

# 2024 Demand Response Operations Markets Activity Report: May 2024

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PJM Demand Side Response Operations

May 16, 2024



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Figure 1: DY 23/24 Active Participants in DR Programs

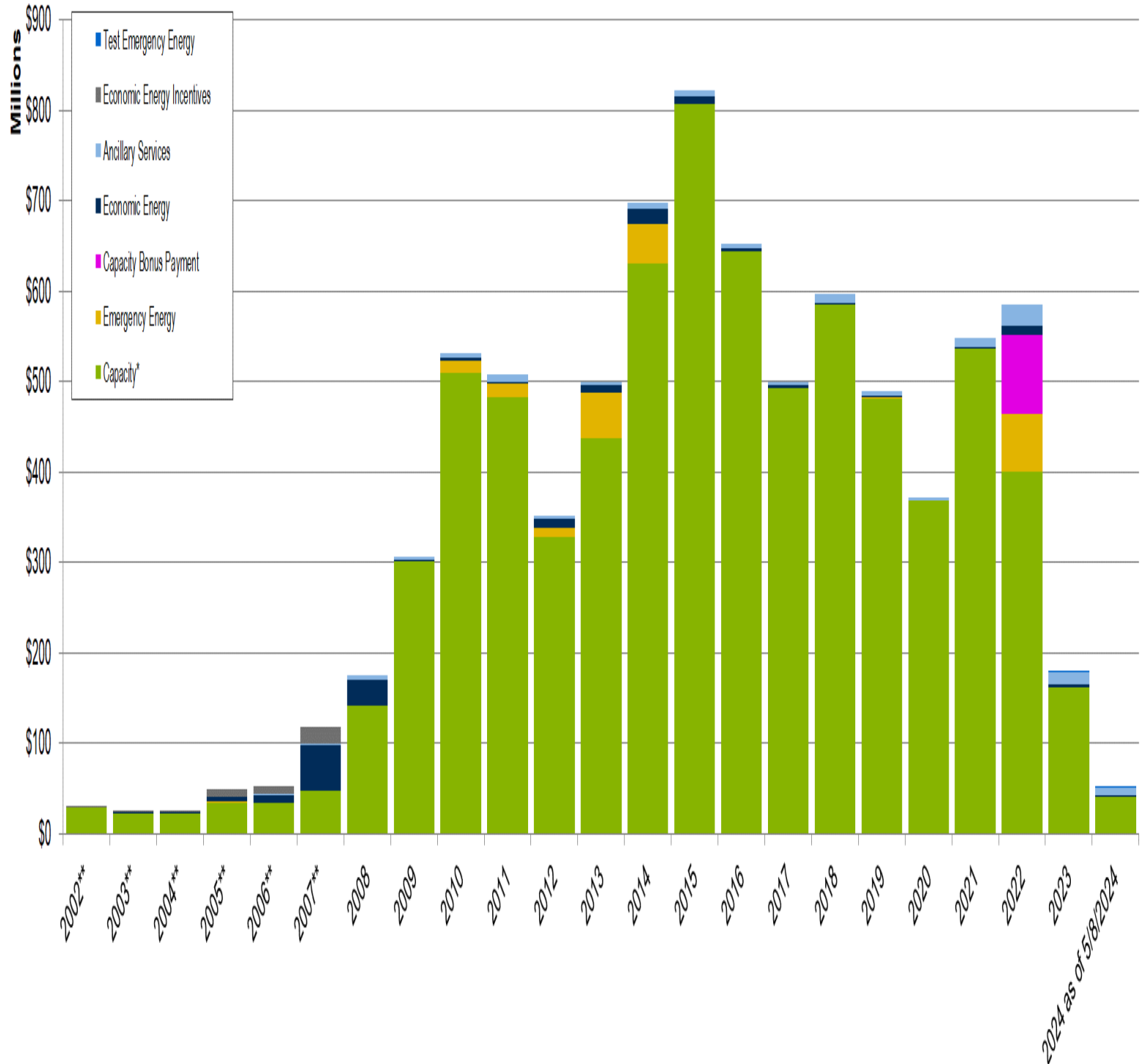
Zone	Economic		Load Management		Unique	
	Locations	MW	Locations	MW	Locations	MW
AECO	16	6.7	181	43.6	185	46.9
AEP	138	622.4	2,121	1,447.6	2,146	1,703.0
APS	53	298.3	1,267	678.6	1,282	710.9
ATSI	58	697.7	1,402	903.0	1,435	1,424.3
BGE	27	277.5	822	177.7	826	428.0
COMED	77	64.4	2,545	1,350.6	2,592	1,359.3
DAY	8	12.0	202	172.9	204	176.0
DEOK	15	133.6	502	200.0	503	240.4
DOM	73	144.9	1,396	680.2	1,446	789.7
DPL	135	34.6	558	118.4	559	118.5
DUQ	15	128.3	524	99.5	533	121.8
EKPC			19	202.5	19	202.5
JCPL	19	45.8	334	125.9	338	168.1
METED	13	100.5	563	155.9	570	246.4
PECO	40	70.6	1,306	327.1	1,316	361.1
PENELEC	12	56.7	645	233.1	651	241.6
PEPCO	14	24.5	642	168.1	652	173.6
PPL	25	89.8	1,433	444.3	1,449	483.2
PSEG	37	36.4	1,006	264.2	1,016	279.3
RECO			16	2.6	16	2.6
<b>Totals</b>	<b>775</b>	<b>2,845</b>	<b>17,484</b>	<b>7,796</b>	<b>17,738</b>	<b>9,277</b>

Note:

- 1) Data as of May 7, 2024.
- 2) Load Management MW are Summer 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 summer period of DY23/24, Total DR Commitment Value is 7,464 MW (includes FRR value of 413 MW and DR Summer Only value of 258 MW)

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

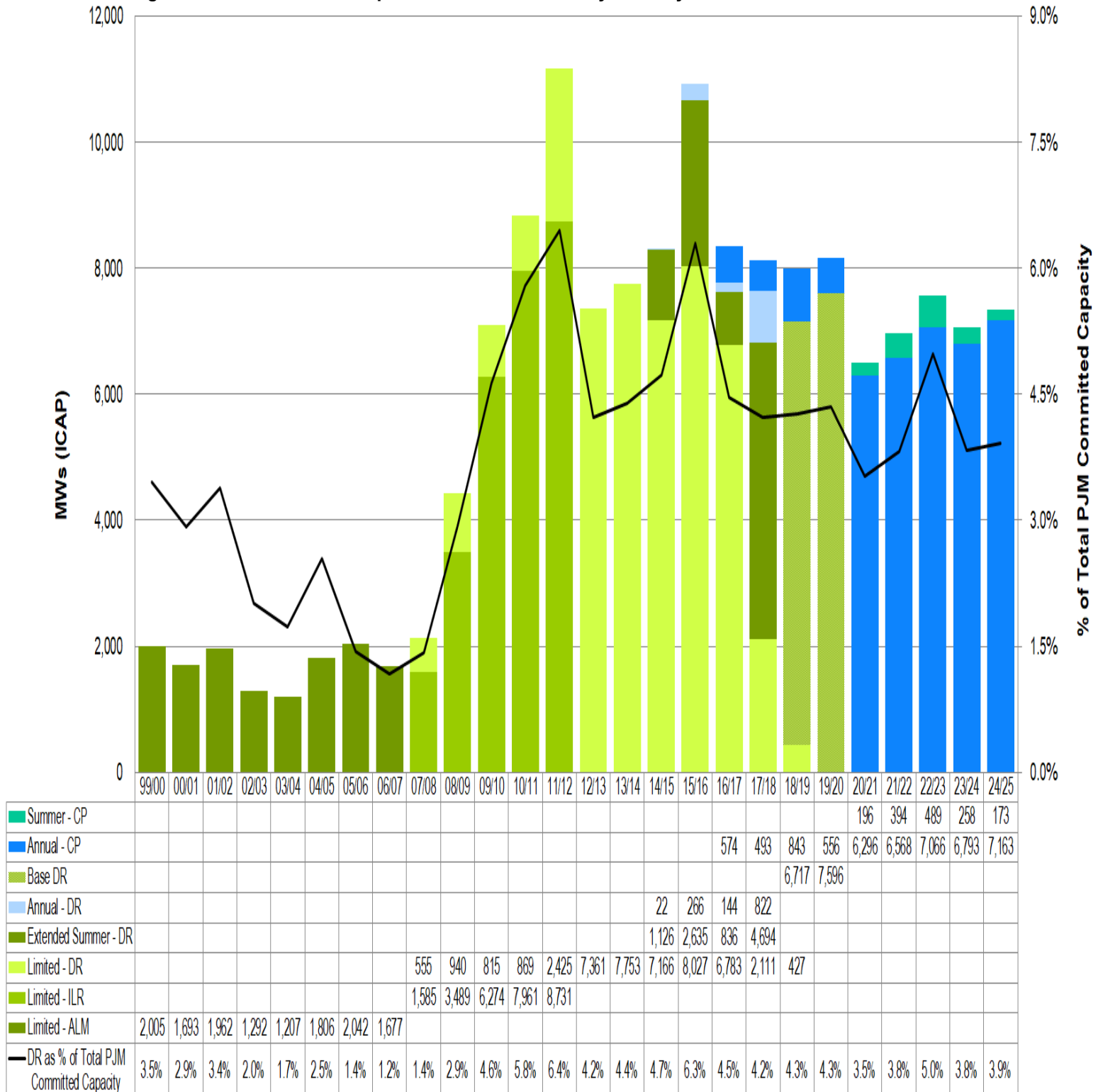


\* Capacity Net Revenue inclusive of Capacity Credits and Charges. From 2020 on this value also includes Price Responsive Demand Credits.

\*\* 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.

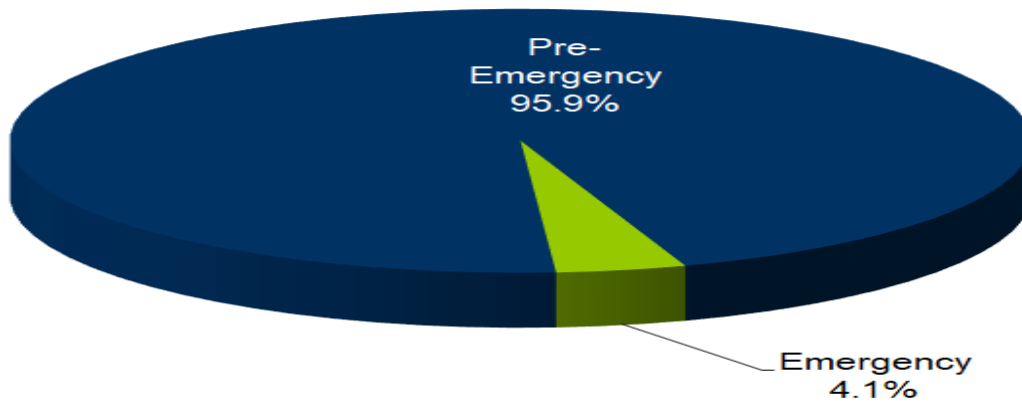
Figure 3: PJM Demand Response Committed MWs by Delivery Year



## Notes:

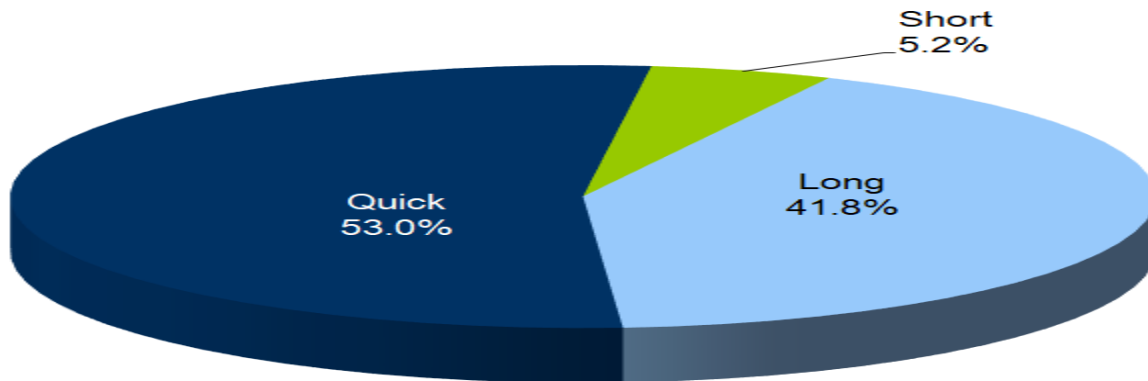
- 1) Data represents net commitment ICAP value (for each product) as of 6/1/2023. Does not include FRR values.
- 2) DY 24/25 MWs include values from the Base Residual Auction.
- 3) RPM was implemented DY 07/08.
- 4) ALM MWs are seasonal averages for Delivery Years before 07/08.

**Figure 4: DY 23/24 Confirmed Load Management DR Registrations by Resource**



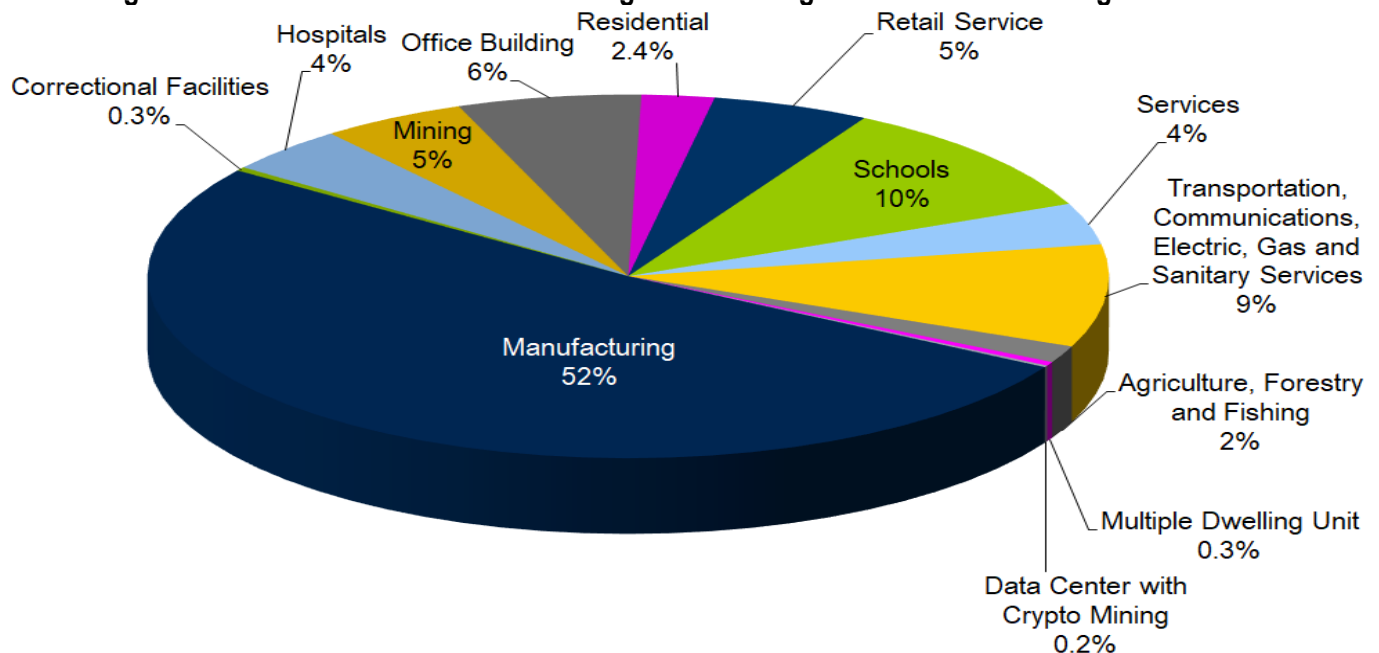
Note: Percent of Summer Nominated Capacity (MWs).

**Figure 5: DY 23/24 Confirmed Load Management DR Registrations Lead Times**



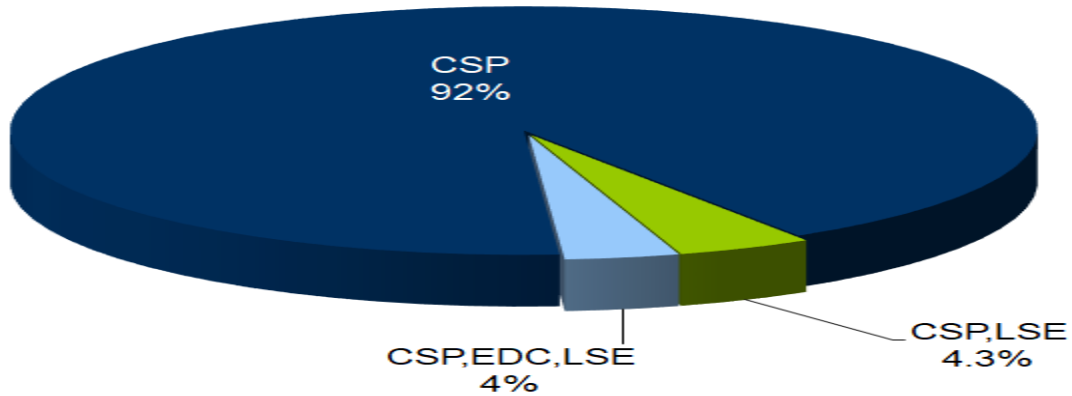
Note: Percent of Summer Nominated Capacity (MWs).

**Figure 6: DY 23/24 Confirmed Load Management DR Registrations Business Segments**



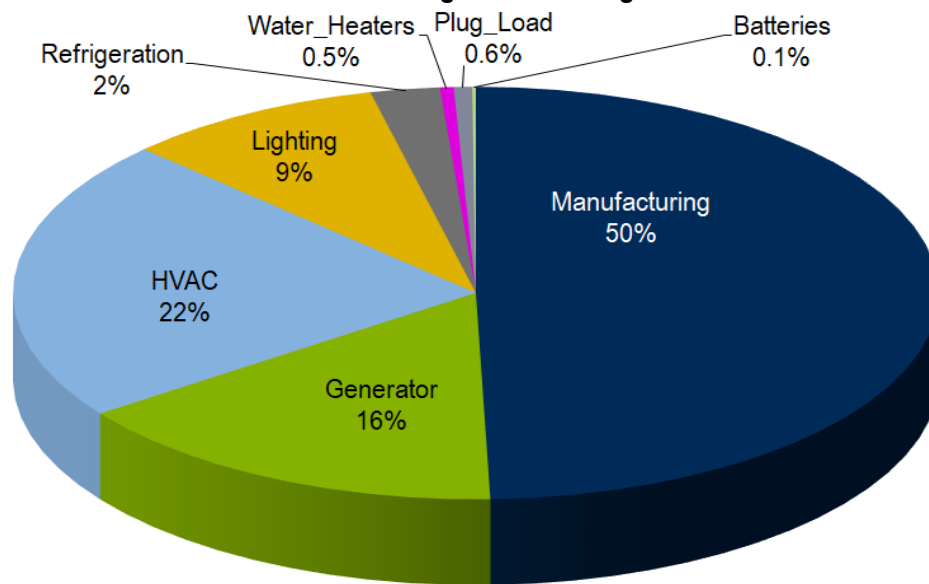
Note: Percent of Summer Nominated Capacity (MWs).

**Figure 7: DY 23/24 Confirmed Load Management DR Registrations Owner/Company Type**



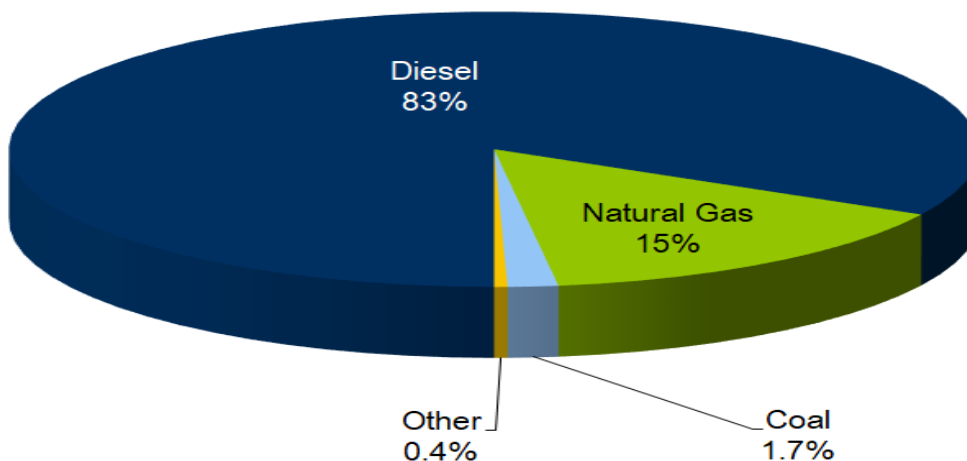
Note: Percent of Summer Nominated Capacity (MWs).

**Figure 8: DY 23/24 Confirmed Load Management DR Registrations Customer Load Reduction Methods**



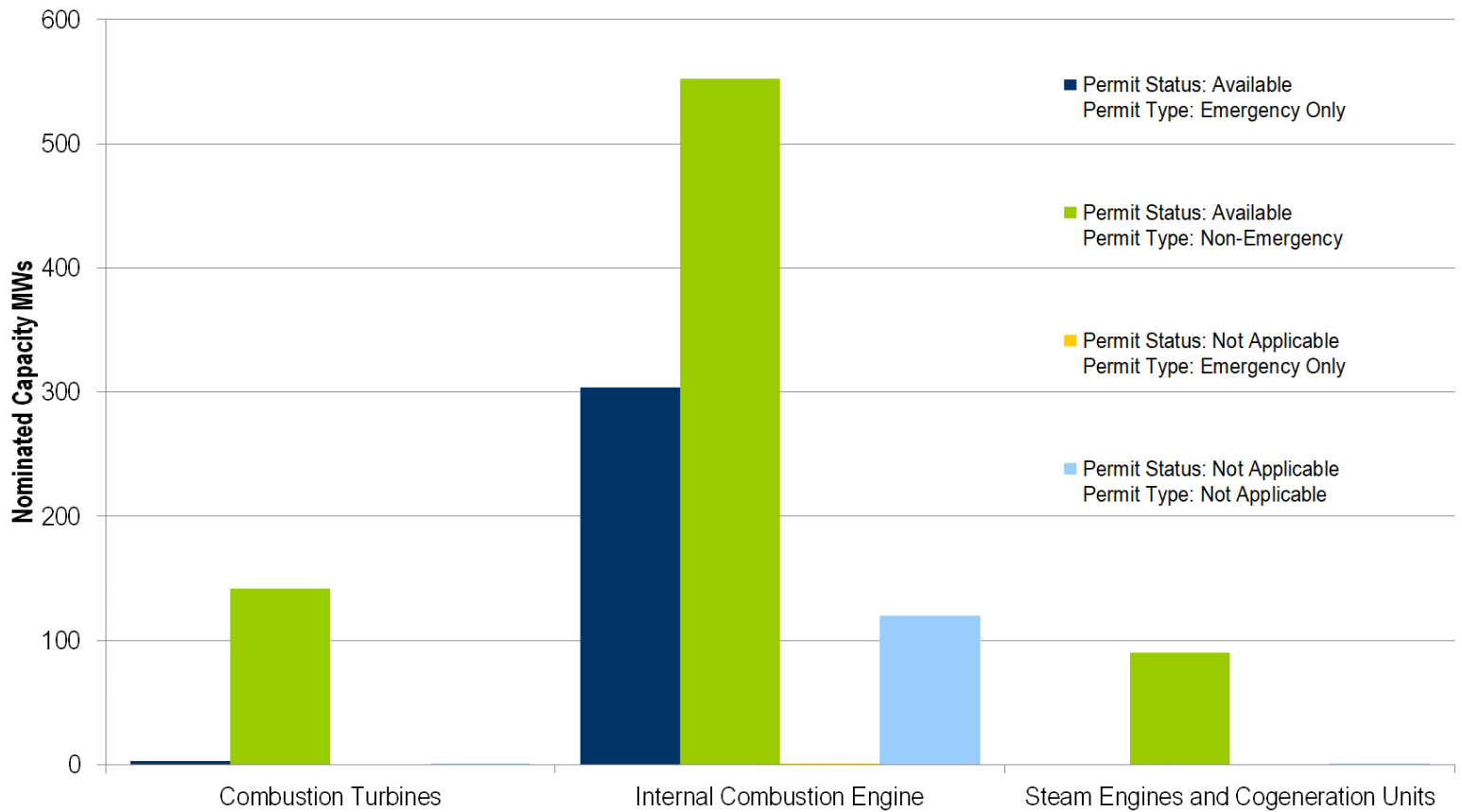
Note: Percent of Summer Nominated Capacity (MWs). Plug Load includes nominated capacity from Data Centers.

**Figure 9: DY 23/24 Confirmed Load Management DR Registrations Fuel Mix with Behind the Meter Generation**



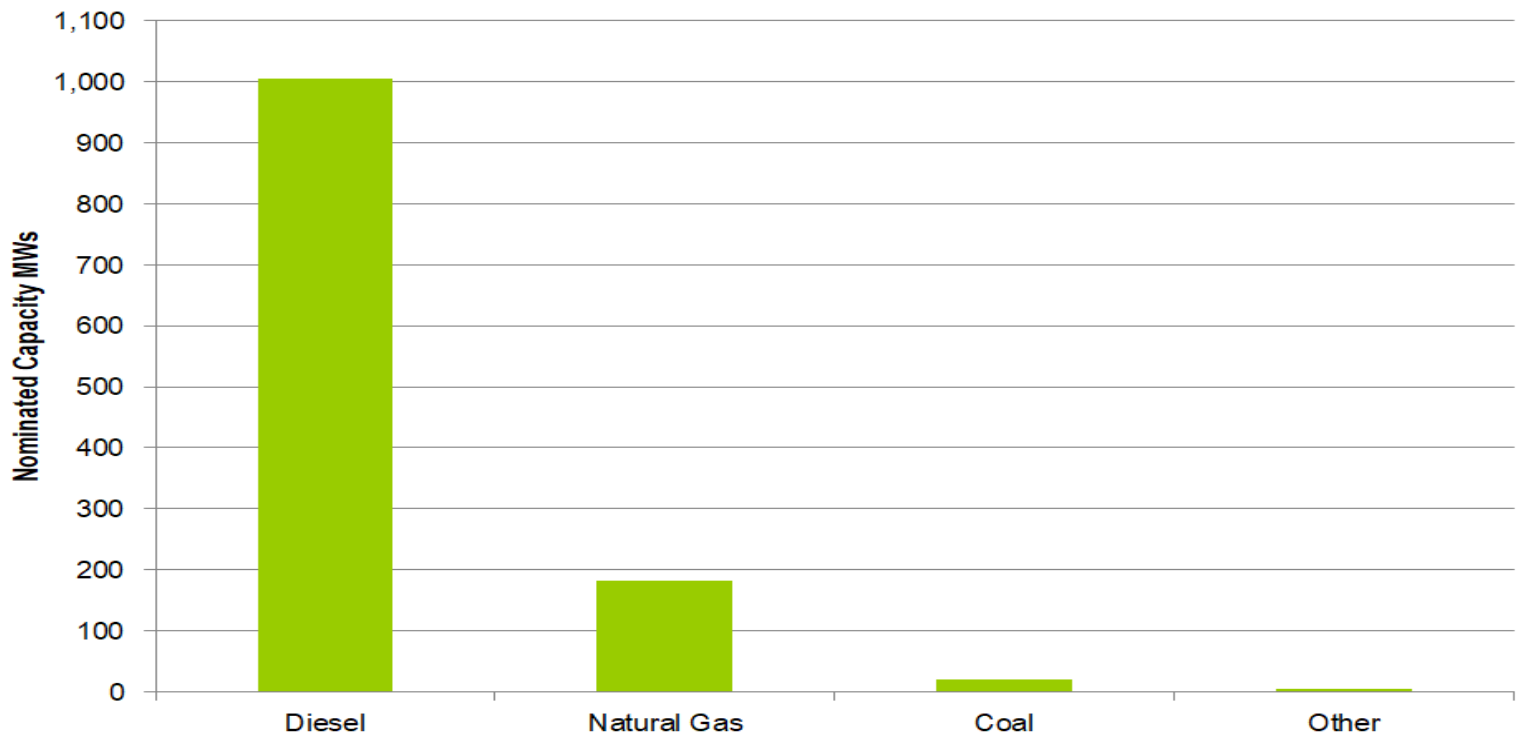
Note: Percent of Summer Nominated Capacity (MWs).

**Figure 10: DY 23/24 Confirmed Load Management DR Registrations Generator and Permit Type**



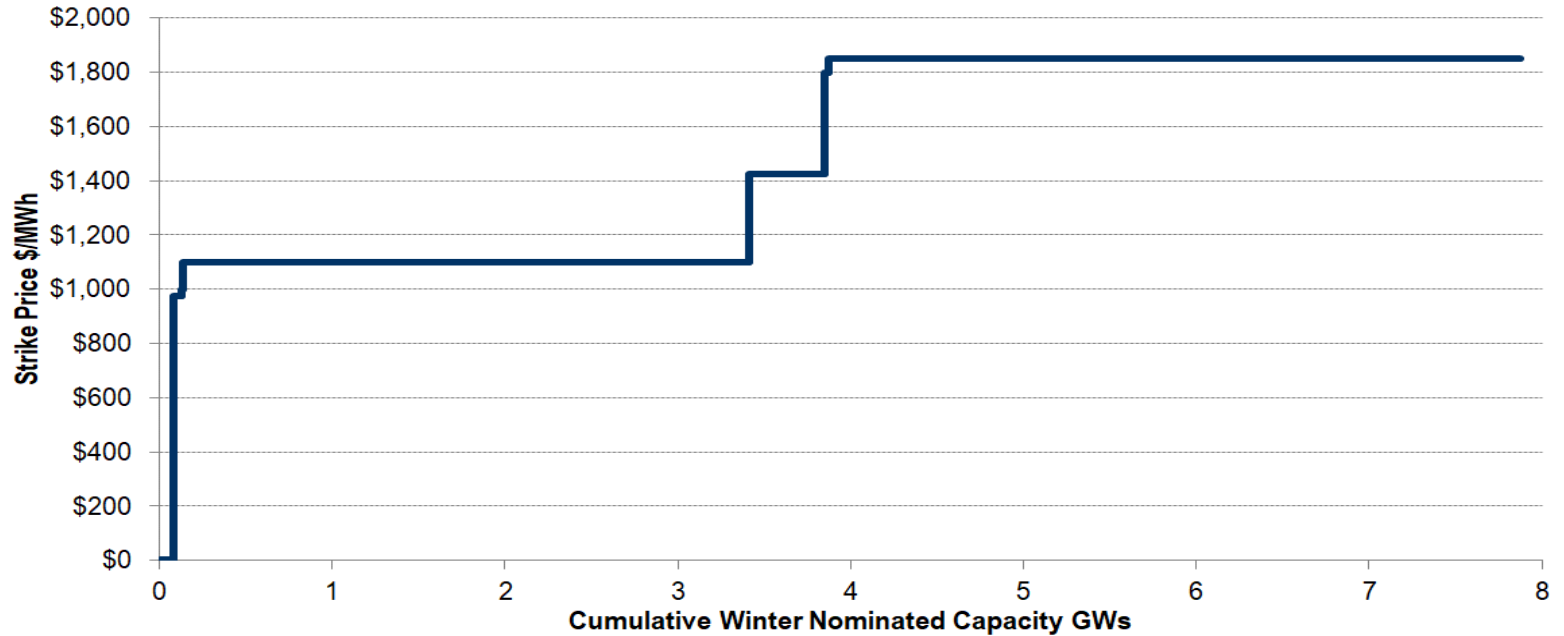
Note: Summer Nominated Capacity (MWs).

**Figure 11: DY 23/24 Confirmed Load Management DR Registrations Fuel Mix with Behind the Meter Generation**



Note: Summer Nominated Capacity (MWs) Other includes Oil, Propane and Waste Products.

**Figure 12: DY 23/24 Confirmed Load Management Full DR Registrations Energy Supply Curve:**



**Figure 13: 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								
AEP	\$1,351,740	\$1,264,531	\$1,351,740	\$1,308,135								
APS	\$757,761	\$708,873	\$757,761	\$733,317								
ATSI	\$976,187	\$913,207	\$976,187	\$944,697								
BGE	\$365,167	\$341,608	\$365,167	\$353,388								
COMED	\$1,169,652	\$1,094,191	\$1,169,652	\$1,131,922								
DAY	\$221,445	\$207,159	\$221,445	\$214,302								
DEOK	\$185,579	\$173,606	\$185,579	\$179,592								
DOM	\$845,472	\$790,925	\$845,472	\$818,198								
DPL	\$258,481	\$241,805	\$258,481	\$250,143								
DUQ	\$125,059	\$116,991	\$125,059	\$121,025								
EKPC	\$285,562	\$267,139	\$285,562	\$276,351								
JCPL	\$184,870	\$172,943	\$184,870	\$178,907								
METED	\$331,692	\$310,293	\$331,692	\$320,993								
PECO	\$580,538	\$543,084	\$580,538	\$561,811								
PENELEC	\$448,444	\$419,512	\$448,444	\$433,978								
PEPCO	\$245,777	\$229,921	\$245,777	\$237,849								
PPL	\$895,046	\$837,301	\$895,046	\$866,174								
PSEG	\$418,374	\$391,382	\$418,374	\$404,878								
RECO	\$3,375	\$3,158	\$3,375	\$3,266								
<b>Total</b>	<b>\$9,734,911</b>	<b>\$9,106,852</b>	<b>\$9,734,911</b>	<b>\$9,420,882</b>								

Total Capacity Credits: \$37,997,556

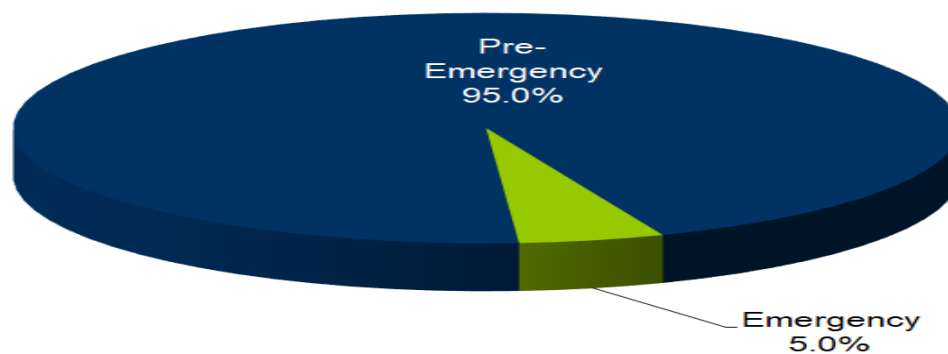
**Figure 14: Preliminary DY24/25 Load Management Participation by Zone**

Zone	Locations	MW
AECO	101	18.4
AEP	1,004	1,203.9
APS	764	396.1
ATSI	760	494.5
BGE	441	129.1
COMED	1,792	854.1
DAY	125	150.7
DEOK	221	81.7
DOM	421	488.9
DPL	270	99.6
DUQ	304	83.8
JCPL	225	73.4
METED	253	111.6
PECO	431	169.1
PENELEC	397	188.2
PEPCO	386	106.0
PPL	755	337.8
PSEG	605	182.7
<b>Totals</b>	<b>9,255</b>	<b>5,170</b>

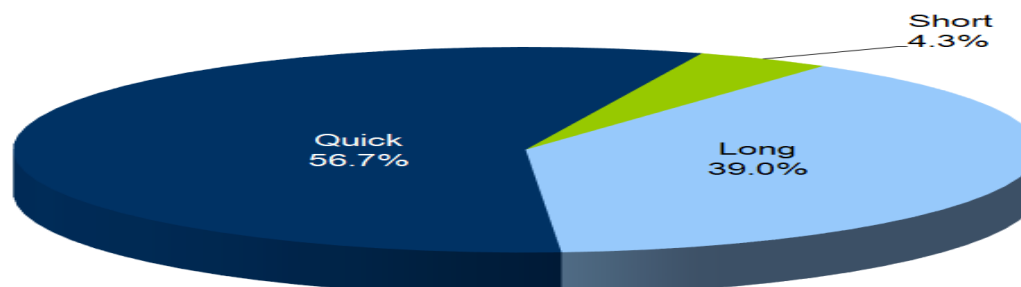
Note:

1) Data as of May 1, 2024.

2) Load Management MW are Summer ICAP and include FRR value.

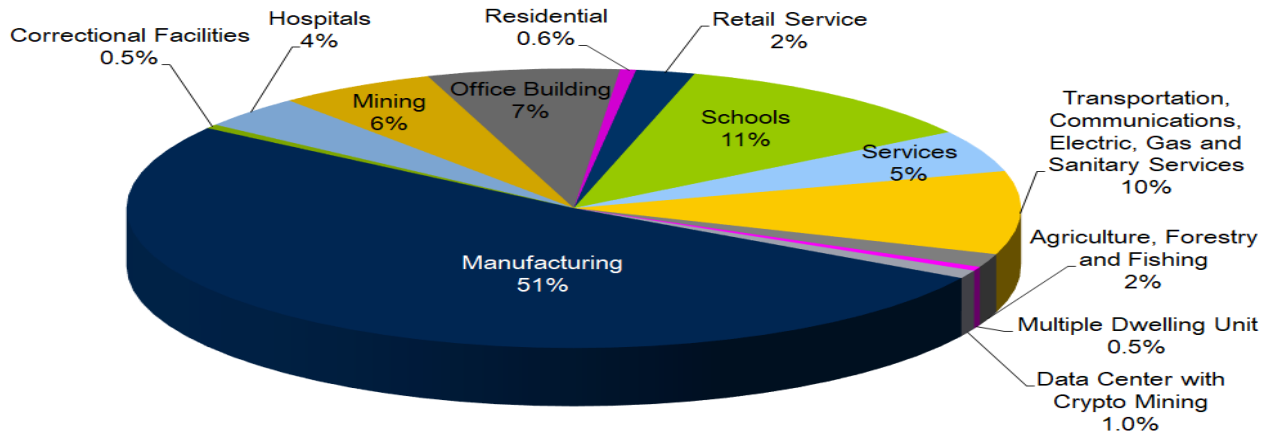
**Figure 15: Preliminary DY 24/25 Confirmed Load Management DR Registrations by Resource**


Note: Percent of Summer Nominated Capacity (MWs).

**Figure 16: Preliminary DY 24/25 Confirmed Load Management DR Registrations by Lead Time**


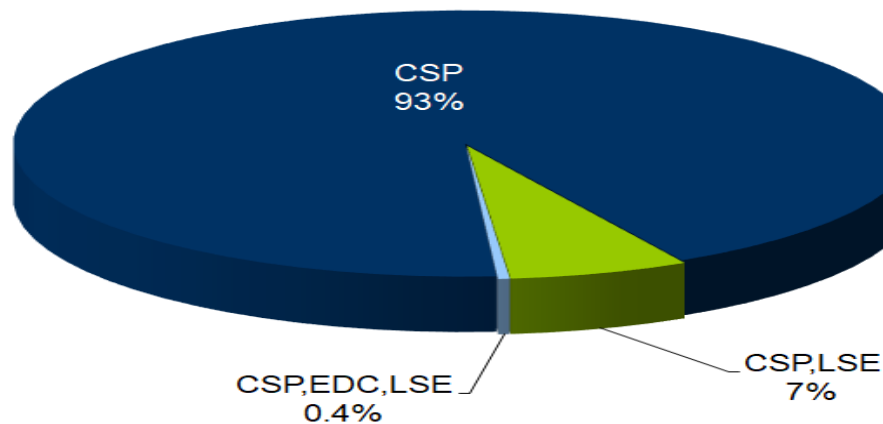
Note: Percent of Summer Nominated Capacity (MWs).

**Figure 17: Preliminary DY24/25 Confirmed Load Management DR Registrations Business Segments**



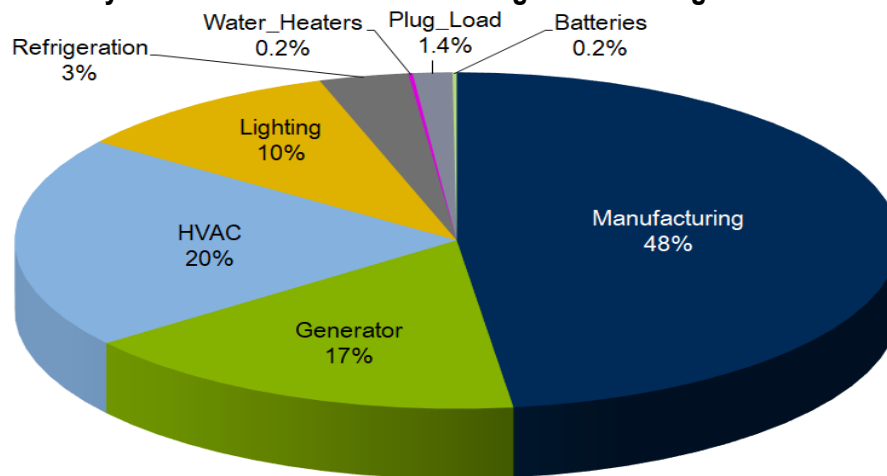
Note: Percent of Summer Nominated Capacity (MWs).

**Figure 18: Preliminary DY24/25 Confirmed Load Management DR Registrations Owner/Company Type**



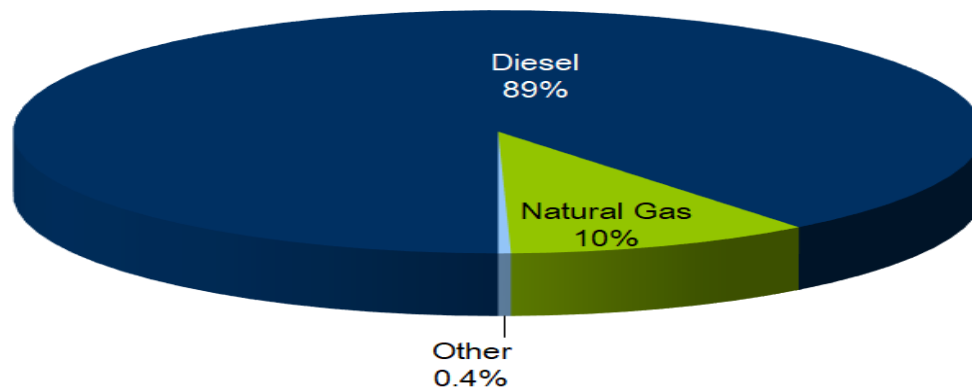
Note: Percent of Summer Nominated Capacity (MWs).

**Figure 19: Preliminary DY24/25 Confirmed Load Management DR Registrations Load Reduction Methods**



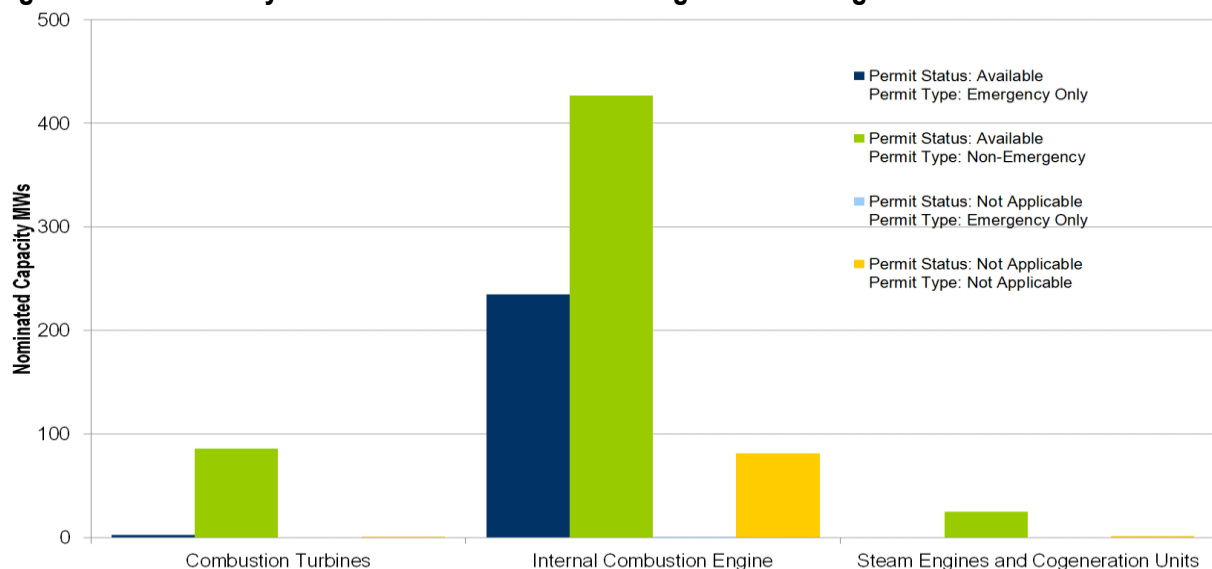
Note: Percent of Summer Nominated Capacity (MWs). Plug Load includes nominated capacity from Data Centers.

**Figure 20: Preliminary DY24/25 Confirmed Load Management DR Registrations Fuel Mix with Behind the Meter Generation**



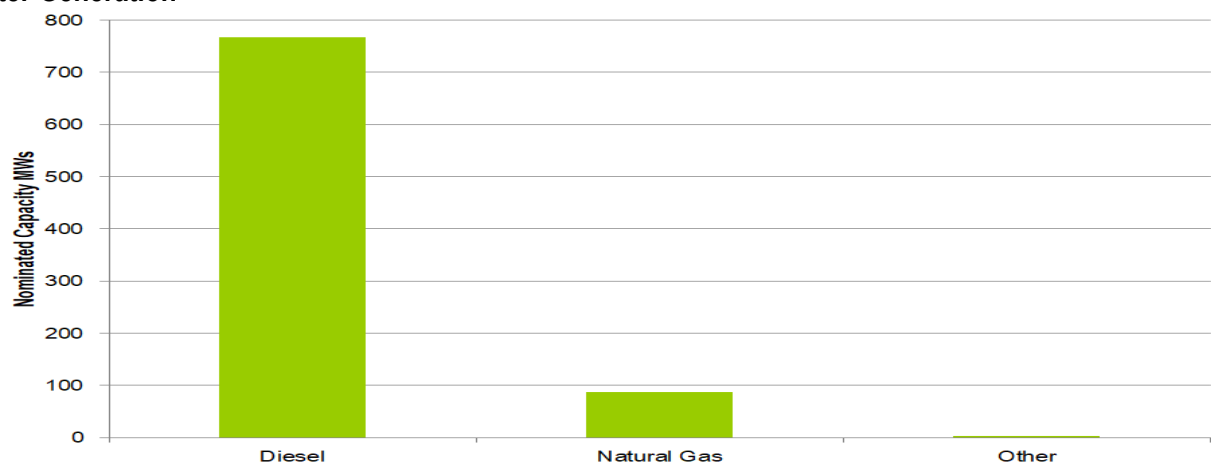
Note: Percent of Summer Nominated Capacity (MWs).

**Figure 21: Preliminary DY24/25 Confirmed Load Management DR Registrations Generator and Permit Type**



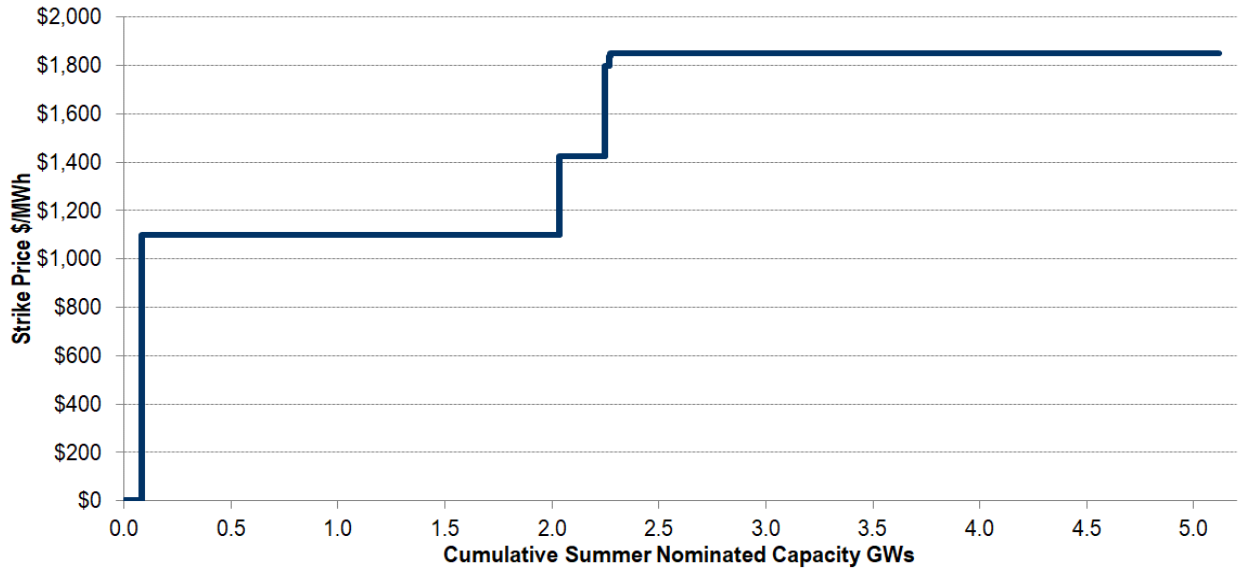
Note: Summer Nominated Capacity (MWs).

**Figure 22: Preliminary DY24/25 Confirmed Load Management DR Registrations Fuel Mix with Behind the Meter Generation**

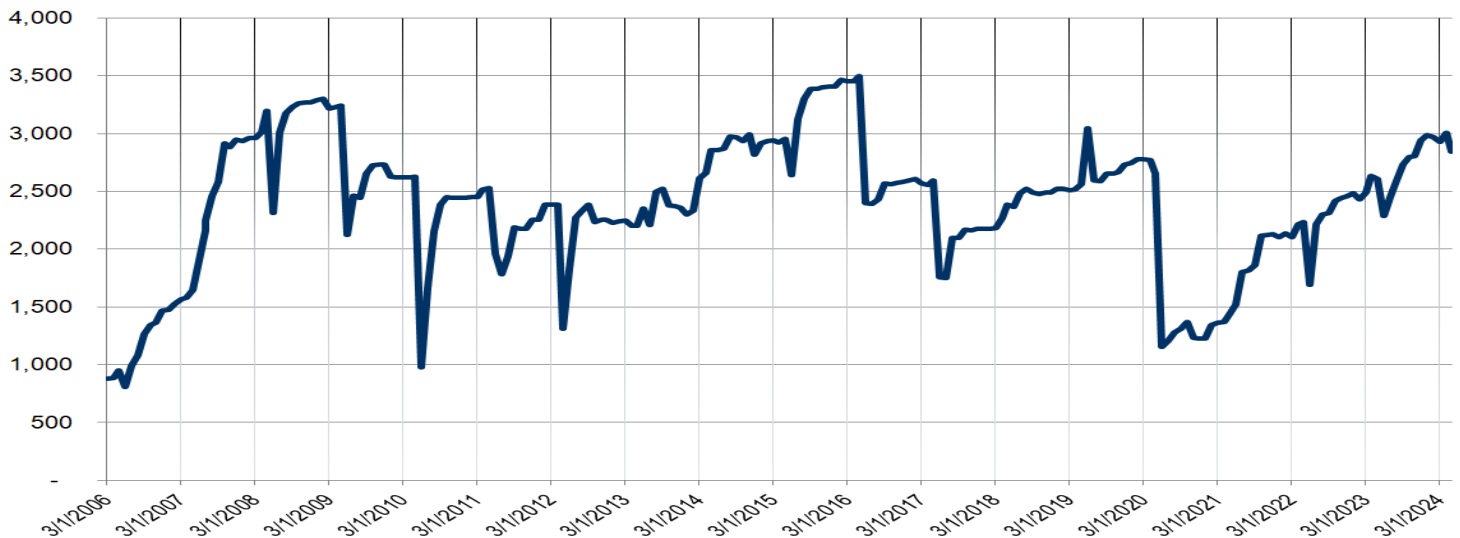


Note: Summer Nominated Capacity (MWs). Other includes Oil, Propane, and Waste Products.

**Figure 23: Preliminary DY24/25 Confirmed Load Management Full DR Registrations Energy Supply Curve:**



**Figure 24: PJM Economic Demand Response Capability in Energy Market (3/1/2006-5/1/2024)**



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 25: 2024 Economic Demand Response Dispatch/Cleared vs Settled Total Energy Market Summary**

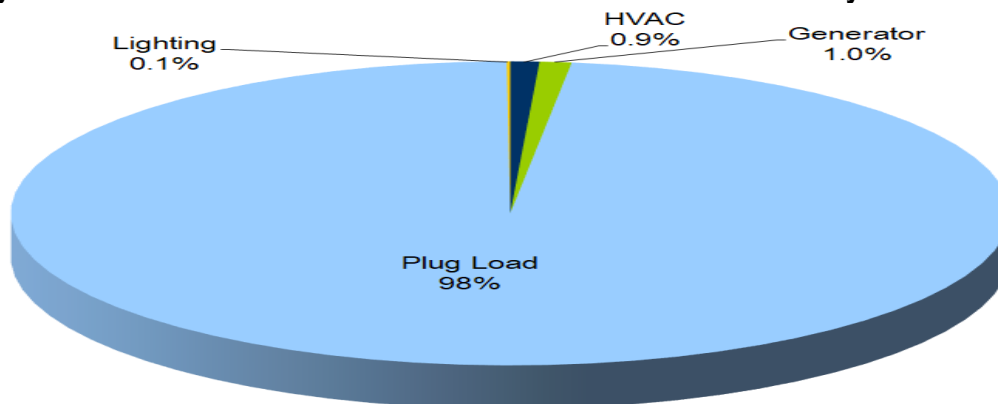
Time		Zone		MWh			Registration Hours			Credits
Year	Month	Dispatched/Cleared	Settled	Dispatched/Cleared	Settled	%	Dispatched/Cleared	Settled	%	\$
2024	1	9	9	24,576	25,484	104%	1,617	1,617	100%	\$2,621,636
2024	2	4	3	1,295	1,452	112%	271	269	99%	\$65,962
2024	3	4	3	1,169	1,068	91%	224	94	42%	\$68,732
2024	4	4	1	2,568	256	10%	419	13	3%	\$14,748
2024	5									
2024	6									
2024	7									
2024	8									
2024	9									
2024	10									
2024	11									
2024	12									
YTD Totals				29,608	28,260	95%	2,531	1,993	79%	\$2,771,078
YTD Average		5	4							

**Figure 26: 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	10	135%	87	64	74%	\$253
2024	4	2		22			181			
2024	5									
2024	6									
2024	7									
2024	8									
2024	9									
2024	10									
2024	11									
2024	12									
YTD Totals				325	524	161%	812	608	75%	\$27,417
YTD Average		3	3							

**Figure 27: 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	2	1,282	1,283	100%	124	122	98%	\$62,239
2024	3	3	2	1,161	1,058	91%	137	30	22%	\$68,479
2024	4	3	1	2,546	256	10%	238	13	5%	\$14,748
2024	5									
2024	6									
2024	7									
2024	8									
2024	9									
2024	10									
2024	11									
2024	12									
YTD Totals				29,283	27,737	95%	1,719	1,385	81%	\$2,743,660
YTD Average		4	3							

**Figure 28: 2024 Estimated Total Economic DR Load Reduction MWh by Load Reduction Method**


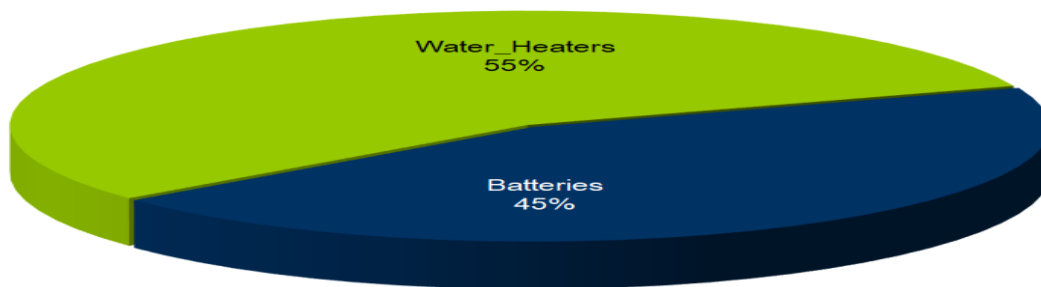
Note: Plug Load includes reductions from Data Centers.

**Figure 29: 2024 Economic Demand Response Capability in the Ancillary Service Markets**

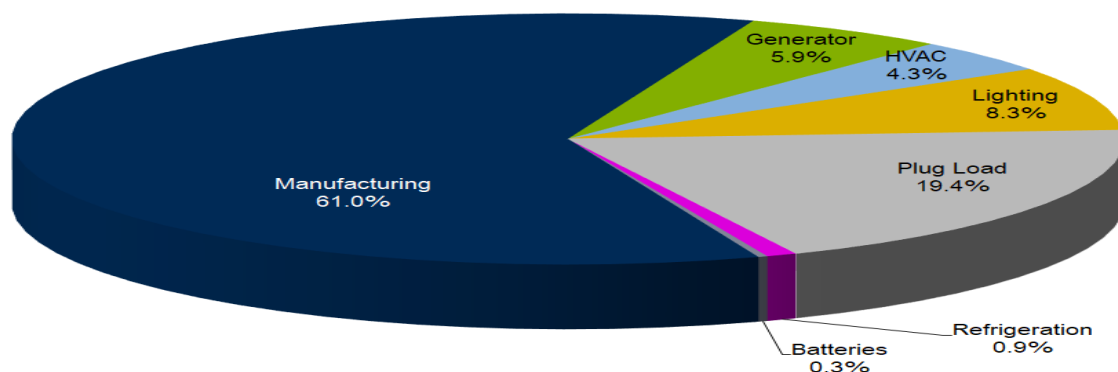
Synch Reserves	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Locations	MAD	215	214	217	223								
	Non-MAD	199	203	205	210								
	RTO	414	417	422	433								
Average Number of Unique Participating Locations per Month:		422											
MWs	MAD	631	547	550	493								
	Non-MAD	1,701	1,836	1,831	1,714								
	RTO	2,332	2,383	2,381	2,207								
Average MWs per Month:		2,326											

Regulation	Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Locations	RTO	180	176	166	119								
Average Number of Unique Participating Locations per Month:		160											
MWs	RTO	157	160	157	143								
Average MWs per Month:		155											

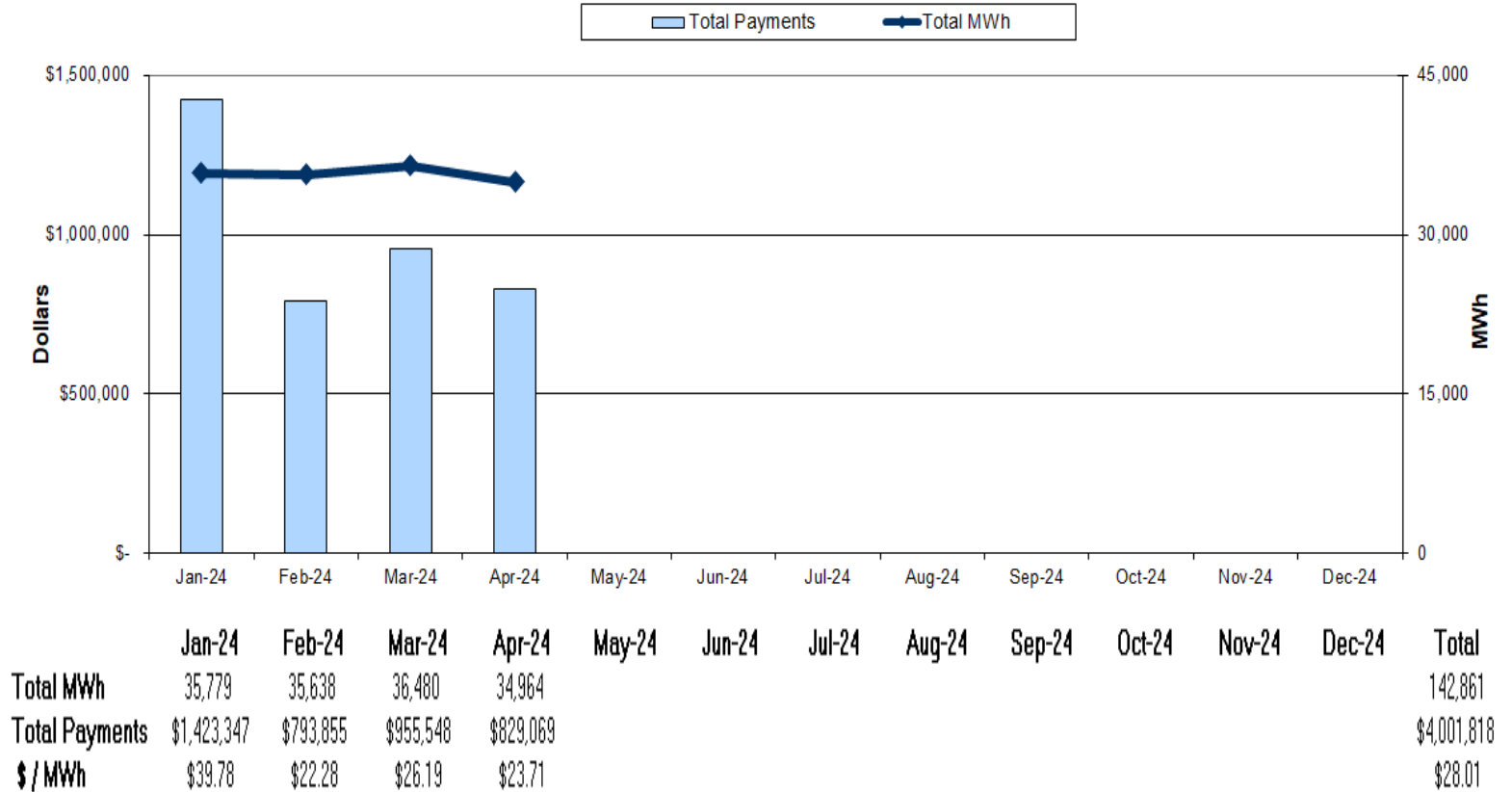
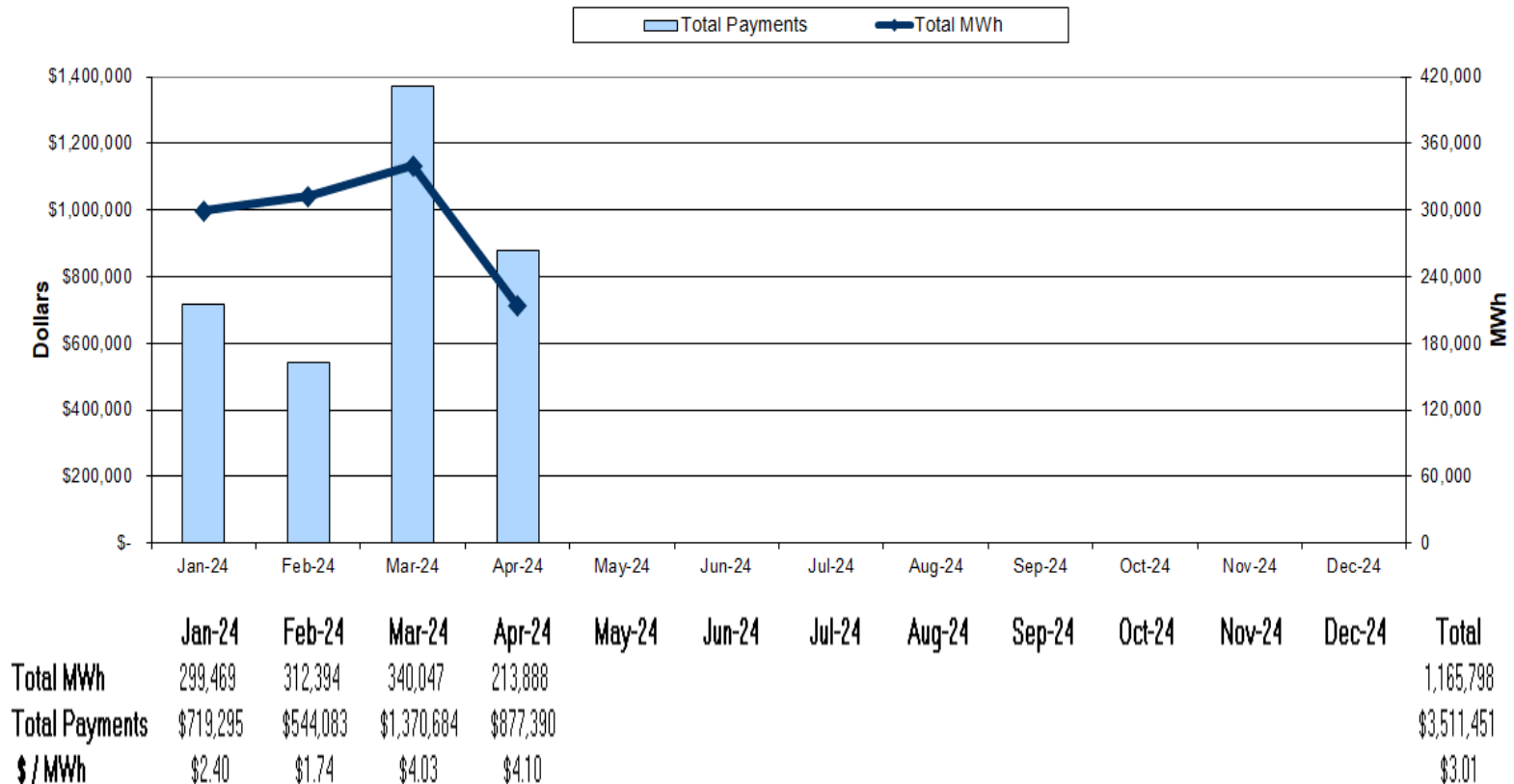
Capability represents total amount that may be offered. Actual offered and cleared volume may be significantly lower and is represented in subsequent figures/tables in report

**Figure 30: 2024 PJM Demand Response Confirmed Regulation Registrations Load Reduction Methods**


Note: Percent of CSP Reported Load Reduction MWs

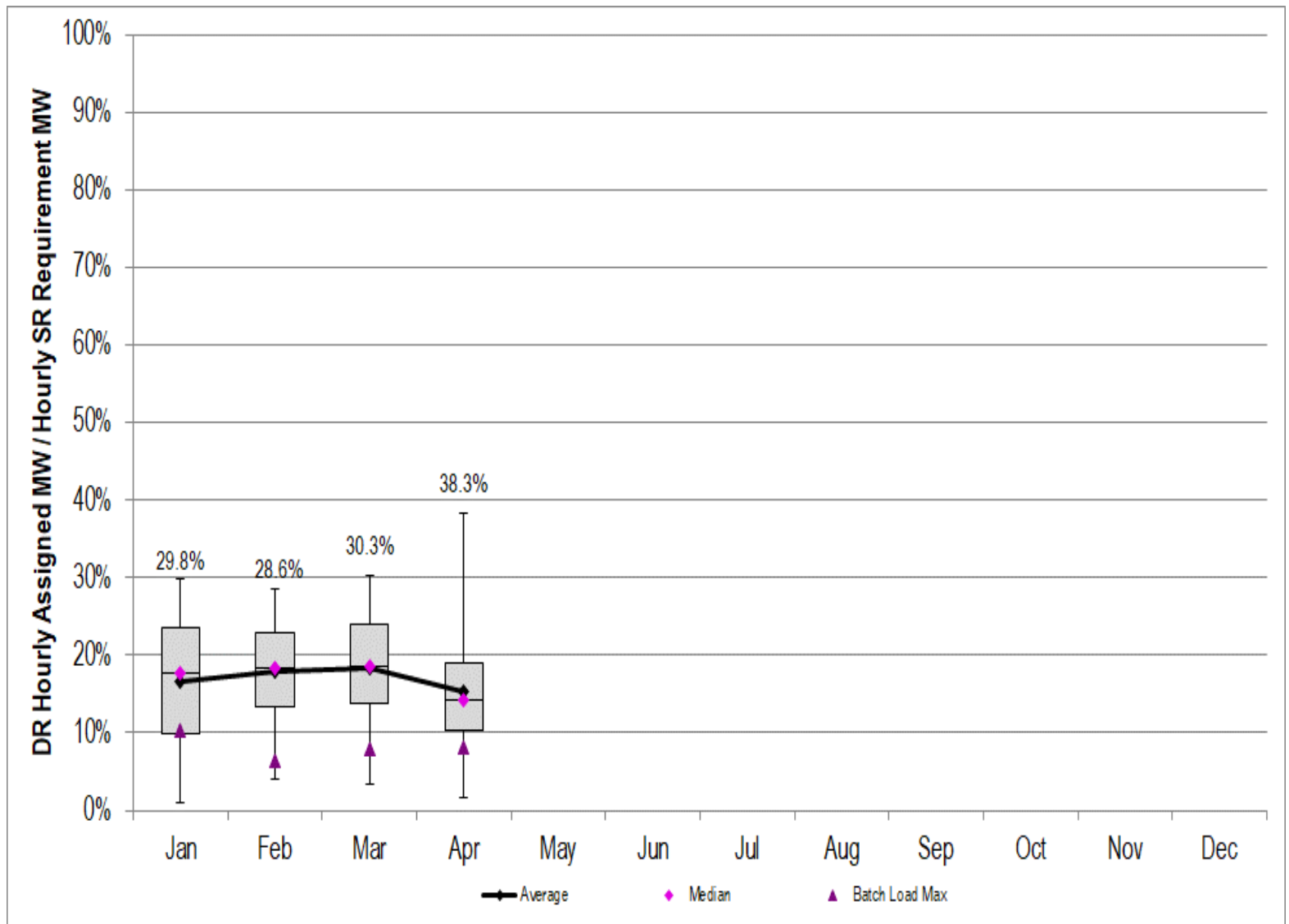
**Figure 31: 2024 PJM Demand Response Confirmed Synch Reserve Registrations Load Reduction Methods**


Note: Percent of CSP Reported Load Reduction MWs. Plug Load includes reported reductions from Data Centers.

**Figure 32: 2024 Economic Demand Response Regulation Market Participation**

**Figure 33: 2024 Economic Demand Response Synchronous Reserve Market Participation**


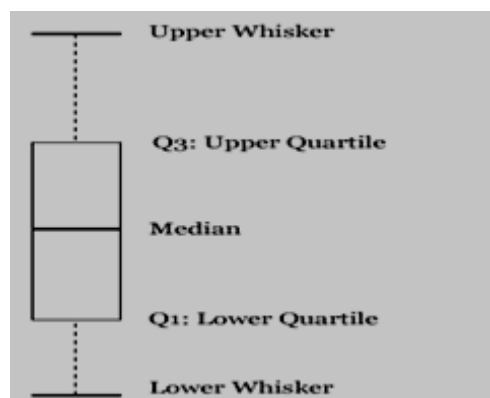
Note: For Figures 32 and 33 above, MWh=sum of the settled MW. Example: 1 MW load available for 12 hours = 12 MWh.

Figure 34: Economic DR Synchronous Reserve Penetration Distribution (Box-plot) for 2024



Notes:

- 1) Economic Demand Response are Tier2 resources.
- 2) Percents shown on upper whisker are maximum hourly DR percentage of Total SR Requirement.
- 3) 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