

To the Public Utility Commission of Texas

# ERCOT Wholesale Electricity Market Monthly Report

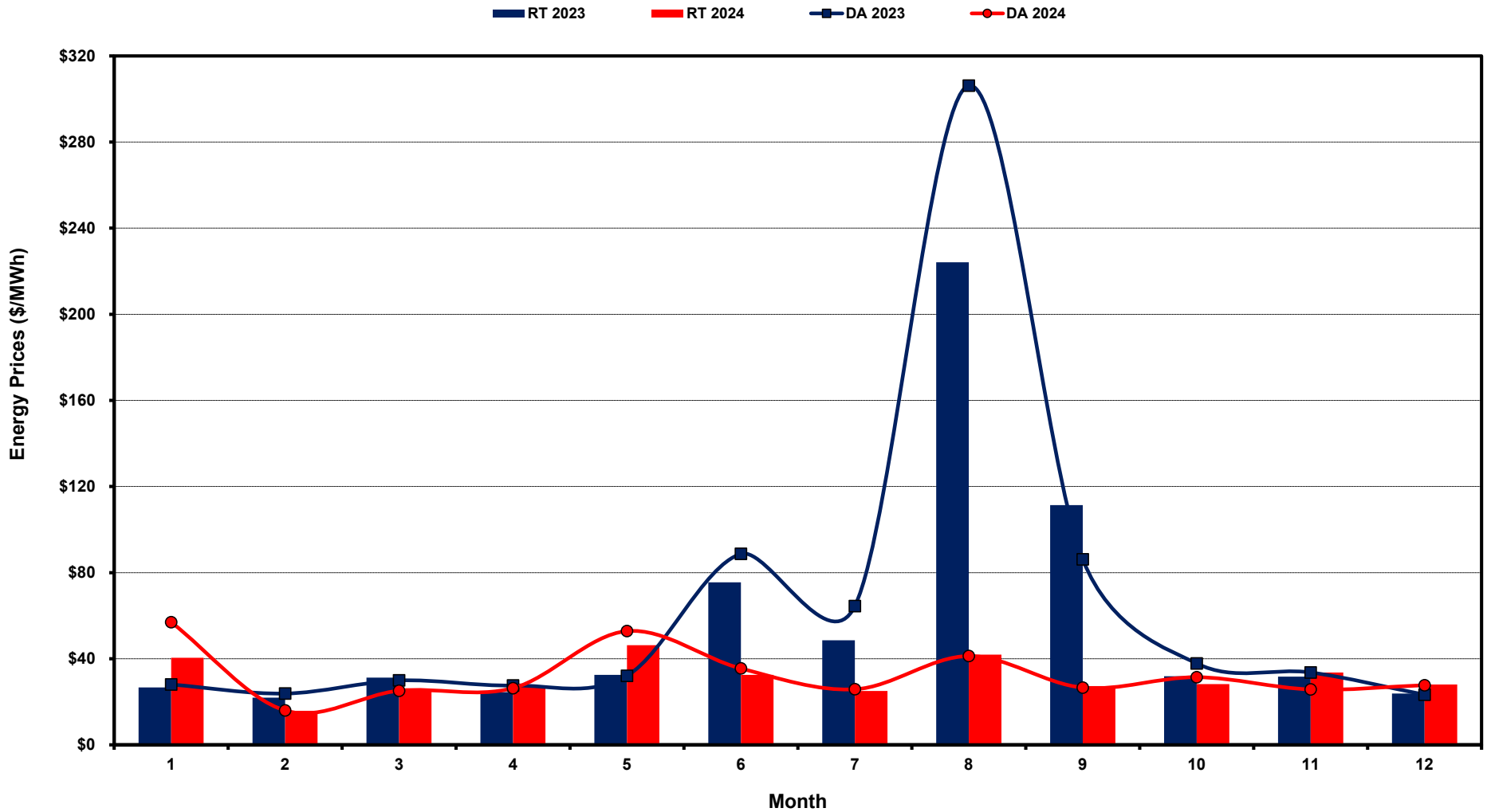
Friday, January 10, 2025

Potomac Economics, Ltd.  
Independent Market Monitor

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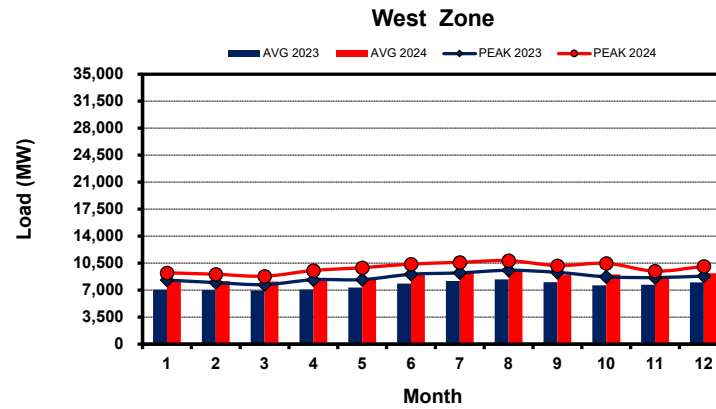
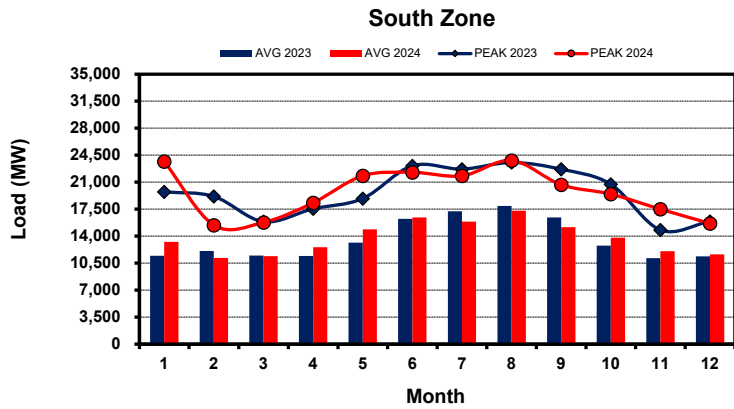
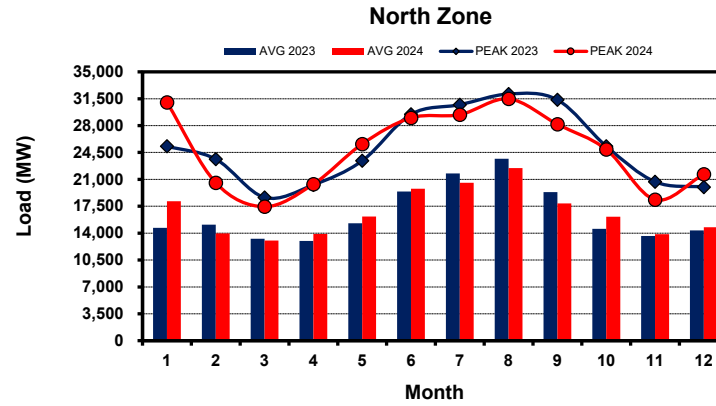
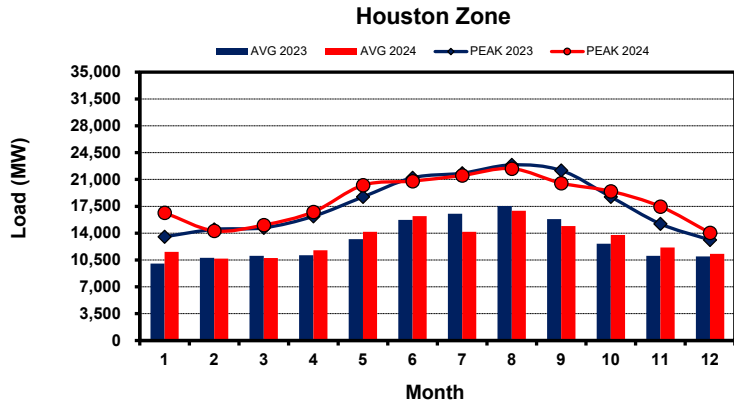
# ERCOT-wide Average Energy Prices DA vs RT

(avg. DA & RT SPPs weighted by Real Time Settlement Loads)



# Load Zone Load Statistics

(Nodal load zone made comparable to zonal system Load Zone definitions\*)

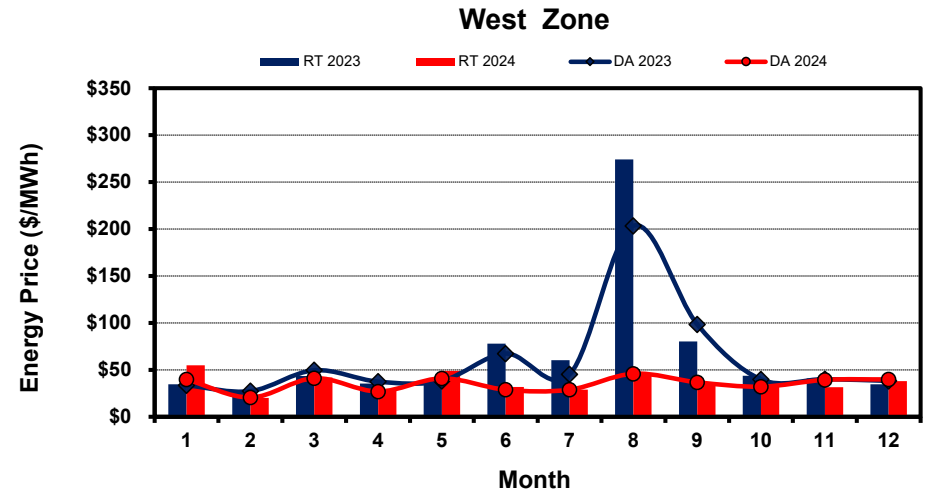
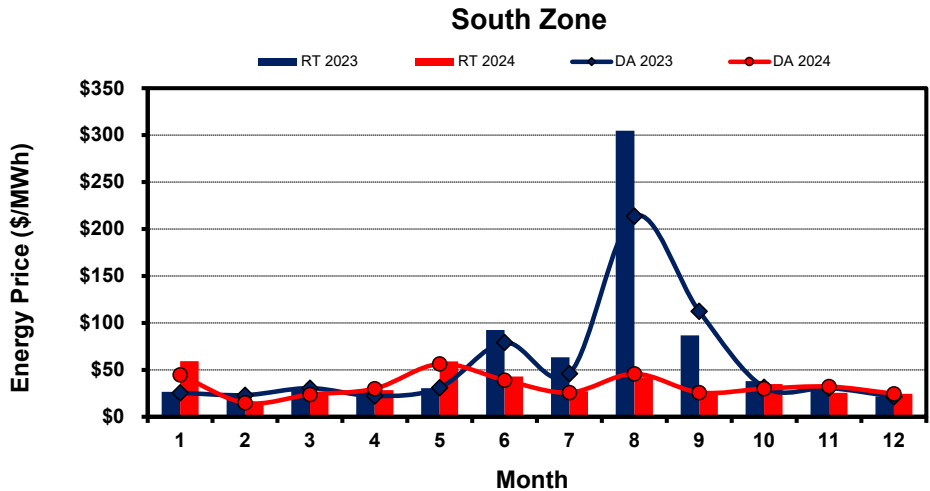
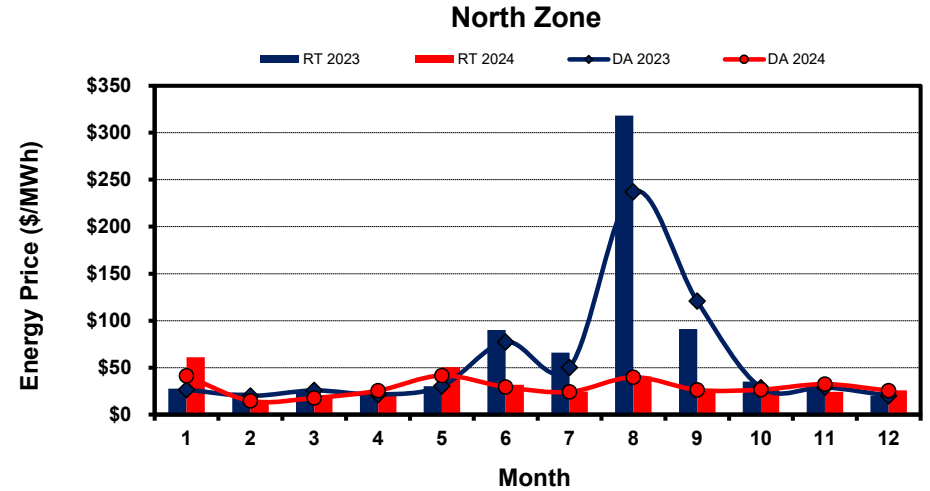
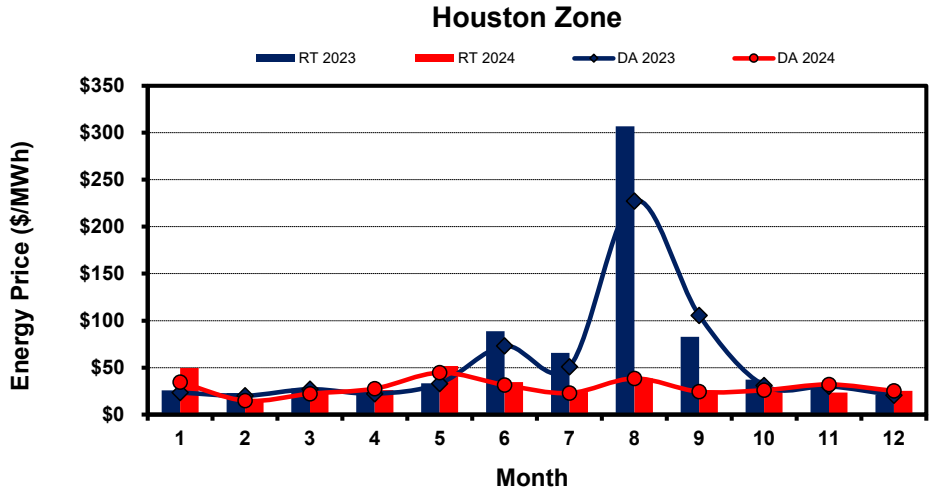


Year	Month	ERCOT-Wide	
		Average Load	Peak Load
2023	1	10,807	25,319
2023	2	11,244	23,636
2023	3	10,687	18,648
2023	4	10,657	20,284
2023	5	12,251	23,418
2023	6	14,813	29,468
2023	7	15,935	30,724
2023	8	16,882	32,117
2023	9	14,912	31,357
2023	10	11,890	25,315
2023	11	10,877	20,691
2023	12	11,181	19,994
2024	1	12,830	31,031
2024	2	11,000	20,566
2024	3	10,835	17,450
2024	4	11,618	20,381
2024	5	13,431	25,610
2024	6	15,407	29,012
2024	7	14,971	29,426
2024	8	16,559	31,479
2024	9	14,236	28,175
2024	10	13,180	24,900
2024	11	11,705	18,358
2024	12	11,724	21,666

Note: \* Zonal load zone definition vs. Nodal comparable load zone definition: LZ\_Houston=LZ\_Houston; LZ\_West=LZ\_West; LZ\_North=(LZ\_North,LZ\_RAYBN); LZ\_South=(LZ\_South,LZ\_CPS,LZ\_AEN,LZ\_LCRA)

# Load Zone Monthly Average Energy Price DA vs RT

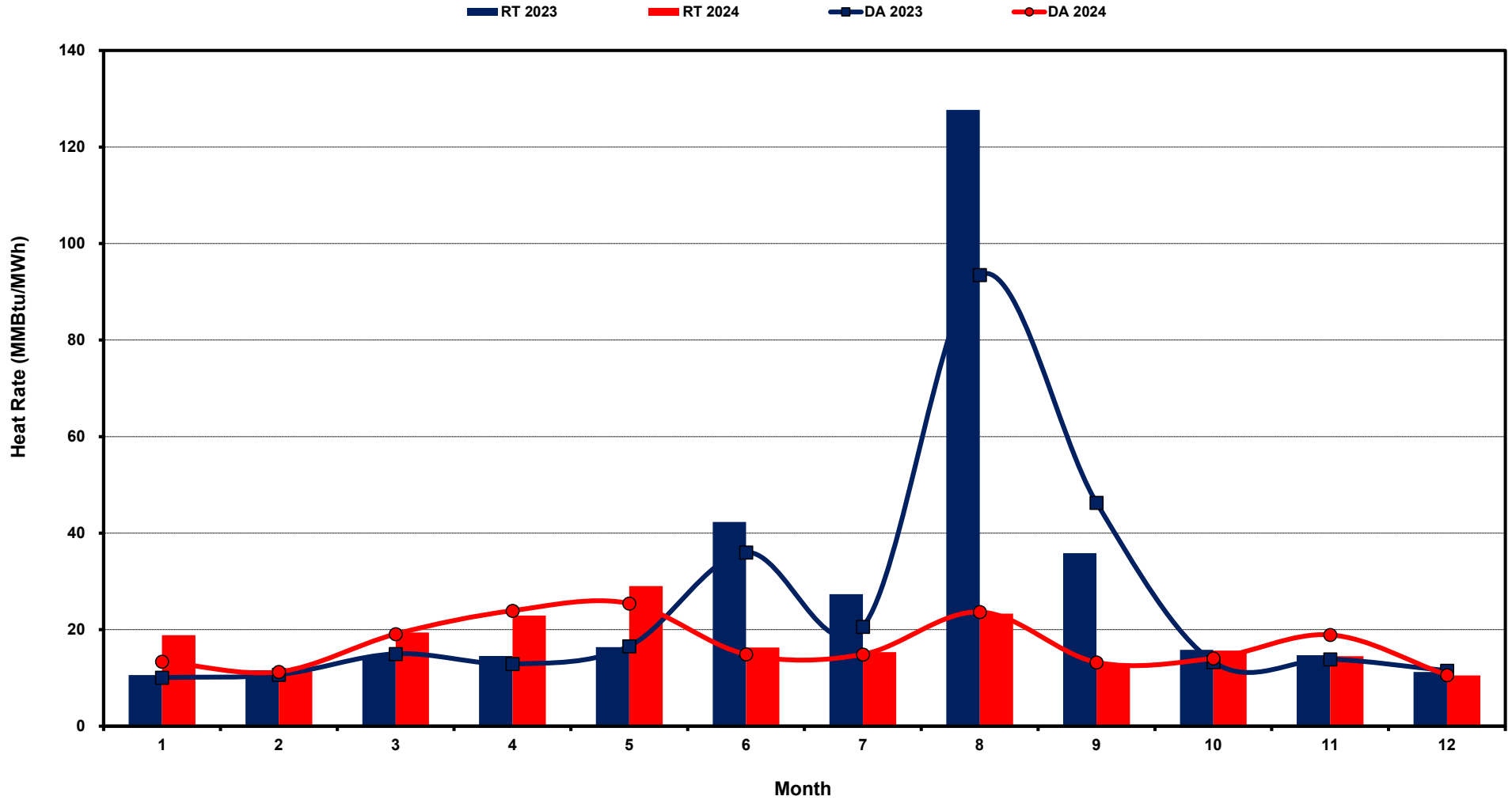
(avg. DA & RT SPPs weighted by Real Time Settlement Loads)  
 (Nodal load zone made comparable to zonal system Load Zone definitions\*)



**Note:** \* Zonal load zone definition vs. Nodal comparable load zone definition: LZ\_Houston=LZ\_Houston; LZ\_West=LZ\_West; LZ\_North=(LZ\_North,LZ\_RAYBN); LZ\_South=(LZ\_South,LZ\_CPS,LZ\_AEN,LZ\_LCRA)

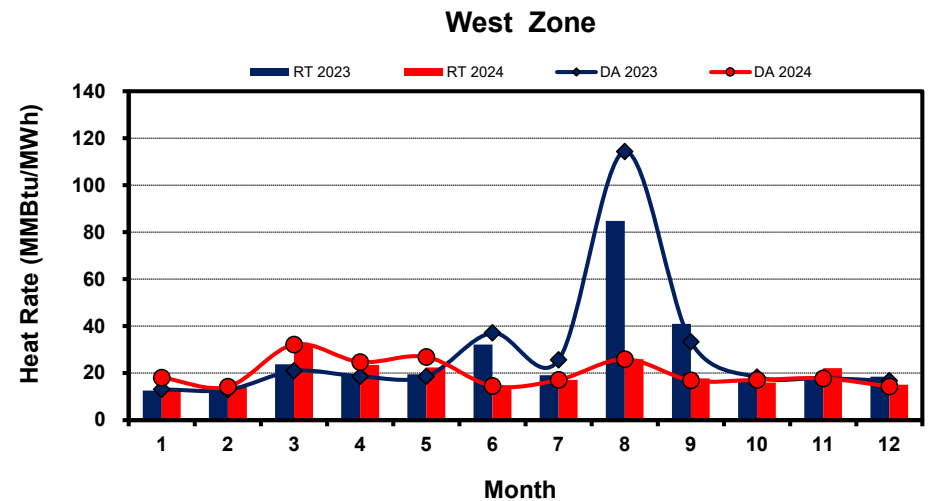
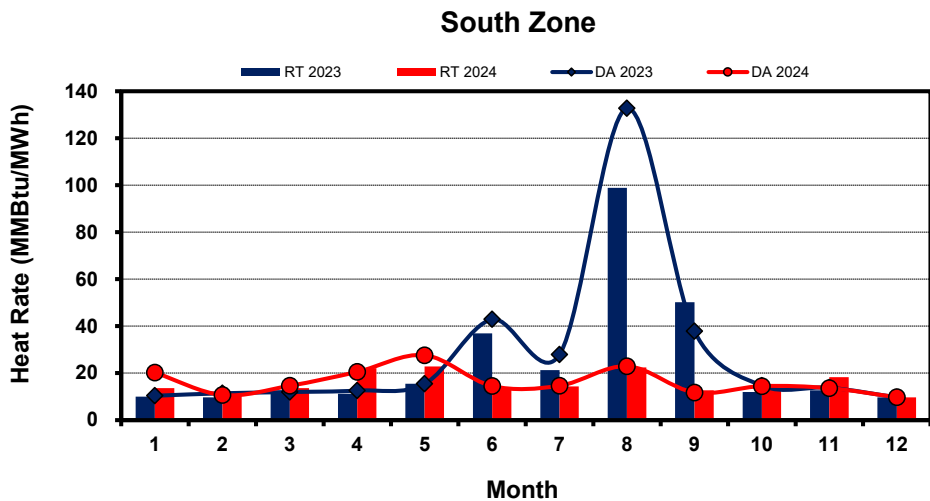
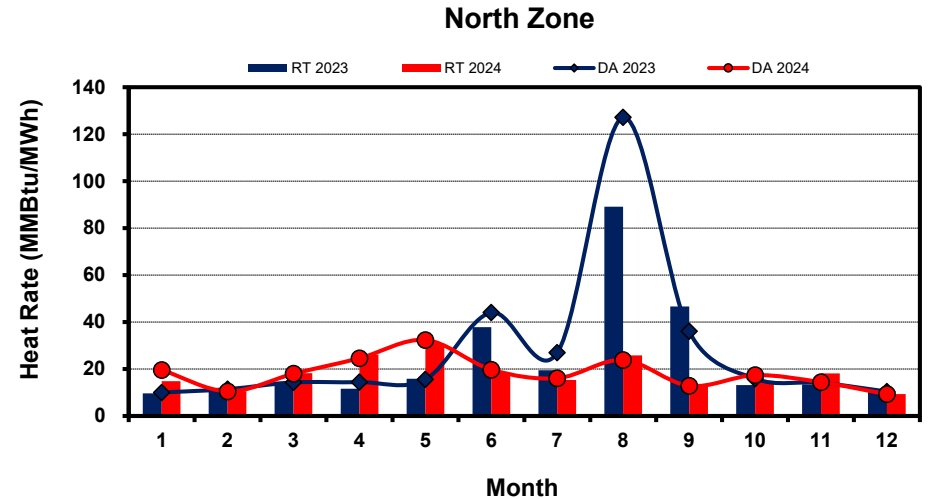
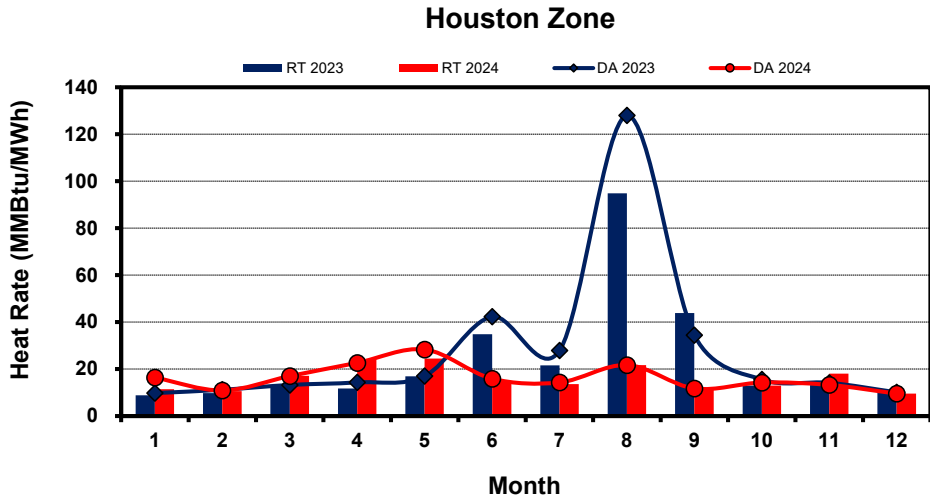
# ERCOT-wide Monthly Implied Heat Rate DA vs RT

(avg. heat rates weighted by Real Time Settlement Loads)



# Load Zone Monthly Implied Heat Rate DA vs RT

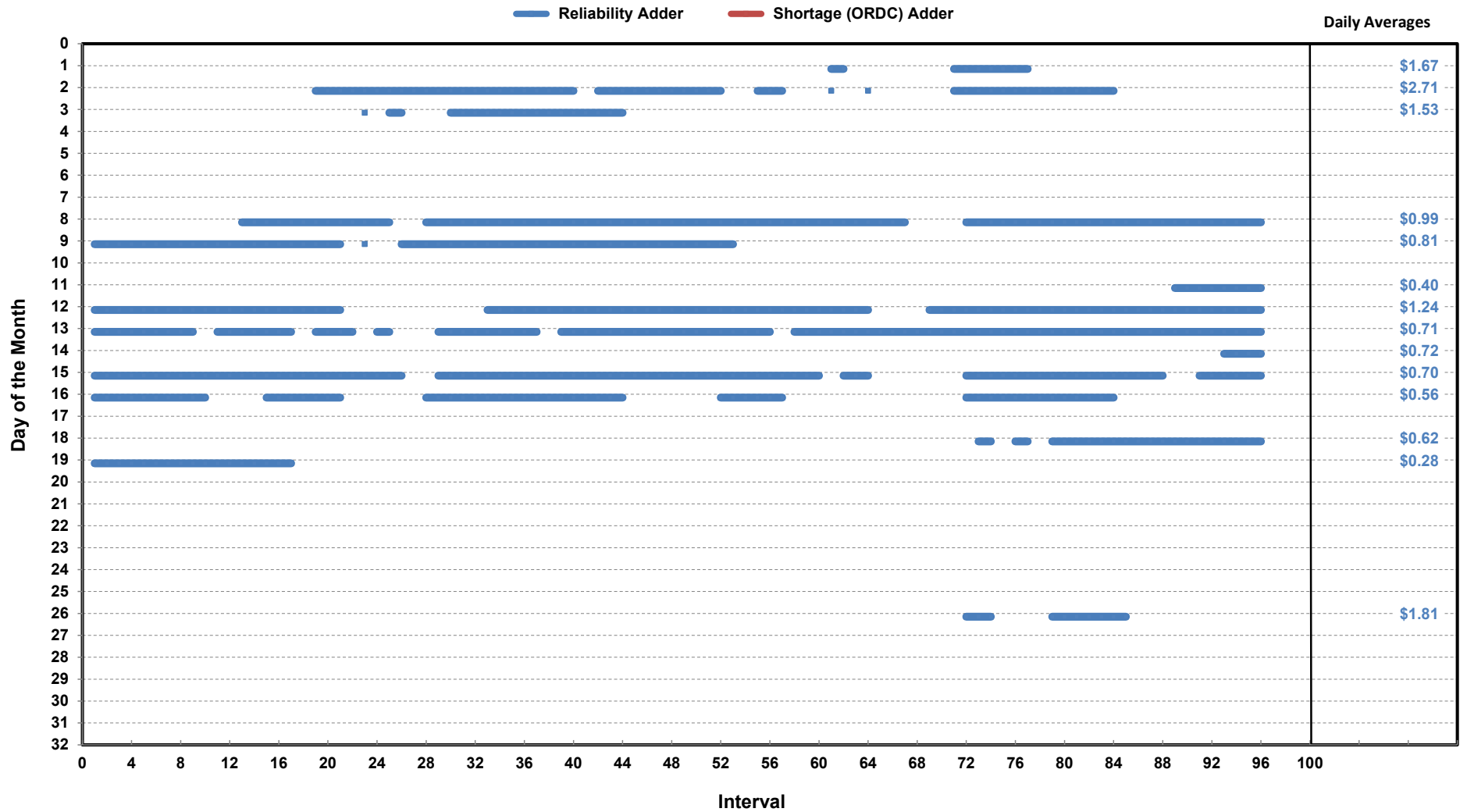
(avg. heat rates weighted by Real Time Settlement Loads)  
 (Nodal load zone made comparable to zonal system Load Zone definitions\*)



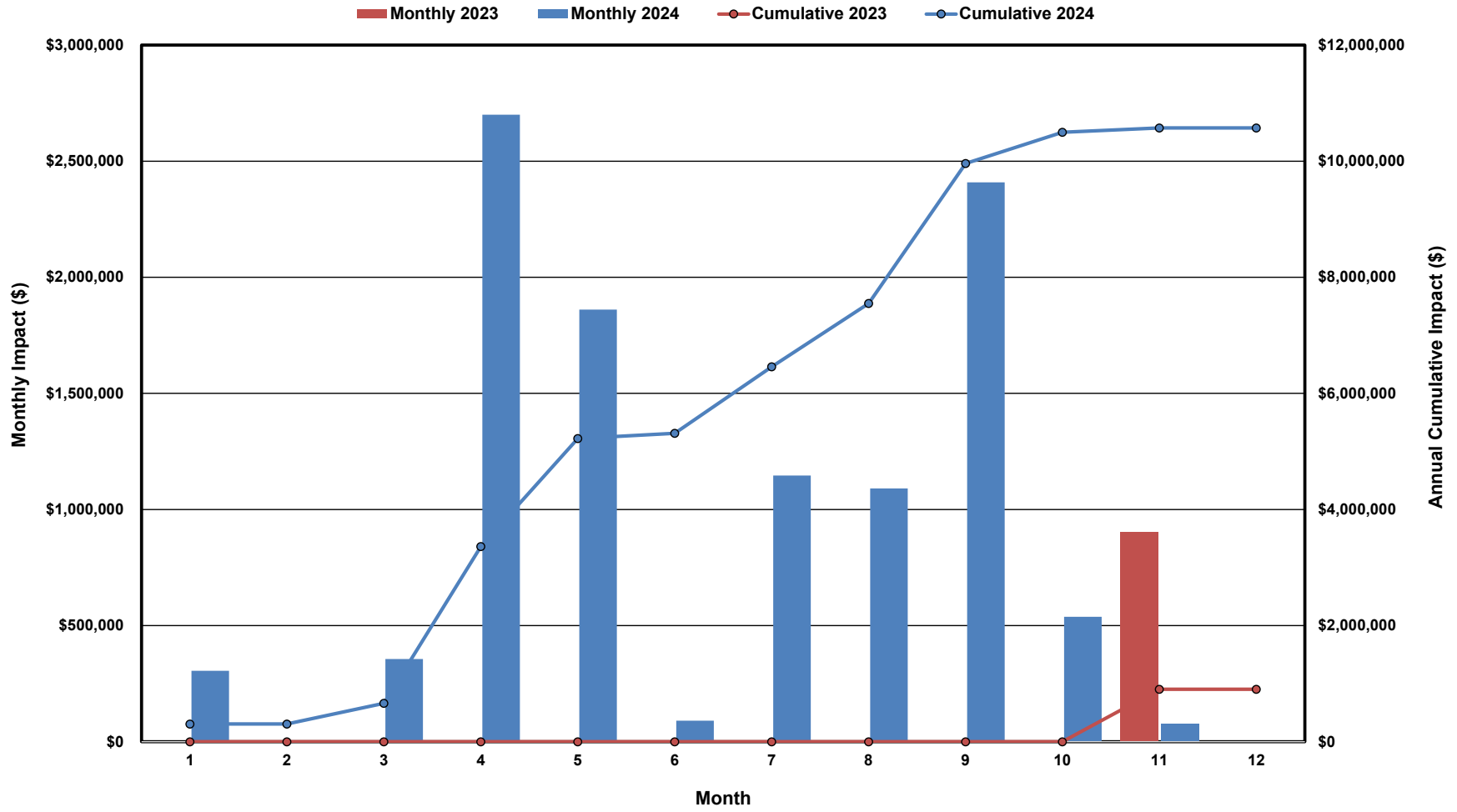
**Note:** \* Zonal load zone definition vs. Nodal comparable load zone definition: LZ\_Houston=LZ\_Houston; LZ\_West=LZ\_West; LZ\_North=(LZ\_North,LZ\_RAYBN); LZ\_South=(LZ\_South,LZ\_CPS,LZ\_AEN,LZ\_LCRA)

# Daily Shortage (ORDC) and Reliability Adders Average Values and Duration

## Dec-2024

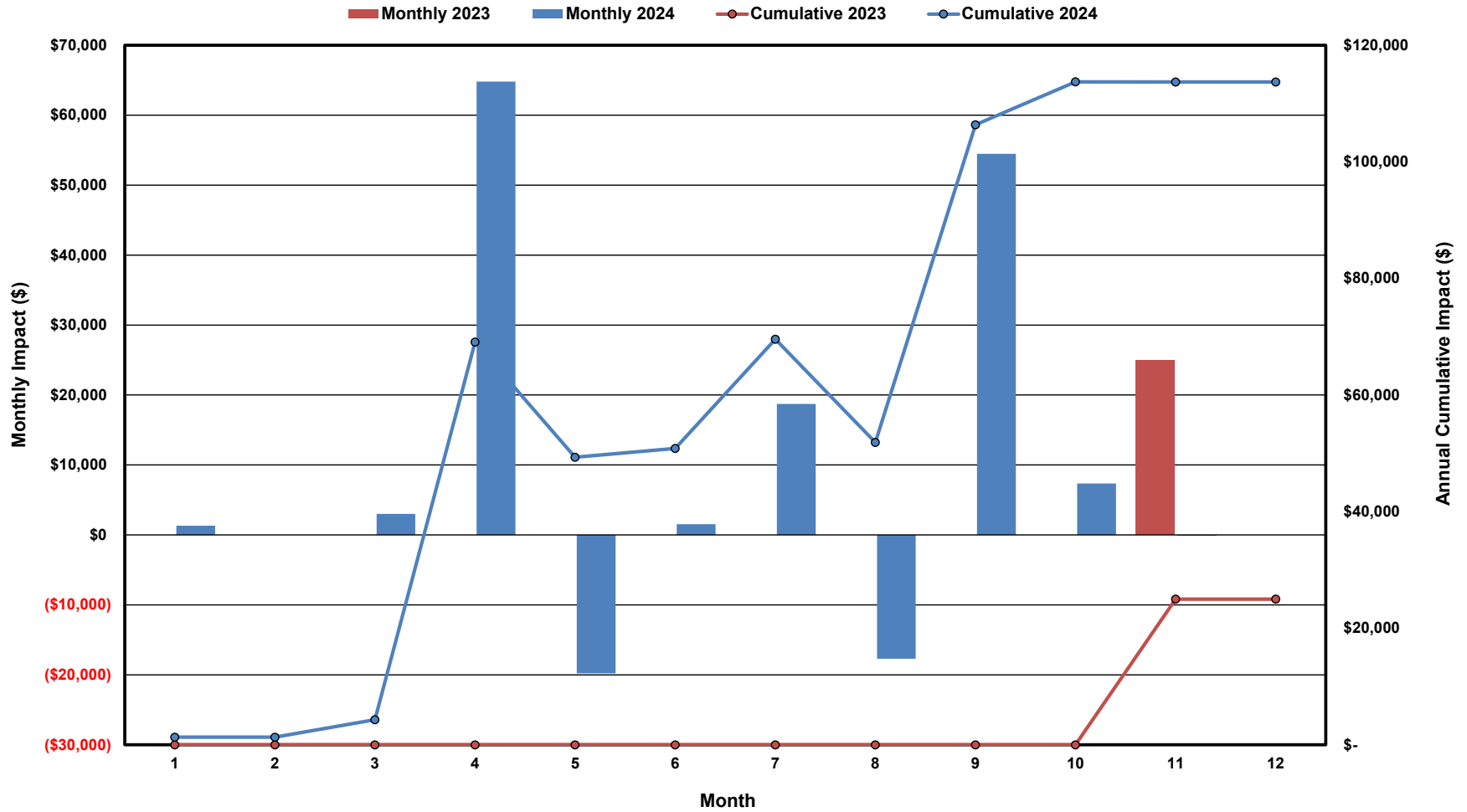


## Shortage (ORDC) and Reliability Adder Floor Impact on Energy Cost

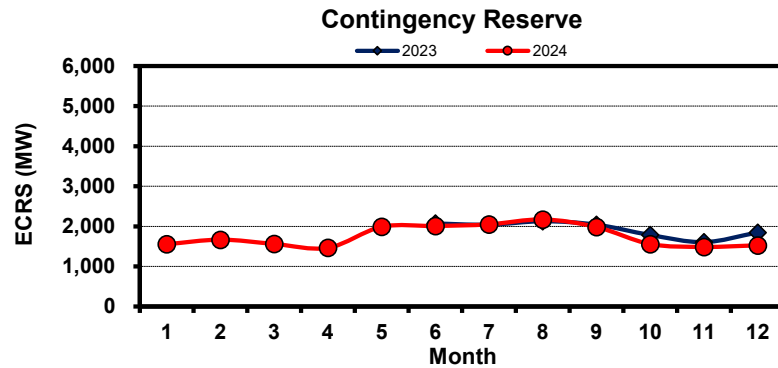
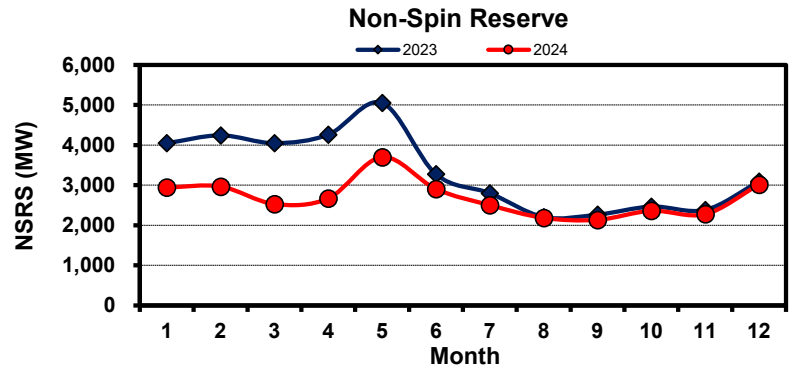
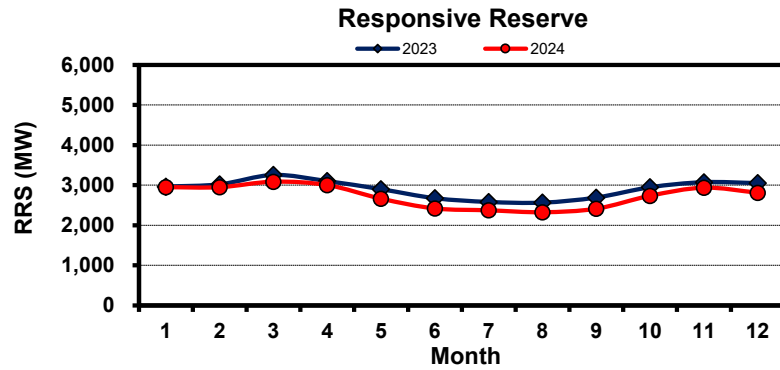
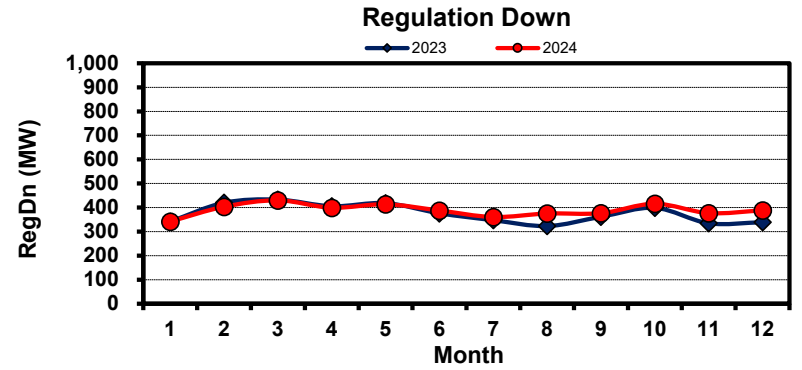
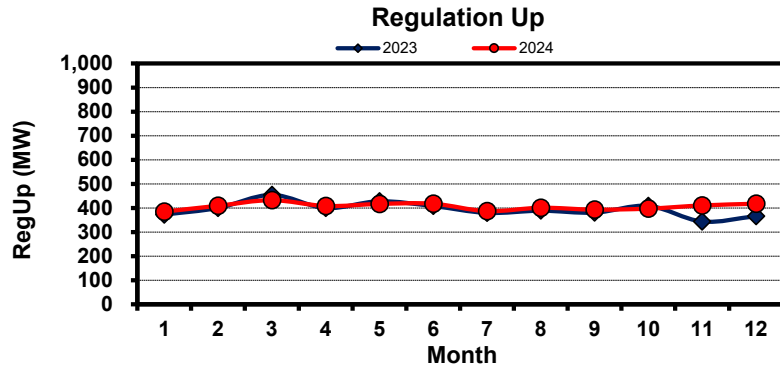




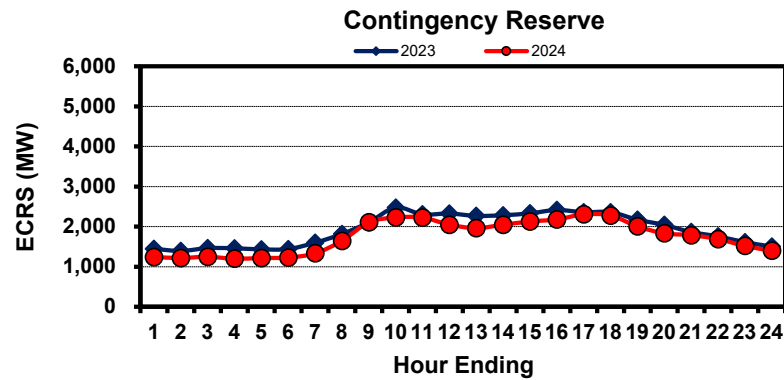
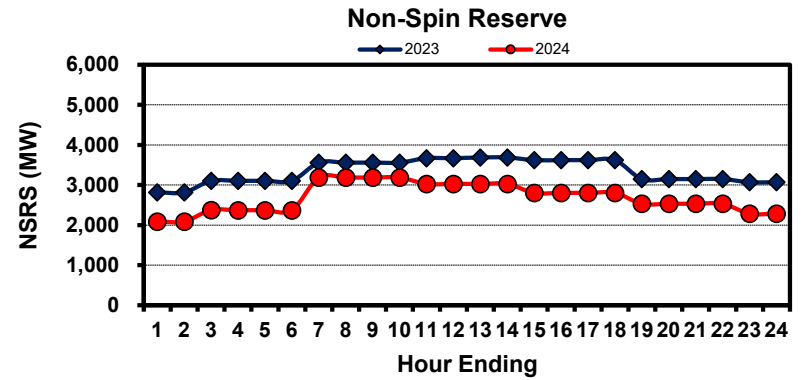
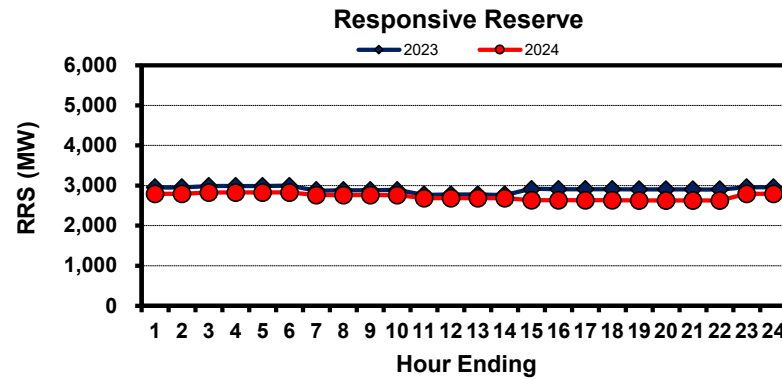
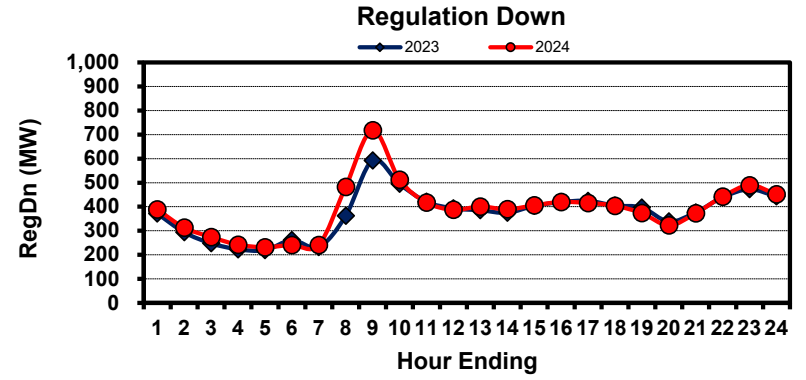
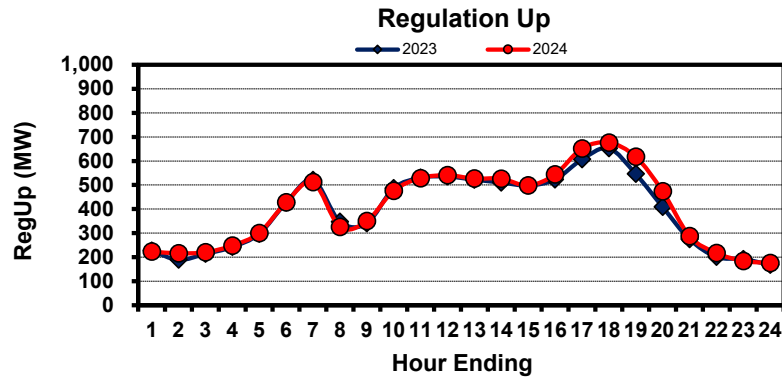
## Shortage (ORDC) and Reliability Adder Floor Impact on A/S Imbalance



# Monthly Average of Ancillary Services Required MW

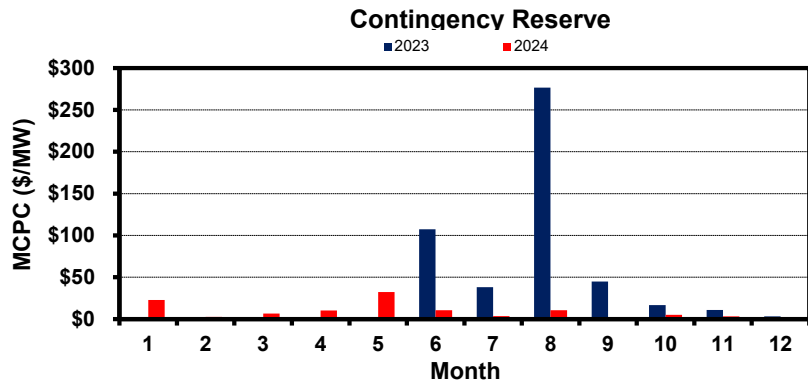
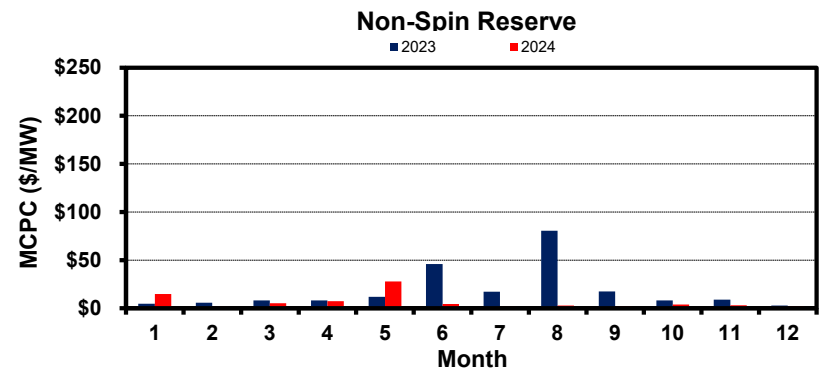
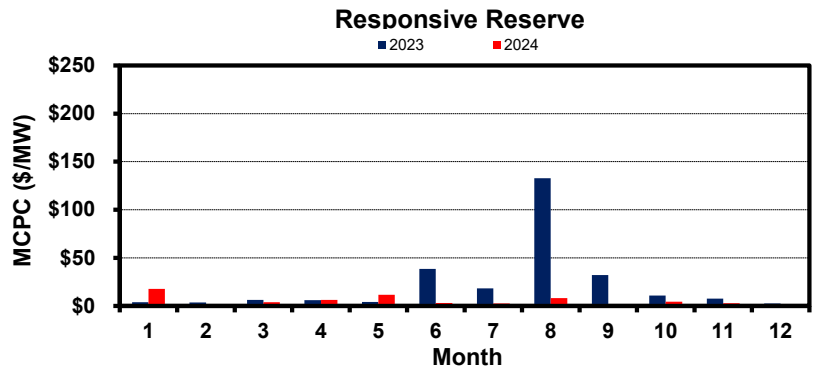
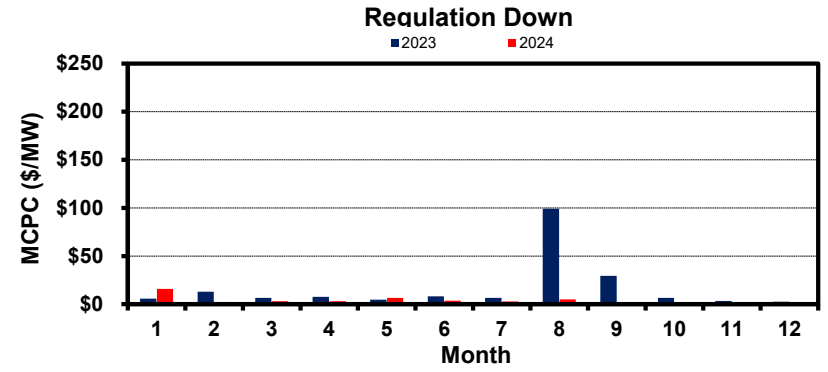
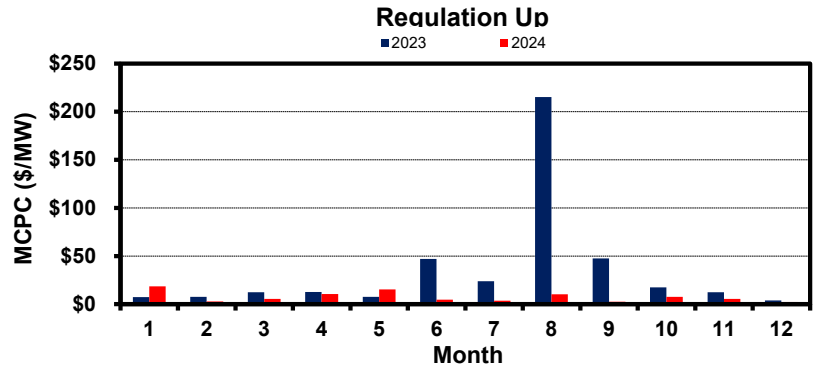


# Hourly Average of Ancillary Services Required MW



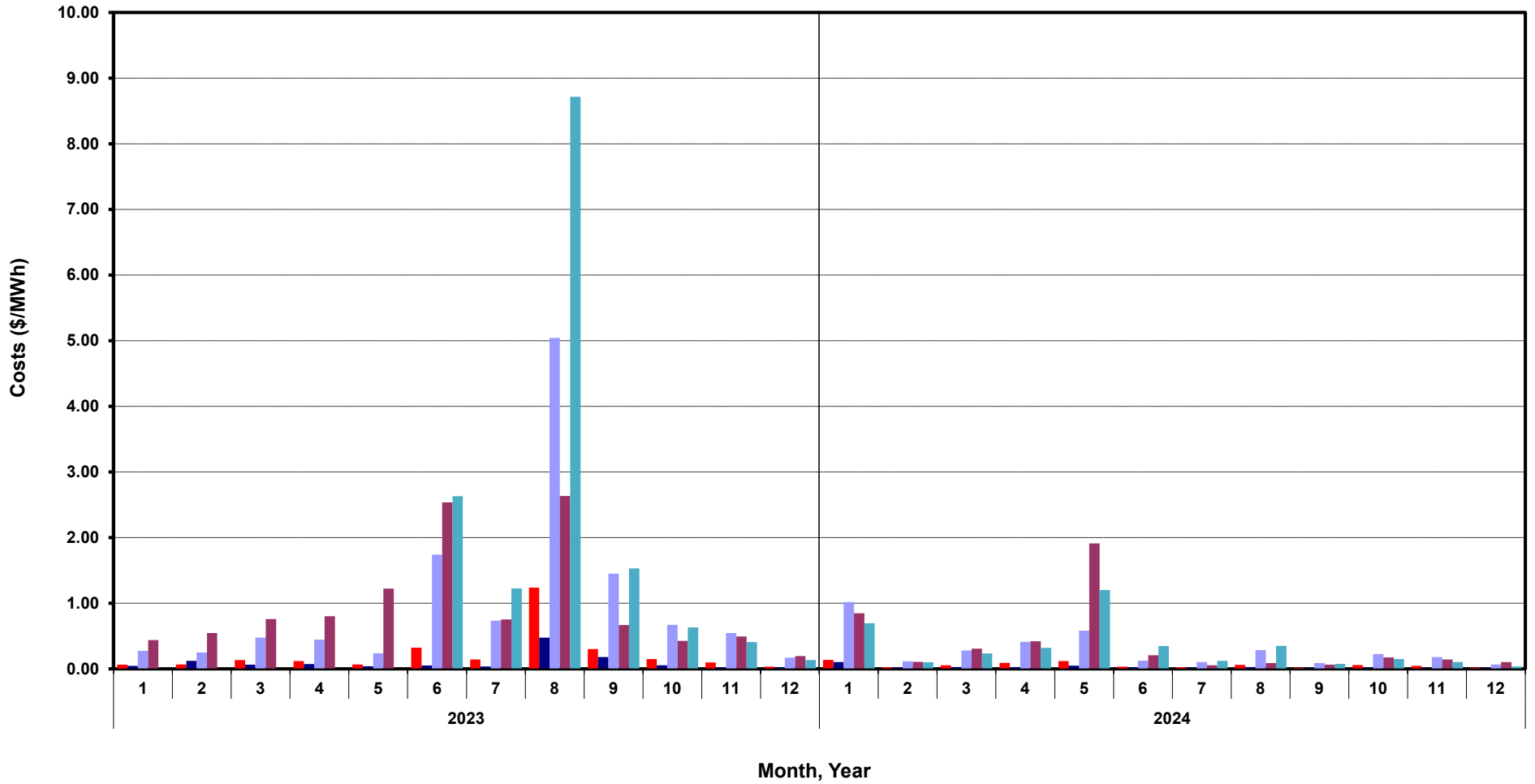
# Monthly Average Ancillary Services Prices

(weighted by A/S Quantities Required)

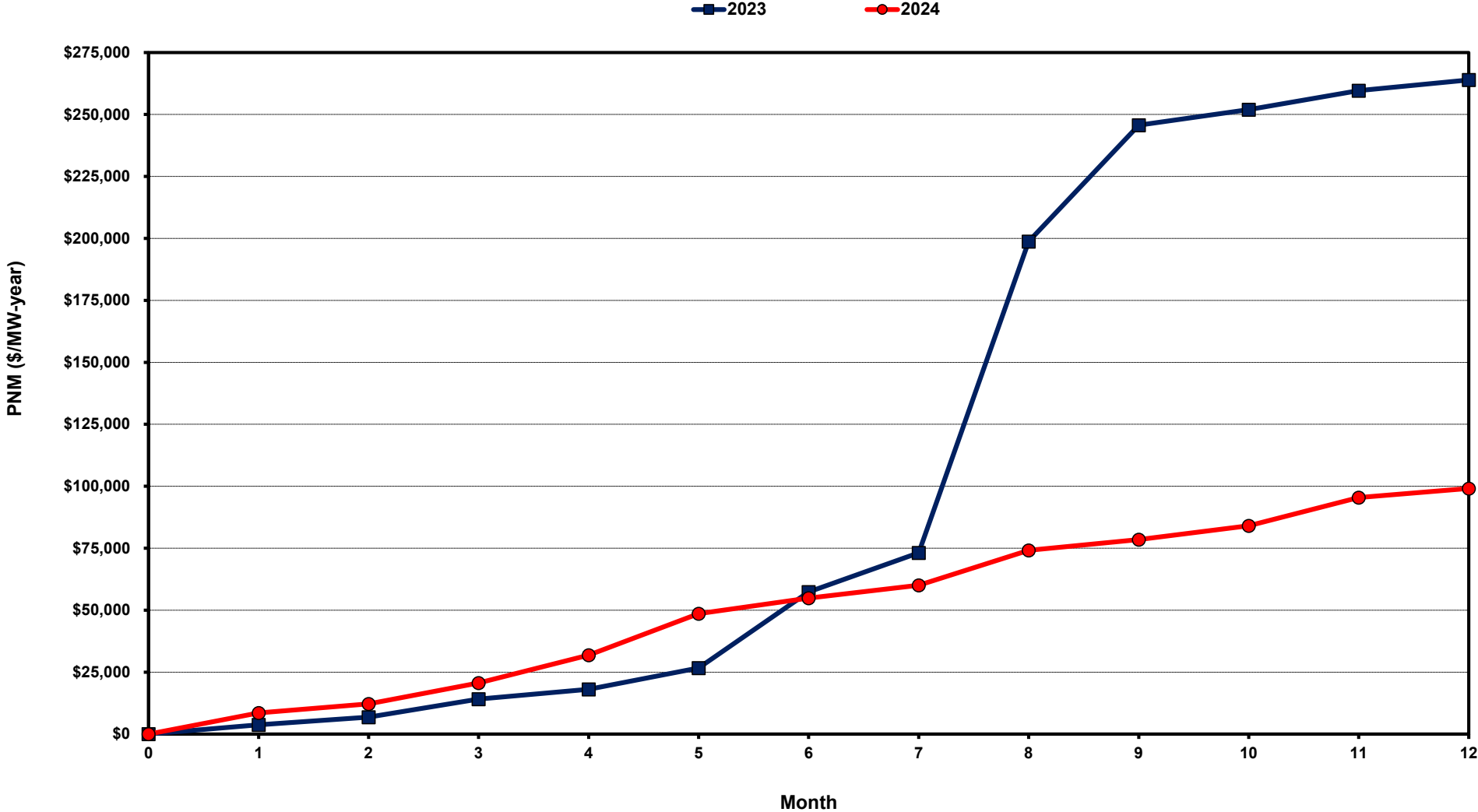


# Monthly Average Ancillary Services Cost per MWh Load

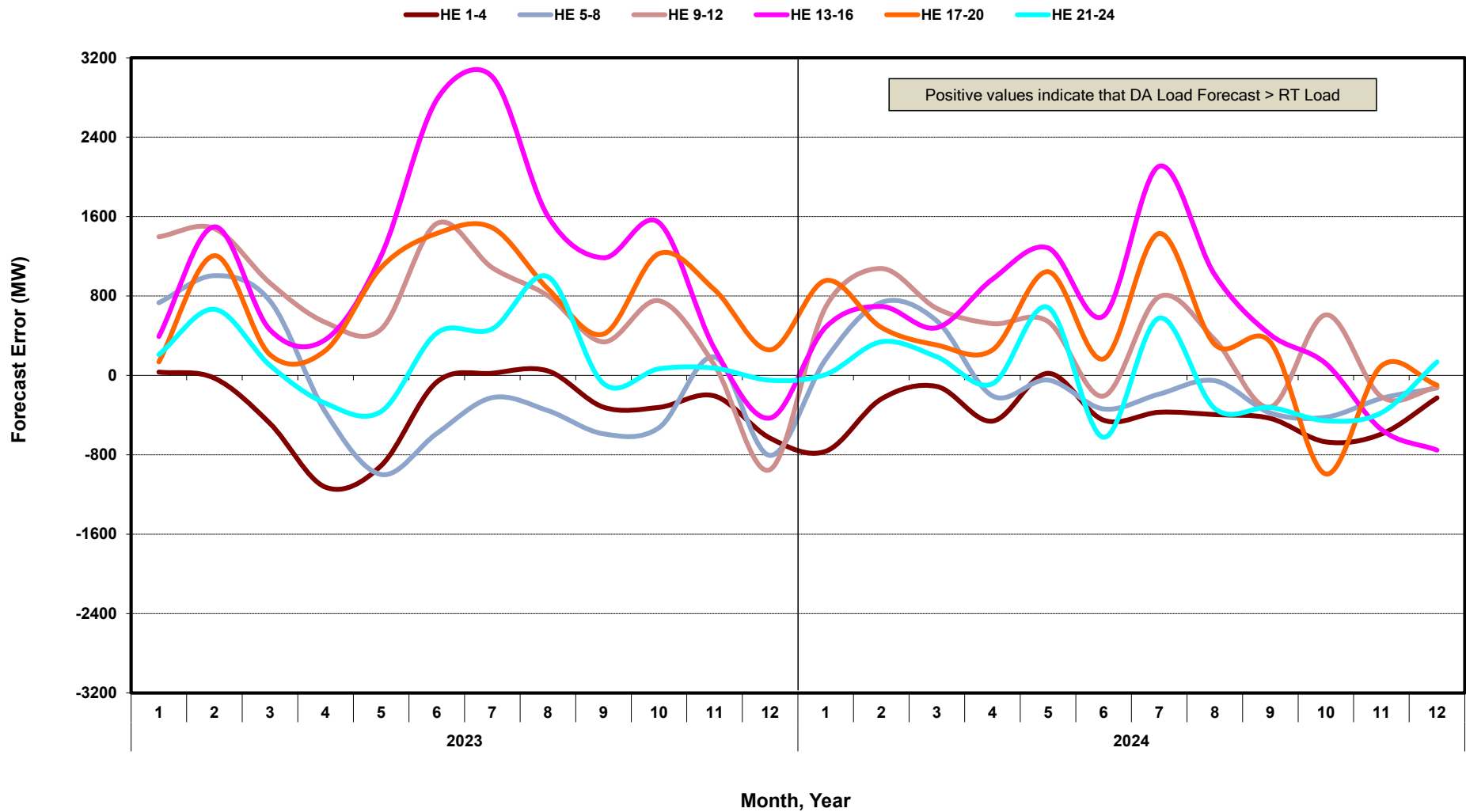
■ RegUp ■ RegDn ■ RRS ■ NonSpin ■ ECRS



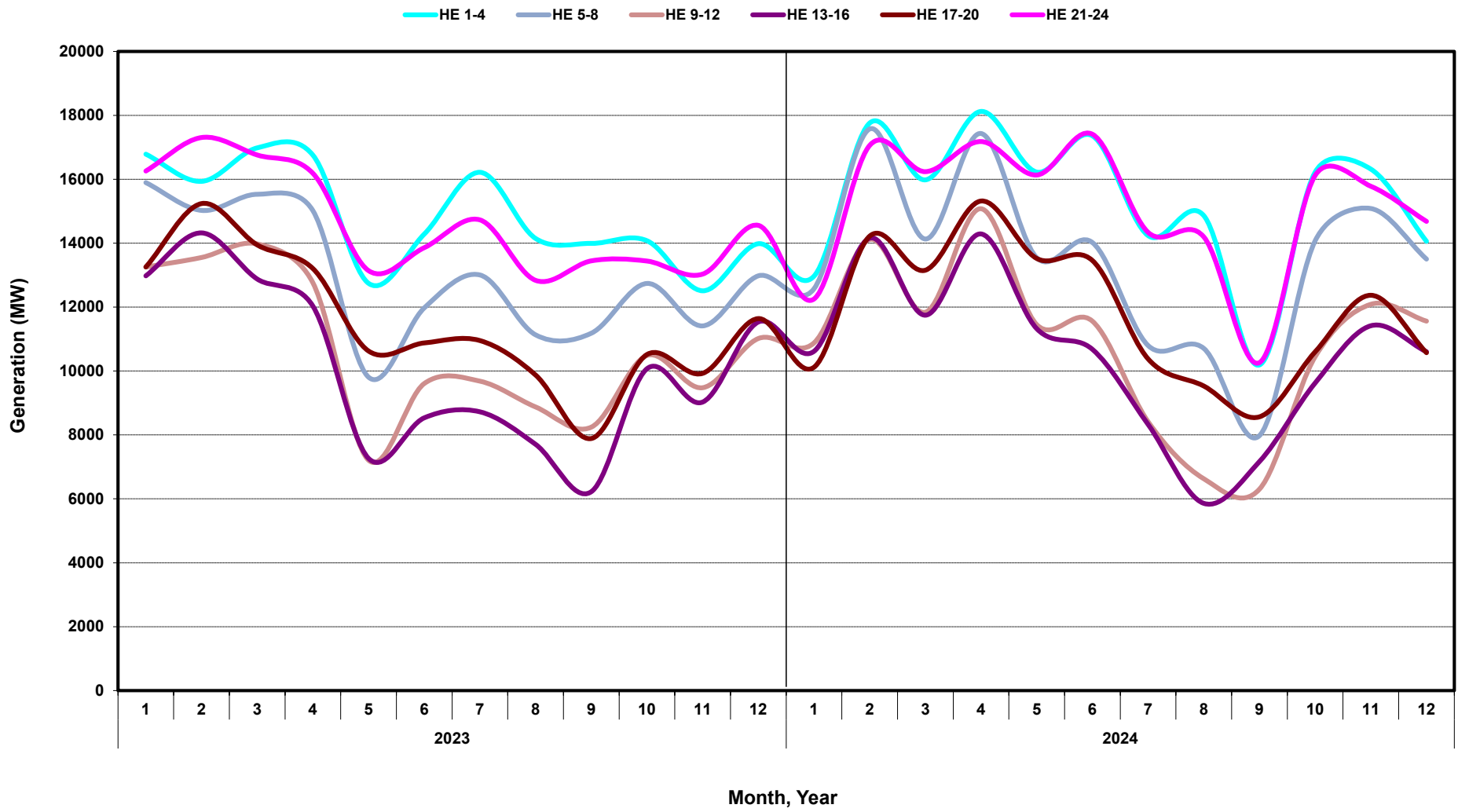
# ERCOT-wide Cumulative Peaker Net Margin



# DA vs. RT Load Forecast Error by Hour Ending

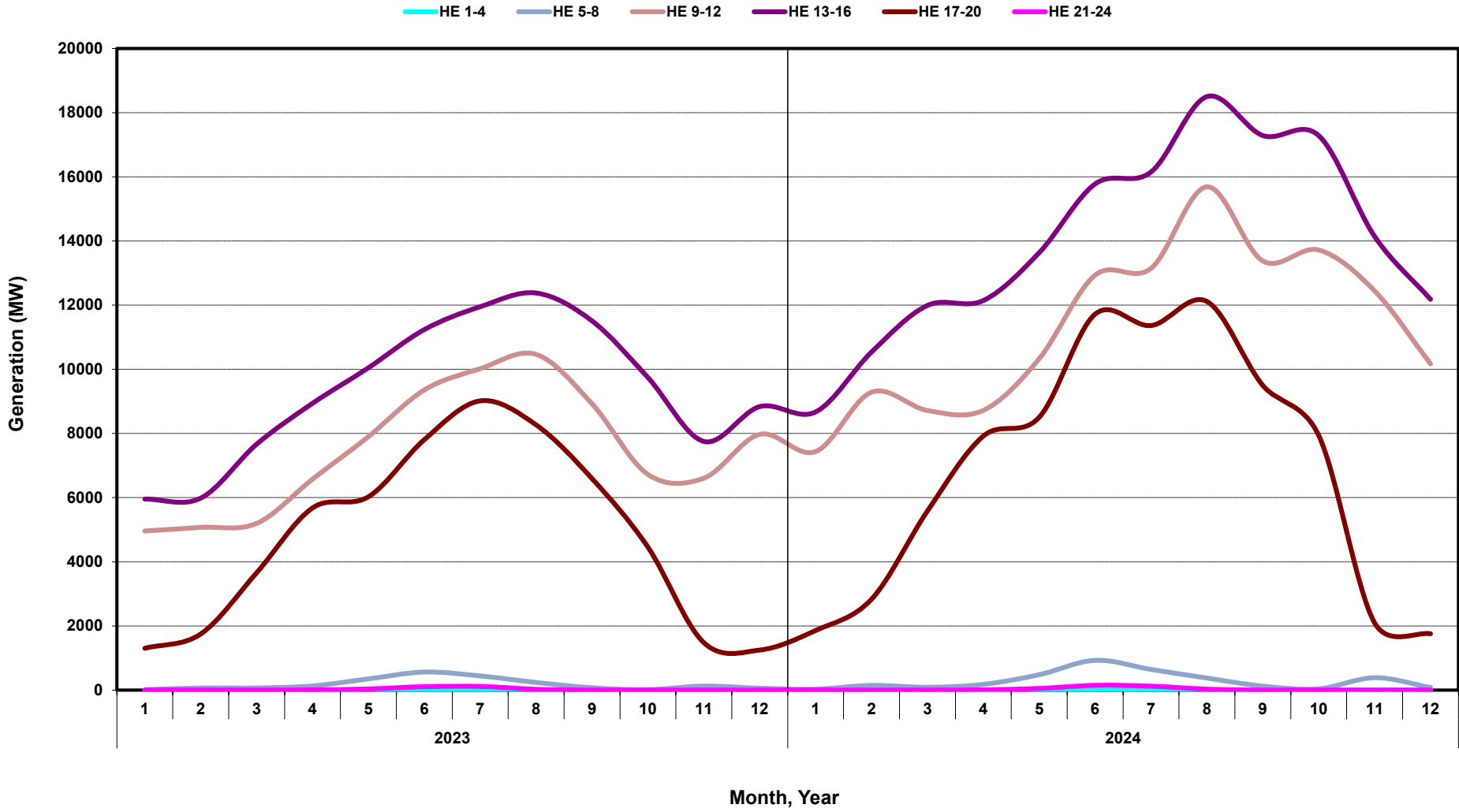


# Monthly Average of Wind Generation by Hour Ending

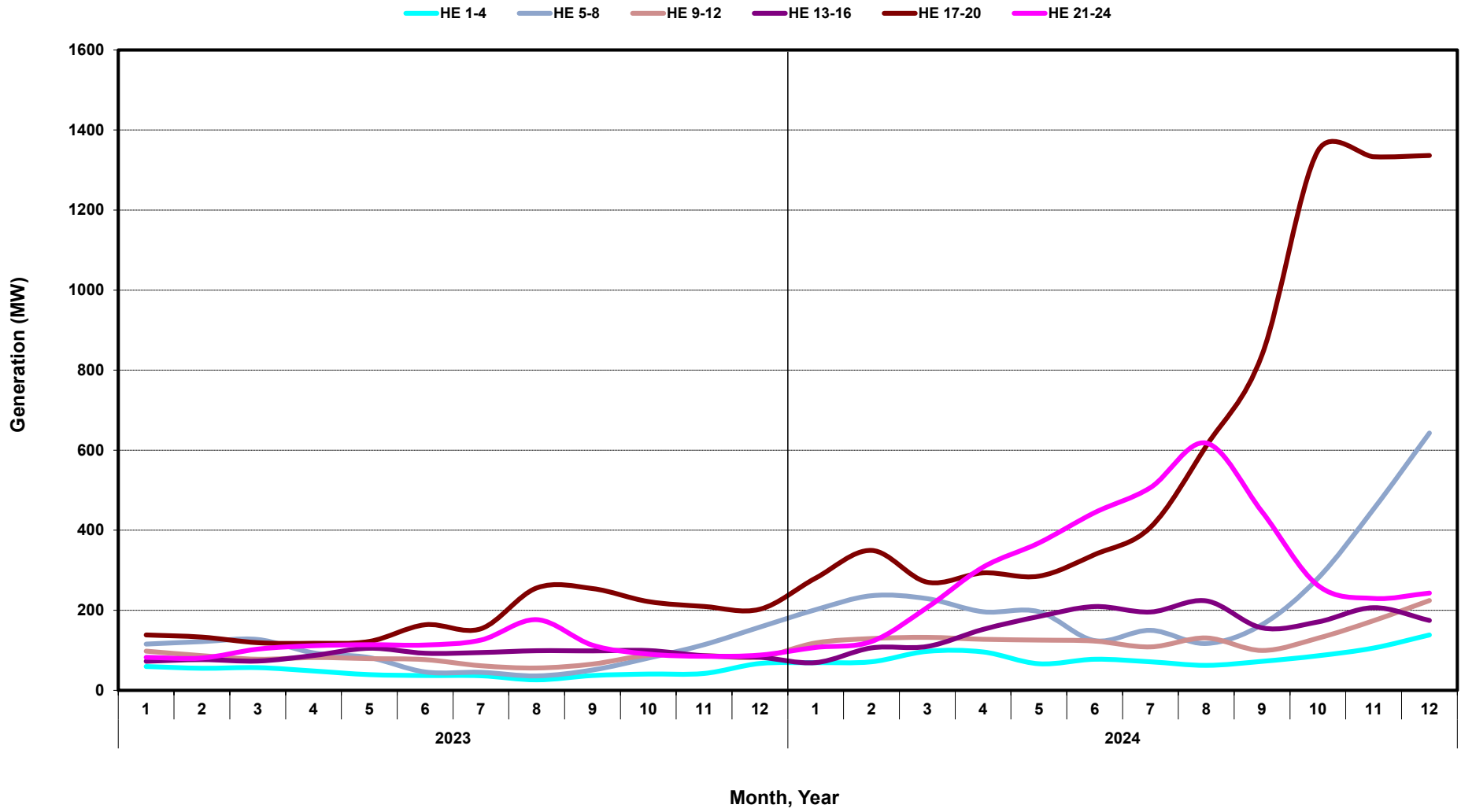




# Monthly Average of Solar Generation by Hour Ending

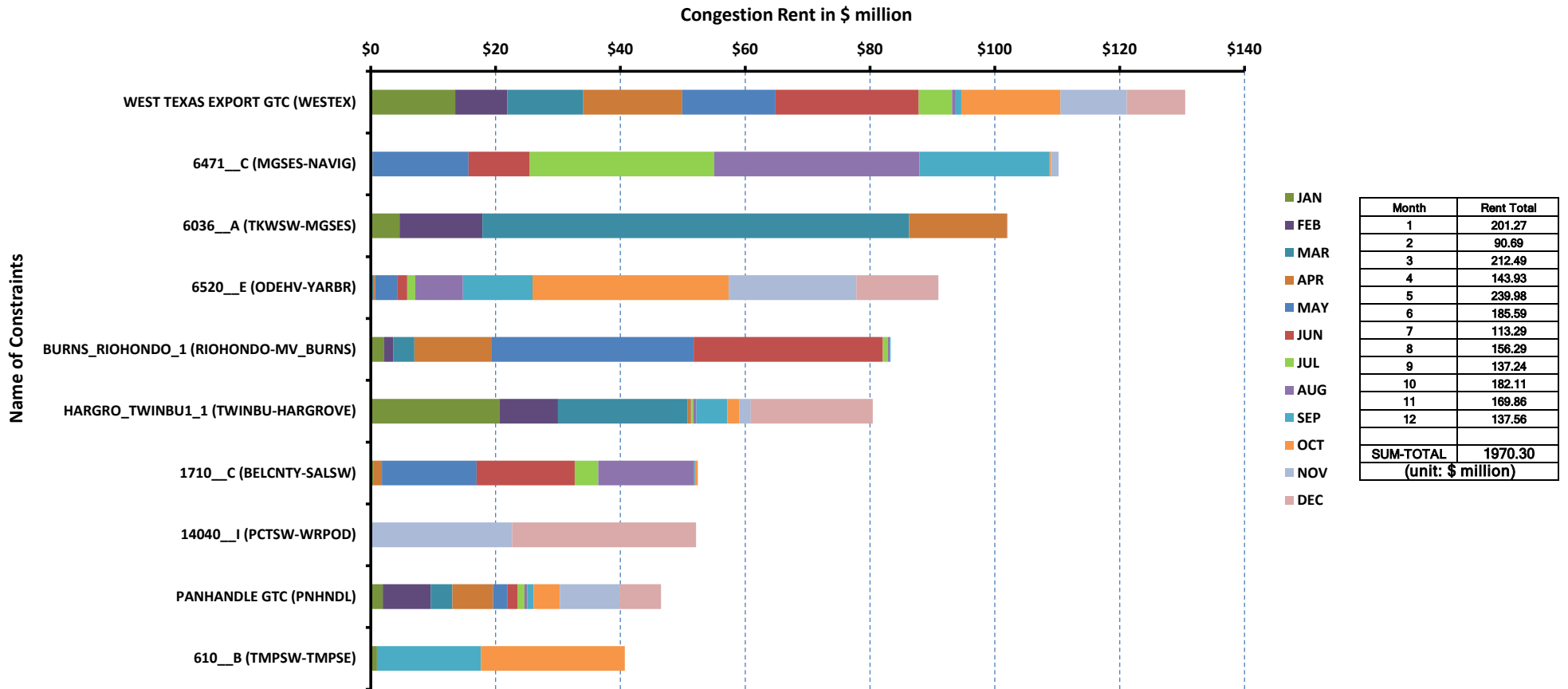


# Monthly Average of Battery Generation by Hour Ending



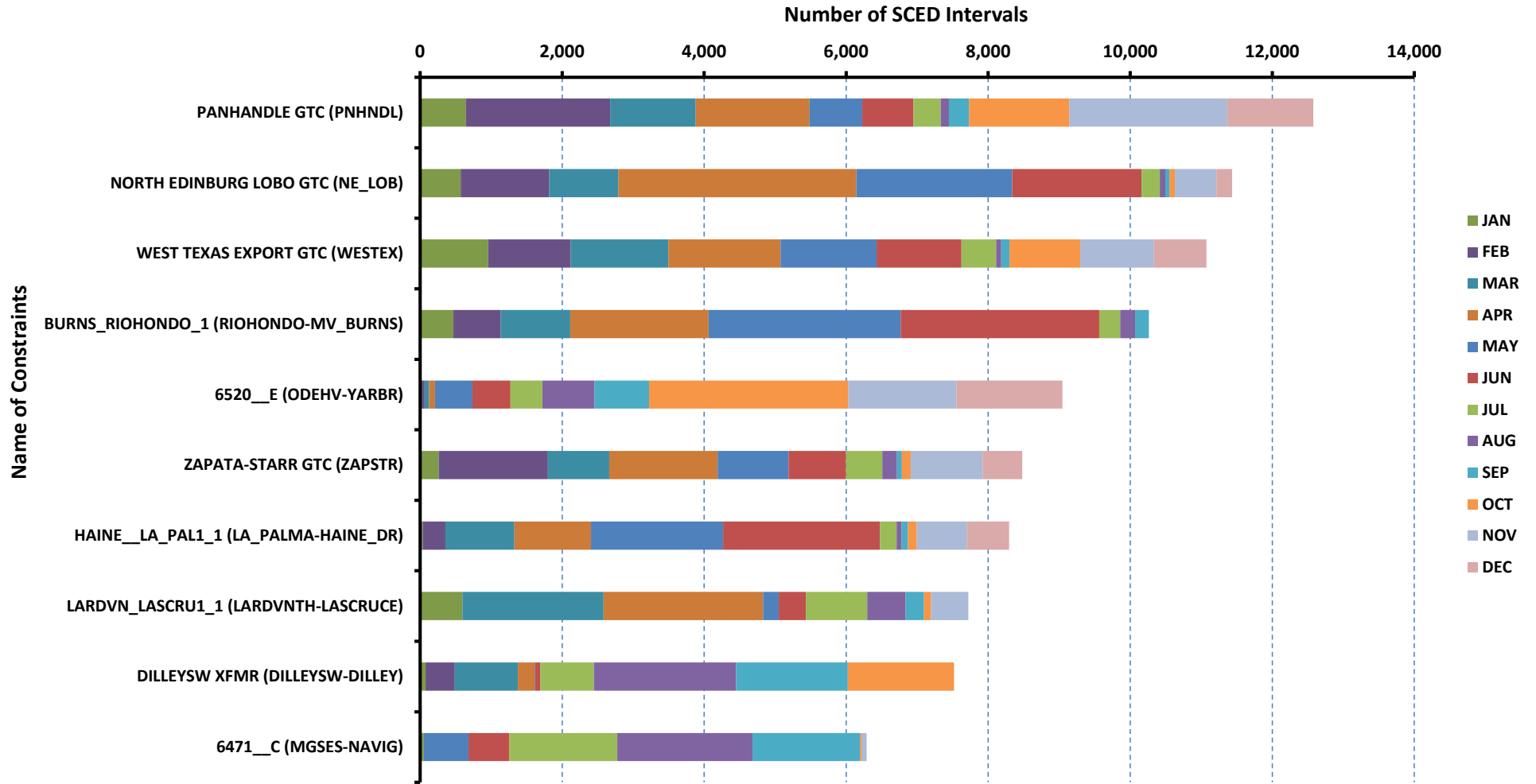
# RT Congestion Constraint Rankings - 1

## Top 10 Constraints by Total Congestion Value - 2024



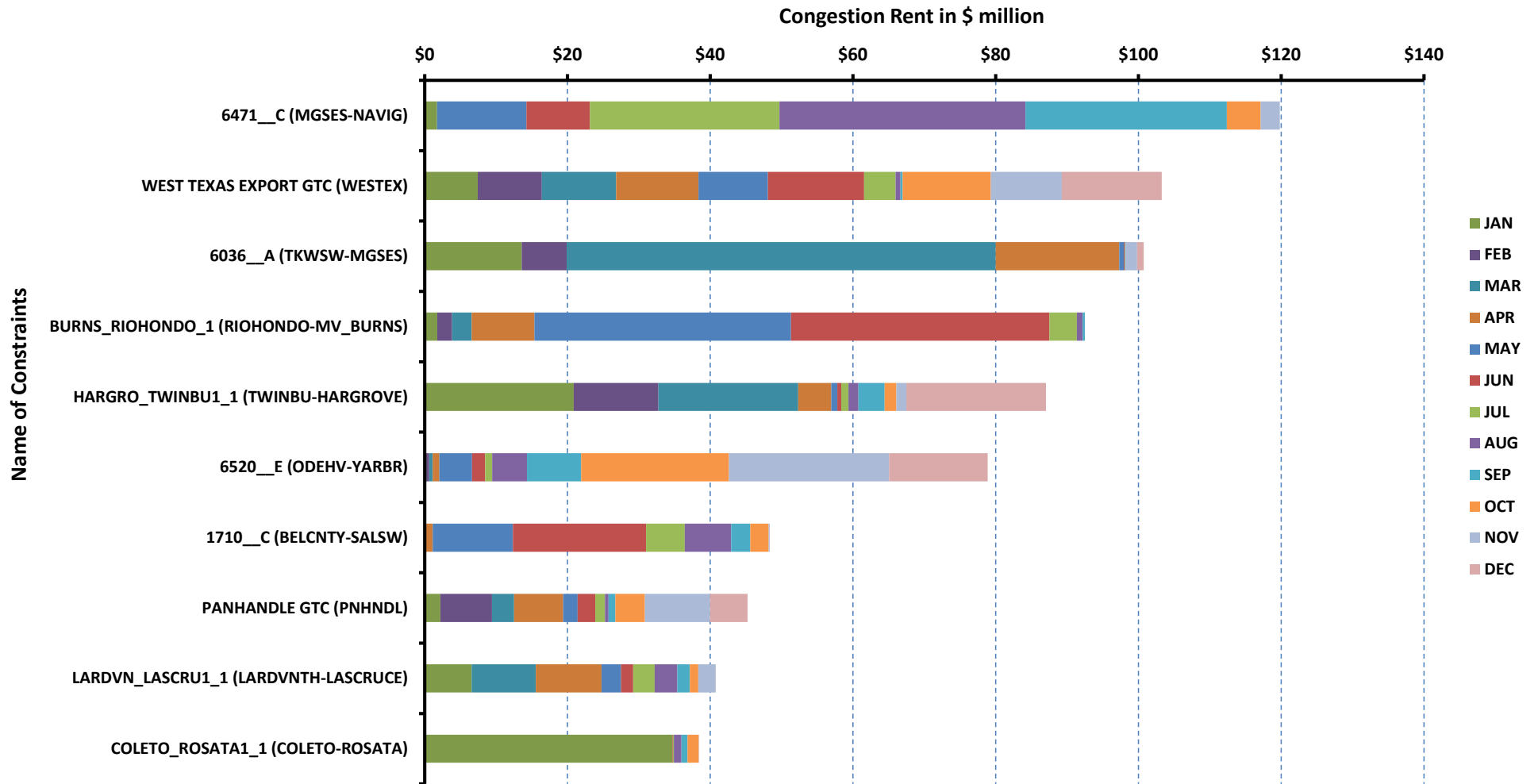
# RT Congestion Constraint Rankings - 2

## Top 10 Constraints by Binding Frequency - 2024



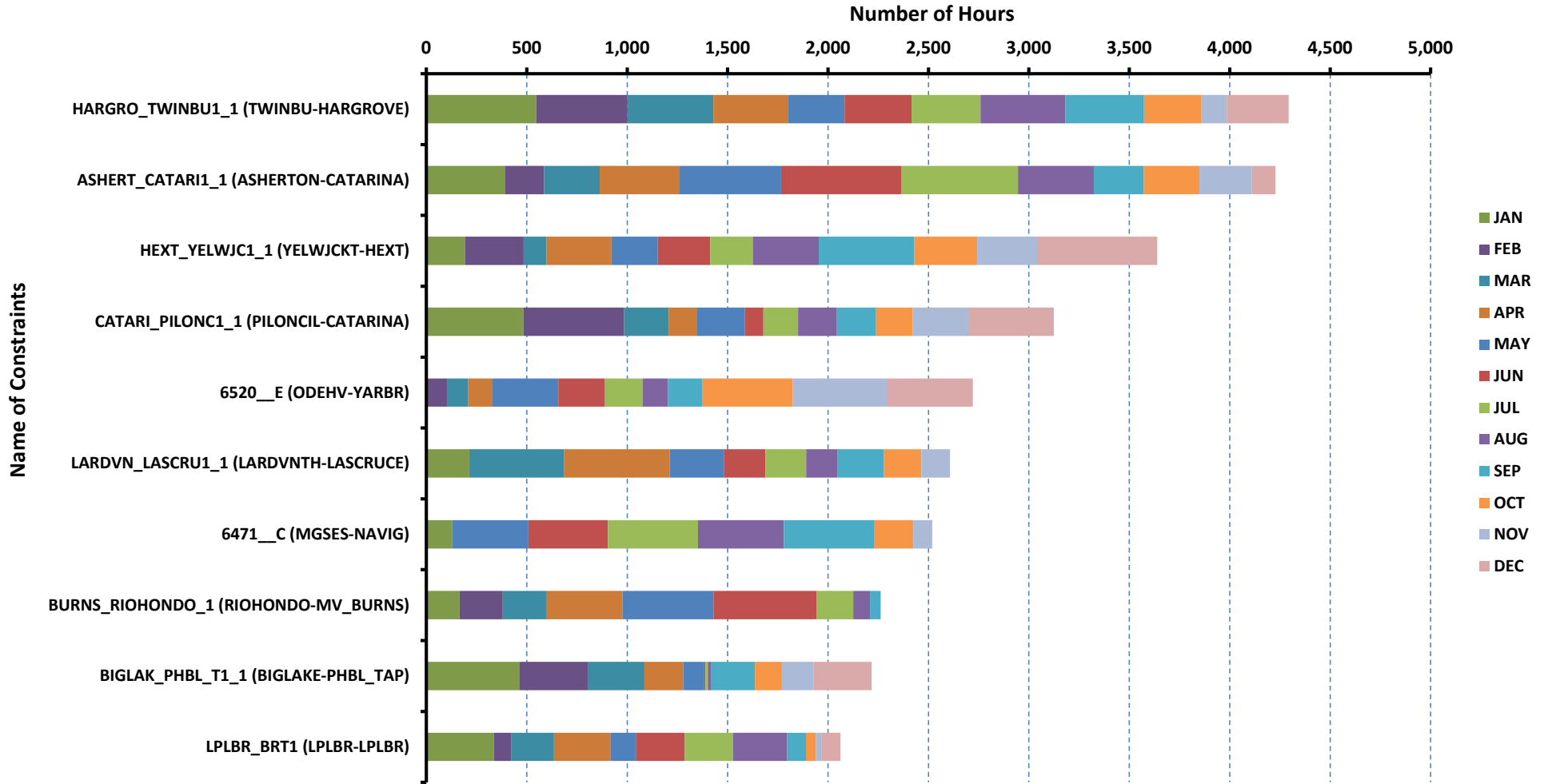
# DA Congestion Constraint Rankings - 1

## Top 10 Constraints by Total Congestion Value - 2024



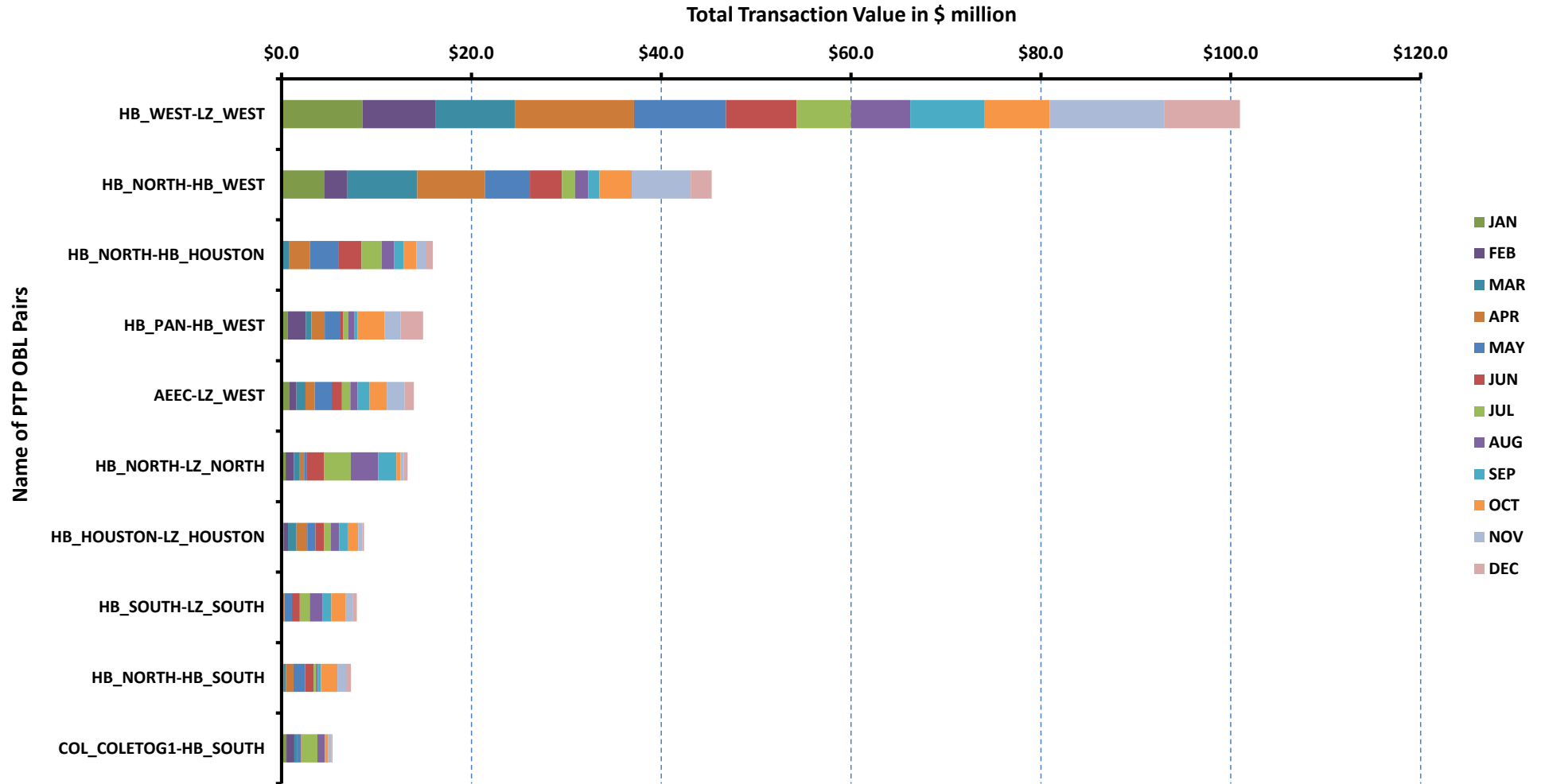
# DA Congestion Constraint Rankings - 2

## Top 10 Constraints by Binding Frequency - 2024



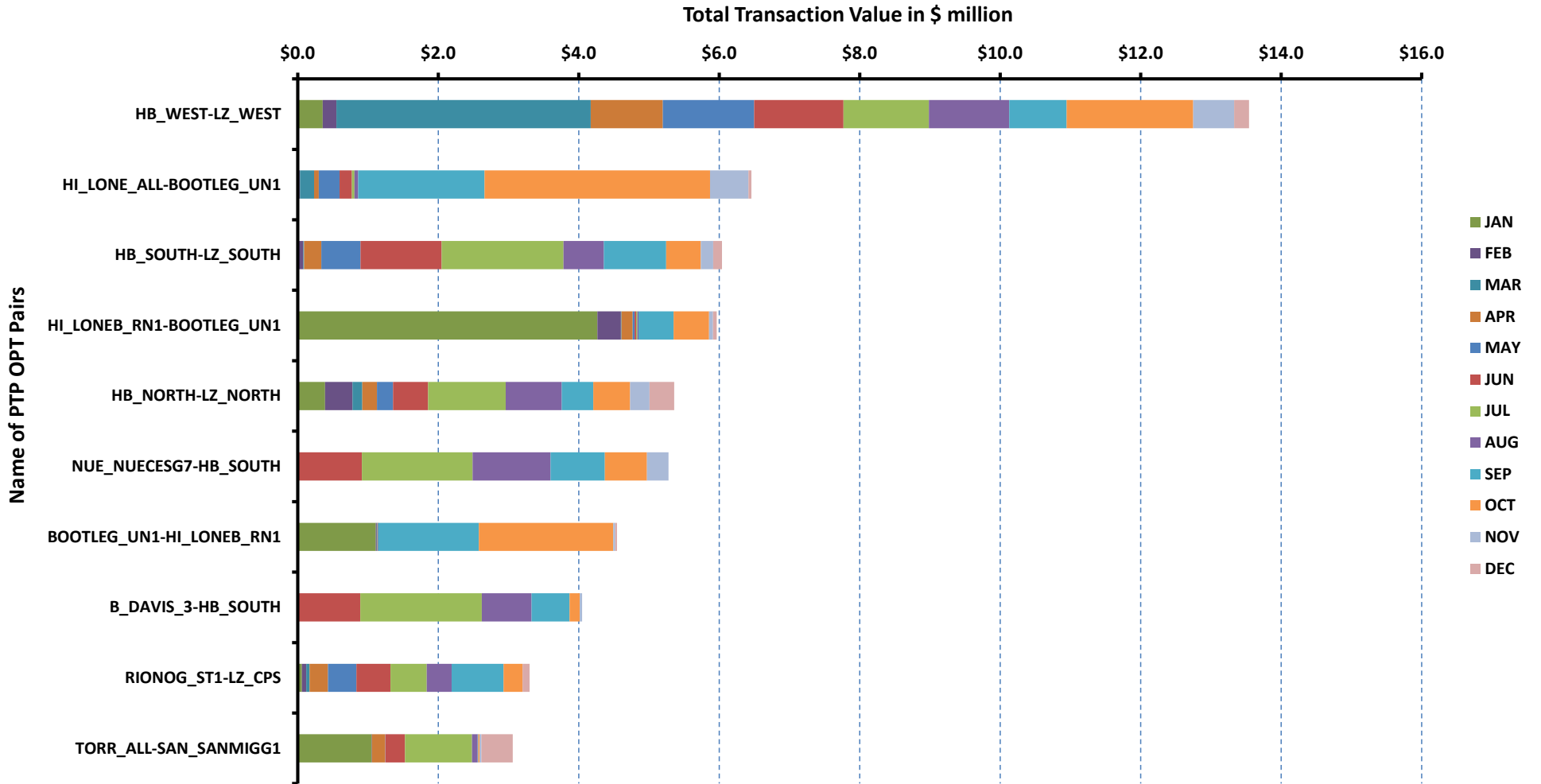
# Top 10 CRR Pairs Ranked by Monthly Auction Values - 1

## Top 10 PTP Obligations by Total Transaction Value - 2024



# Top 10 CRR Pairs Ranked by Monthly Auction Values - 2

## Top 10 PTP Options by Total Transaction Value - 2024





ERCOT-wide Avg. Energy Price - DA vs. RT			
Year	Month	DA Settlement Point Price (\$/MWh)	RT Settlement Point Price (\$/MWh)
2023	1	\$ 28.02	\$ 26.68
	2	\$ 23.83	\$ 21.95
	3	\$ 29.90	\$ 31.20
	4	\$ 27.58	\$ 24.45
	5	\$ 32.08	\$ 32.48
	6	\$ 88.69	\$ 75.44
	7	\$ 64.45	\$ 48.58
	8	\$ 306.22	\$ 224.18
	9	\$ 86.20	\$ 111.36
	10	\$ 37.83	\$ 31.84
	11	\$ 33.62	\$ 31.71
	12	\$ 23.30	\$ 23.87
2024	1	\$ 57.00	\$ 40.43
	2	\$ 15.96	\$ 15.83
	3	\$ 25.15	\$ 24.75
	4	\$ 26.34	\$ 27.50
	5	\$ 52.83	\$ 46.32
	6	\$ 35.48	\$ 32.46
	7	\$ 25.80	\$ 25.03
	8	\$ 41.24	\$ 41.88
	9	\$ 26.58	\$ 27.32
	10	\$ 31.42	\$ 28.23
	11	\$ 25.74	\$ 33.56
	12	\$ 27.70	\$ 27.99

Year	Month	Load Zone Load Statistics								ERCOT-Wide	
		Average Load - Houston (MW)	Average Load - North (MW)	Average Load - South (MW)	Average Load - West (MW)	Peak Load - Houston (MW)	Peak Load - North (MW)	Peak Load - South (MW)	Peak Load - West (MW)	Average Load	Peak Load
2023	1	13,536	25,319	19,752	8,314	10,032	14,695	11,456	7,047	10,807	25,319
	2	14,496	23,636	19,151	7,982	10,774	15,110	12,079	7,012	11,244	23,636
	3	14,697	18,648	15,878	7,717	11,041	13,262	11,487	6,958	10,687	18,648
	4	16,197	20,284	17,553	8,356	11,129	12,981	11,440	7,078	10,657	20,284
	5	18,724	23,418	18,877	8,367	13,228	15,282	13,151	7,344	12,251	23,418
	6	21,220	29,468	23,132	9,058	15,728	19,420	16,250	7,856	14,813	29,468
	7	21,818	30,724	22,696	9,243	16,542	21,768	17,230	8,198	15,935	30,724
	8	22,904	32,117	23,551	9,579	17,535	23,675	17,930	8,386	16,882	32,117
	9	22,170	31,357	22,680	9,310	15,835	19,342	16,426	8,045	14,912	31,357
	10	18,731	25,315	20,730	8,732	12,624	14,551	12,768	7,616	11,890	25,315
	11	15,214	20,691	14,797	8,634	11,045	13,625	11,144	7,692	10,877	20,691
	12	13,111	19,994	15,925	8,826	10,964	14,362	11,373	8,023	11,181	19,994
2024	1	16,671	31,031	23,680	9,246	11,562	18,143	13,259	8,355	12,830	31,031
	2	14,311	20,566	15,434	9,066	10,678	13,964	11,185	8,172	11,000	20,566
	3	15,065	17,450	15,788	8,811	10,771	13,034	11,415	8,120	10,835	17,450
	4	16,776	20,381	18,324	9,549	11,767	13,877	12,562	8,267	11,618	20,381
	5	20,249	25,610	21,828	9,912	14,168	16,158	14,874	8,526	13,431	25,610
	6	20,790	29,012	22,280	10,385	16,214	19,775	16,440	9,199	15,407	29,012
	7	21,520	29,426	21,824	10,608	14,165	20,547	15,880	9,290	14,971	29,426
	8	22,422	31,479	23,817	10,833	16,926	22,475	17,296	9,541	16,559	31,479
	9	20,522	28,175	20,669	10,186	14,916	17,881	15,179	8,968	14,236	28,175
	10	19,464	24,900	19,460	10,486	13,751	16,132	13,792	9,047	13,180	24,900
	11	17,471	18,358	17,501	9,470	12,143	13,862	12,049	8,768	11,705	18,358
	12	14,037	21,666	15,651	10,086	11,293	14,766	11,647	9,189	11,724	21,666

Load Zone Monthly Average Energy Price - DA vs. RT										
Year	Month	Average DA Price Houston (\$/MWh)	Average DA Price North (\$/MWh)	Average DA Price South (\$/MWh)	Average DA Price West (\$/MWh)	Average RT Price Houston (\$/MWh)	Average RT Price North (\$/MWh)	Average RT Price South (\$/MWh)	Average RT Price West (\$/MWh)	
2023	1	\$ 25.89	\$ 27.48	\$ 26.48	\$ 34.71	\$ 23.47	\$ 26.48	\$ 25.55	\$ 33.49	
	2	\$ 22.98	\$ 23.49	\$ 23.47	\$ 26.49	\$ 20.03	\$ 19.93	\$ 23.08	\$ 27.30	
	3	\$ 27.54	\$ 24.88	\$ 29.70	\$ 43.56	\$ 27.01	\$ 25.68	\$ 30.49	\$ 49.53	
	4	\$ 27.18	\$ 23.91	\$ 27.33	\$ 35.31	\$ 22.22	\$ 21.37	\$ 22.07	\$ 37.41	
	5	\$ 33.33	\$ 30.28	\$ 30.50	\$ 36.38	\$ 33.09	\$ 30.37	\$ 31.09	\$ 38.29	
	6	\$ 88.76	\$ 89.95	\$ 92.38	\$ 77.80	\$ 73.11	\$ 77.43	\$ 79.23	\$ 67.36	
	7	\$ 65.69	\$ 65.85	\$ 63.45	\$ 60.35	\$ 50.84	\$ 50.19	\$ 46.01	\$ 45.18	
	8	\$ 306.83	\$ 318.23	\$ 304.77	\$ 274.17	\$ 227.39	\$ 237.12	\$ 213.68	\$ 203.39	
	9	\$ 82.78	\$ 91.09	\$ 86.66	\$ 80.22	\$ 105.53	\$ 120.74	\$ 112.25	\$ 98.46	
	10	\$ 37.20	\$ 35.14	\$ 38.02	\$ 43.73	\$ 30.94	\$ 28.74	\$ 31.54	\$ 39.76	
	11	\$ 32.36	\$ 31.56	\$ 32.36	\$ 40.92	\$ 30.16	\$ 29.07	\$ 30.69	\$ 40.07	
	12	\$ 20.94	\$ 20.12	\$ 21.60	\$ 34.61	\$ 20.65	\$ 20.20	\$ 21.45	\$ 38.26	
2024	1	\$ 49.51	\$ 61.13	\$ 59.27	\$ 54.79	\$ 34.69	\$ 41.25	\$ 44.73	\$ 39.76	
	2	\$ 15.31	\$ 15.04	\$ 14.77	\$ 20.03	\$ 14.83	\$ 14.62	\$ 14.84	\$ 20.56	
	3	\$ 22.07	\$ 18.96	\$ 23.32	\$ 41.77	\$ 22.16	\$ 17.67	\$ 23.65	\$ 41.11	
	4	\$ 26.04	\$ 23.61	\$ 28.27	\$ 28.43	\$ 27.67	\$ 25.45	\$ 29.99	\$ 26.95	
	5	\$ 51.60	\$ 50.31	\$ 58.92	\$ 48.99	\$ 44.58	\$ 41.55	\$ 56.26	\$ 40.91	
	6	\$ 34.68	\$ 31.63	\$ 43.00	\$ 31.72	\$ 31.60	\$ 29.31	\$ 39.14	\$ 28.79	
	7	\$ 24.07	\$ 24.62	\$ 27.10	\$ 28.84	\$ 22.91	\$ 24.18	\$ 25.80	\$ 28.85	
	8	\$ 38.45	\$ 40.61	\$ 42.23	\$ 45.91	\$ 38.46	\$ 39.78	\$ 45.76	\$ 45.89	
	9	\$ 24.24	\$ 24.38	\$ 26.53	\$ 34.96	\$ 24.37	\$ 26.25	\$ 25.93	\$ 36.75	
	10	\$ 28.67	\$ 29.08	\$ 34.89	\$ 34.47	\$ 25.97	\$ 26.53	\$ 29.97	\$ 32.07	
	11	\$ 23.53	\$ 24.16	\$ 25.55	\$ 31.54	\$ 32.07	\$ 32.42	\$ 32.18	\$ 39.34	
	12	\$ 25.20	\$ 25.73	\$ 24.54	\$ 37.95	\$ 25.17	\$ 25.48	\$ 24.61	\$ 39.80	

**ERCOT-wide Monthly Implied Heat Rate - DA vs. RT**

Year	Month	Gas Price (\$/MMBtu)	DA Settlement Point Price (\$/MWh)	DA Heat Rate (MWh/MMBtu)	RT Settlement Point Price (\$/MWh)	RT Heat Rate (MWh/MMBtu)
2023	1	\$ 2.65	\$ 28.02	10.58	\$ 26.68	10.07
	2	\$ 2.05	\$ 23.83	11.60	\$ 21.95	10.69
	3	\$ 2.08	\$ 29.90	14.37	\$ 31.20	15.00
	4	\$ 1.90	\$ 27.58	14.54	\$ 24.45	12.89
	5	\$ 1.96	\$ 32.08	16.39	\$ 32.48	16.59
	6	\$ 2.10	\$ 88.69	42.32	\$ 75.44	36.00
	7	\$ 2.36	\$ 64.45	27.35	\$ 48.58	20.62
	8	\$ 2.40	\$ 306.22	127.70	\$ 224.18	93.49
	9	\$ 2.41	\$ 86.20	35.84	\$ 111.36	46.30
	10	\$ 2.39	\$ 37.83	15.83	\$ 31.84	13.32
	11	\$ 2.29	\$ 33.62	14.71	\$ 31.71	13.88
	12	\$ 2.07	\$ 23.30	11.23	\$ 23.87	11.51
2024	1	\$ 3.02	\$ 57.00	18.85	\$ 40.43	13.37
	2	\$ 1.41	\$ 15.96	11.36	\$ 15.83	11.26
	3	\$ 1.30	\$ 25.15	19.40	\$ 24.75	19.09
	4	\$ 1.15	\$ 26.34	22.92	\$ 27.50	23.93
	5	\$ 1.82	\$ 52.83	29.02	\$ 46.32	25.44
	6	\$ 2.18	\$ 35.48	16.29	\$ 32.46	14.90
	7	\$ 1.68	\$ 25.80	15.34	\$ 25.03	14.88
	8	\$ 1.77	\$ 41.24	23.30	\$ 41.88	23.66
	9	\$ 2.06	\$ 26.58	12.88	\$ 27.32	13.24
	10	\$ 2.01	\$ 31.42	15.64	\$ 28.23	14.06
	11	\$ 1.77	\$ 25.74	14.50	\$ 33.56	18.92
	12	\$ 2.64	\$ 27.70	10.50	\$ 27.99	10.61

**Load Zone Monthly Implied Heat Rate - DA vs. RT**

Year	Month	DA Heat Rate Houston (MWh/MMBtu)	DA Heat Rate North (MWh/MMBtu)	DA Heat Rate South (MWh/MMBtu)	DA Heat Rate West (MWh/MMBtu)	RT Heat Rate Houston (MWh/MMBtu)	RT Heat Rate North (MWh/MMBtu)	RT Heat Rate South (MWh/MMBtu)	RT Heat Rate West (MWh/MMBtu)
2023	1	9.77	10.37	9.99	13.10	8.86	10.00	9.64	12.64
	2	11.19	11.44	11.43	12.90	9.76	9.70	11.24	13.29
	3	13.24	11.96	14.28	20.94	12.98	12.34	14.65	23.81
	4	14.33	12.60	14.41	18.62	11.71	11.27	11.64	19.72
	5	17.03	15.47	15.58	18.59	16.90	15.52	15.88	19.56
	6	42.35	42.92	44.08	37.13	34.89	36.95	37.81	32.14
	7	27.88	27.94	26.92	25.61	21.57	21.30	19.52	19.17
	8	127.96	132.71	127.10	114.34	94.83	98.89	89.11	84.82
	9	34.42	37.87	36.03	33.35	43.87	50.20	46.67	40.94
	10	15.56	14.70	15.90	18.29	12.94	12.02	13.19	16.63
	11	14.16	13.81	14.16	17.91	13.20	12.72	13.43	17.54
	12	10.10	9.70	10.42	16.69	9.96	9.74	10.34	18.45
2024	1	16.38	20.22	19.60	18.12	11.47	13.64	14.79	13.15
	2	10.89	10.70	10.50	14.25	10.55	10.40	10.56	14.63
	3	17.02	14.62	17.98	32.21	17.08	13.63	18.24	31.71
	4	22.66	20.54	24.60	24.74	24.08	22.14	26.09	23.45
	5	28.35	27.64	32.36	26.91	24.49	22.82	30.90	22.47
	6	15.92	14.52	19.74	14.56	14.51	13.46	17.97	13.22
	7	14.31	14.63	16.11	17.14	13.61	14.37	15.34	17.15
	8	21.72	22.94	23.86	25.94	21.72	22.47	25.85	25.92
	9	11.75	11.81	12.86	16.94	11.81	12.72	12.56	17.81
	10	14.28	14.48	17.37	17.17	12.93	13.21	14.92	15.97
	11	13.26	13.62	14.40	17.77	18.07	18.27	18.14	22.17
	12	9.55	9.75	9.30	14.38	9.54	9.65	9.32	15.08

Daily Shortage (ORDC) and Reliability Adders Average Values and Duration						
Year	Month	Day	Shortage Adder (\$/MW)	Reliability Adder (\$/MW)	Hours of Positive Shortage Adder	Hours of Positive Reliability Adder
2024	12	1	\$ -	\$ 1.67	0	9
2024	12	2	\$ -	\$ 2.71	0	52
2024	12	3	\$ -	\$ 1.53	0	18
2024	12	4	\$ -	\$ -	0	0
2024	12	5	\$ -	\$ -	0	0
2024	12	6	\$ -	\$ -	0	0
2024	12	7	\$ -	\$ -	0	0
2024	12	8	\$ -	\$ 0.99	0	78
2024	12	9	\$ -	\$ 0.81	0	50
2024	12	10	\$ -	\$ -	0	0
2024	12	11	\$ -	\$ 0.40	0	8
2024	12	12	\$ -	\$ 1.24	0	81
2024	12	13	\$ -	\$ 0.71	0	88
2024	12	14	\$ -	\$ 0.72	0	4
2024	12	15	\$ -	\$ 0.70	0	84
2024	12	16	\$ -	\$ 0.56	0	53
2024	12	17	\$ -	\$ -	0	0
2024	12	18	\$ -	\$ 0.62	0	22
2024	12	19	\$ -	\$ 0.28	0	17
2024	12	20	\$ -	\$ -	0	0
2024	12	21	\$ -	\$ -	0	0
2024	12	22	\$ -	\$ -	0	0
2024	12	23	\$ -	\$ -	0	0
2024	12	24	\$ -	\$ -	0	0
2024	12	25	\$ -	\$ -	0	0
2024	12	26	\$ -	\$ 1.81	0	10
2024	12	27	\$ -	\$ -	0	0
2024	12	28	\$ -	\$ -	0	0
2024	12	29	\$ -	\$ -	0	0
2024	12	30	\$ -	\$ -	0	0
2024	12	31	\$ -	\$ -	0	0

Shortage (ORDC) and Reliability Adder Floor Impact on Energy Cost			
Year	Month	Monthly Impact (\$)	Annual Cumulative Impact (\$)
2023	1	\$ -	\$ -
2023	2	\$ -	\$ -
2023	3	\$ -	\$ -
2023	4	\$ -	\$ -
2023	5	\$ -	\$ -
2023	6	\$ -	\$ -
2023	7	\$ -	\$ -
2023	8	\$ -	\$ -
2023	9	\$ -	\$ -
2023	10	\$ -	\$ -
2023	11	\$ 903,568	\$ 903,568
2023	12	\$ -	\$ 903,568
2024	1	\$ 305,655	\$ 305,655
2024	2	\$ -	\$ 305,655
2024	3	\$ 356,079	\$ 661,734
2024	4	\$ 2,700,062	\$ 3,361,796
2024	5	\$ 1,860,853	\$ 5,222,649
2024	6	\$ 90,904	\$ 5,313,553
2024	7	\$ 1,146,261	\$ 6,459,814
2024	8	\$ 1,090,732	\$ 7,550,546
2024	9	\$ 2,408,895	\$ 9,959,442
2024	10	\$ 537,746	\$ 10,497,188
2024	11	\$ 75,543	\$ 10,572,730
2024	12	\$ -	\$ 10,572,730

Shortage (ORDC) and Reliability Adder Floor Impact on A/S Imbalance			
Year	Month	Monthly Impact (\$)	Annual Cumulative Impact (\$)
2023	1	\$ -	\$ -
2023	2	\$ -	\$ -
2023	3	\$ -	\$ -
2023	4	\$ -	\$ -
2023	5	\$ -	\$ -
2023	6	\$ -	\$ -
2023	7	\$ -	\$ -
2023	8	\$ -	\$ -
2023	9	\$ -	\$ -
2023	10	\$ -	\$ -
2023	11	\$ 24,983	\$ 24,983
2023	12	\$ -	\$ 24,983
2024	1	\$ 1,307	\$ 1,307
2024	2	\$ -	\$ 1,307
2024	3	\$ 3,006	\$ 4,313
2024	4	\$ 64,791	\$ 69,104
2024	5	\$ (19,782)	\$ 49,322
2024	6	\$ 1,528	\$ 50,850
2024	7	\$ 18,724	\$ 69,574
2024	8	\$ (17,690)	\$ 51,884
2024	9	\$ 54,477	\$ 106,361
2024	10	\$ 7,356	\$ 113,717
2024	11	\$ (25)	\$ 113,691
2024	12	\$ -	\$ 113,691



Monthly Average of Ancillary Services Required MW						
Year	Month	Regulation Down (MW)	Non-Spinning Reserve Service (MW)	Responsive Reserve Service (MW)	Regulation Up (MW)	ERCOT Contingency Reserve Service (MW)
2023	1	342	4,048	2,965	372	-
	2	420	4,243	3,022	400	-
	3	433	4,049	3,256	454	-
	4	405	4,262	3,102	400	-
	5	418	5,052	2,901	428	-
	6	376	3,275	2,676	408	2,073
	7	347	2,801	2,583	379	2,041
	8	323	2,207	2,566	389	2,127
	9	362	2,265	2,693	381	2,041
	10	399	2,467	2,950	409	1,784
	11	335	2,385	3,076	344	1,607
	12	339	3,092	3,053	366	1,847
2024	1	342	2,945	2,951	385	1,554
	2	403	2,968	2,951	409	1,668
	3	430	2,530	3,088	432	1,562
	4	399	2,672	3,003	408	1,464
	5	414	3,702	2,664	417	1,988
	6	388	2,906	2,420	418	2,009
	7	361	2,503	2,375	387	2,049
	8	375	2,185	2,326	401	2,172
	9	377	2,137	2,414	393	1,983
	10	416	2,361	2,737	397	1,558
	11	377	2,278	2,939	410	1,488
	12	388	3,018	2,813	418	1,526

Hourly Average of Ancillary Services Required MW						
Year	Month	Regulation Down (MW)	Non-Spinning Reserve Service (MW)	Responsive Reserve Service (MW)	Regulation Up (MW)	ERCOT Contingency Reserve Service (MW)
2023	1	372	2,816	2,954	227	1,447
	2	294	2,816	2,954	189	1,393
	3	248	3,101	2,987	214	1,462
	4	223	3,103	2,988	242	1,460
	5	219	3,103	2,988	297	1,431
	6	261	3,103	2,988	426	1,440
	7	233	3,558	2,883	521	1,598
	8	362	3,558	2,883	347	1,815
	9	592	3,558	2,883	340	2,104
	10	495	3,558	2,883	486	2,474
	11	421	3,668	2,778	530	2,305
	12	393	3,668	2,778	535	2,325
	13	385	3,687	2,778	522	2,267
	14	375	3,687	2,778	510	2,283
	15	404	3,620	2,908	499	2,331
	16	419	3,620	2,908	523	2,413
	17	424	3,620	2,908	606	2,359
	18	405	3,620	2,908	652	2,359
	19	397	3,147	2,905	546	2,172
	20	338	3,147	2,905	409	2,042
	21	376	3,147	2,905	275	1,864
	22	439	3,147	2,905	201	1,756
	23	472	3,068	2,954	192	1,612
	24	443	3,068	2,954	168	1,501
2024	1	388	2,090	2,793	223	1,242
	2	313	2,090	2,793	216	1,217
	3	274	2,372	2,829	220	1,246
	4	242	2,371	2,830	248	1,199
	5	232	2,371	2,830	301	1,216
	6	241	2,371	2,830	428	1,228
	7	241	3,186	2,761	512	1,333
	8	483	3,186	2,761	326	1,644
	9	718	3,186	2,761	350	2,106
	10	512	3,186	2,761	476	2,227
	11	418	3,027	2,689	529	2,225
	12	388	3,027	2,689	541	2,048
	13	401	3,026	2,689	527	1,963
	14	389	3,026	2,689	526	2,045
	15	406	2,803	2,633	498	2,128
	16	420	2,803	2,633	544	2,178
	17	416	2,803	2,633	652	2,304
	18	404	2,803	2,633	676	2,277
	19	374	2,532	2,629	618	2,004
	20	323	2,532	2,629	474	1,832
	21	373	2,532	2,629	288	1,786
	22	443	2,532	2,629	217	1,688
	23	489	2,284	2,793	185	1,518
	24	452	2,284	2,793	175	1,397

Monthly Average Ancillary Services Prices						
Year	Month	Regulation Down (MW)	Non-Spinning Reserve Service (MW)	Responsive Reserve Service (MW)	Regulation Up (MW)	ERCOT Contingency Reserve Service (MW)
2023	1	\$ 5.69	\$ 4.69	\$ 4.00	\$ 7.27	\$ -
	2	\$ 12.99	\$ 5.79	\$ 3.72	\$ 7.58	\$ -
	3	\$ 6.42	\$ 8.01	\$ 6.24	\$ 12.47	\$ -
	4	\$ 7.65	\$ 8.03	\$ 6.12	\$ 12.52	\$ -
	5	\$ 4.74	\$ 11.87	\$ 4.03	\$ 7.66	\$ -
	6	\$ 8.20	\$ 45.87	\$ 38.57	\$ 47.00	\$ 107.44
	7	\$ 6.53	\$ 17.12	\$ 18.14	\$ 23.85	\$ 38.30
	8	\$ 99.16	\$ 80.61	\$ 132.73	\$ 215.17	\$ 276.73
	9	\$ 29.48	\$ 17.56	\$ 32.12	\$ 47.44	\$ 44.76
	10	\$ 6.59	\$ 8.23	\$ 10.82	\$ 17.38	\$ 16.78
	11	\$ 3.19	\$ 8.98	\$ 7.73	\$ 12.42	\$ 11.06
	12	\$ 2.60	\$ 2.81	\$ 2.50	\$ 3.91	\$ 3.28
2024	1	\$ 15.69	\$ 14.74	\$ 17.72	\$ 18.47	\$ 22.98
	2	\$ 2.15	\$ 1.58	\$ 1.74	\$ 2.65	\$ 2.64
	3	\$ 2.90	\$ 5.29	\$ 3.95	\$ 5.52	\$ 6.54
	4	\$ 3.01	\$ 7.30	\$ 6.37	\$ 10.41	\$ 10.16
	5	\$ 6.40	\$ 27.75	\$ 11.74	\$ 15.37	\$ 32.49
	6	\$ 3.62	\$ 4.39	\$ 3.20	\$ 4.71	\$ 10.62
	7	\$ 2.66	\$ 1.34	\$ 2.62	\$ 3.53	\$ 3.59
	8	\$ 4.91	\$ 2.70	\$ 8.17	\$ 10.10	\$ 10.67
	9	\$ 1.87	\$ 1.69	\$ 2.07	\$ 2.47	\$ 2.17
	10	\$ 1.73	\$ 3.88	\$ 4.36	\$ 7.51	\$ 5.05
	11	\$ 1.35	\$ 2.97	\$ 2.88	\$ 5.33	\$ 3.21
	12	\$ 1.56	\$ 1.63	\$ 1.13	\$ 2.17	\$ 1.16

Monthly Average Ancillary Services Cost per MWh Load						
Year	Month	Regulation Down (MW)	Non-Spinning Reserve Service (MW)	Responsive Reserve Service (MW)	Regulation Up (MW)	ERCOT Contingency Reserve Service (MW)
2023	1	\$ 0.04	\$ 0.44	\$ 0.27	\$ 0.06	\$ -
	2	\$ 0.12	\$ 0.55	\$ 0.25	\$ 0.07	\$ -
	3	\$ 0.06	\$ 0.76	\$ 0.48	\$ 0.13	\$ -
	4	\$ 0.07	\$ 0.80	\$ 0.45	\$ 0.12	\$ -
	5	\$ 0.04	\$ 1.22	\$ 0.24	\$ 0.07	\$ -
	6	\$ 0.05	\$ 2.53	\$ 1.74	\$ 0.32	\$ 2.63
	7	\$ 0.04	\$ 0.75	\$ 0.73	\$ 0.14	\$ 1.23
	8	\$ 0.47	\$ 2.63	\$ 5.04	\$ 1.24	\$ 8.72
	9	\$ 0.18	\$ 0.67	\$ 1.45	\$ 0.30	\$ 1.53
	10	\$ 0.06	\$ 0.43	\$ 0.67	\$ 0.15	\$ 0.63
	11	\$ 0.02	\$ 0.49	\$ 0.55	\$ 0.10	\$ 0.41
	12	\$ 0.02	\$ 0.19	\$ 0.17	\$ 0.03	\$ 0.14
2024	1	\$ 0.10	\$ 0.85	\$ 1.02	\$ 0.14	\$ 0.70
	2	\$ 0.02	\$ 0.11	\$ 0.12	\$ 0.02	\$ 0.10
	3	\$ 0.03	\$ 0.31	\$ 0.28	\$ 0.06	\$ 0.24
	4	\$ 0.03	\$ 0.42	\$ 0.41	\$ 0.09	\$ 0.32
	5	\$ 0.05	\$ 1.91	\$ 0.58	\$ 0.12	\$ 1.20
	6	\$ 0.02	\$ 0.21	\$ 0.13	\$ 0.03	\$ 0.35
	7	\$ 0.02	\$ 0.06	\$ 0.10	\$ 0.02	\$ 0.12
	8	\$ 0.03	\$ 0.09	\$ 0.29	\$ 0.06	\$ 0.35
	9	\$ 0.01	\$ 0.06	\$ 0.09	\$ 0.02	\$ 0.08
	10	\$ 0.01	\$ 0.17	\$ 0.23	\$ 0.06	\$ 0.15
	11	\$ 0.01	\$ 0.14	\$ 0.18	\$ 0.05	\$ 0.10
	12	\$ 0.01	\$ 0.10	\$ 0.07	\$ 0.02	\$ 0.04

ERCOT-wide Cumulative Peaker Net Margin			
Year	Month	PNM (\$)	Cumulative (\$)
2023	0	\$ -	\$ -
	1	\$ 3,758.67	\$ 3,758.67
	2	\$ 3,066.65	\$ 6,825.32
	3	\$ 7,327.65	\$ 14,152.97
	4	\$ 3,963.19	\$ 18,116.16
	5	\$ 8,532.76	\$ 26,648.92
	6	\$ 30,725.00	\$ 57,373.92
	7	\$ 15,736.44	\$ 73,110.36
	8	\$ 125,626.42	\$ 198,736.78
	9	\$ 46,968.45	\$ 245,705.23
	10	\$ 6,299.66	\$ 252,004.89
	11	\$ 7,639.84	\$ 259,644.73
	12	\$ 4,296.20	\$ 263,940.93
2024	0	\$ -	\$ -
	1	\$ 8,527.11	\$ 8,527.11
	2	\$ 3,701.32	\$ 12,228.43
	3	\$ 8,447.84	\$ 20,676.27
	4	\$ 11,209.11	\$ 31,885.38
	5	\$ 16,738.09	\$ 48,623.47
	6	\$ 6,214.57	\$ 54,838.04
	7	\$ 5,216.01	\$ 60,054.05
	8	\$ 14,133.36	\$ 74,187.41
	9	\$ 4,269.52	\$ 78,456.93
	10	\$ 5,634.59	\$ 84,091.52
	11	\$ 11,380.65	\$ 95,472.17
	12	\$ 3,650.50	\$ 99,122.67

DA vs. RT Load Forecast Error (MW) by Hour Ending							
Year	Month	HE 1-4	HE 5-8	HE 9-12	HE 13-16	HE 17-20	HE 21-24
2023	1	33	732	1,397	392	136	210
	2	(28)	1,005	1,480	1,497	1,206	666
	3	(484)	750	931	459	208	100
	4	(1,127)	(373)	534	362	252	(282)
	5	(909)	(998)	467	1,207	1,088	(363)
	6	(68)	(586)	1,530	2,778	1,430	426
	7	22	(224)	1,085	3,009	1,488	469
	8	45	(355)	802	1,604	872	994
	9	(320)	(589)	338	1,185	417	(82)
	10	(322)	(527)	752	1,539	1,228	67
	11	(207)	186	101	268	863	73
	12	(632)	(806)	(949)	(429)	258	(48)
2024	1	(764)	163	690	486	956	9
	2	(237)	735	1,077	694	483	339
	3	(112)	549	675	481	306	187
	4	(461)	(206)	522	969	256	(84)
	5	21	(47)	543	1,284	1,045	684
	6	(451)	(338)	(208)	598	167	(623)
	7	(371)	(188)	793	2,108	1,430	577
	8	(395)	(53)	360	1,014	312	(333)
	9	(433)	(378)	(319)	411	336	(323)
	10	(670)	(421)	610	119	(993)	(457)
	11	(591)	(232)	(215)	(545)	97	(376)
	12	(226)	(126)	(120)	(753)	(98)	136

Monthly Average of Wind Generation (MW) by Hour Ending								Average	Total
Year	Month	HE 1-4	HE 5-8	HE 9-12	HE 13-16	HE 17-20	HE 21-24	Across All Hours	
2023	1	16,786	15,896	13,255	12,978	13,256	16,258	14,728	458,868
	2	15,935	15,026	13,552	14,322	15,239	17,307	15,236	429,049
	3	16,983	15,530	13,978	12,878	13,946	16,760	15,012	472,087
	4	16,756	15,018	12,761	12,031	13,207	16,187	14,321	434,203
	5	12,744	9,807	7,209	7,265	10,625	13,140	10,175	321,318
	6	14,285	11,975	9,609	8,535	10,879	13,859	11,504	348,036
	7	16,218	13,006	9,683	8,723	10,953	14,729	12,221	382,627
	8	14,147	11,131	8,875	7,705	9,874	12,837	10,702	343,583
	9	13,994	11,182	8,244	6,223	7,888	13,447	10,125	309,927
	10	14,077	12,740	10,486	10,071	10,516	13,441	11,854	375,247
	11	12,510	11,412	9,478	9,029	9,928	13,033	10,885	333,008
	12	13,984	12,979	11,017	11,534	11,641	14,558	12,620	394,512
2024	1	12,969	12,574	10,880	10,617	10,118	12,254	11,575	360,958
	2	17,760	17,575	14,116	14,160	14,221	17,060	15,822	465,260
	3	15,982	14,130	11,839	11,747	13,155	16,239	13,828	435,532
	4	18,123	17,432	15,079	14,290	15,320	17,181	16,162	496,253
	5	16,225	13,545	11,451	11,325	13,522	16,133	13,677	430,104
	6	17,360	14,020	11,560	10,678	13,458	17,409	14,066	429,173
	7	14,238	10,798	8,413	8,329	10,379	14,340	11,070	347,172
	8	14,863	10,709	6,629	5,859	9,531	14,198	10,267	322,339
	9	10,190	7,977	6,303	7,167	8,566	10,262	8,443	258,376
	10	16,221	14,074	10,448	9,625	10,599	16,119	12,950	408,431
	11	16,319	15,086	12,088	11,416	12,370	15,781	13,863	426,437
	12	14,058	13,502	11,561	10,604	10,573	14,682	12,505	390,534

Monthly Average of Solar Generation (MW) by Hour Ending								Average	Total
Year	Month	HE 1-4	HE 5-8	HE 9-12	HE 13-16	HE 17-20	HE 21-24	Across All Hours	
2023	1	0.3	14.6	4,959.9	5,954.5	1,303.5	0.7	2,041	63,592
	2	0.9	64.5	5,072.6	5,984.7	1,750.2	1.0	2,144	60,384
	3	0.2	67.8	5,196.4	7,665.3	3,657.6	0.4	2,762	86,845
	4	0.2	130.2	6,575.6	8,939.2	5,678.3	7.1	3,546	107,527
	5	0.2	350.0	7,903.1	10,047.5	6,026.7	36.3	4,048	127,842
	6	0.3	563.2	9,356.5	11,237.5	7,807.2	107.4	4,827	146,028
	7	0.5	442.2	10,019.0	11,950.8	9,016.3	114.9	5,232	163,806
	8	0.3	237.9	10,464.6	12,377.6	8,266.7	25.0	5,158	165,600
	9	0.2	73.3	8,924.6	11,508.5	6,593.0	0.4	4,524	138,489
	10	0.1	13.8	6,723.8	9,743.6	4,456.3	0.7	3,535	111,908
	11	0.4	125.5	6,606.1	7,750.9	1,479.5	0.4	2,663	81,458
	12	0.0	59.6	7,972.6	8,837.9	1,248.3	0.1	3,005	93,944
2024	1	0.1	29.9	7,435.8	8,671.2	1,858.3	2.4	2,993	93,337
	2	0.3	147.0	9,285.9	10,538.0	2,832.7	0.4	3,812	112,098
	3	0.8	88.2	8,715.8	11,990.2	5,583.0	0.7	4,404	138,725
	4	0.7	179.2	8,720.3	12,143.5	7,918.3	8.9	4,811	147,709
	5	0.9	480.7	10,332.1	13,635.7	8,505.4	52.3	5,489	172,617
	6	0.5	928.2	12,935.4	15,777.8	11,719.2	147.9	6,913	210,921
	7	1.0	644.3	13,145.4	16,149.5	11,363.5	123.5	6,904	216,510
	8	0.3	375.8	15,688.4	18,500.9	12,114.1	30.5	7,759	243,596
	9	0.7	123.7	13,377.5	17,286.7	9,497.5	0.7	6,765	207,003
	10	1.0	39.4	13,720.0	17,284.0	7,938.4	0.9	6,473	204,158
	11	0.5	386.9	12,443.1	14,141.7	2,094.7	0.9	4,847	149,103
	12	1.0	82.3	10,169.9	12,182.3	1,755.8	2.3	4,034	125,970



Monthly Average of Battery Generation (MW) by Hour Ending								Average	Total
Year	Month	HE 1-4	HE 5-8	HE 9-12	HE 13-16	HE 17-20	HE 21-24	Across All Hours	
2023	1	60	116	98	73	138	82	95	2,955
	2	55	122	87	77	133	81	93	2,608
	3	57	127	78	73	119	103	95	2,976
	4	48	94	82	87	118	112	92	2,787
	5	39	82	79	105	122	114	93	2,924
	6	37	46	77	93	164	113	90	2,726
	7	36	45	61	95	154	126	88	2,771
	8	26	36	56	99	256	177	120	3,855
	9	37	51	66	99	254	113	109	3,350
	10	41	81	88	99	222	91	106	3,359
	11	42	114	87	86	210	85	106	3,244
	12	67	158	83	83	203	88	115	3,587
2024	1	69	202	118	69	281	107	142	4,436
	2	71	236	129	106	350	122	170	5,008
	3	97	229	132	110	270	207	177	5,566
	4	96	196	128	152	293	308	203	6,242
	5	66	196	126	185	285	368	209	6,571
	6	78	124	123	209	339	444	225	6,860
	7	71	150	109	196	407	507	245	7,691
	8	62	117	131	224	611	618	303	9,503
	9	72	164	100	156	838	446	303	9,280
	10	86	280	130	171	1,348	262	381	12,025
	11	106	453	174	207	1,333	230	420	12,928
	12	138	643	224	175	1,336	243	457	14,285

RT Congestion Constraint Rankings - Top 10 Constraints by Binding Frequency and Top 10 Constraints by Total Congestion Rent																
Category	Year	Constraint	Value	Rank	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
FREQ_EXIST	2024	PANHANDLE GTC (PNHNDL)	12577	1	647	2029	1204	1604	742	721	385	115	284	1412	2223	1211
FREQ_EXIST	2024	NORTH EDINBURG LOBO GTC (NE LOB)	11435	2	571	1245	977	3350	2195	1822	257	77	59	76	585	221
FREQ_EXIST	2024	WEST TEXAS EXPORT GTC (WESTEX)	11073	3	958	1163	1377	1578	1353	1195	487	73	117	996	1036	740
FREQ_EXIST	2024	BURNS RIOHONDO 1 (RIOHONDO-MV BURNS)	10263	4	469	664	982	1949	2705	2794	296	210	194	0	0	0
FREQ_EXIST	2024	6520 E (ODEHV-YARBR)	9045	5	0	62	64	84	527	535	449	735	769	2806	1520	1494
FREQ_EXIST	2024	ZAPATA-STARR GTC (ZAPSTR)	8480	6	261	1539	864	1526	998	810	511	206	69	125	1014	557
FREQ_EXIST	2024	HAINA LA PALM 1 (LA PALMA-HAINA DR)	8294	7	36	321	971	1079	1859	2209	234	72	88	125	708	592
FREQ_EXIST	2024	LARDVN_LASCRU1_1 (LARDVNTH-LASCRUCE)	7719	8	595	0	1988	2246	223	380	863	543	259	100	522	0
FREQ_EXIST	2024	DILLEYSW_XFMR (DILLEYSW-DILLEY)	7519	9	77	412	888	235	7	72	756	2003	1574	1495	0	0
FREQ_EXIST	2024	6471 C (MGSES-NAVIG)	6289	10	52	0	0	0	630	574	1520	1905	1512	23	73	0
TOP10_RENT	2024	WEST TEXAS EXPORT GTC (WESTEX)	\$ 130.49	1	\$ 13.53	\$ 8.32	\$ 12.19	\$ 15.85	\$ 14.98	\$ 22.95	\$ 5.34	\$ 0.47	\$ 1.01	\$ 15.88	\$ 10.62	\$ 9.37
TOP10_RENT	2024	6471 C (MGSES-NAVIG)	\$ 110.20	2	\$ 0.29	\$ -	\$ -	\$ -	\$ 15.37	\$ 9.80	\$ 29.57	\$ 32.88	\$ 20.88	\$ 0.20	\$ 1.22	\$ -
TOP10_RENT	2024	6036 A (TKWSW-MGSES)	\$ 102.05	3	\$ 4.60	\$ 13.29	\$ 68.38	\$ 15.63	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.15
TOP10_RENT	2024	6520 E (ODEHV-YARBR)	\$ 90.94	4	\$ -	\$ 0.14	\$ 0.22	\$ 0.35	\$ 3.51	\$ 1.61	\$ 1.29	\$ 7.64	\$ 11.16	\$ 31.44	\$ 20.44	\$ 13.14
TOP10_RENT	2024	BURNS RIOHONDO 1 (RIOHONDO-MV BURNS)	\$ 83.29	5	\$ 2.14	\$ 1.46	\$ 3.38	\$ 12.42	\$ 32.34	\$ 30.31	\$ 0.79	\$ 0.27	\$ 0.18	\$ -	\$ -	\$ -
TOP10_RENT	2024	HARGRO TWINBU1_1 (TWINBU-HARGROVE)	\$ 80.44	6	\$ 20.59	\$ 9.39	\$ 20.80	\$ 0.51	\$ 0.05	\$ -	\$ 0.33	\$ 0.49	\$ 4.96	\$ 1.95	\$ 1.80	\$ 19.57
TOP10_RENT	2024	1710 C (BELGNTY-SALSW)	\$ 52.43	7	\$ 0.46	\$ -	\$ -	\$ 1.32	\$ 15.19	\$ 15.71	\$ 3.79	\$ 15.35	\$ 0.15	\$ 0.40	\$ -	\$ 0.07
TOP10_RENT	2024	14040 I (PCTSW-WRPOD)	\$ 52.11	8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.01	\$ 22.64	\$ 29.64
TOP10_RENT	2024	PANHANDLE GTC (PNHNDL)	\$ 46.50	9	\$ 1.92	\$ 7.68	\$ 3.48	\$ 6.52	\$ 2.25	\$ 1.71	\$ 1.06	\$ 0.47	\$ 1.01	\$ 4.20	\$ 9.55	\$ 6.64
TOP10_RENT	2024	610_B (TMPSW-TMPSE)	\$ 40.69	10	\$ 0.99	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 16.64	\$ 23.05	\$ -	\$ -

Month	Rent Total
1	\$201.27
2	\$90.69
3	\$212.49
4	\$143.93
5	\$239.98
6	\$185.59
7	\$113.29
8	\$156.29
9	\$137.24
10	\$182.11
11	\$169.86
12	\$137.56
Cumulative	\$1,970.30

DA Congestion Constraint Rankings - Top 10 Constraints by Binding Frequency and Top 10 Constraints by Total Congestion Rent																
Category	Year	Constraint	Value	Rank	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
FREQ_EXIST	2024	HARGRO_TWINBU1_1 (TWINBU-HARGROVE)	4,293	1	547	454	428	374	279	334	343	423	391	287	125	308
FREQ_EXIST	2024	ASHERT_CATARI1_1 (ASHERTON-CATARINA)	4,228	2	393	194	276	398	506	597	582	377	249	277	261	118
FREQ_EXIST	2024	HEXT_YELWJC1_1 (YELWJCKT-HEXT)	3,639	3	192	293	112	325	231	260	212	329	475	314	298	598
FREQ_EXIST	2024	CATARI_PILONC1_1 (PILONCIL-CATARINA)	3,124	4	484	501	221	143	236	93	173	193	195	182	281	422
FREQ_EXIST	2024	6520_E (ODEHV-YARBR)	2,721	5	5	101	103	121	327	233	188	126	171	448	469	429
FREQ_EXIST	2024	LARDVN_LASCRU1_1 (LARDVNTH-LASCROUCE)	2,607	6	214	-	473	524	270	207	203	157	231	186	142	-
FREQ_EXIST	2024	6471_C (MGSES-NAVIG)	2,519	7	128	-	-	-	380	396	449	427	449	196	94	-
FREQ_EXIST	2024	BURNS_RIOHONDO_1 (RIOHONDO-MV_BURNS)	2,262	8	166	215	215	381	453	514	182	83	53	-	-	-
FREQ_EXIST	2024	BIGLAK_PHBL_T1_1 (BIGLAKE-PHBL_TAP)	2,217	9	465	338	283	193	105	6	12	17	217	134	158	289
FREQ_EXIST	2024	LPLBR_BRT1 (LPLBR-LPLBR)	2,062	10	336	86	214	282	128	241	239	271	93	50	27	95
TOP10_RENT	2024	6471_C (MGSES-NAVIG)	\$ 119.80	1	\$ 1.72	\$ -	\$ -	\$ -	\$ 12.53	\$ 8.90	\$ 26.55	\$ 34.46	\$ 28.23	\$ 4.71	\$ 2.70	\$ -
TOP10_RENT	2024	WEST TEXAS EXPORT GTC (WESTEX)	\$ 103.26	2	\$ 7.41	\$ 8.98	\$ 10.43	\$ 11.52	\$ 9.72	\$ 13.50	\$ 4.40	\$ 0.69	\$ 0.29	\$ 12.37	\$ 9.94	\$ 14.00
TOP10_RENT	2024	6036_A (TKWSW-MGSES)	\$ 100.73	3	\$ 13.59	\$ 6.30	\$ 60.11	\$ 17.30	\$ 0.63	\$ 0.11	\$ 0.06	\$ 0.02	\$ 0.09	\$ 0.01	\$ 1.58	\$ 0.93
TOP10_RENT	2024	BURNS_RIOHONDO_1 (RIOHONDO-MV_BURNS)	\$ 92.50	4	\$ 1.76	\$ 2.08	\$ 2.73	\$ 8.78	\$ 35.95	\$ 36.21	\$ 3.83	\$ 0.84	\$ 0.30	\$ -	\$ -	\$ -
TOP10_RENT	2024	HARGRO_TWINBU1_1 (TWINBU-HARGROVE)	\$ 87.02	5	\$ 20.87	\$ 11.87	\$ 19.58	\$ 4.65	\$ 0.83	\$ 0.57	\$ 1.01	\$ 1.40	\$ 3.66	\$ 1.65	\$ 1.40	\$ 19.55
TOP10_RENT	2024	6520_E (ODEHV-YARBR)	\$ 78.88	6	\$ 0.00	\$ 0.62	\$ 0.49	\$ 0.94	\$ 4.57	\$ 1.83	\$ 1.00	\$ 4.89	\$ 7.57	\$ 20.73	\$ 22.42	\$ 13.82
TOP10_RENT	2024	1710_C (BELCNTY-SALSW)	\$ 48.33	7	\$ 0.00	\$ -	\$ 0.01	\$ 1.12	\$ 11.22	\$ 18.65	\$ 5.43	\$ 6.50	\$ 2.67	\$ 2.59	\$ 0.13	\$ -
TOP10_RENT	2024	PANHANDLE GTC (PNHNDL)	\$ 45.24	8	\$ 2.20	\$ 7.21	\$ 3.12	\$ 6.87	\$ 2.02	\$ 2.45	\$ 1.40	\$ 0.49	\$ 0.94	\$ 4.16	\$ 9.12	\$ 5.27
TOP10_RENT	2024	LARDVN_LASCRU1_1 (LARDVNTH-LASCROUCE)	\$ 40.77	9	\$ 6.56	\$ -	\$ 9.01	\$ 9.18	\$ 2.75	\$ 1.69	\$ 3.01	\$ 3.18	\$ 1.75	\$ 1.18	\$ 2.45	\$ -
TOP10_RENT	2024	COLETO_ROSATA1_1 (COLETO-ROSATA)	\$ 38.43	10	\$ 34.68	\$ -	\$ -	\$ -	\$ -	\$ 0.09	\$ 0.12	\$ 1.09	\$ 0.85	\$ 1.54	\$ -	\$ 0.07

Top 10 CRR Pairs Ranked by Monthly Auction Values - Top 10 PTP Obligations by Total Transaction Values and Top 10 PTP Options by Total Transaction Values																
FTR Option	Year	CCR Pair	Total Value	Rank	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
N	2024	HB WEST-LZ WEST	\$ 100.97	1	\$ 8.52	\$ 7.67	\$ 8.38	\$ 12.56	\$ 9.68	\$ 7.43	\$ 5.76	\$ 6.23	\$ 7.79	\$ 6.90	\$ 12.06	\$ 7.99
N	2024	HB NORTH-HB WEST	\$ 45.31	2	\$ 4.48	\$ 2.45	\$ 7.35	\$ 7.16	\$ 4.72	\$ 3.37	\$ 1.39	\$ 1.41	\$ 1.14	\$ 3.41	\$ 6.22	\$ 2.22
N	2024	HB NORTH-HB HOUSTON	\$ 15.94	3	\$ 0.04	\$ 0.02	\$ 0.77	\$ 2.18	\$ 2.97	\$ 2.46	\$ 2.11	\$ 1.33	\$ 0.97	\$ 1.37	\$ 0.97	\$ 0.75
N	2024	HB PAN-HB WEST	\$ 14.90	4	\$ 0.65	\$ 1.90	\$ 0.59	\$ 1.41	\$ 1.58	\$ 0.38	\$ 0.53	\$ 0.61	\$ 0.37	\$ 2.85	\$ 1.68	\$ 2.37
N	2024	AEEC-LZ WEST	\$ 13.93	5	\$ 0.85	\$ 0.71	\$ 0.95	\$ 0.98	\$ 1.80	\$ 1.07	\$ 0.89	\$ 0.76	\$ 1.26	\$ 1.81	\$ 1.89	\$ 0.95
N	2024	HB NORTH-LZ NORTH	\$ 13.29	6	\$ 0.44	\$ 0.87	\$ 0.61	\$ 0.46	\$ 0.25	\$ 1.83	\$ 2.84	\$ 2.88	\$ 1.94	\$ 0.41	\$ 0.36	\$ 0.41
N	2024	HB HOUSTON-LZ HOUSTON	\$ 8.69	7	\$ 0.21	\$ 0.47	\$ 0.89	\$ 1.12	\$ 0.88	\$ 0.88	\$ 0.74	\$ 0.87	\$ 0.88	\$ 1.12	\$ 0.43	\$ 0.19
N	2024	HB SOUTH-LZ SOUTH	\$ 7.93	8	\$ -	\$ -	\$ 0.00	\$ 0.31	\$ 0.77	\$ 0.85	\$ 1.05	\$ 1.36	\$ 0.92	\$ 1.53	\$ 0.75	\$ 0.40
N	2024	HB NORTH-HB SOUTH	\$ 7.30	9	\$ 0.20	\$ 0.06	\$ 0.23	\$ 0.77	\$ 1.23	\$ 0.89	\$ 0.26	\$ 0.19	\$ 0.33	\$ 1.74	\$ 0.89	\$ 0.51
N	2024	COL_COLETG1-HB SOUTH	\$ 5.38	10	\$ 0.51	\$ 0.82	\$ 0.33	\$ 0.00	\$ 0.38	\$ 0.03	\$ 1.70	\$ 0.79	\$ 0.02	\$ 0.34	\$ 0.31	\$ 0.14
Y	2024	HB WEST-LZ WEST	\$ 13.54	1	\$ 0.35	\$ 0.20	\$ 3.62	\$ 1.03	\$ 1.30	\$ 1.27	\$ 1.22	\$ 1.14	\$ 0.82	\$ 1.80	\$ 0.58	\$ 0.21
Y	2024	HI_LONE_ALL-BOOTLEG_UN1	\$ 6.46	2	\$ -	\$ 0.03	\$ 0.20	\$ 0.07	\$ 0.29	\$ 0.18	\$ 0.03	\$ 0.05	\$ 1.80	\$ 3.21	\$ 0.55	\$ 0.04
Y	2024	HB SOUTH-LZ SOUTH	\$ 6.04	3	\$ 0.02	\$ 0.06	\$ 0.01	\$ 0.25	\$ 0.56	\$ 1.15	\$ 1.74	\$ 0.57	\$ 0.89	\$ 0.49	\$ 0.18	\$ 0.13
Y	2024	HI_LONEB_RN1-BOOTLEG_UN1	\$ 5.96	4	\$ 4.27	\$ 0.33	\$ 0.01	\$ 0.16	\$ 0.03	\$ 0.02	\$ 0.02	\$ 0.02	\$ 0.50	\$ 0.50	\$ 0.06	\$ 0.05
Y	2024	HB NORTH-LZ NORTH	\$ 5.36	5	\$ 0.39	\$ 0.39	\$ 0.14	\$ 0.21	\$ 0.23	\$ 0.50	\$ 1.10	\$ 0.80	\$ 0.45	\$ 0.52	\$ 0.28	\$ 0.35
Y	2024	NUE_NUECESG7-HB SOUTH	\$ 5.28	6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.91	\$ 1.58	\$ 1.11	\$ 0.77	\$ 0.60	\$ 0.31	\$ -
Y	2024	BOOTLEG_UN1-HI_LONEB_RN1	\$ 4.54	7	\$ 1.11	\$ 0.01	\$ 0.01	\$ 0.01	\$ 0.01	\$ 0.00	\$ -	\$ -	\$ 1.43	\$ 1.92	\$ 0.03	\$ 0.03
Y	2024	B_DAVIS_3-HB SOUTH	\$ 4.05	8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.89	\$ 1.73	\$ 0.71	\$ 0.54	\$ 0.14	\$ 0.03	\$ -
Y	2024	RIONOG_ST1-LZ CPS	\$ 3.30	9	\$ 0.06	\$ 0.06	\$ 0.05	\$ 0.26	\$ 0.41	\$ 0.48	\$ 0.52	\$ 0.35	\$ 0.74	\$ 0.27	\$ -	\$ 0.10
Y	2024	TORR_ALL-SAN_SANMIGG1	\$ 3.06	10	\$ 1.05	\$ 0.00	\$ 0.00	\$ 0.19	\$ 0.00	\$ 0.28	\$ 0.95	\$ 0.08	\$ 0.01	\$ 0.02	\$ 0.02	\$ 0.45