Market Monitor Report

MC

08.20.2025

IMM

Monitoring Analytics

CURRENT ISSUES

PJM Short Capacity on June 1, 2025

- **The actual RPM reserve margin for June 1, 2025, was 17.6 percent (net deficit of 205.1 MW UCAP), after accounting for all RPM auction results, replacements, deficiency MW and the final peak load forecast and parameters for the 2025/2026 Delivery Year.**
- **The IRM was 17.8 percent. The IRM is a target reserve margin defined in the auction parameters for the delivery year.**
- **The actual reserve margin is calculated for June 1, the first day of the deliver year, because committed MW, replacements, and deficiency MW can vary daily.**

RPM reserve margin: June 1, 2025

	01-Jun-21	01-Jun-22	01-Jun-23	01-Jun-24	01-Jun-25	
Forecast peak load ICAP (MW)	149,482.9	149,263.6	149,382.2	151,631.1	154,534.1	A
FRR peak load ICAP (MW)	11,717.7	28,292.8	29,554.6	30,431.0	11,720.3	B
PRD ICAP (MW)	510.0	230.0	235.0	305.0	224.0	C
Installed reserve margin (IRM)	14.7%	14.9%	14.9%	17.7%	17.8%	D
Pool wide average EFORd	5.22%	5.08%	4.87%	5.10%		E
Pool wide accredited UCAP factor					79.63%	F
Forecast pool requirement (FPR)	1.0871	1.0906	1.0930	1.1170	0.9380	G=(1+D)*(1-E) or G=(1+D)*F
RPM committed less deficiency UCAP (MW) (generation and DR)	156,633.6	137,944.8	136,401.8	138,318.6	133,544.1	H
RPM committed less deficiency ICAP (MW) (generation and DR)	165,260.2	145,327.4	143,384.6	145,751.9	167,705.8	J=H/(1-E) or J=H/F
RPM peak load ICAP (MW)	137,255.2	120,740.8	119,592.6	120,895.1	142,589.7	K=A-B-C
Reserve margin ICAP (MW)	28,005.0	24,586.6	23,792.0	24,856.9	25,116.0	L=J-K
Reserve margin (%)	20.4%	20.4%	19.9%	20.6%	17.6%	M=L/K
Reserve margin in excess of IRM ICAP (MW)	7,828.5	6,596.3	5,972.7	3,458.4	(264.9)	N=L-D*K
Reserve margin in excess of IRM (%)	5.7%	5.5%	5.0%	2.9%	(0.2%)	P=N/K
RPM peak load UCAP (MW)	130,090.5	114,607.2	113,768.4	114,729.4	113,544.2	Q=K*(1-E) or Q=K*F
RPM reliability requirement UCAP (MW)	149,210.1	131,679.9	130,714.7	135,039.8	133,749.2	R=K*G
Reserve margin UCAP (MW)	26,543.1	23,337.6	22,633.4	23,589.2	19,999.9	S=H-Q
Reserve cleared in excess of IRM UCAP (MW)	7,423.5	6,264.9	5,687.1	3,278.8	(205.1)	T=H-R
Projected replacement capacity UCAP (MW)	0.0	0.0	0.0	0.0	0.0	U
Projected reserve margin	20.4%	20.4%	19.9%	20.6%	17.6%	V=(J-U/(1-E))/K-1 or V=(J-U/F)/K-1

OBBBA: Bonus Depreciation and CRF

- **One Big Beautiful Bill Act (OBBBA): Enacted July 4, 2025, made significant changes to bonus depreciation rules previously instated by the Tax Cuts and Jobs Act (TCJA) of 2017.**
- **100 percent Bonus Depreciation: Section 70301 of OBBBA (I.R.C. § 168(k)) allows 100 percent bonus depreciation for eligible property acquired and placed in service on or after January 20, 2025.**

OBBBA: Bonus Depreciation and CRF

- **Eligible Property: Construction must begin after January 19, 2025, and before January 1, 2029, and the property must be placed in service before January 1, 2031.**
- **Impact: Bonus depreciation in TCJA had been set to phase down from 60 percent in 2024 to 40 percent in 2025, to 20 percent in 2026, and to 0 percent in 2027. OBBBA eliminates these phase-downs and makes permanent 100 percent expensing.**

OBBBA: Bonus Depreciation and CRF

- **The result will be to reduce CRFs for projects that fall within the defined period.**
- **CRF affects black start rates, OATT Schedule 6A.**
  - **Ongoing issue at FERC, Docket No. EL21-91.**
- **CRF affects APIR values per OATT Attachment DD§ 6.8.**
- **CRF is a formula based rate.**

Peak Load by Season

Peak Load by Season											
Summer Peak Load Hour						Winter Peak Load Hour					
Date	Hour Ending	RT Load (MWh)	Net Export (MWh)	RT Generation (MWh)	LMP ($/MWh)	Date	Hour Ending	RT Load (MWh)	Net Export (MWh)	RT Generation (MWh)	LMP ($/MWh)
Tuesday, August 3, 2004	17	77,950	435	78,666	$90.55	Monday, December 20, 2004	19	96,838	1,796	98,797	$129.90
Tuesday, July 26, 2005	16	134,017	(2,206)	131,975	$156.02	Wednesday, December 14, 2005	19	110,632	(376)	110,406	$163.45
Wednesday, August 2, 2006	17	144,904	(782)	143,957	$404.80	Friday, December 8, 2006	19	106,866	873	108,002	$83.17
Wednesday, August 8, 2007	16	136,368	404	140,170	$471.98	Monday, February 5, 2007	20	119,072	(3,964)	115,252	$178.18
Monday, June 9, 2008	17	127,216	2,862	125,804	$155.67	Thursday, January 3, 2008	19	109,239	(641)	112,339	$130.11
Monday, August 10, 2009	17	123,900	163	127,229	$85.64	Friday, January 16, 2009	19	114,765	(2,316)	115,093	$80.73
Tuesday, July 6, 2010	17	133,297	(247)	136,442	$194.02	Tuesday, December 14, 2010	19	113,121	(1,688)	115,284	$137.02
Thursday, July 21, 2011	17	154,095	(5,906)	151,790	$162.28	Monday, January 24, 2011	8	108,156	(1,218)	109,394	$176.49
Tuesday, July 17, 2012	17	150,879	(4,825)	149,582	$203.72	Tuesday, January 3, 2012	19	119,450	109	122,802	$67.07
Thursday, July 18, 2013	17	153,790	(7,607)	149,806	$244.92	Tuesday, January 22, 2013	19	123,473	(3,412)	123,283	$119.20
Tuesday, June 17, 2014	18	138,448	(7,382)	134,914	$113.51	Tuesday, January 7, 2014	19	136,932	(9,127)	131,731	$386.36
Tuesday, July 28, 2015	17	140,266	(3,942)	139,450	$101.40	Friday, February 20, 2015	8	139,647	(6,994)	137,504	$381.93
Thursday, August 11, 2016	16	148,577	1,235	153,820	$128.83	Thursday, December 15, 2016	19	127,759	(2,946)	128,979	$107.06
Wednesday, July 19, 2017	18	142,387	3,166	148,409	$59.49	Monday, January 9, 2017	8	124,210	(1,054)	126,761	$67.72
Tuesday, August 28, 2018	17	147,042	3,238	154,067	$131.36	Friday, January 5, 2018	19	133,851	(403)	137,173	$164.15
Friday, July 19, 2019	18	148,228	3,253	154,542	$37.47	Thursday, January 31, 2019	8	134,060	1,077	138,744	$85.21
Monday, July 20, 2020	17	141,449	6,013	150,667	$74.91	Wednesday, January 22, 2020	8	116,761	4,230	123,609	$31.76
Tuesday, August 24, 2021	17	145,563	2,984	151,708	$243.98	Friday, January 29, 2021	9	114,457	3,200	120,648	$27.87
Wednesday, July 20, 2022	18	144,356	3,190	151,620	$204.29	Friday, December 23, 2022	19	131,474	3,340	136,132	$2,011.80
Thursday, July 27, 2023	18	144,215	7,211	151,896	$110.52	Friday, February 3, 2023	20	117,705	746	121,952	$56.22
Tuesday, July 16, 2024	18	148,890	508	152,864	$384.56	Wednesday, January 17, 2024	9	130,293	9,291	143,324	$103.66
Monday, June 23, 2025	**18**	**156,256**	**2,533**	**162,599**	**$273.39**	**Wednesday, January 22, 2025**	**9**	**140,043**	**7,660**	**151,437**	**$355.76**

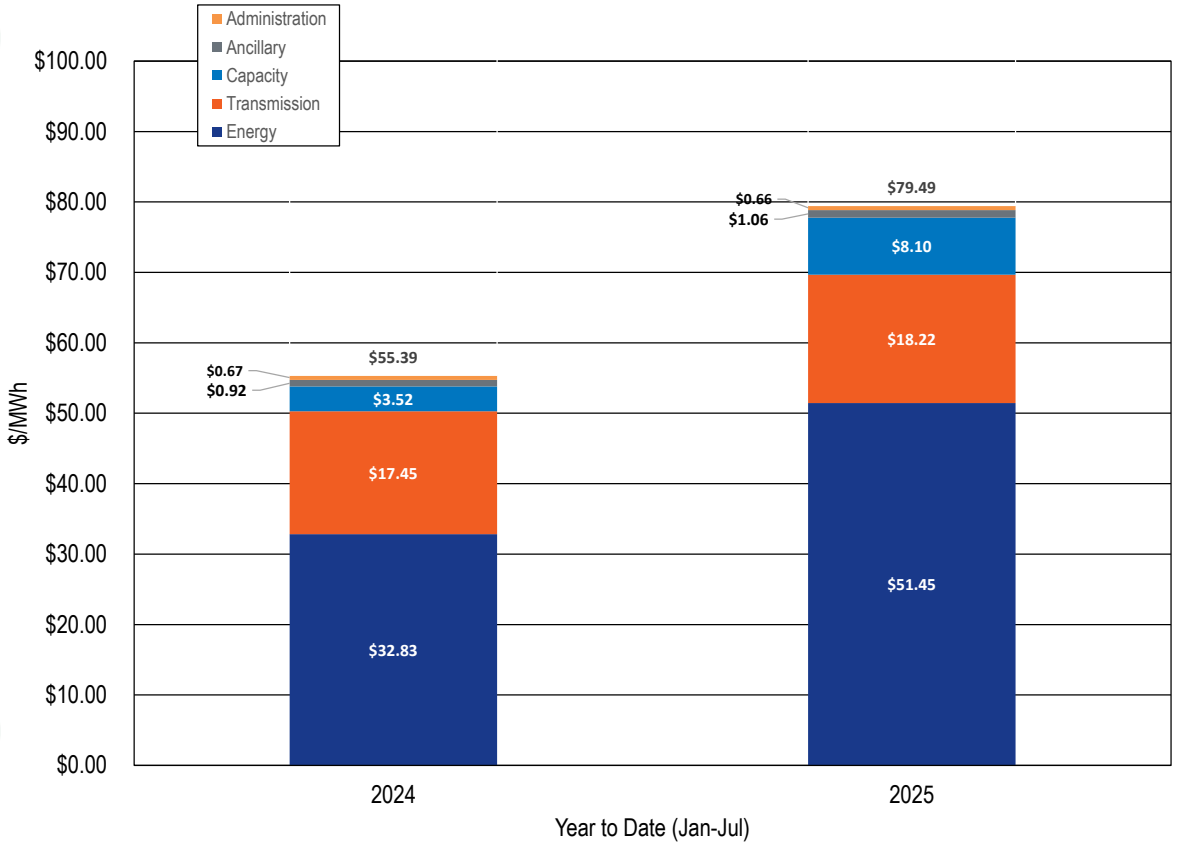
Peak Load Q&A

- **Why does this data not match Data Miner?**
  - **Data miner is instantaneous load with losses. Our data is settlement load without losses.**
- **Is peak hour integrated load over the full hour?**
  - **The peak hour load is the load for entire hour, not one interval or instantaneous.**

Peak Load Q&A

- **Are any reserves included in generation? Regulation? Spin if there were a spin event?**
  - **The generation data does not include reserves and regulation commitment. It does reflect the response from regulating resources, response from all generation resources, with or without reserve commitment, during a reserve deployment such as a spin event.**
- **LMP is load-weighted average?**
  - **LMP is the RTO footprint load weighted average PLMP.**

Total Cost of Wholesale Power



Monitoring Analytics

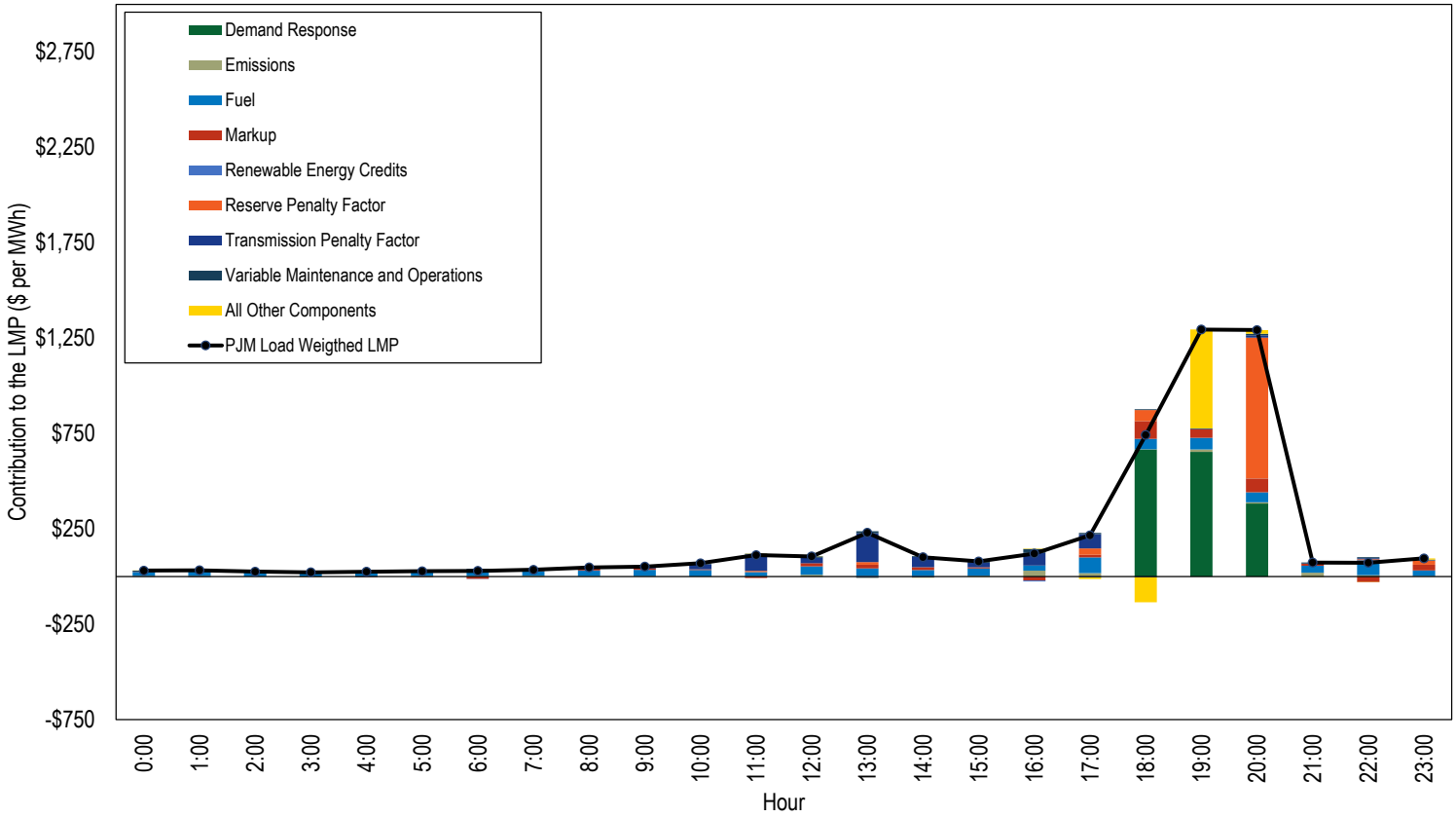
Total Cost of Wholesale Power

Category	2024 (Jan-Jul) $/MWh	2024 (Jan-Jul) ($ Millions)	2024 (Jan-Jul) Percent of Total	2025 (Jan-Jul) $/MWh	2025 (Jan-Jul) ($ Millions)	2025 (Jan-Jul) Percent of Total	Percent Change
Energy	$32.83	$15,157	59.3%	$51.45	$24,587	64.7%	56.7%
Day Ahead Energy	$33.48	$15,454	60.4%	$52.01	$24,853	65.4%	55.4%
Balancing Energy	$0.63	$292	1.1%	$1.17	$560	1.5%	85.2%
ARR Credits	($1.25)	($577)	(2.3%)	($1.68)	($805)	(2.1%)	34.8%
Self Scheduled FTR Credits	($0.51)	($235)	(0.9%)	($1.43)	($684)	(1.8%)	181.5%
Balancing Congestion	$0.44	$201	0.8%	$0.67	$318	0.8%	52.7%
Emergency Energy	$0.00	$0	0.0%	$0.01	$6	0.0%	0.0%
Inadvertent Energy	$0.02	$7	0.0%	($0.01)	($6)	(0.0%)	(180.4%)
Load Response - Energy	$0.01	$5	0.0%	$0.04	$18	0.0%	270.8%
Emergency Load Response	$0.00	$0	0.0%	$0.00	$0	0.0%	0.0%
Energy Uplift (Operating Reserves)	$0.41	$188	0.7%	$1.29	$615	1.6%	216.1%
Marginal Loss Surplus Allocation	($0.45)	($208)	(0.8%)	($0.71)	($337)	(0.9%)	56.4%
Market to Market Payments	$0.06	$30	0.1%	$0.10	$48	0.1%	58.4%
Capacity	$3.52	$1,623	6.3%	$8.10	$3,869	10.2%	130.2%
Capacity (Capacity Market and FRR)	$3.43	$1,581	6.2%	$8.04	$3,844	10.1%	134.8%
Capacity Part V (RMR)	$0.09	$42	0.2%	$0.05	$25	0.1%	(42.4%)
Load Response - Capacity	$0.00	$0	0.0%	$0.00	$0	0.0%	0.0%
Transmission	$17.45	$8,056	31.5%	$18.22	$8,707	22.9%	4.4%
Transmission Service Charges	$14.80	$6,833	26.7%	$15.46	$7,388	19.4%	4.4%
Transmission Enhancement Cost Recovery	$2.56	$1,180	4.6%	$2.67	$1,274	3.4%	4.3%
Transmission Owner (Schedule 1A)	$0.09	$43	0.2%	$0.09	$45	0.1%	2.2%
Transmission Seams Elimination Cost Assignment (SECA)	$0.00	$0	0.0%	$0.00	$0	0.0%	0.0%
Transmission Facility Charges	$0.00	$0	0.0%	$0.00	$0	0.0%	0.0%
Ancillary	$0.92	$425	1.7%	$1.06	$508	1.3%	15.4%
Reactive	$0.48	$223	0.9%	$0.45	$215	0.6%	(6.8%)
Regulation	$0.23	$106	0.4%	$0.31	$149	0.4%	35.2%
Black Start	$0.09	$42	0.2%	$0.07	$32	0.1%	(25.8%)
Synchronized Reserves	$0.10	$47	0.2%	$0.21	$98	0.3%	103.4%
Secondary Reserves	$0.00	$1	0.0%	$0.01	$4	0.0%	235.9%
Non-Synchronized Reserves	$0.01	$6	0.0%	$0.02	$9	0.0%	50.3%
Day Ahead Scheduling Reserve (DASR)	$0.00	$0	0.0%	$0.00	$0	0.0%	0.0%
Administration	$0.67	$308	1.2%	$0.66	$315	0.8%	(1.4%)
PJM Administrative Fees	$0.62	$285	1.1%	$0.61	$292	0.8%	(1.0%)
NERC/RFC	$0.04	$19	0.1%	$0.04	$20	0.1%	1.0%
RTO Startup and Expansion	$0.00	$0	0.0%	$0.00	$0	0.0%	0.0%
Other	$0.01	$4	0.0%	$0.00	$2	0.0%	(45.7%)
Total Price	$55.39	$25,570	100.0%	$79.49	$37,985	100.0%	43.5%
Total Day Ahead Load	456,113			470,359			3.1%
Total Balancing Load	(5,516)			(7,497)			35.9%
Total Real Time Load	461,629			477,856			3.5%
Total Cost ($ Billions)	$25.57			$37.99			48.6%

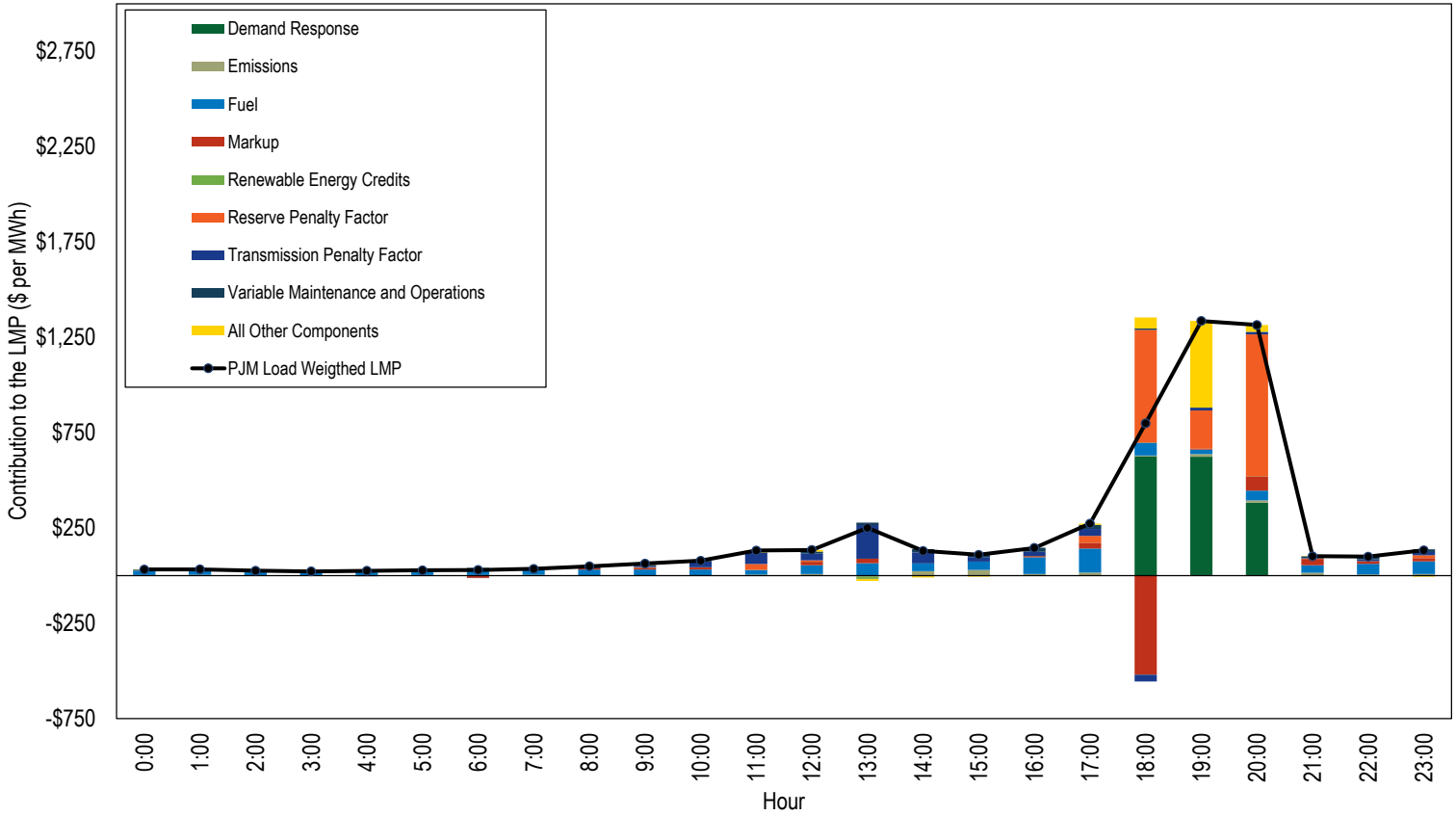
LMP Formation during June Peak Load

- The IMM decomposes LMP into the components of the offers of marginal units and the administrative components of LMP on a five minute basis.
- Five minute LMP components are averaged to load weighted average hourly LMP components.
- The analysis shows the extent to which fuel costs, markup, demand response, ORDCs, transmission constraint penalty factors determined LMP.
- The ORDCs during primary reserve shortages and demand response strike prices were the primary determinants of LMPs over $1,000 per MWh.
- Administrative price caps to SMP applied in the pricing run on June 24, 2025.

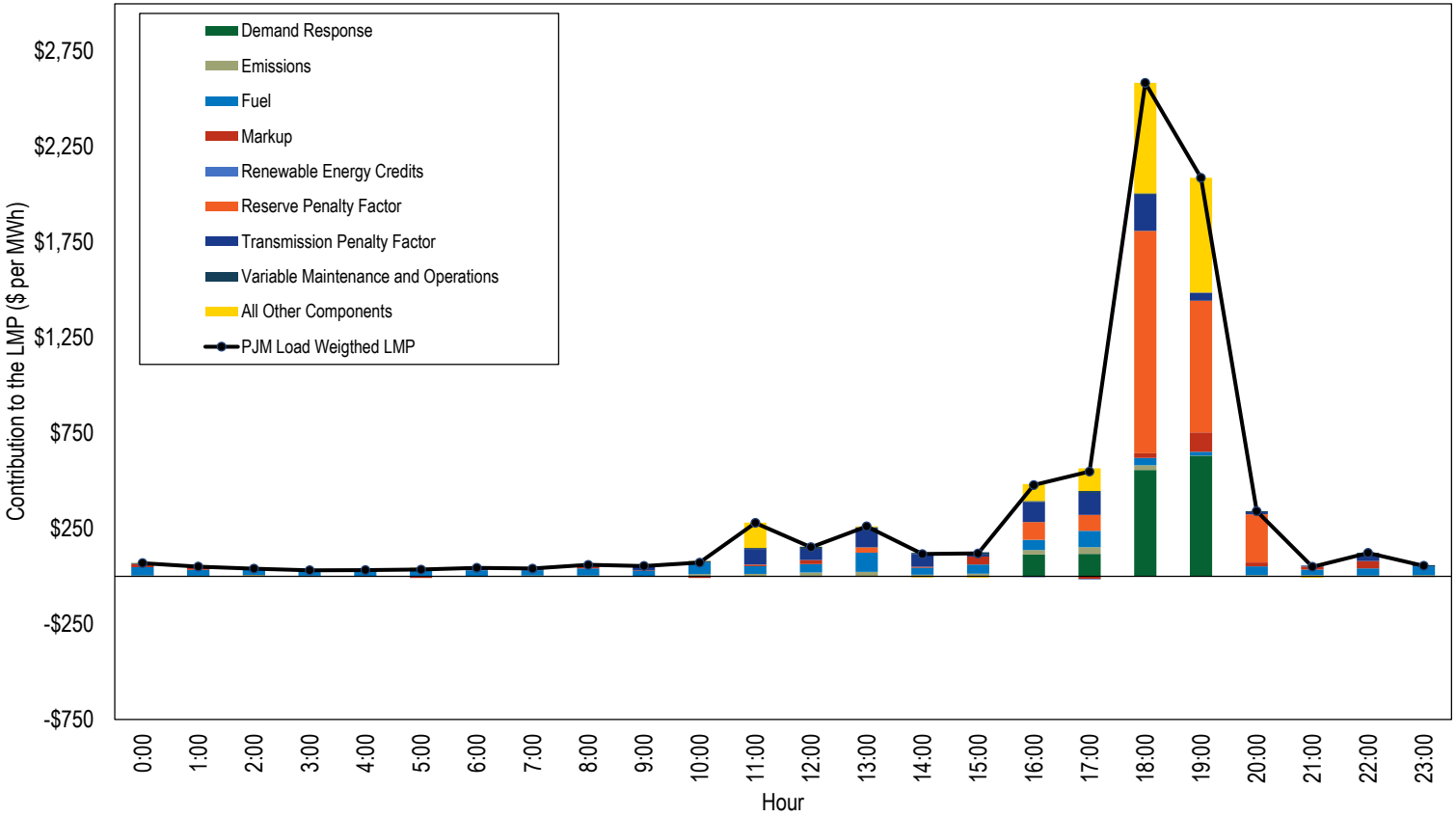
Dispatch Run LMP Formation June 23, 2025



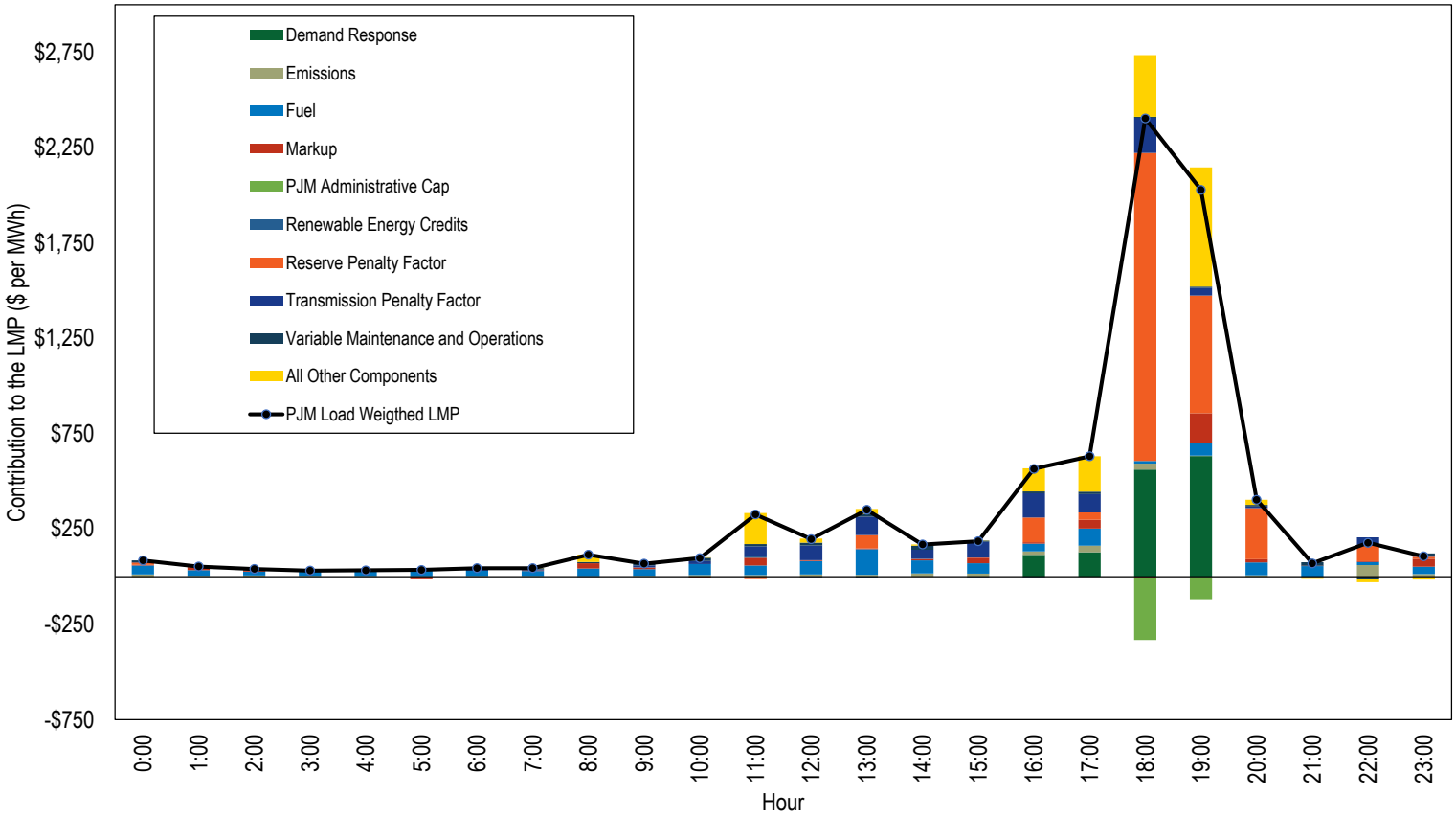
Pricing Run LMP Formation June 23, 2025



Dispatch Run LMP Formation June 24, 2025



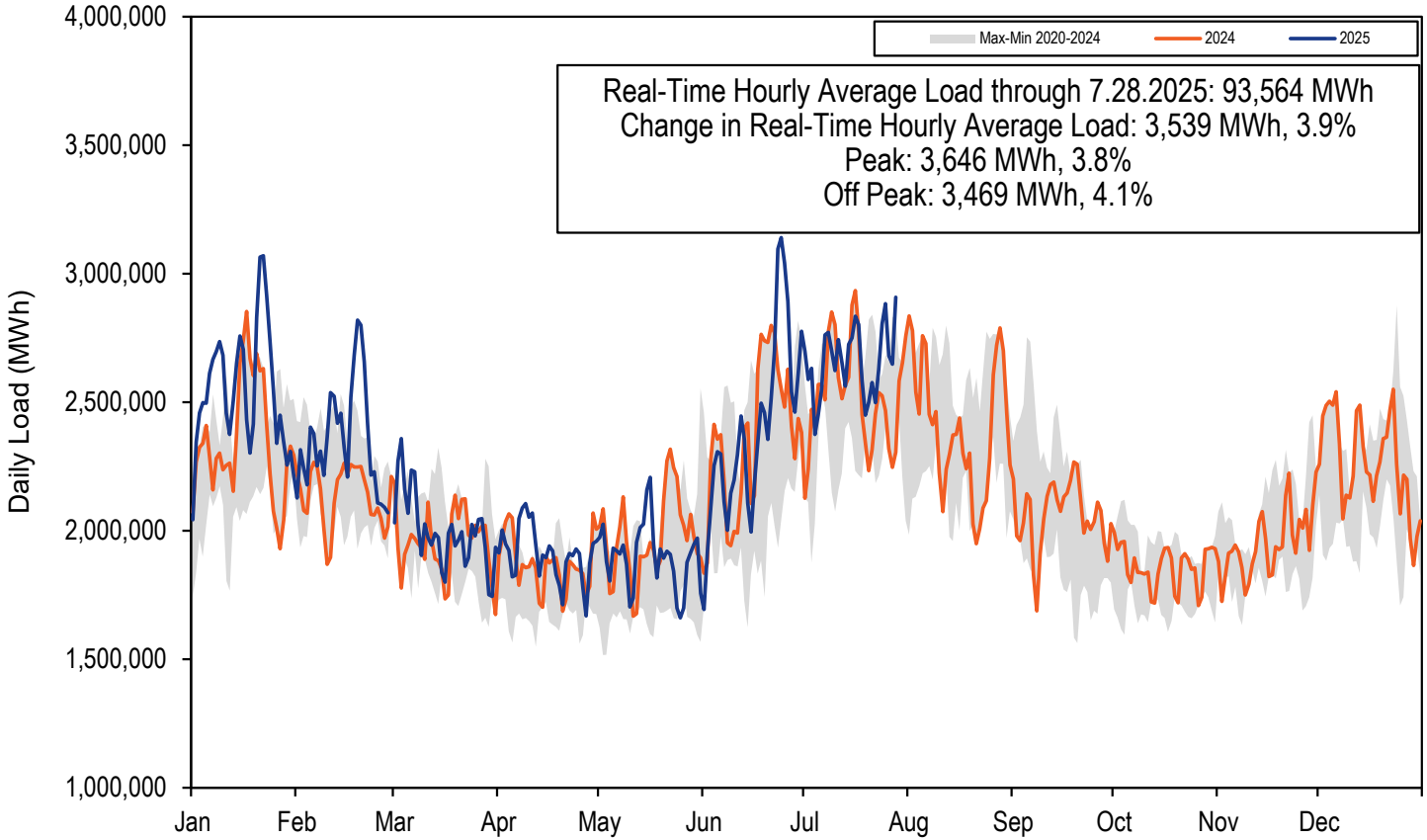
Pricing Run LMP Formation June 24, 2025



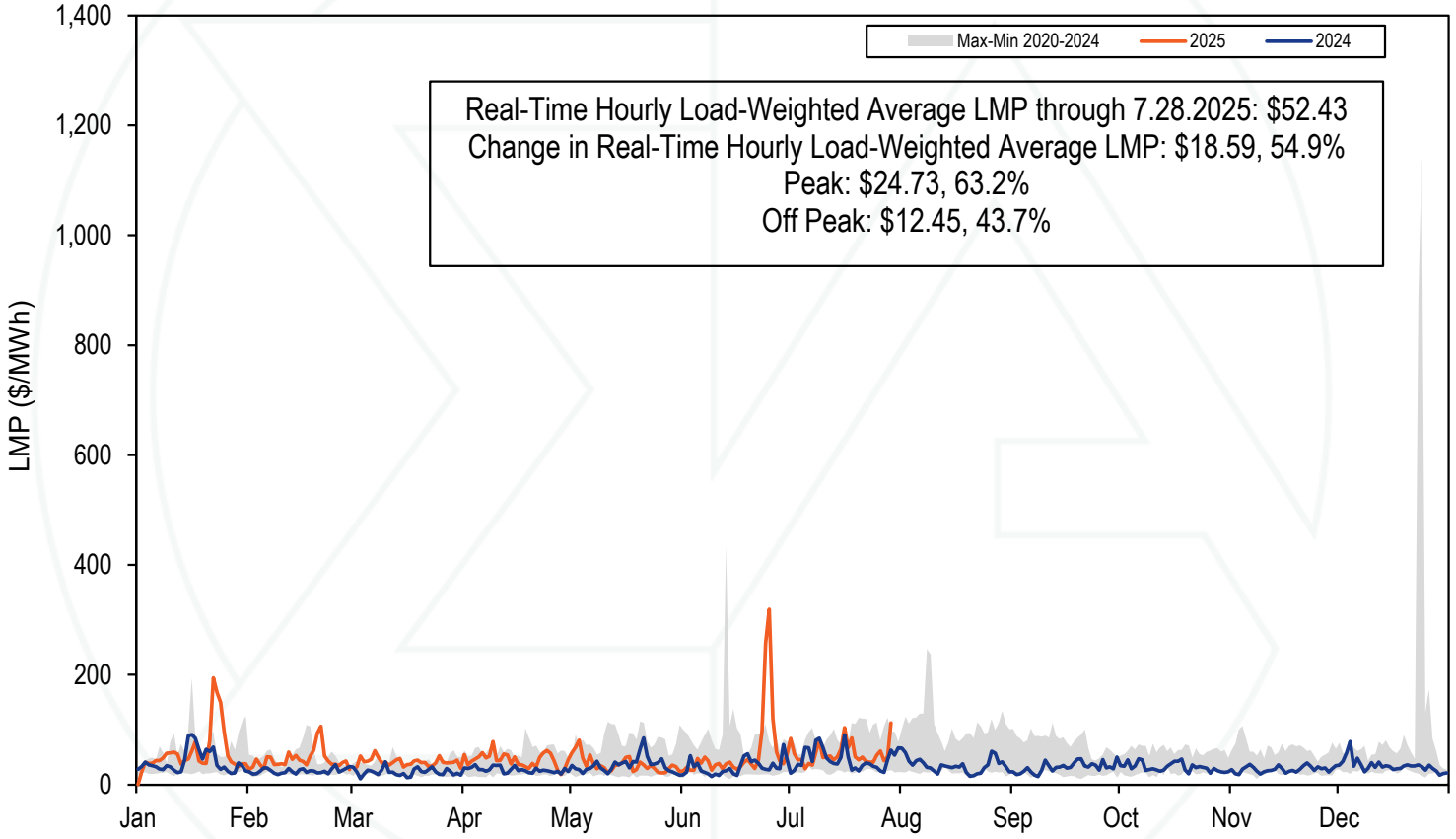
Monitoring Analytics

YEAR TO DATE UPDATE

2024 YTD PJM Real-Time Daily Load

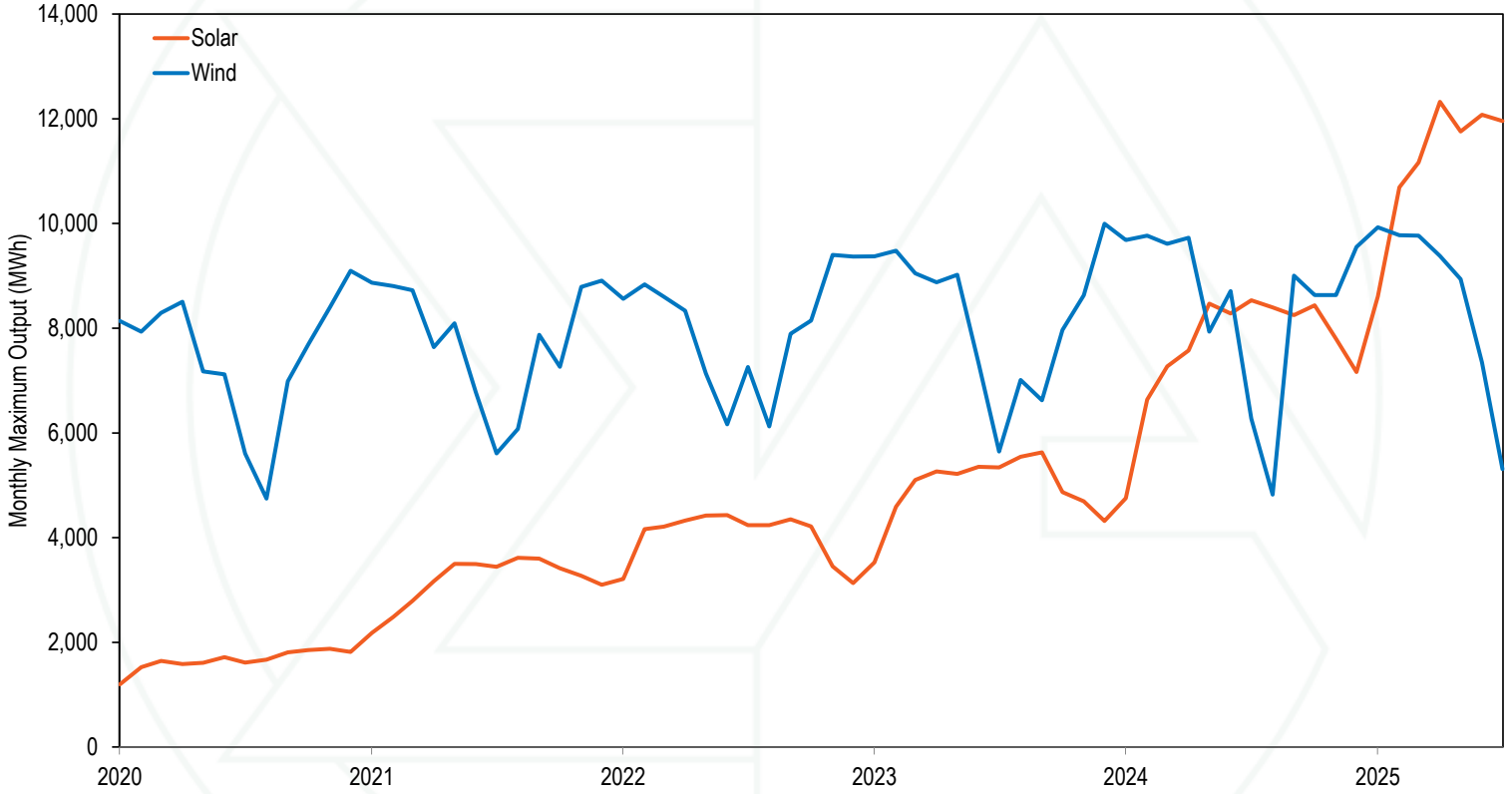


2024 YTD PJM Real-Time Daily LMP



Monitoring Analytics

Monthly Maximum Solar and Wind Hourly Output



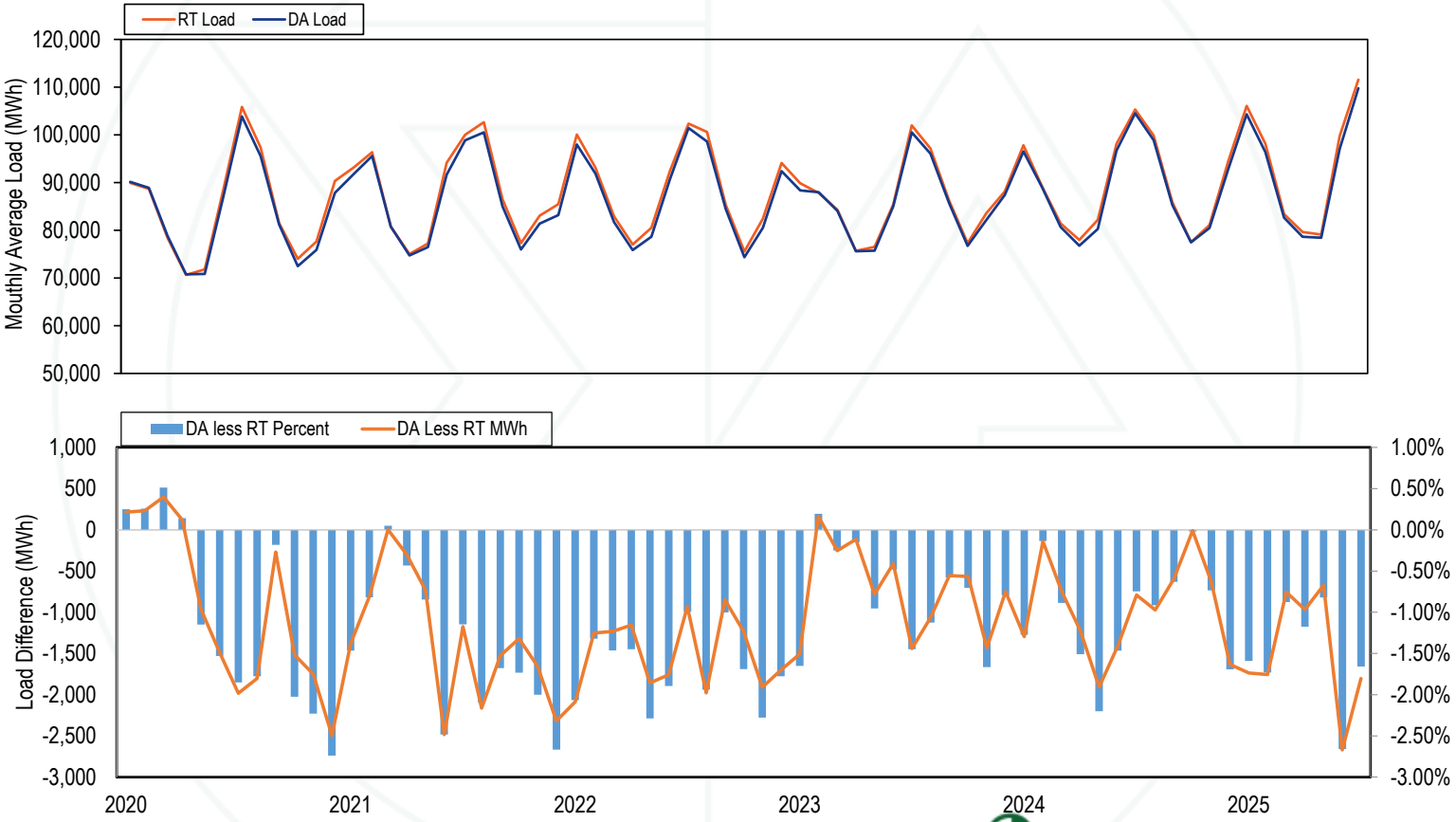
Annual Maximum Hourly Solar and Wind Output

Year	Solar Maximum Hourly Output			Solar Percent of All Generation For The Year	Wind Maximum Hourly Output			Wind Percent of All Generation For The Year
	Maximum Hourly MWh	Change	Percent Change		Maximum Hourly MWh	Change	Percent Change	
2020	1,879			0.4%	9,095			3.3%
2021	3,617	1,739	92.5%	0.9%	8,911	(184)	(2.0%)	3.3%
2022	4,429	812	22.4%	1.1%	9,402	491	5.5%	3.8%
2023	5,630	1,201	27.1%	1.4%	9,993	592	6.3%	3.5%
2024	8,532	2,901	51.5%	2.1%	9,768	(226)	(2.3%)	3.7%
2025	12,325	3,794	44.5%	2.9%	9,929	161	1.7%	4.5%

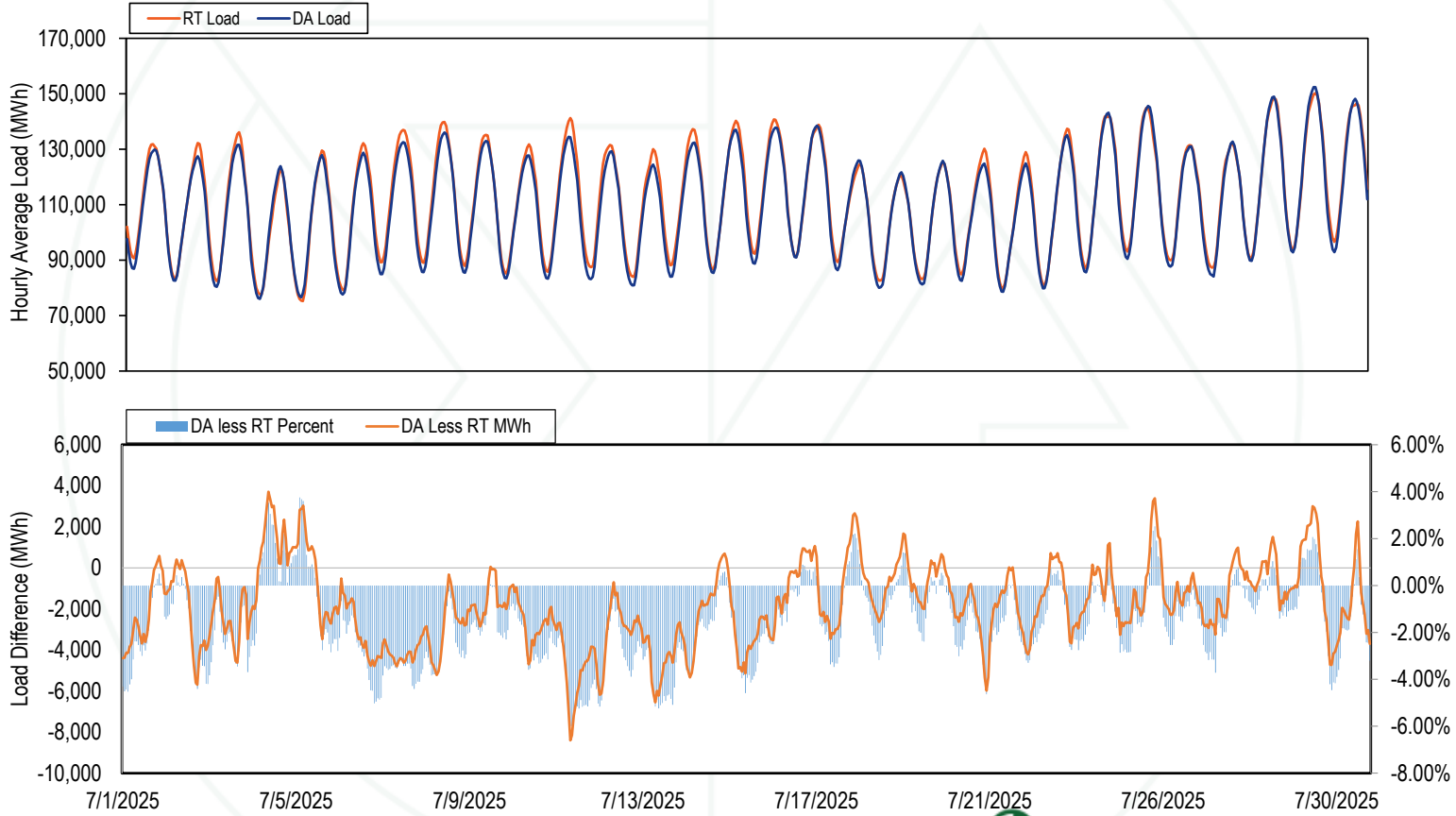
Real-Time Load-Weighted Average LMP

	2024				2025			
	Off Peak	On Peak	Difference	Percent Difference	Off Peak	On Peak	Difference	Percent Difference
Jan	$38.50	$47.10	$8.60	22.3%	$55.29	$70.54	$15.25	27.6%
Feb	$24.49	$25.23	$0.74	3.0%	$43.75	$54.12	$10.37	23.7%
Mar	$21.64	$24.79	$3.15	14.6%	$38.89	$45.68	$6.79	17.5%
Apr	$23.99	$30.03	$6.04	25.2%	$38.15	$52.08	$13.93	36.5%
May	$28.99	$42.74	$13.75	47.4%	$27.32	$45.53	$18.21	66.7%
Jun	$26.66	$40.04	$13.38	50.2%	$39.62	$94.51	$54.89	138.5%
Jul	$32.20	$60.78	$28.58	88.7%	$39.08	$77.77	$38.68	99.0%
Aug	$26.71	$44.99	$18.28	68.5%				
Sep	$24.53	$39.42	$14.89	60.7%				
Oct	$26.60	$36.49	$9.89	37.2%				
Nov	$23.80	$33.18	$9.38	39.4%				
Dec	$31.60	$38.70	$7.10	22.5%				

DA vs RT Load Bidding Difference History



DA vs RT Hourly Load Bidding Difference, July 2025



FAST START

Fast Start Pricing: DLMP and PLMP

- **PJM implemented fast start pricing in both the day-ahead and real-time markets on September 1, 2021.**
- **The goal of fast start pricing is to allow inflexible resources to set prices based on the sum of their commitment costs per MWh and their marginal costs.**
- **The pricing run LMP (PLMP) is now the official settlement LMP in PJM, replacing the dispatch run LMP (DLMP).**

Fast Start Pricing: DLMP and PLMP

- **Fast start pricing employs a new LMP calculation called the pricing run.**
- **The pricing run calculates LMP using the same optimal power flow algorithm as the dispatch run while simultaneously reducing ("relaxing" or ignoring) the economic minimum and maximum output MW constraints for all eligible fast start units.**

Fast Start Pricing: DLMP and PLMP

- **The price signal no longer equals the short run marginal cost and therefore no longer provides the correct signal for efficient behavior for market participants making decisions on the margin.**
- **The differences between the actual LMP (DLMP) and the fast start LMP (PLMP) distort the incentive for market participants to behave competitively and to follow PJM's dispatch instructions.**

Fast Start Pricing: DLMP and PLMP

- **PJM also uses the pricing run for capping the system marginal price at $3,700 per MWh.**
  - **This was last used during Winter Storm Elliott.**
  - **The cap applies to the marginal energy component of LMP, but the congestion and loss components of LMP can exceed the cap.**
- **PJM uses a lower default transmission constraint penalty factor in the pricing run in the day-ahead market.**
  - **$30,000 per MWh in the dispatch run**
  - **$2,000 per MWh in the pricing run**

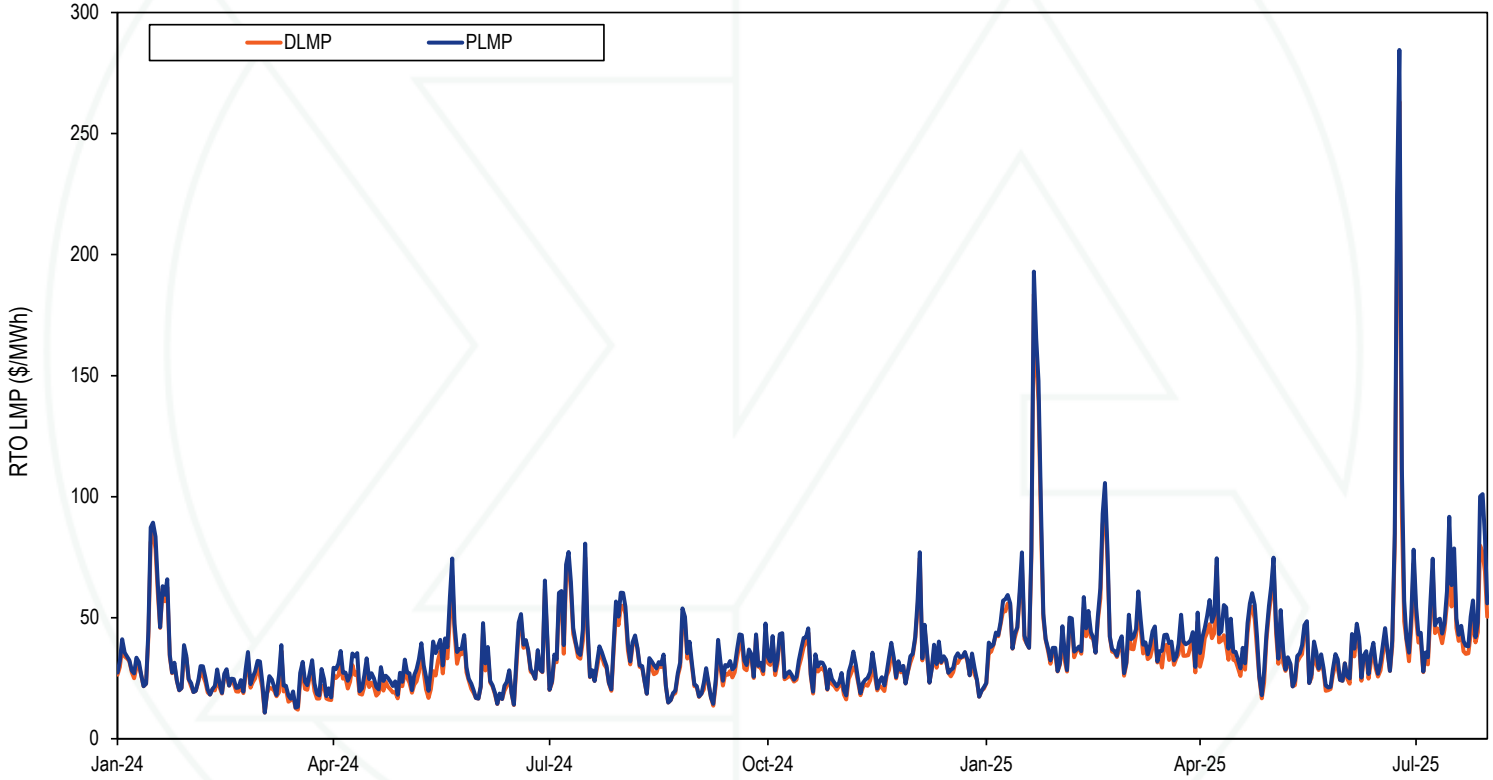
Monthly Average Load-Weighted DLMP and PLMP

		Day-Ahead Load-Weighted Average				Real-Time Load-Weighted Average			
Year	Month	DLMP	PLMP	Difference	Percent Difference	DLMP	PLMP	Difference	Percent Difference
2024	Jan	$48.45	$48.65	$0.20	0.4%	$40.82	$42.78	$1.95	4.8%
2024	Feb	$23.67	$23.70	$0.03	0.1%	$23.20	$24.86	$1.66	7.2%
2024	Mar	$21.89	$21.93	$0.04	0.2%	$20.30	$23.15	$2.85	14.0%
2024	Apr	$26.73	$26.75	$0.02	0.1%	$23.29	$27.17	$3.87	16.6%
2024	May	$32.92	$32.90	($0.02)	(0.1%)	$31.70	$36.16	$4.46	14.1%
2024	Jun	$32.59	$32.62	$0.03	0.1%	$31.95	$33.35	$1.40	4.4%
2024	Jul	$44.51	$44.69	$0.18	0.4%	$44.12	$47.17	$3.04	6.9%
2024	Aug	$36.34	$36.31	($0.03)	(0.1%)	$34.37	$36.29	$1.92	5.6%
2024	Sep	$30.63	$30.77	$0.14	0.4%	$29.32	$31.81	$2.48	8.5%
2024	Oct	$33.18	$33.26	$0.08	0.2%	$29.85	$31.87	$2.02	6.8%
2024	Nov	$29.78	$29.82	$0.04	0.1%	$25.70	$28.26	$2.55	9.9%
2024	Dec	$36.98	$37.05	$0.06	0.2%	$33.62	$34.98	$1.36	4.0%
2024	Jan-Jul	$36.95	$37.08	$0.12	0.3%	$32.71	$34.53	$1.82	5.6%
2024		$33.72	$33.79	$0.07	0.2%	$31.31	$33.74	$2.43	7.7%
2025	Jan	$67.53	$67.74	$0.21	0.3%	$59.93	$62.87	$2.94	4.9%
2025	Feb	$48.85	$49.02	$0.16	0.3%	$46.27	$48.90	$2.62	5.7%
2025	Mar	$40.76	$40.74	($0.03)	(0.1%)	$37.82	$42.11	$4.30	11.4%
2025	Apr	$44.36	$44.35	($0.01)	(0.0%)	$40.07	$45.42	$5.35	13.4%
2025	May	$37.56	$37.40	($0.16)	(0.4%)	$33.98	$36.34	$2.36	6.9%
2025	Jun	$53.01	$53.14	$0.13	0.2%	$62.53	$68.13	$5.60	9.0%
2025	Jul	$66.56	$66.76	$0.20	0.3%	$52.41	$59.38	$6.97	13.3%
2025	Jan-Jul	$59.01	$59.20	$0.19	0.3%	$53.71	$56.51	$2.80	5.2%

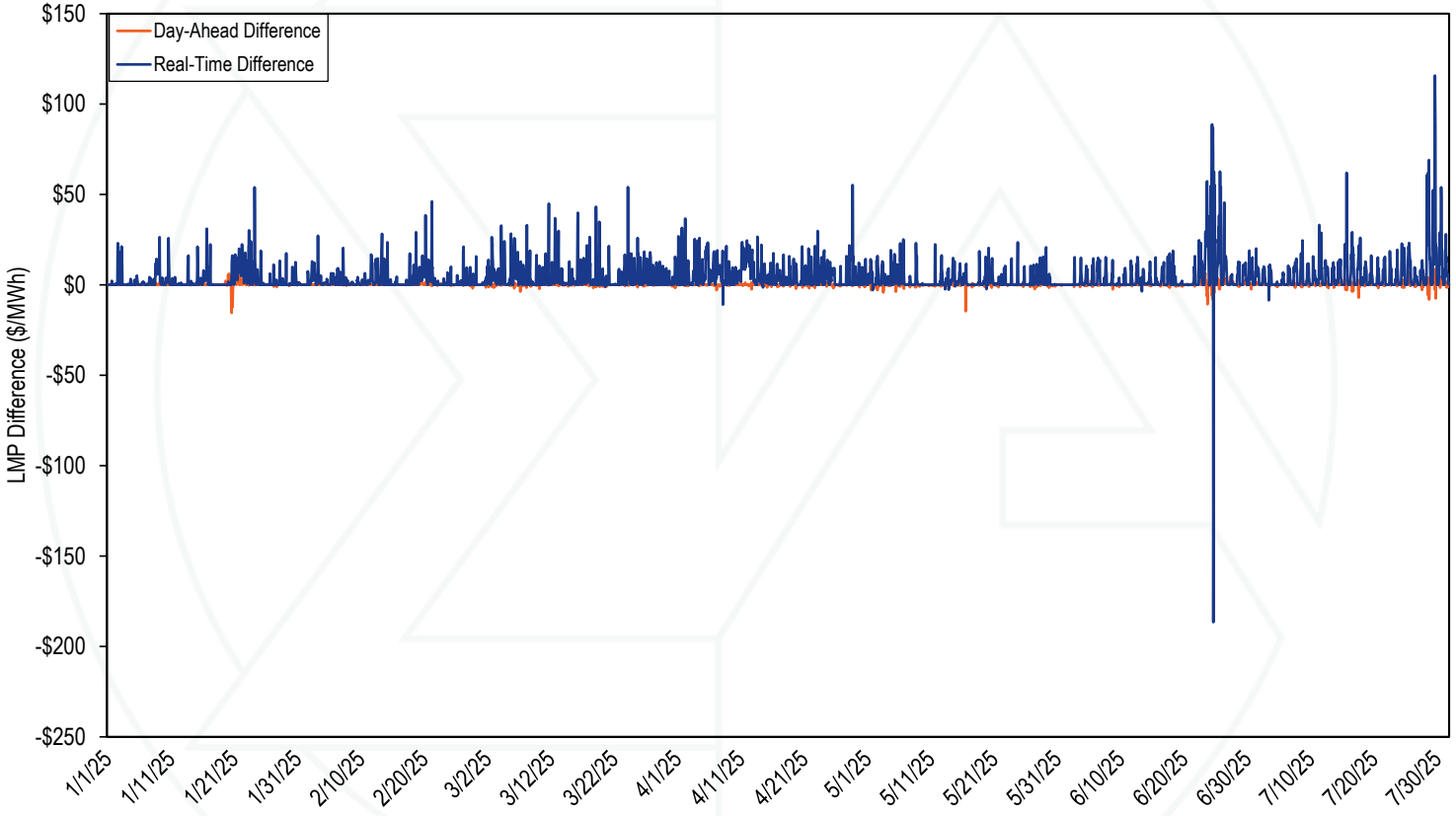
Real Time Fast Start Impact

Month	2022 (In Millions)	2023 (In Millions)	2024 (In Millions)	2025 (In Millions)
Jan	196.33	72.89	142.06	232.11
Feb	52.11	33.74	103.17	173.03
Mar	106.74	53.11	172.59	266.16
Apr	195.22	121.28	217.50	306.90
May	247.03	143.80	272.73	138.96
Jun	429.42	98.31	98.74	402.22
Jul	643.44	217.56	238.39	578.75
Aug	602.88	112.21	142.81	
Sep	259.08	137.94	153.65	
Oct	204.26	239.25	116.28	
Nov	122.77	152.91	149.38	
Dec	(99.68)	104.53	95.35	
Total	2,959.60	1,487.52	1,902.66	

Daily Average Real-Time DLMP and PLMP



Hourly Difference: PLMP – DLMP



Monitoring Analytics

Fast Start Units as a Percent of Marginal Units

		Dispatch Run					Pricing Run				
Year	Month	CT	Diesel	Wind	Solar	All Fast Start Units	CT	Diesel	Wind	Solar	All Fast Start Units
2024	Jan	0.7%	0.6%	0.0%	0.0%	1.3%	3.5%	1.1%	0.0%	0.0%	4.7%
2024	Feb	0.4%	0.1%	0.1%	0.0%	0.5%	2.2%	0.1%	0.1%	0.0%	2.4%
2024	Mar	0.7%	0.2%	1.2%	0.0%	2.1%	4.1%	0.8%	1.3%	0.0%	6.2%
2024	Apr	1.5%	0.2%	0.2%	0.0%	1.9%	6.5%	0.7%	0.1%	0.0%	7.3%
2024	May	0.6%	0.2%	0.1%	0.0%	1.0%	5.1%	0.6%	0.1%	0.0%	5.8%
2024	Jun	0.5%	0.3%	0.1%	0.0%	0.8%	3.5%	0.4%	0.1%	0.0%	4.0%
2024	Jul	0.8%	0.5%	0.0%	0.1%	1.4%	7.4%	1.0%	0.0%	0.1%	8.5%
2024	Aug	0.6%	0.5%	0.0%	0.0%	1.1%	5.0%	1.0%	0.0%	0.0%	6.0%
2024	Sep	1.0%	0.1%	0.0%	0.0%	1.1%	7.1%	0.4%	0.0%	0.0%	7.6%
2024	Oct	1.2%	0.1%	0.0%	0.0%	1.3%	6.4%	1.3%	0.0%	0.0%	7.7%
2024	Nov	1.0%	0.2%	0.0%	0.1%	1.4%	6.2%	0.6%	0.0%	0.1%	7.0%
2024	Dec	0.5%	0.2%	0.0%	0.0%	0.7%	2.2%	0.6%	0.0%	0.0%	2.9%
2024	Jan-Jul	0.7%	0.3%	0.3%	0.0%	1.3%	4.6%	0.7%	0.2%	0.0%	5.6%
2024		0.8%	0.3%	0.2%	0.0%	1.2%	4.9%	0.7%	0.2%	0.0%	5.8%
2025	Jan	0.8%	0.6%	0.1%	0.0%	1.5%	4.5%	2.1%	0.1%	0.0%	6.8%
2025	Feb	1.5%	0.1%	0.4%	0.0%	2.0%	3.7%	0.6%	0.3%	0.0%	4.6%
2025	Mar	0.5%	4.5%	0.1%	0.2%	5.2%	3.4%	5.0%	0.1%	0.2%	8.6%
2025	Apr	1.9%	1.8%	0.3%	0.1%	4.1%	7.1%	2.2%	0.3%	0.1%	9.7%
2025	May	0.6%	0.3%	0.0%	0.0%	1.0%	3.9%	1.5%	0.0%	0.0%	5.4%
2025	Jun	1.4%	0.2%	0.0%	0.0%	1.6%	6.2%	0.8%	0.0%	0.0%	7.0%
2025	Jul	2.5%	0.5%	0.0%	0.0%	3.1%	10.6%	1.3%	0.0%	0.0%	12.0%
2025	Jan-Jul	1.3%	1.2%	0.1%	0.0%	2.7%	5.6%	1.9%	0.1%	0.0%	7.7%

Fast Start Impacts: Zone Average Differences

	2025 Jan-Jul							
	Day-Ahead				Real-Time			
Zone	Average DLMP	Average PLMP	Difference	Percent Difference	Average DLMP	Average PLMP	Difference	Percent Difference
ACEC	$33.50	$33.56	$0.07	0.2%	$31.17	$33.36	$2.20	7.0%
AEP	$36.75	$36.81	$0.06	0.2%	$34.05	$36.93	$2.88	8.5%
APS	$37.95	$38.01	$0.07	0.2%	$35.03	$38.02	$2.99	8.5%
ATSI	$37.03	$37.04	$0.01	0.0%	$33.80	$36.63	$2.82	8.3%
BGE	$46.41	$46.49	$0.08	0.2%	$42.18	$45.74	$3.56	8.4%
COMED	$29.39	$29.47	$0.08	0.3%	$26.59	$28.98	$2.39	9.0%
DAY	$37.87	$37.94	$0.06	0.2%	$34.61	$37.58	$2.97	8.6%
DUKE	$36.44	$36.50	$0.06	0.2%	$33.18	$36.02	$2.84	8.6%
DOM	$45.67	$45.72	$0.04	0.1%	$42.49	$45.72	$3.23	7.6%
DPL	$37.35	$37.45	$0.10	0.3%	$33.65	$36.81	$3.16	9.4%
DUQ	$36.06	$36.11	$0.05	0.1%	$33.39	$36.16	$2.77	8.3%
EKPC	$35.89	$35.96	$0.06	0.2%	$33.24	$36.07	$2.83	8.5%
JCPLC	$33.60	$33.67	$0.07	0.2%	$31.32	$33.57	$2.25	7.2%
MEC	$35.31	$35.38	$0.07	0.2%	$32.11	$34.59	$2.48	7.7%
OVEC	$35.02	$35.08	$0.06	0.2%	$31.85	$34.59	$2.73	8.6%
PECO	$32.82	$32.88	$0.07	0.2%	$30.50	$32.61	$2.11	6.9%
PE	$38.46	$38.50	$0.04	0.1%	$35.16	$37.92	$2.76	7.9%
PEPCO	$45.10	$45.17	$0.07	0.2%	$41.31	$44.69	$3.37	8.2%
PPL	$32.49	$32.56	$0.07	0.2%	$29.93	$32.22	$2.29	7.7%
PSEG	$33.82	$33.89	$0.07	0.2%	$31.81	$34.10	$2.29	7.2%
REC	$36.59	$36.66	$0.07	0.2%	$34.14	$36.57	$2.43	7.1%

Fast Start Impacts: Hub Average Differences

	2025 Jan-Jul							
	Day-Ahead				Real-Time			
Hub	Average DLMP	Average PLMP	Difference	Percent Difference	Average DLMP	Average PLMP	Difference	Percent Difference
AEP GEN HUB	$34.94	$34.98	$0.04	0.1%	$31.87	$34.62	$2.75	8.6%
AEP-DAYTON HUB	$36.19	$36.23	$0.04	0.1%	$33.05	$35.87	$2.82	8.5%
ATSI GEN HUB	$36.45	$36.45	$0.01	0.0%	$32.98	$35.73	$2.75	8.3%
CHICAGO GEN HUB	$28.66	$28.74	$0.08	0.3%	$25.62	$28.01	$2.39	9.3%
CHICAGO HUB	$29.59	$29.63	$0.04	0.1%	$26.72	$29.10	$2.38	8.9%
DOMINION HUB	$40.39	$40.42	$0.04	0.1%	$37.34	$40.45	$3.11	8.3%
EASTERN HUB	$37.21	$37.28	$0.07	0.2%	$33.44	$36.54	$3.11	9.3%
N ILLINOIS HUB	$29.32	$29.41	$0.09	0.3%	$26.61	$29.00	$2.39	9.0%
NEW JERSEY HUB	$33.69	$33.73	$0.04	0.1%	$31.50	$33.76	$2.26	7.2%
OHIO HUB	$36.20	$36.24	$0.04	0.1%	$33.08	$35.90	$2.82	8.5%
WEST INT HUB	$37.97	$37.98	$0.01	0.0%	$34.95	$37.86	$2.91	8.3%
WESTERN HUB	$39.82	$39.86	$0.03	0.1%	$36.37	$39.37	$3.00	8.2%

Zonal Real-Time PLMP-DLMP Difference Frequency

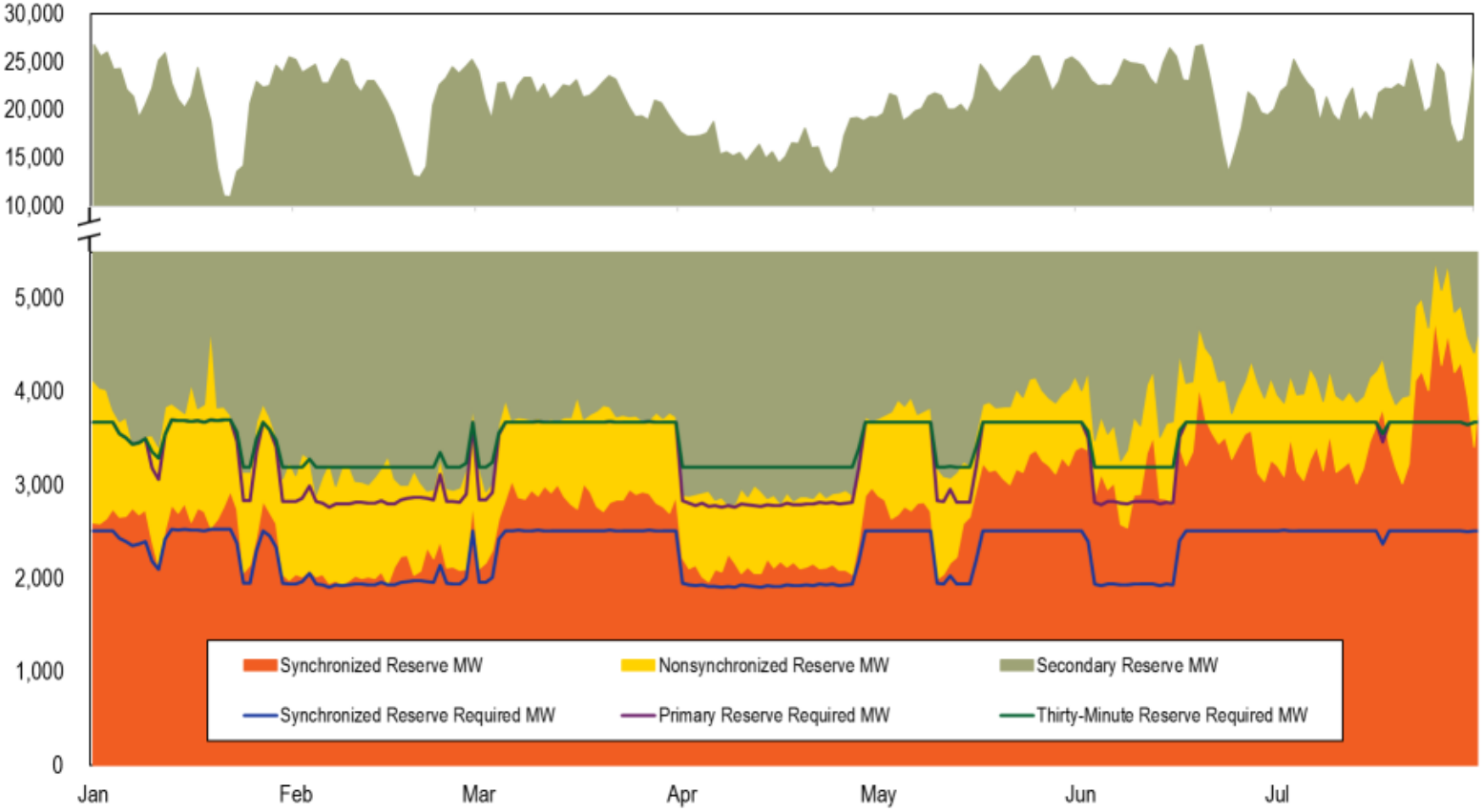
	2025 Jan-Jul									
Zone	< ($50)	($50) to ($10)	($10) to $0	$0	$0 to $10	$10 to $20	$20 to $50	$50 to $100	$100 to $200	>= $200
PJM-RTO	0.0%	0.0%	0.9%	43.7%	43.0%	7.7%	3.8%	0.7%	0.1%	0.0%
ACEC	0.0%	0.1%	5.1%	43.9%	41.1%	5.9%	3.1%	0.6%	0.2%	0.0%
AEP	0.0%	0.0%	1.5%	43.8%	42.1%	7.8%	4.0%	0.7%	0.1%	0.0%
APS	0.0%	0.0%	1.1%	43.8%	42.1%	7.7%	4.4%	0.8%	0.1%	0.0%
ATSI	0.0%	0.0%	1.4%	43.7%	42.5%	7.6%	4.0%	0.7%	0.1%	0.0%
BGE	0.0%	0.2%	2.5%	43.6%	39.1%	8.0%	5.2%	1.1%	0.2%	0.0%
COMED	0.1%	0.1%	6.4%	44.9%	38.3%	6.5%	3.1%	0.6%	0.1%	0.0%
DAY	0.0%	0.1%	1.7%	43.8%	41.8%	7.7%	4.1%	0.7%	0.1%	0.0%
DUKE	0.0%	0.1%	1.8%	43.9%	41.9%	7.6%	3.8%	0.7%	0.1%	0.0%
DOM	0.1%	0.3%	2.4%	43.7%	39.7%	7.6%	4.9%	1.0%	0.2%	0.0%
DPL	0.0%	0.2%	7.2%	43.9%	37.9%	5.6%	3.2%	1.2%	0.8%	0.0%
DUQ	0.0%	0.0%	1.6%	43.7%	42.5%	7.5%	3.8%	0.7%	0.1%	0.0%
EKPC	0.0%	0.0%	1.7%	43.8%	42.1%	7.8%	3.8%	0.7%	0.1%	0.0%
JCPLC	0.0%	0.0%	3.0%	43.9%	43.1%	6.0%	3.1%	0.6%	0.1%	0.0%
MEC	0.0%	0.1%	2.7%	43.7%	42.4%	6.6%	3.6%	0.7%	0.1%	0.0%
OVEC	0.0%	0.2%	2.0%	43.9%	42.0%	7.4%	3.7%	0.7%	0.1%	0.0%
PECO	0.0%	0.1%	6.7%	43.8%	39.8%	5.8%	3.0%	0.6%	0.1%	0.0%
PE	0.0%	0.1%	1.8%	43.5%	42.1%	7.6%	4.1%	0.7%	0.1%	0.0%
PEPCO	0.0%	0.1%	2.5%	43.8%	39.5%	7.9%	5.0%	1.0%	0.2%	0.0%
PPL	0.0%	0.0%	2.8%	43.7%	43.4%	6.1%	3.2%	0.6%	0.1%	0.0%
PSEG	0.0%	0.0%	2.8%	43.8%	43.3%	6.1%	3.2%	0.7%	0.1%	0.0%
REC	0.0%	0.1%	2.7%	43.6%	42.7%	6.6%	3.5%	0.7%	0.1%	0.0%

Hourly Average Load and PLMP – DLMP Delta

Monitoring Analytics

RESERVES

Real-Time Average Cleared Reserves and Requirements



Day-Ahead & Real-Time RTO Average Reserve MW

Year	Month	Average Synchronized Reserve MW		Average Nonsynchronized Reserve MW		Average Total Primary Reserve MW		Average Secondary Reserve MW		Average Total Thirty-Minute Reserve MW	
		DA	RT	DA	RT	DA	RT	DA	RT	DA	RT
2025	Jan	2,637	2,582	1,313	1,130	3,950	3,712	13,079	17,602	17,028	21,313
2025	Feb	2,180	2,111	1,220	1,013	3,400	3,124	13,024	18,628	16,424	21,752
2025	Mar	2,824	2,802	932	881	3,756	3,683	11,763	17,934	15,519	21,617
2025	Apr	2,171	2,183	809	776	2,981	2,959	8,536	13,507	11,517	16,466
2025	May	2,636	2,894	1,021	864	3,657	3,758	11,589	18,348	15,246	22,107
2025	Jun	2,686	3,223	953	734	3,639	3,957	12,801	18,589	16,440	22,546
2025	Jul	3,020	3,581	823	747	3,843	4,327	11,687	16,947	15,529	21,275

Day-Ahead & Real-Time MAD Average Reserve MW

Year	Month	Average Synchronized Reserve MW		Average Nonsynchronized Reserve MW		Average Total Primary Reserve MW		Average Secondary Reserve MW		Average Total Thirty-Minute Reserve MW	
		DA	RT	DA	RT	DA	RT	DA	RT	DA	RT
2025	Jan	2,004	1,985	985	925	2,989	2,909	NA	NA	NA	NA
2025	Feb	1,968	1,971	890	839	2,858	2,810	NA	NA	NA	NA
2025	Mar	2,034	1,966	657	667	2,690	2,633	NA	NA	NA	NA
2025	Apr	1,838	1,783	524	599	2,362	2,382	NA	NA	NA	NA
2025	May	1,819	1,833	592	619	2,411	2,451	NA	NA	NA	NA
2025	Jun	2,036	2,040	575	613	2,611	2,653	NA	NA	NA	NA
2025	Jul	2,068	2,038	525	621	2,593	2,659	NA	NA	NA	NA

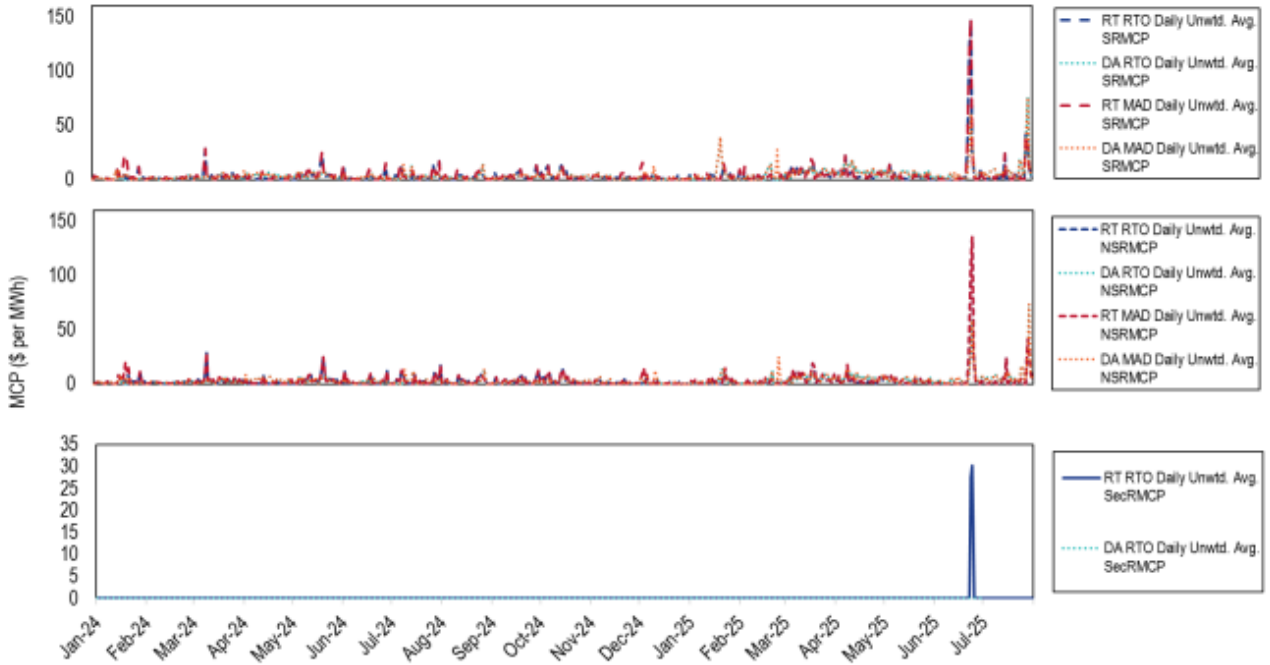
Total Reserve Settlements by Month

Month	Total Day-Ahead Credits			Total Balancing MCP Credits			Total LOC Credits		
	SR	NSR	SecR	SR	NSR	SecR	SR	NSR	SecR
Jan	$9,766,427	$1,310,758	$0	($93,903)	($807,014)	$0	$1,086,575	$185,652	$244,917
Feb	$5,437,781	$698,931	$0	($126,526)	($300,892)	$0	$779,549	$96,940	$142,489
Mar	$15,181,061	$2,079,574	$0	($1,464,818)	($470,698)	$0	$2,047,513	$289,300	$132,092
Apr	$13,256,012	$1,984,502	$0	($345,197)	($236,456)	$0	$1,269,081	$91,514	$137,951
May	$10,685,430	$1,340,915	$0	($13,056)	($142,473)	$0	$786,719	$64,502	$468,635
Jun	$15,012,782	$2,457,199	$0	($4,322,960)	($2,281,783)	($955,512)	$4,654,496	$102,701	$2,262,656
Jul	$22,294,834	$3,388,187	$0	($332,533)	($901,438)	$0	$2,515,465	$81,165	$1,743,783

Month	Total Shortfall Charges			Total Credits		
	SR	NSR	SecR	SR	NSR	SecR
Jan	$0	NA	$0	$10,759,099	$689,396	$244,917
Feb	$118,146	NA	$0	$5,972,658	$494,978	$142,489
Mar	$0	NA	$0	$15,763,757	$1,898,176	$132,092
Apr	$0	NA	$0	$14,179,896	$1,839,560	$137,951
May	$0	NA	$0	$11,459,093	$1,262,944	$468,635
Jun	$0	NA	$0	$15,344,319	$278,116	$1,307,144
Jul	$76,684	NA	$0	$24,401,081	$2,567,915	$1,743,783

- Only February and July had spin events that lasted at least 10 minutes, so only February and July had synchronized reserve shortfall charges.
- Total credits were higher in June due to dozens of intervals of shortage pricing.
- Greater sum of day-ahead credits in July correspond with higher prices during hot weather alerts and maximum emergency generation alerts.

Reserve Prices: January 2024 through July 2025



- Many intervals of shortage pricing seen in June 2025 heatwave
- Higher day-ahead prices on July 24, July 25, July 28, and July 29 correspond with maximum emergency generation alerts and hot weather alerts.

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