWh			Registration Hours			Credits
Year	Month	Dispatched	Settled	Dispatched	Settled	%	Dispatched	Settled	%	\$
2024	1	6	6	282	345	122%	397	397	100%	\$23,442
2024	2	2	2	13	168	1317%	147	147	100%	\$3,723
2024	3	1	1	8	21	272%	87	87	100%	\$586
2024	4	2	2	22	64	290%	180	180	100%	\$2,021
2024	5	3	3	28	70	251%	221	221	100%	\$2,473
2024	6	3	3	307	374	122%	196	196	100%	\$28,167
2024	7	7	7	770	756	98%	287	287	100%	\$148,484
2024	8	7	7	285	326	114%	233	233	100%	\$32,880
2024	9	4	4	136	162	120%	253	253	100%	\$6,724
2024	10	2	2	91	108	119%	163	163	100%	\$3,796
2024	11	2	2	17	27	161%	118	118	100%	\$932
2024	12	2	2	35	116	336%	203	203	100%	\$4,075
YTD Totals				1,992	2,539	127%	2,485	2,485	100%	\$257,302
YTD Average		3	3							

Figure 17: 2024 Economic Demand Response Cleared vs Settled Day-Ahead Energy Market Summary

Time		Zone		MWh			Registration Hours			Credits
Year	Month	Cleared	Settled	Cleared	Settled	%	Cleared	Settled	%	\$
2024	1	8	8	24,294	25,139	103%	1,220	1,220	100%	\$2,598,194
2024	2	3	3	1,282	1,299	101%	124	124	100%	\$63,832
2024	3	3	3	1,161	1,190	102%	137	137	100%	\$75,020
2024	4	3	3	2,535	2,590	102%	229	229	100%	\$101,710
2024	5	5	5	20,838	20,705	99%	1,025	1,025	100%	\$933,721
2024	6	6	6	13,935	13,338	96%	1,237	1,237	100%	\$522,354
2024	7	7	7	25,006	26,300	105%	1,887	1,887	100%	\$1,285,277
2024	8	8	8	31,870	33,180	104%	2,375	2,375	100%	\$1,373,099
2024	9	6	6	35,883	37,179	104%	2,416	2,416	100%	\$1,547,072
2024	10	8	8	38,306	36,395	95%	2,676	2,676	100%	\$1,633,066
2024	11	7	7	20,397	18,721	92%	1,667	1,667	100%	\$721,478
2024	12	8	8	23,935	23,205	97%	1,987	1,983	100%	\$1,015,838
YTD Totals				239,443	239,241	100%	16,980	16,976	100%	\$11,870,661
YTD Average		6	6							

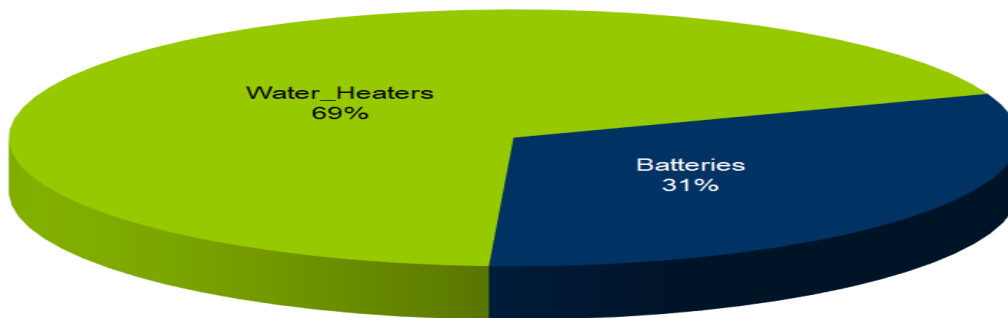
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Figure 18: 2024 Economic Demand Response Locations and Capability MWs in the Ancillary Service Markets

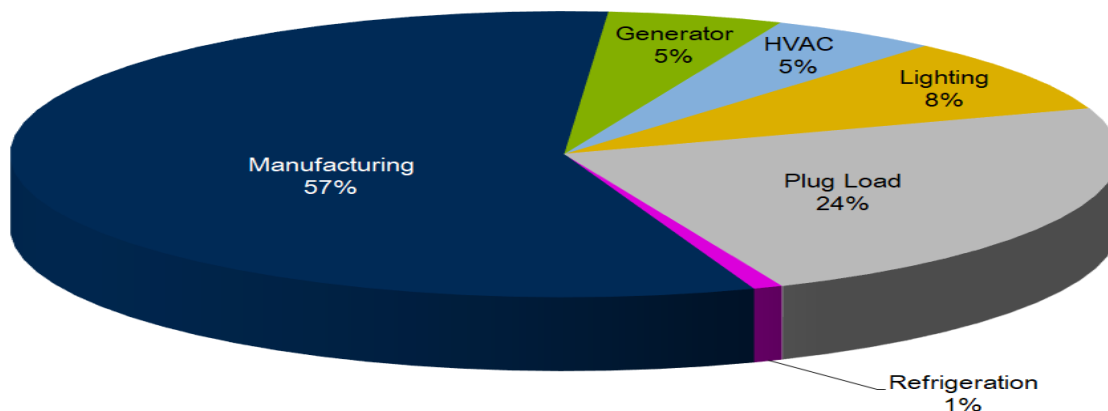
Synch Reserves	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Locations	MAD	215	214	217	223	225	227	228	228	228	229	234	235
	Non-MAD	199	203	205	210	235	233	243	248	248	260	264	264
	RTO	414	417	422	433	460	460	471	476	476	476	476	476
Average Number of Unique Participating Locations per Month:					455								
MWs	MAD	631	547	550	493	497	499	500	485	485	486	497	497
	Non-MAD	1,701	1,836	1,831	1,714	1,765	1,593	1,707	1,721	1,730	1,636	1,698	1,698
	RTO	2,332	2,383	2,381	2,207	2,262	2,092	2,207	2,207	2,215	2,122	2,195	2,196
Average MWs per Month:		2,233											

Regulation	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Locations	RTO	180	176	166	119	133	133	189	189	188	188	530	522
Average Number of Unique Participating Locations per Month:					226								
MWs	RTO	157	160	157	143	155	156	180	180	180	180	208	209
Average MWs per Month:		172											

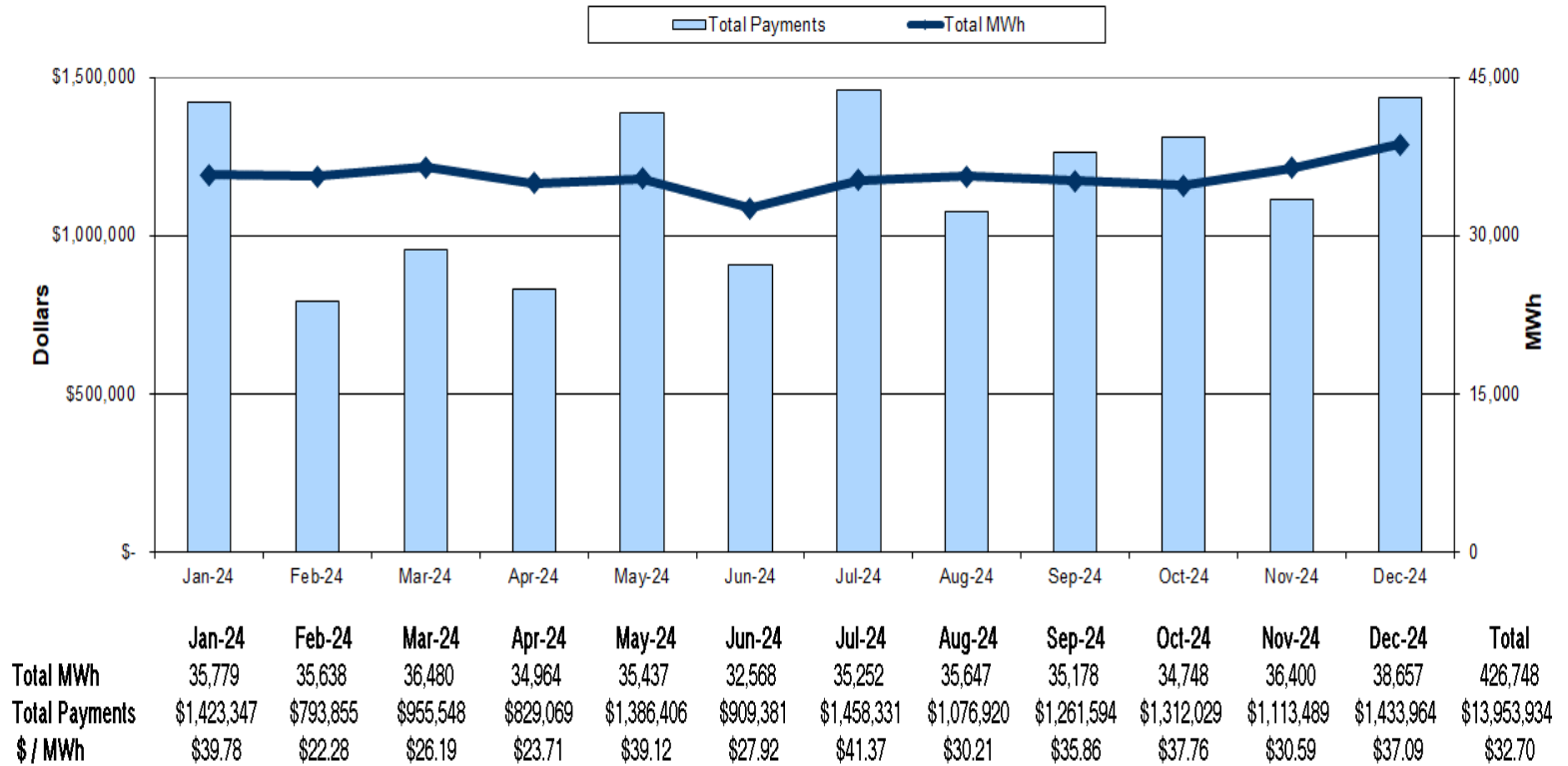
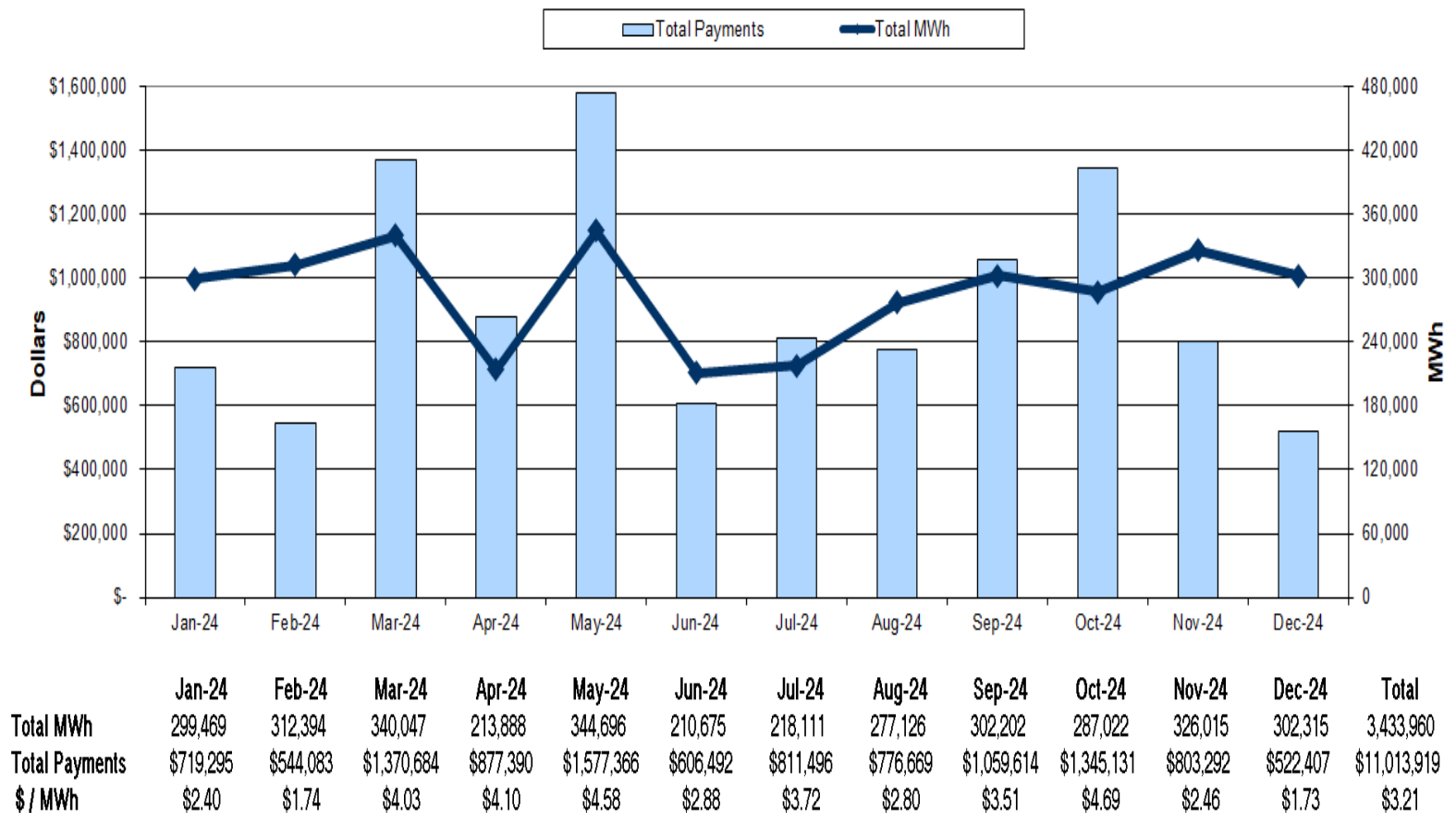
Capability represents total amount that may be offered. Actual offered and cleared volume may be significantly lower and is represented in subsequent figures/tables in report

Figure 19: 2024 PJM Demand Response Confirmed Regulation Registrations Load Reduction Methods


Note: Percent of CSP Reported Load Reduction MWs based on latest month RTO MWs based on Figure 18 for Regulation.

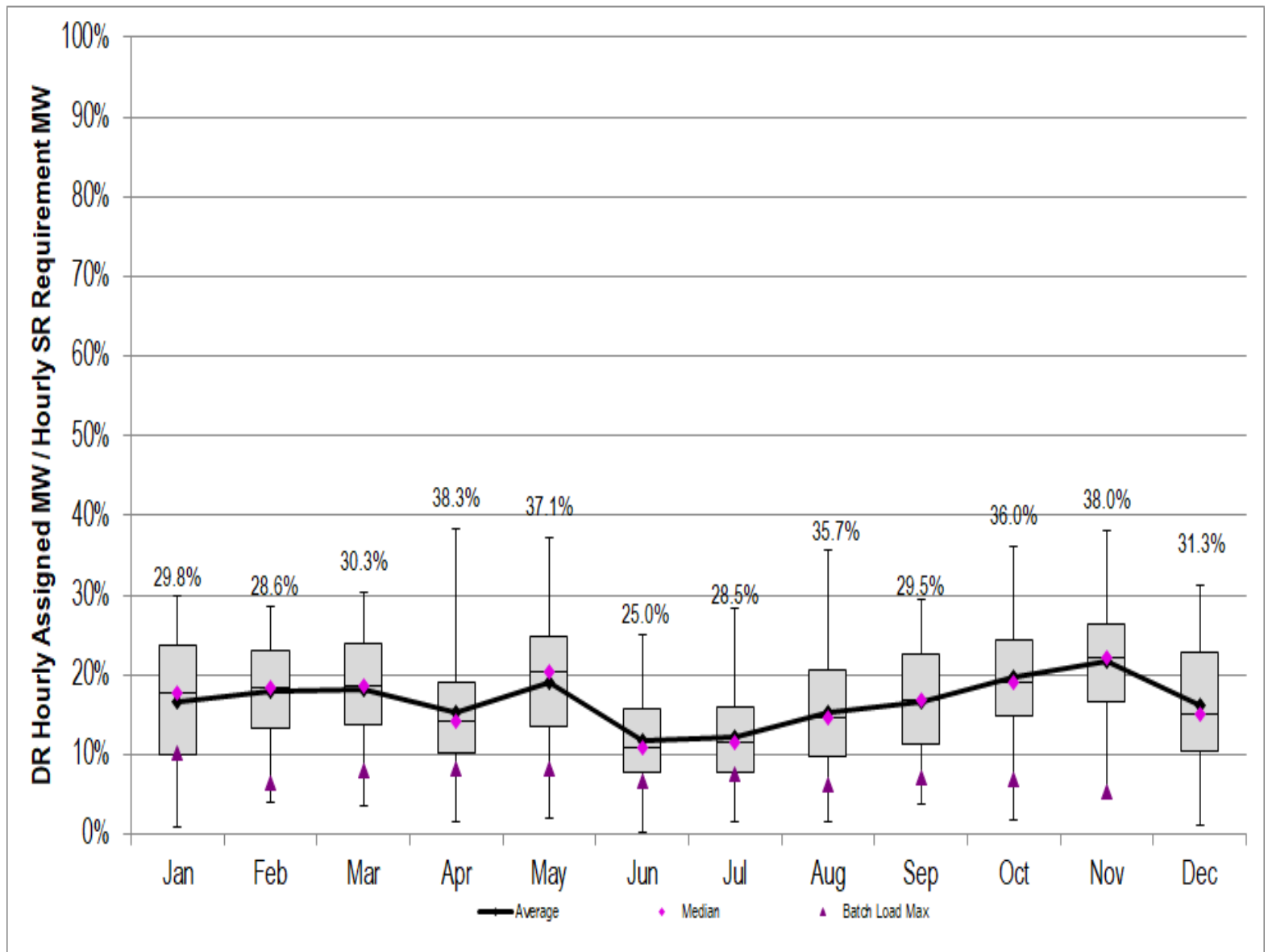
Figure 20: 2024 PJM Demand Response Confirmed Synch Reserve Registrations Load Reduction Methods


Note: Percent of CSP Reported Load Reduction MWs based on latest month RTO MWs based on Figure 18 for Synch Reserves. Plug Load includes reported reductions from Data Centers with Crypto Mining.

Figure 21: 2024 Economic Demand Response Regulation Market Participation

Figure 22: 2024 Economic Demand Response Synchronous Reserve Market Participation


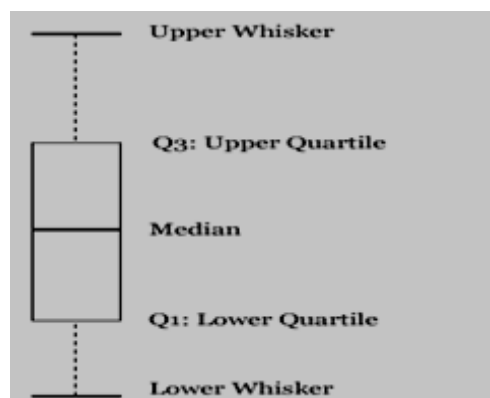
Note: For Figures 21 and 22 above, MWh=sum of the settled MW. Example: 1 MW load available for 12 hours = 12 MWh.

Figure 23: Economic DR Synchronous Reserve Penetration Distribution (Box-plot) for 2024



Notes:

- 1) Percents shown on upper whisker are maximum hourly DR percentage of Total SR Requirement.
- 2) The Box-plot depicts the distribution of DR hourly assigned (as a percentage of the Total requirement) for a month:



The upper whisker is the maximum value

The box top is the Upper Quartile (75%) value

The line inside the box is the median (50%) value

The box bottom is the Lower Quartile (25%) value

The lower whisker is the minimum value