

To the Public Utility Commission of Texas

# ERCOT Wholesale Electricity Market Monthly Report

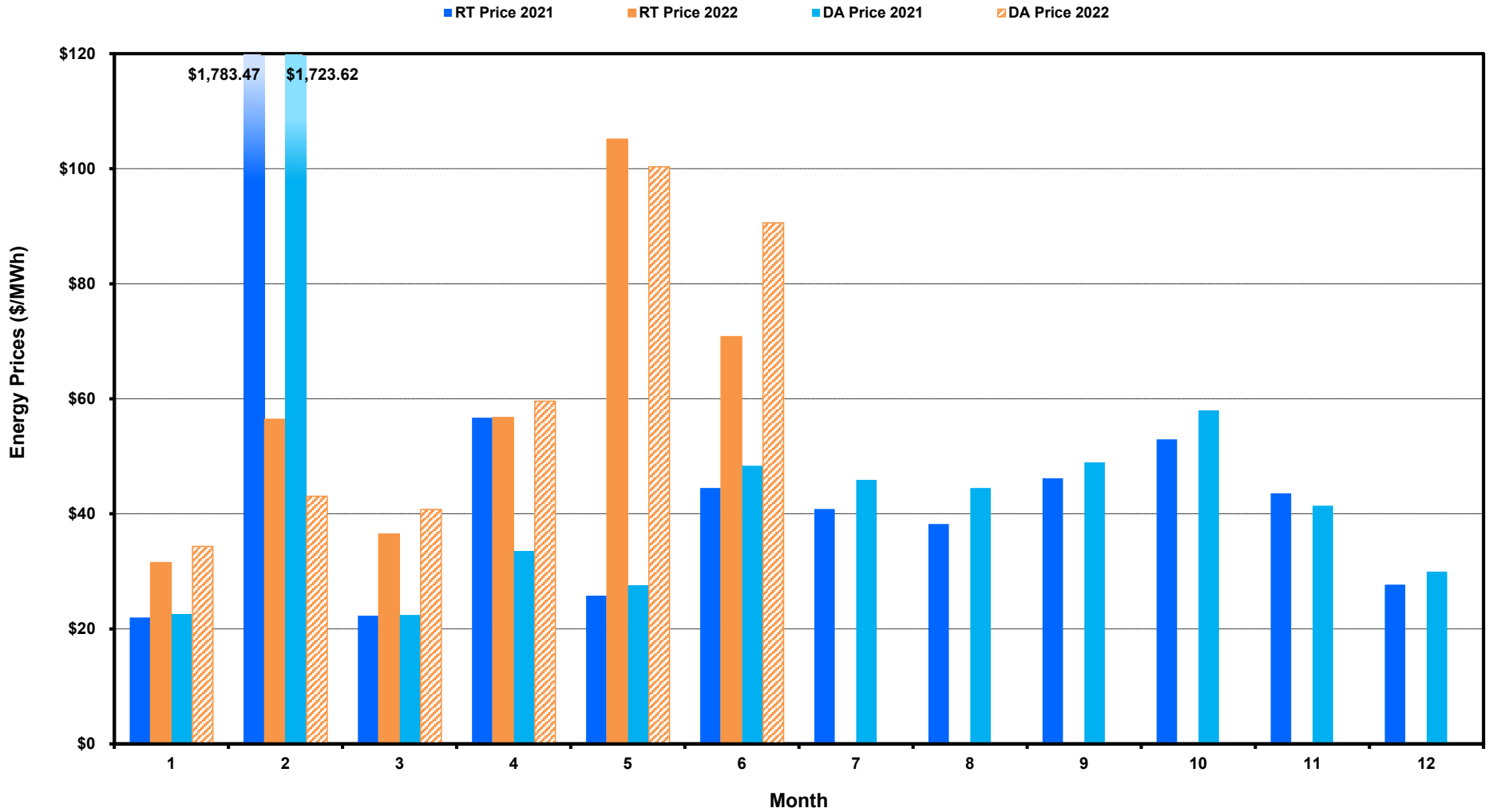
Monday, July 11, 2022

Potomac Economics, Ltd.  
Independent Market Monitor

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# ERCOT-wide Average Energy Prices DA vs RT

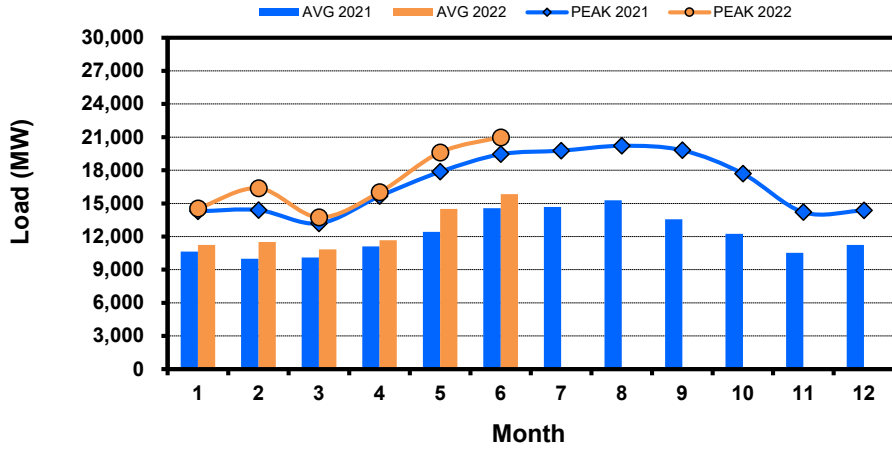
(avg. DA & RT SPPs weighted by Real Time Settlement Loads)



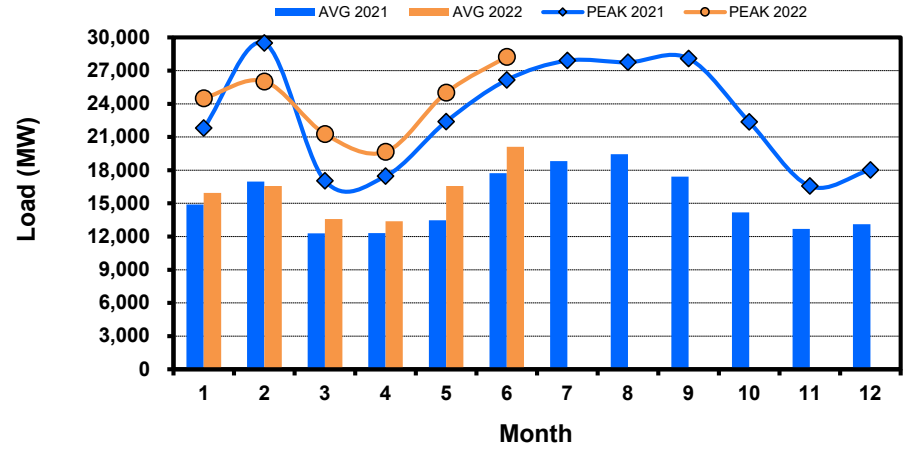
# Load Zone Load Statistics

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

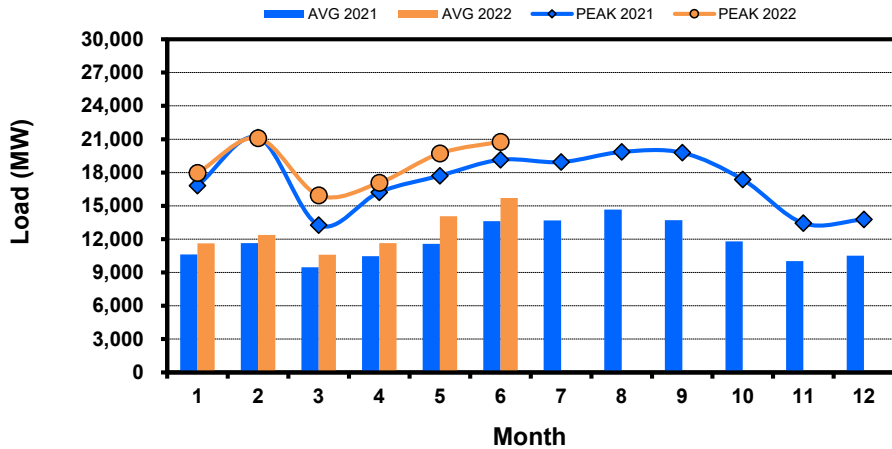
## Houston Zone



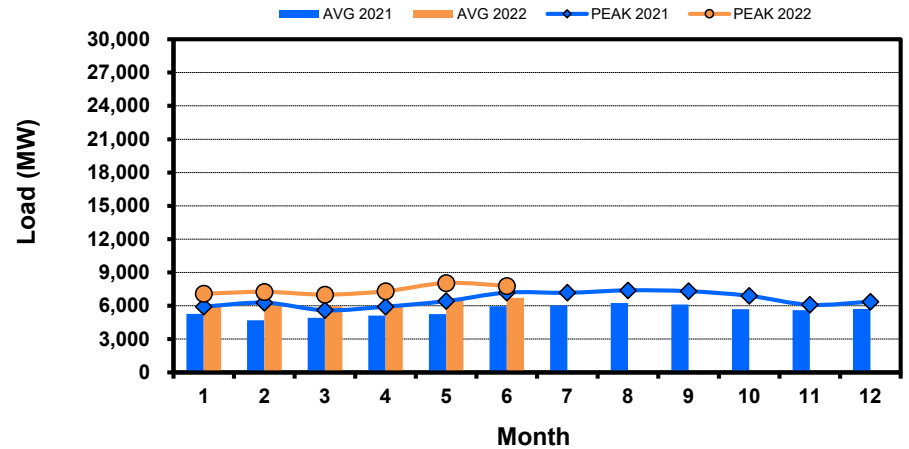
## North Zone



## South Zone



## West Zone

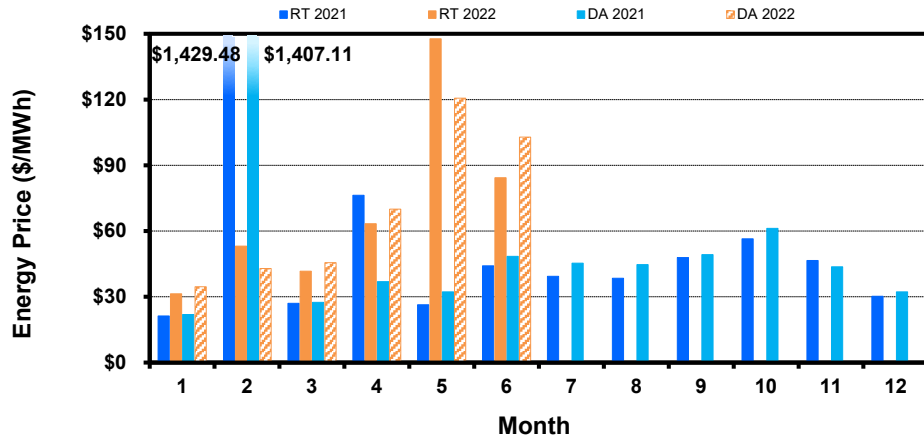


Note: \* Zonal load zone definition vs. Nodal comparable load zone definition: LZ\_Houston=LZ\_Houston; LZ\_West=LZ\_West; LZ\_North=(LZ\_North,LZ\_RAYBN); LZ\_South=(LZ\_South,LZ\_CPS,LZ\_AEN,LZ\_LCRA)

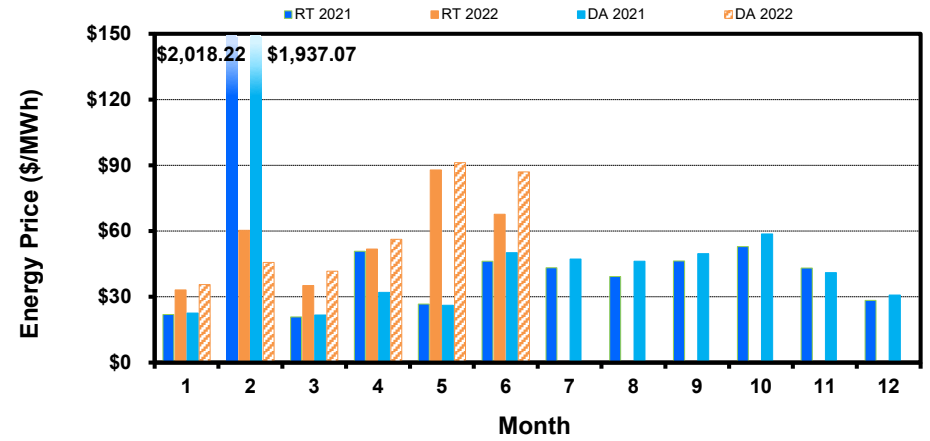
# Load Zone Monthly Average Energy Price DA vs RT

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

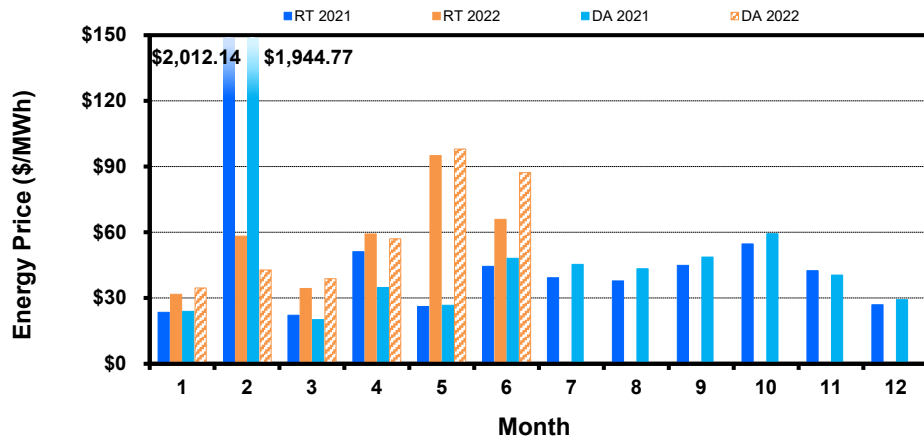
### Houston Zone



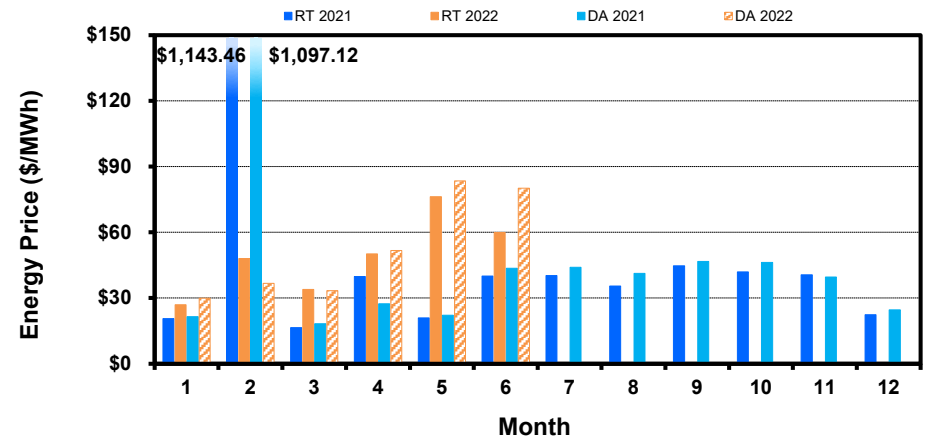
### North Zone



### South Zone



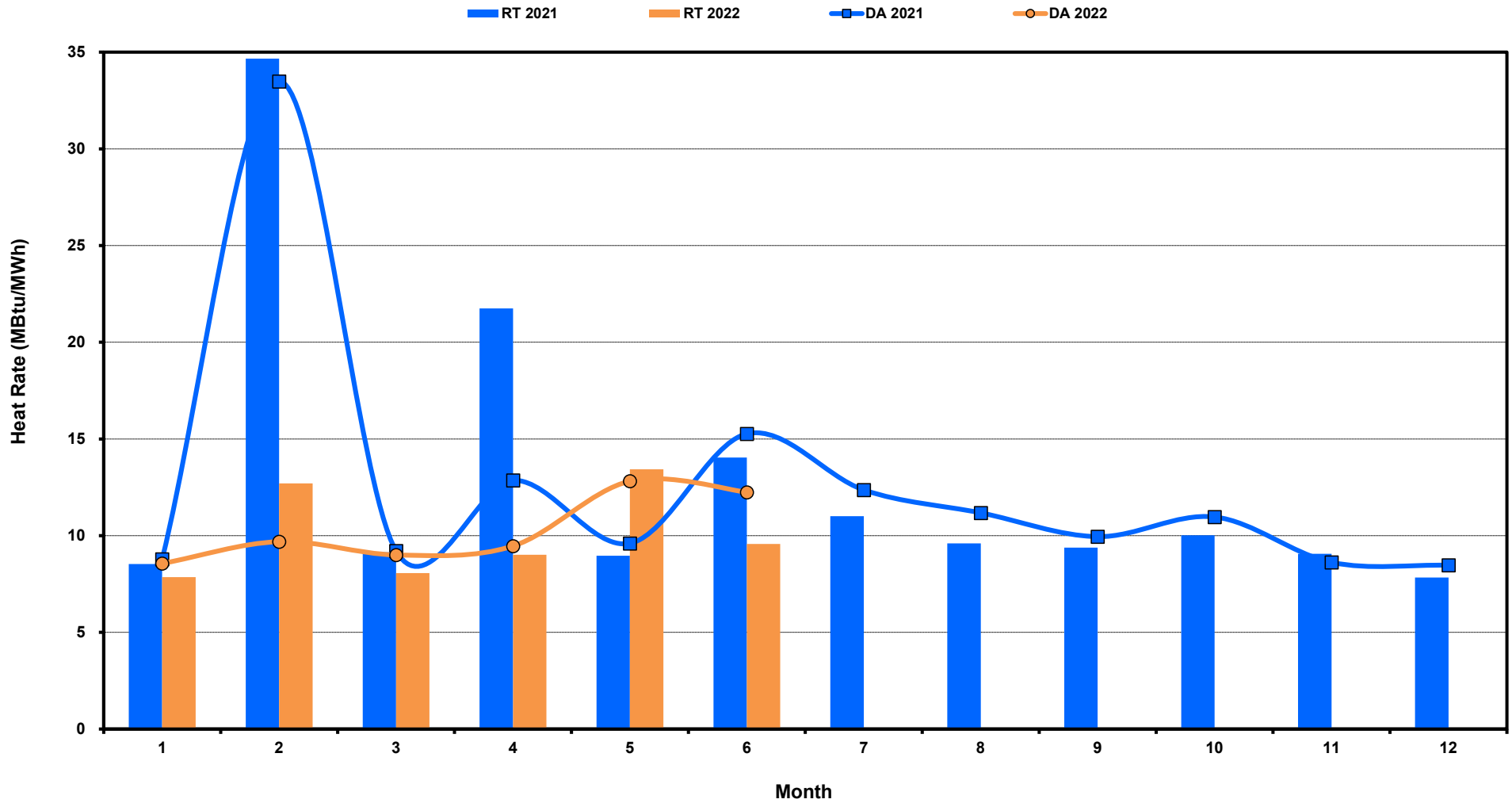
### West Zone



**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)

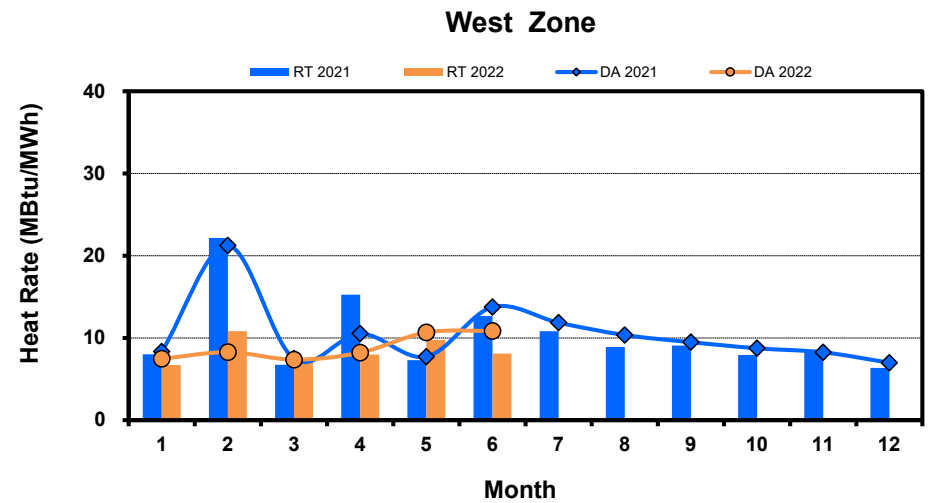
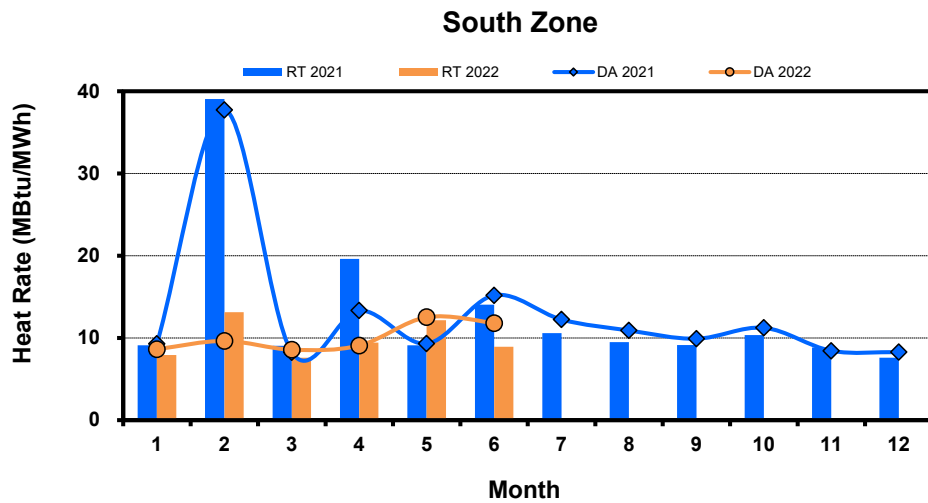
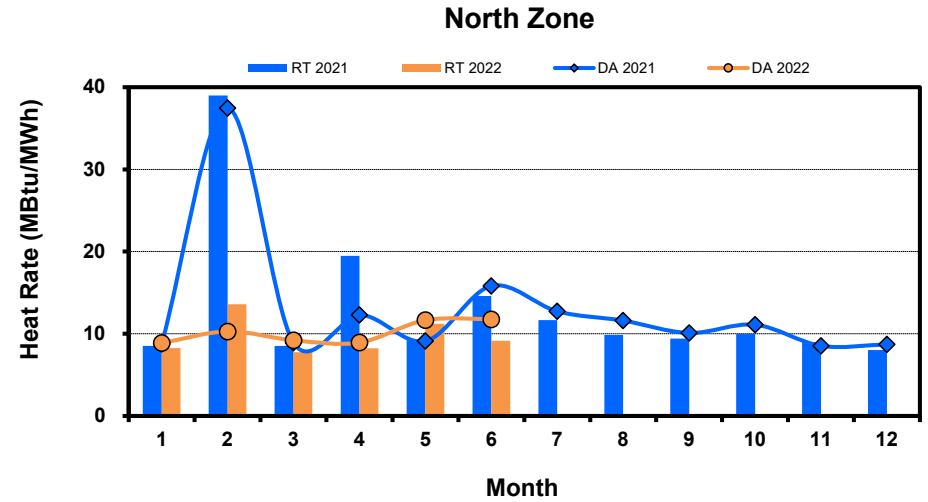
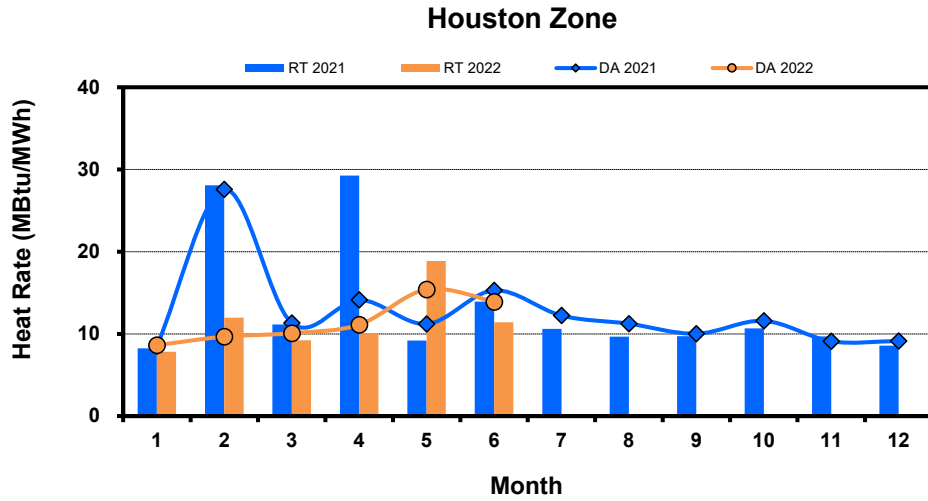
# ERCOT-wide Monthly Implied Heat Rate DA vs RT

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



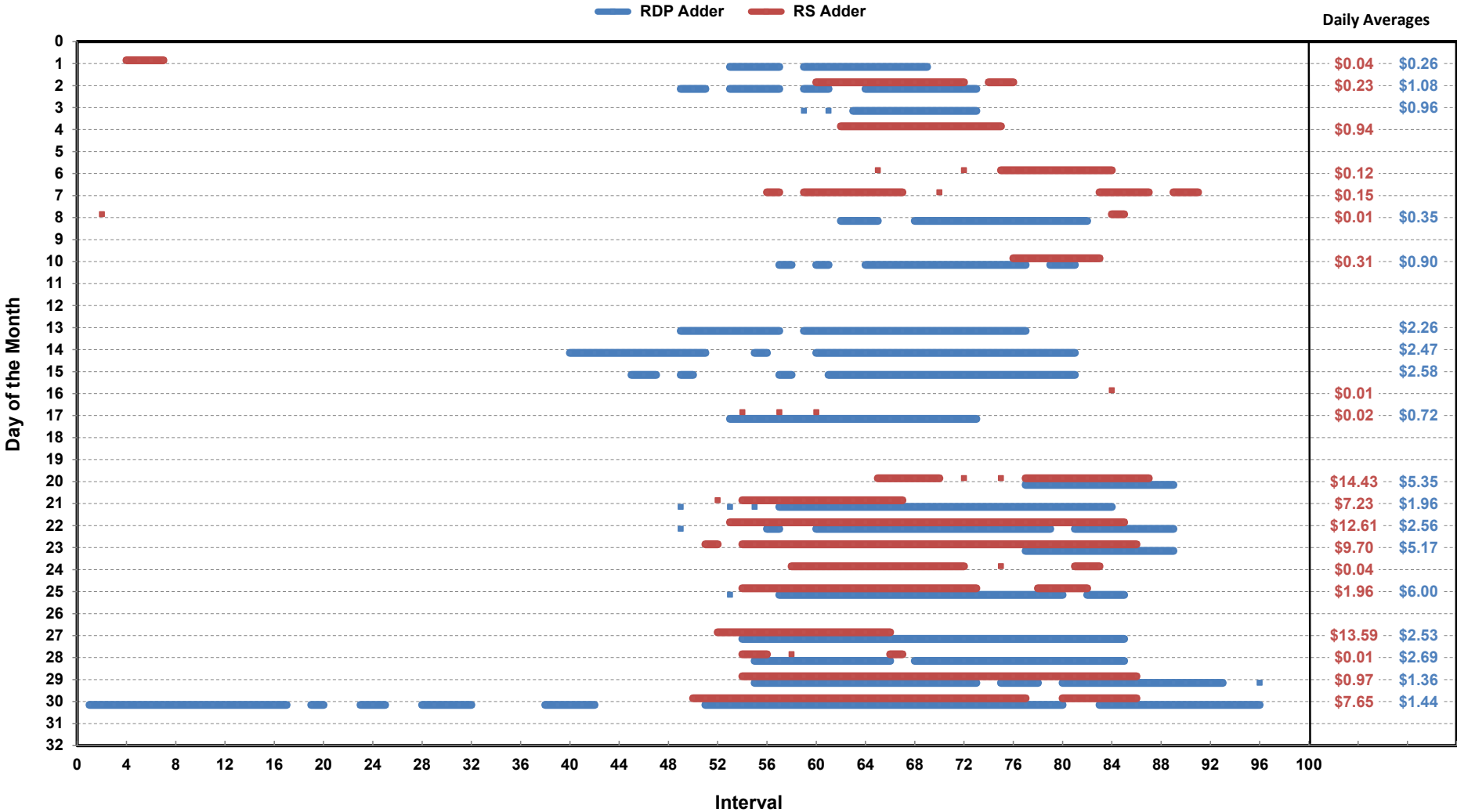
# Load Zone Monthly Implied Heat Rate DA vs RT

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



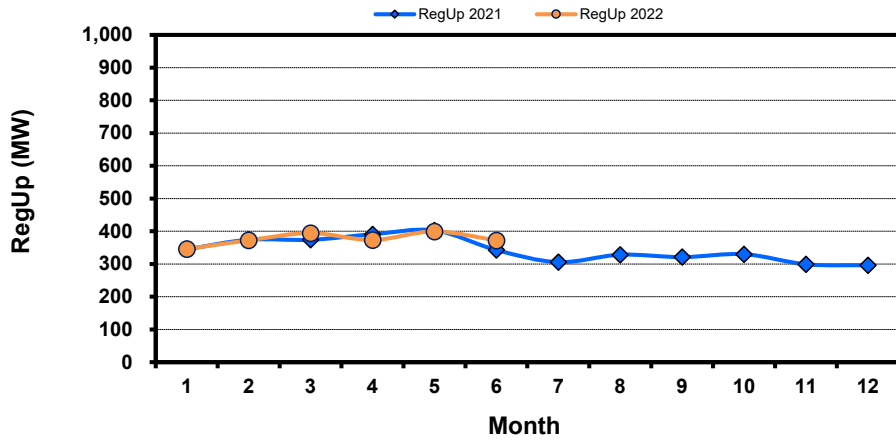
**Note:** \* Zonal load zone definition vs. Nodal comparable load zone definition: LZ\_Houston=LZ\_Houston; LZ\_West=LZ\_West; LZ\_North=(LZ\_North,LZ\_RAYBN); LZ\_South=(LZ\_South,LZ\_CPS,LZ\_AEN,LZ\_LCRA)

# Daily ORDC Adders Average Values and Interval Duration Jun-2022

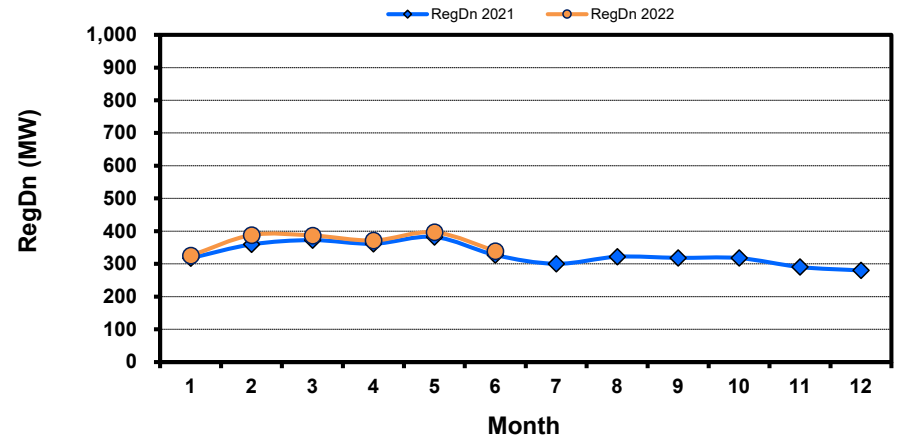


# Monthly Average of Ancillary Services Required MW

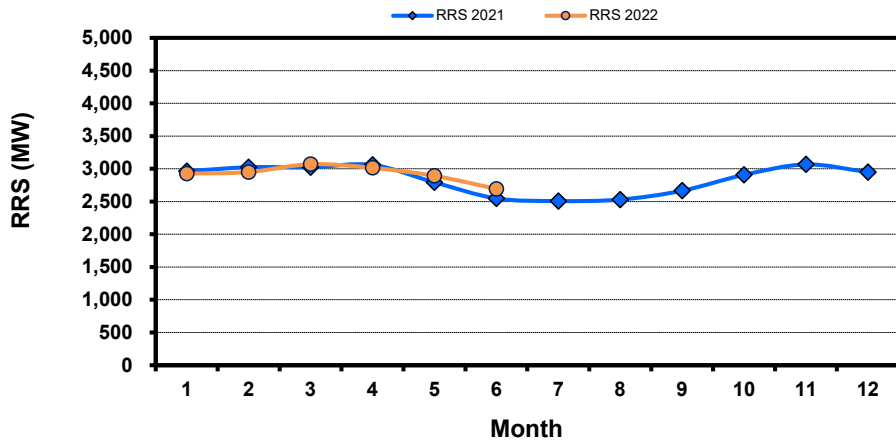
## Regulation Up



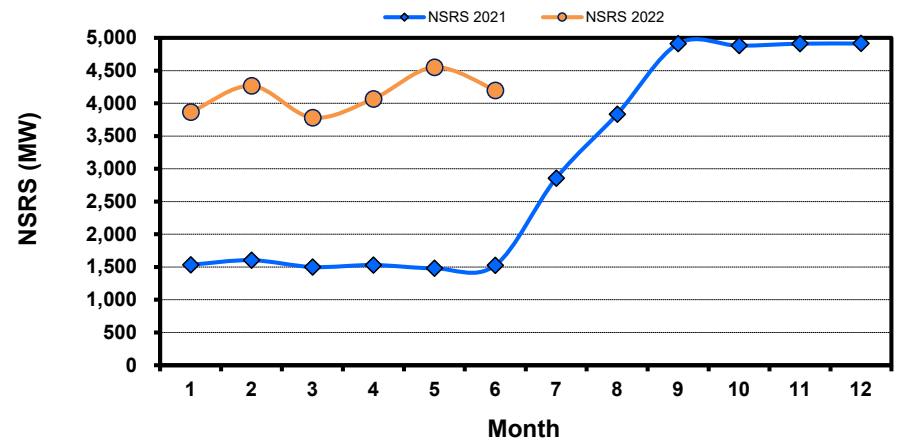
## Regulation Down



## Responsive Reserve



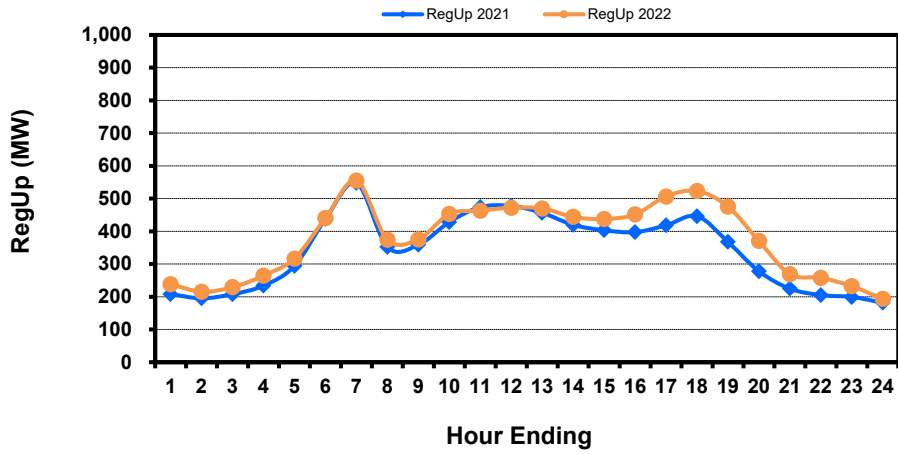
## Non-Spin Reserve



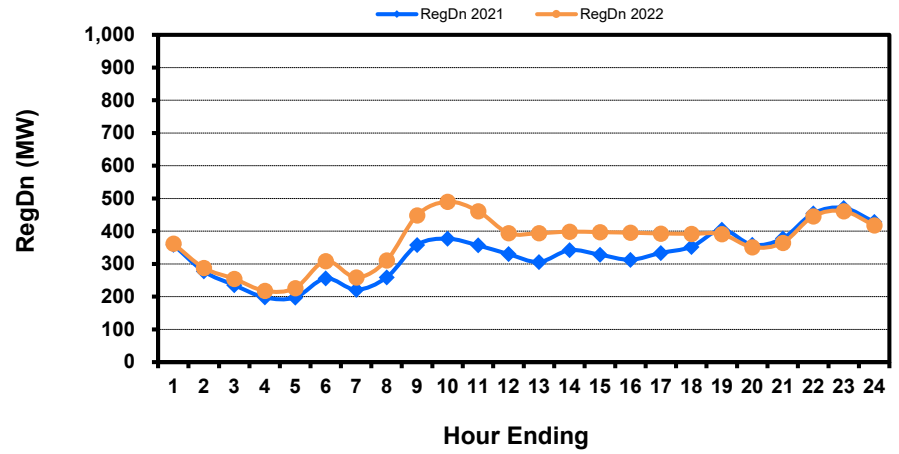


# Hourly Average of Ancillary Services Required MW

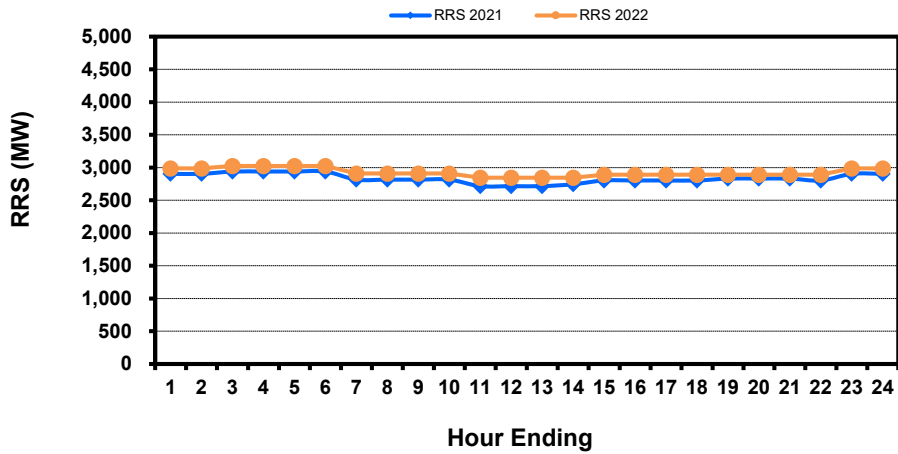
## Regulation Up



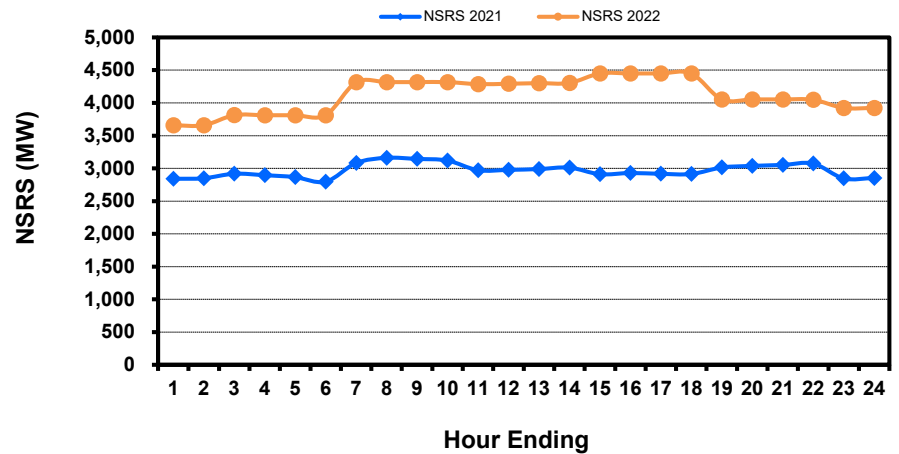
## Regulation Down



## Responsive Reserve



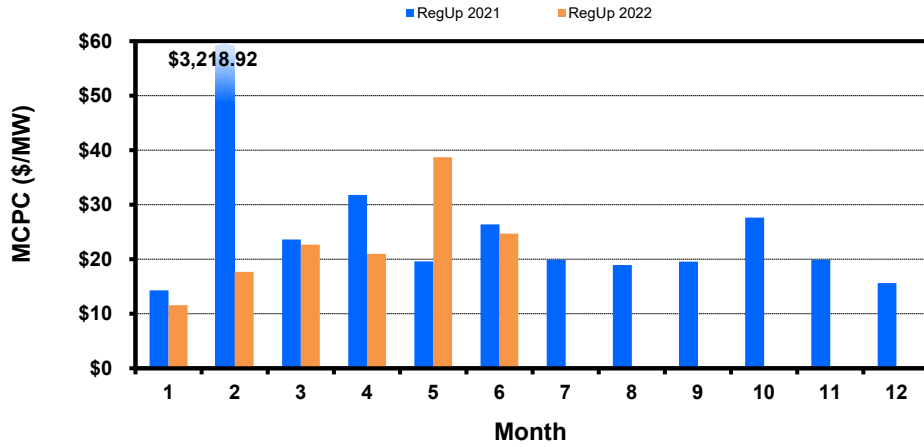
## Non-Spin Reserve



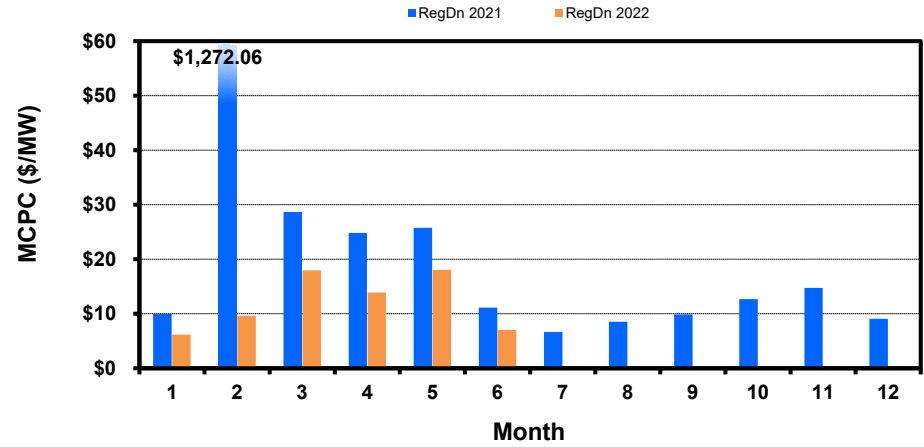
# Monthly Average Ancillary Services Price

(weighted by A/S Quantities Required)

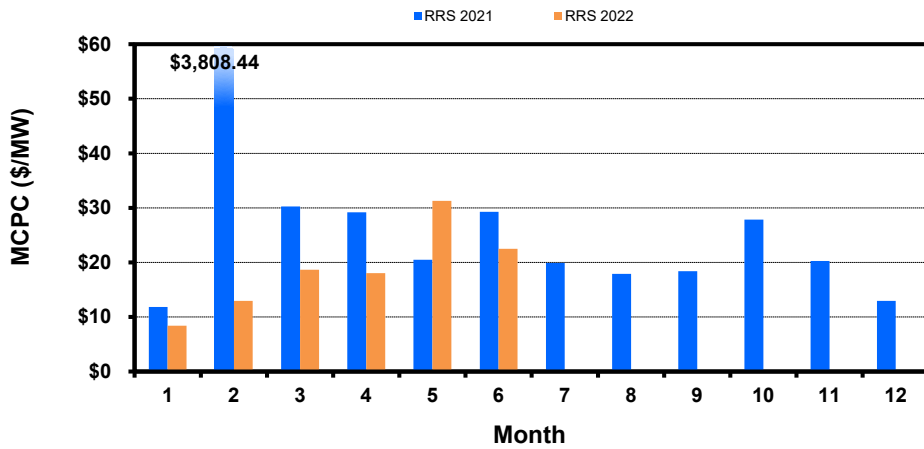
### Regulation Up



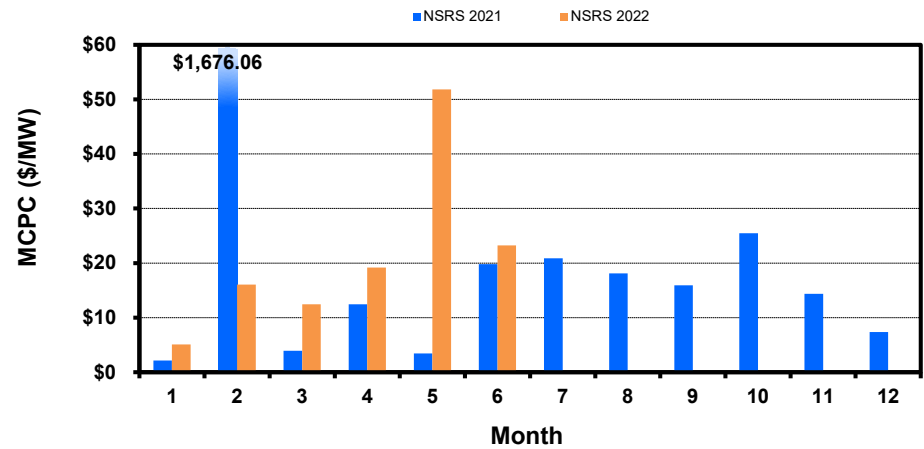
### Regulation Down



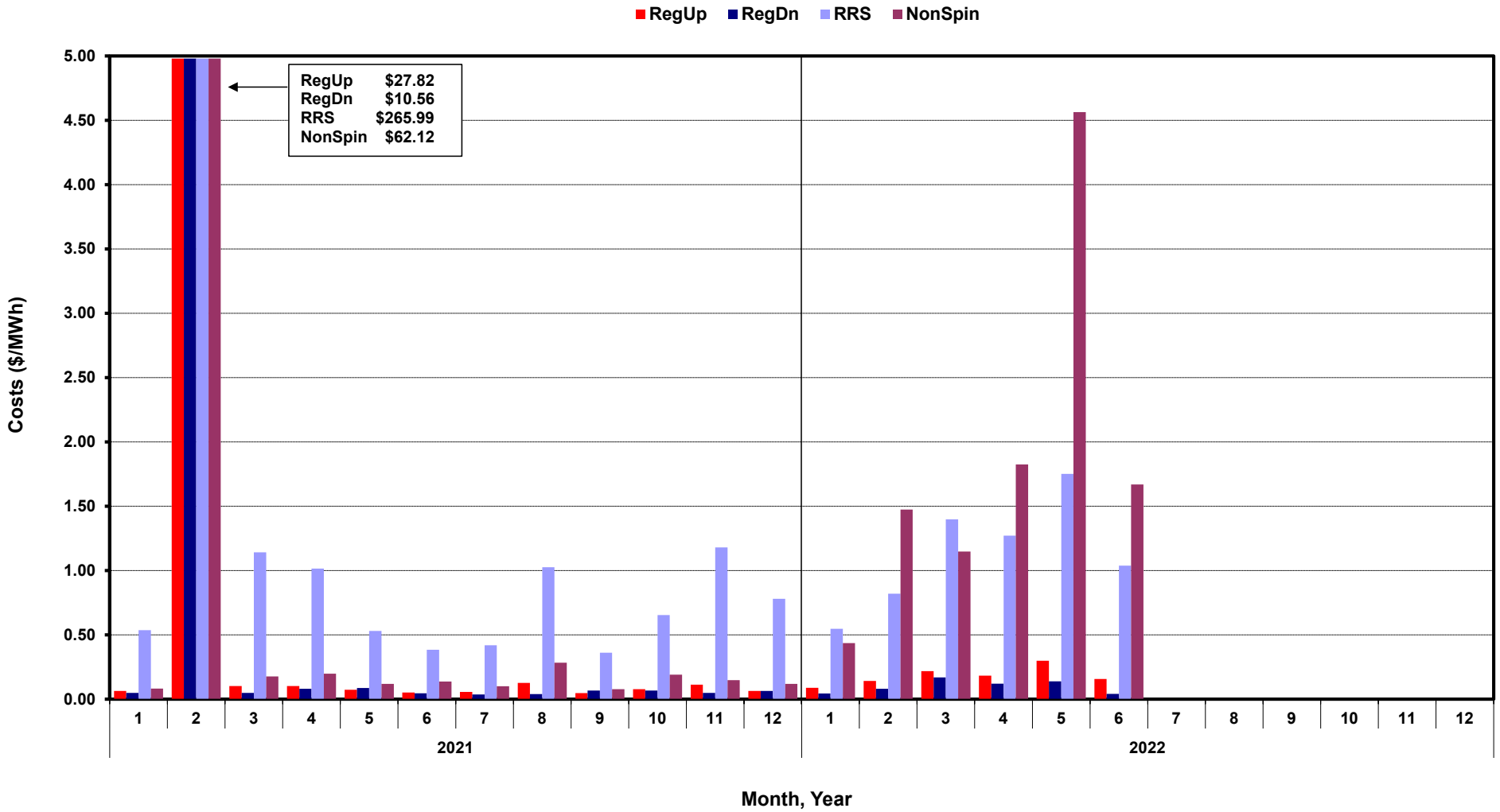
### Responsive Reserve



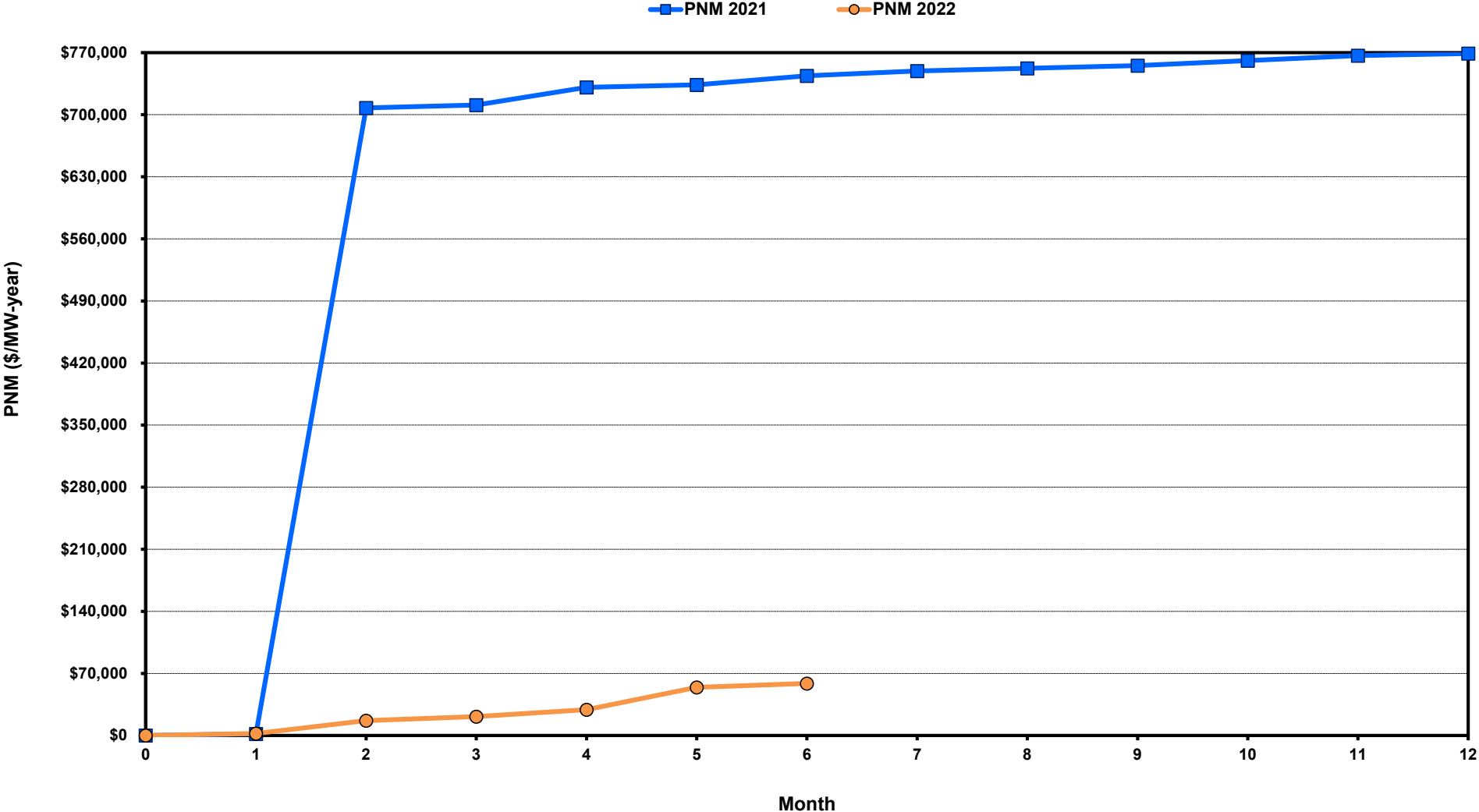
### Non-Spin Reserve



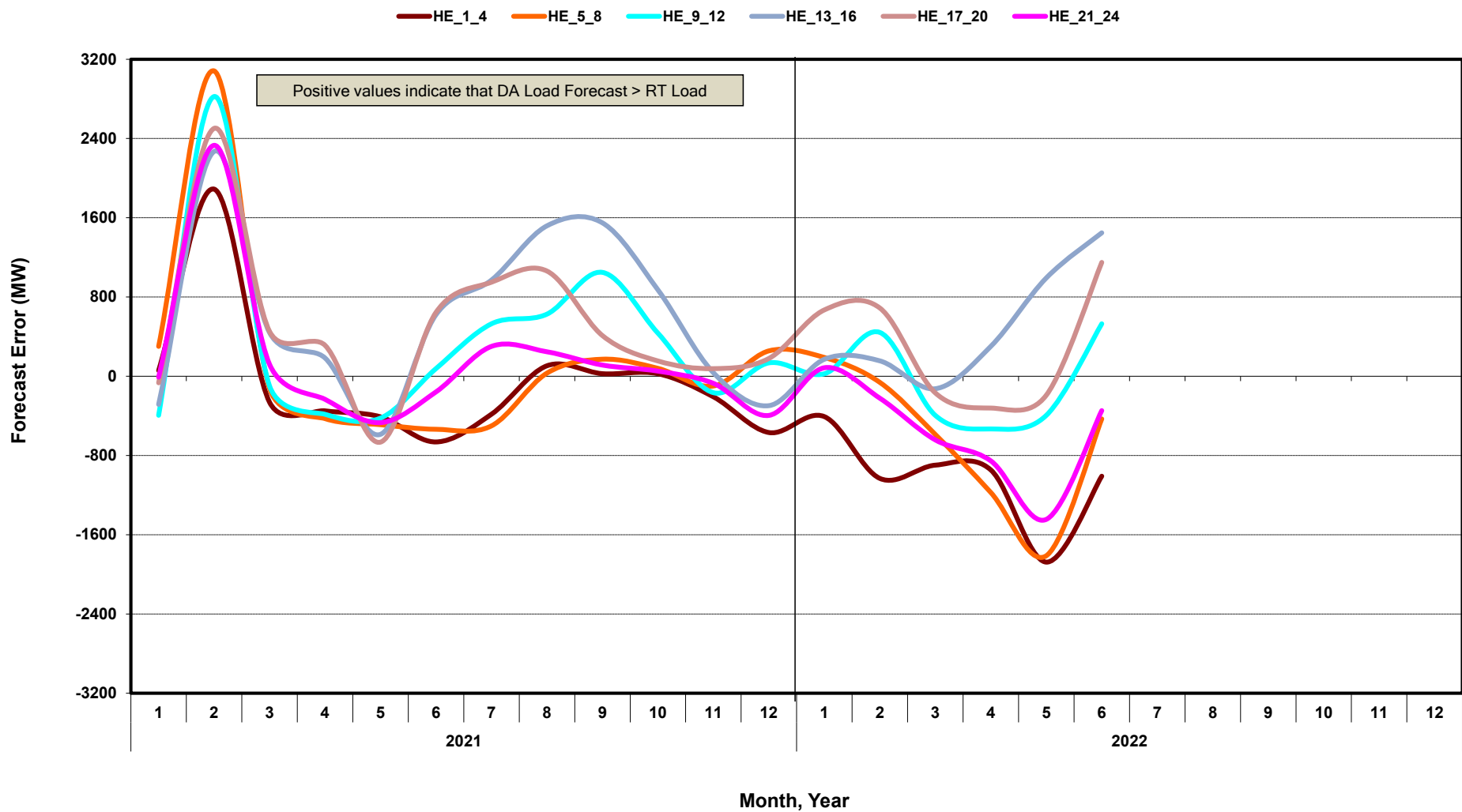
# Monthly Average A/S Cost per MWh Load



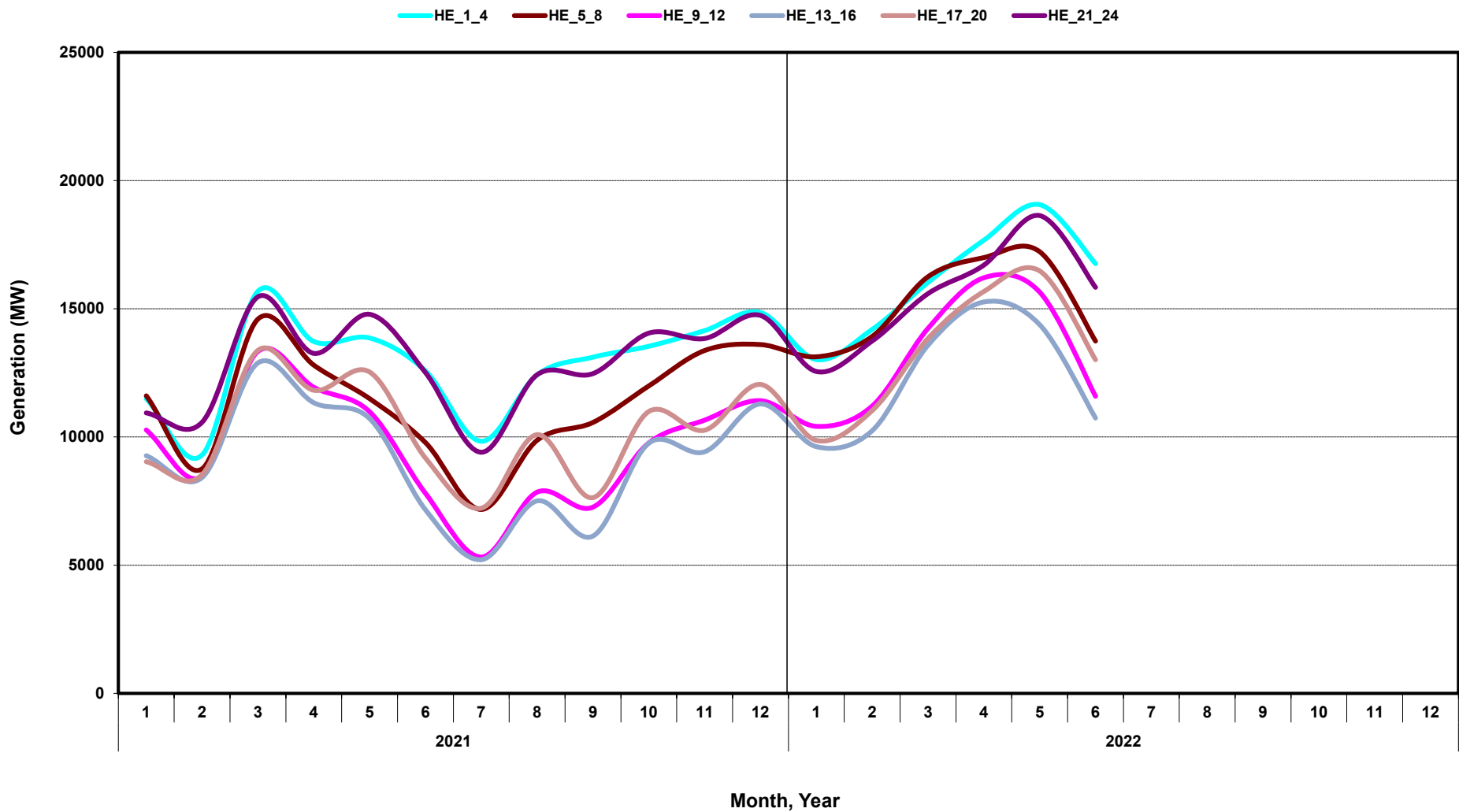
# ERCOT-wide Cumulative Peaker Net Margin



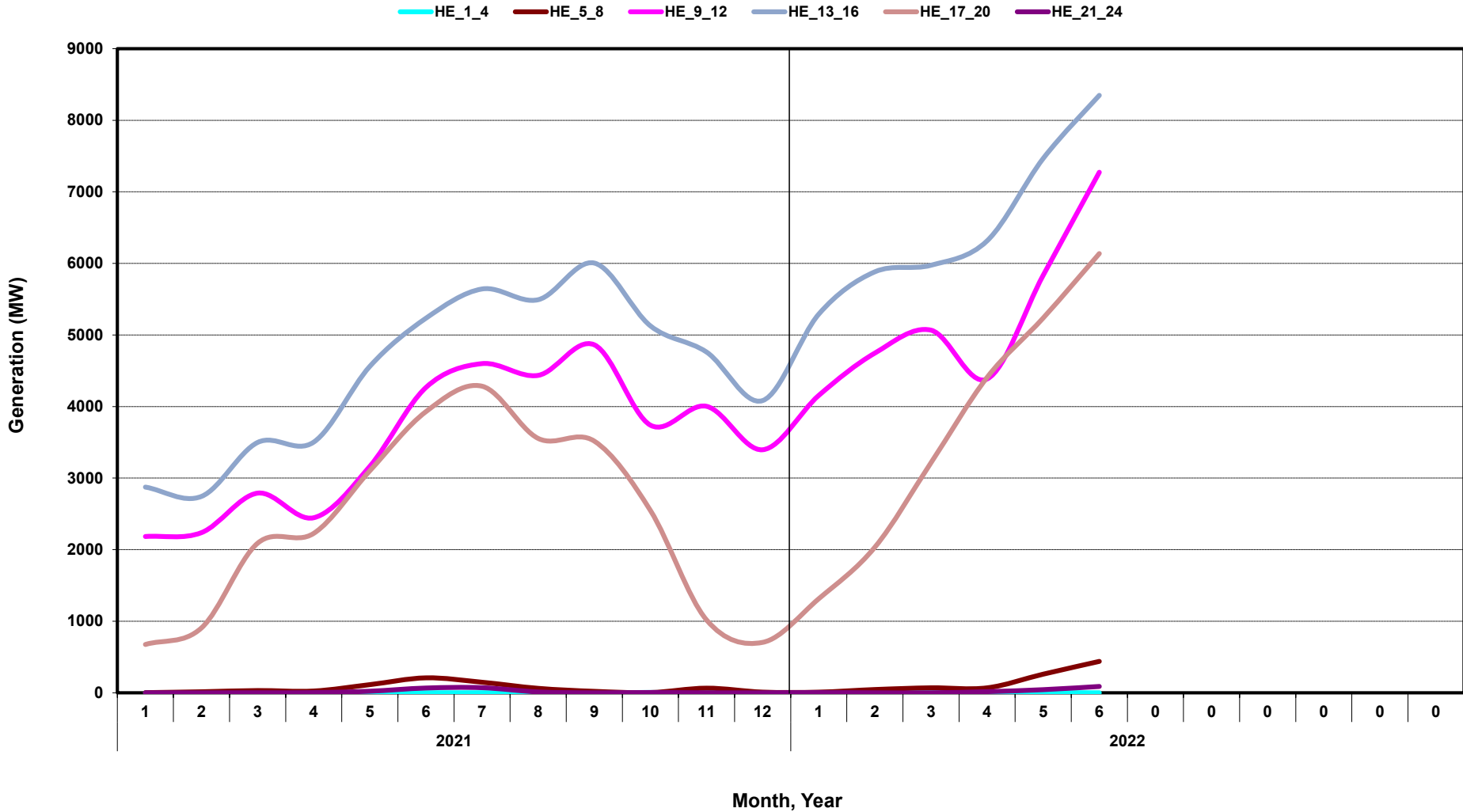
# DA vs. RT Load Forecast Error by Hour Ending



# Monthly Average of Wind Generation by Hour Ending

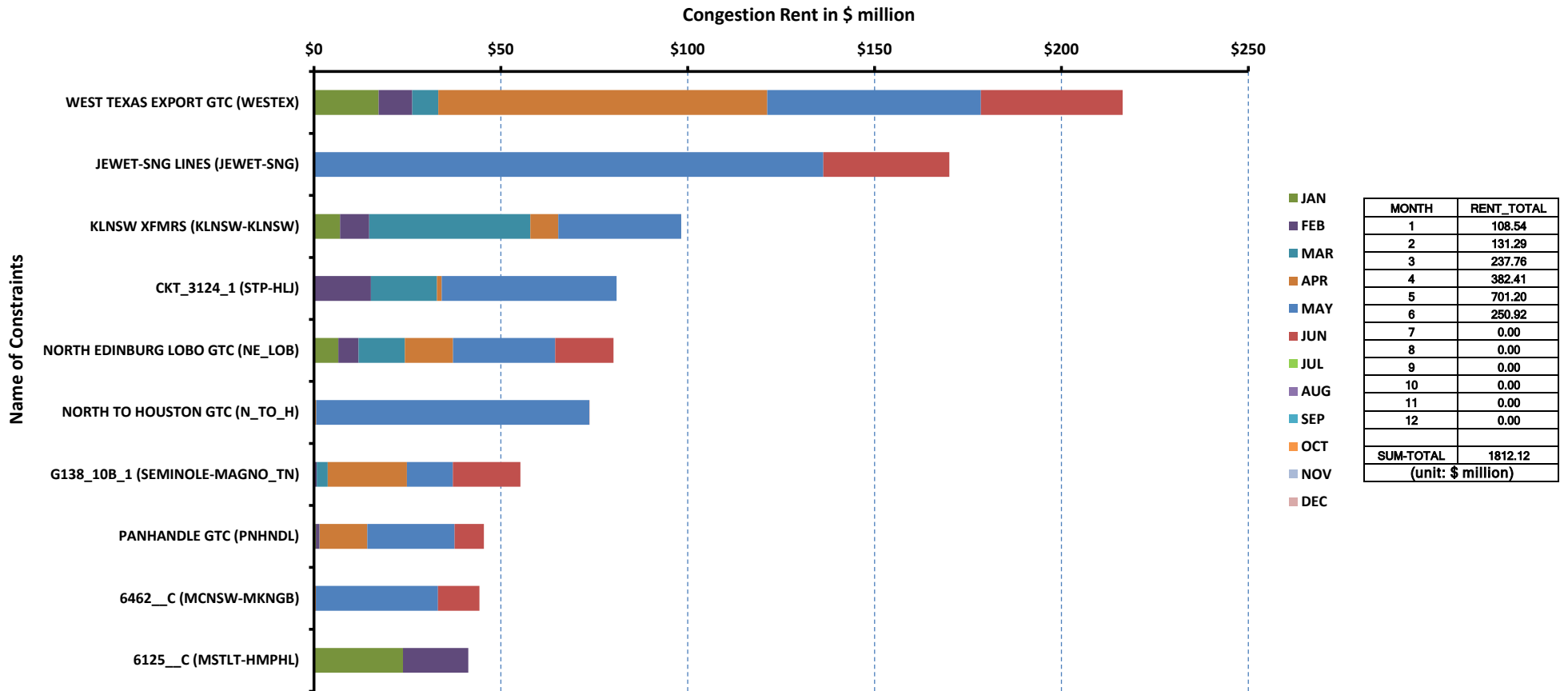


# Monthly Average of Solar Generation by Hour Ending



# RT Congestion Constraint Rankings - 1

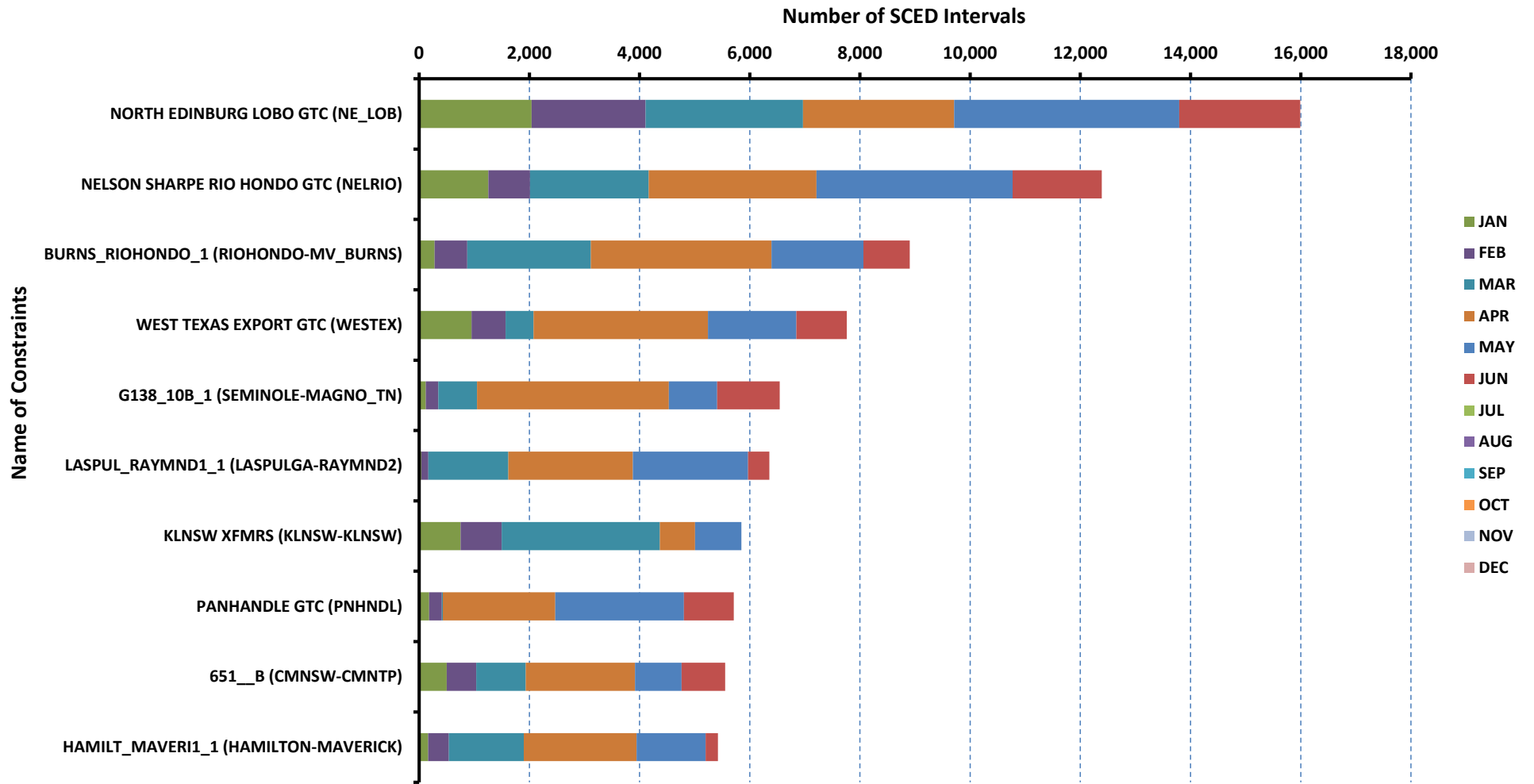
## Top 10 Constraints by Total Congestion Value - 2022





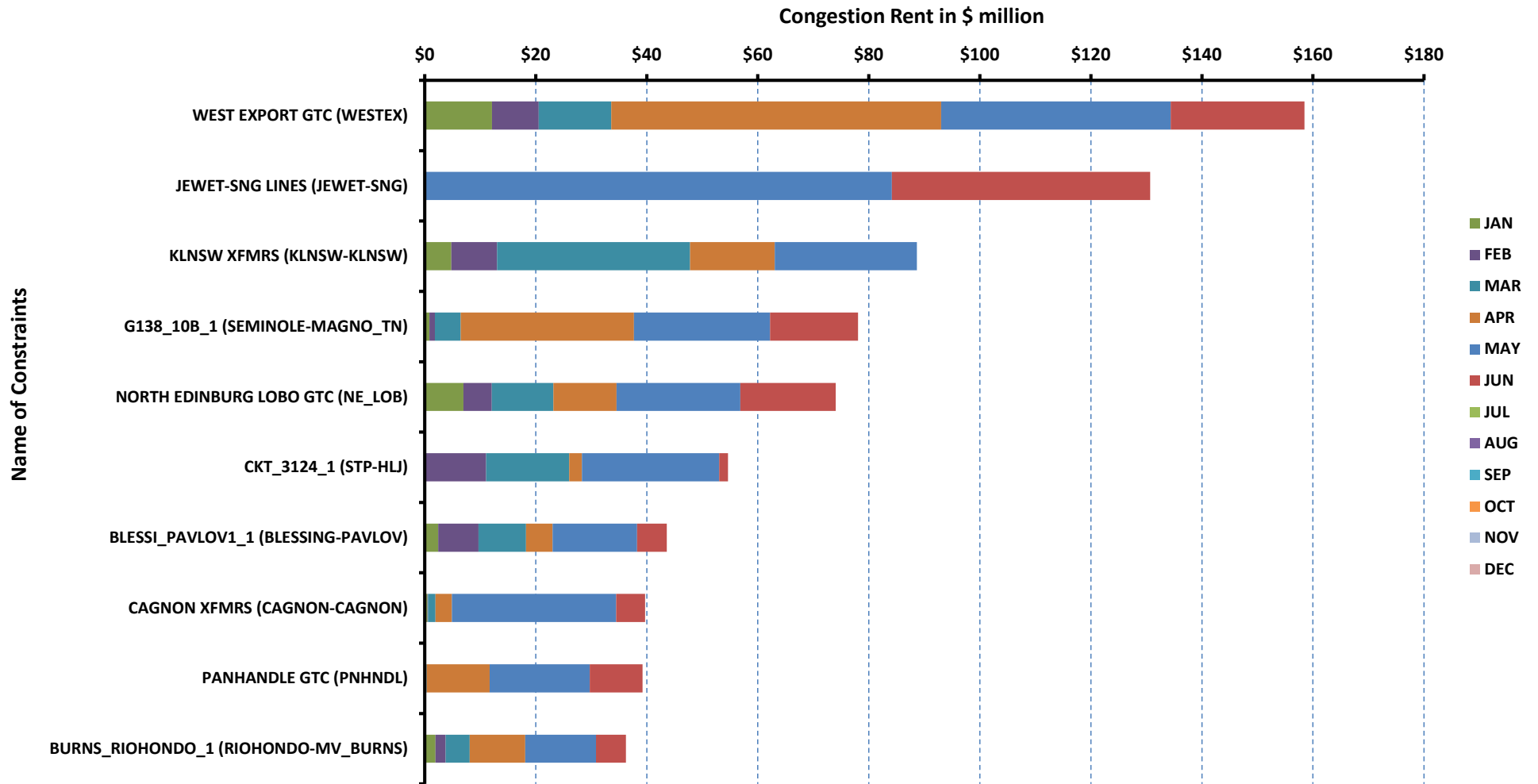
# RT Congestion Constraint Rankings - 2

## Top 10 Constraints by Binding Frequency - 2022



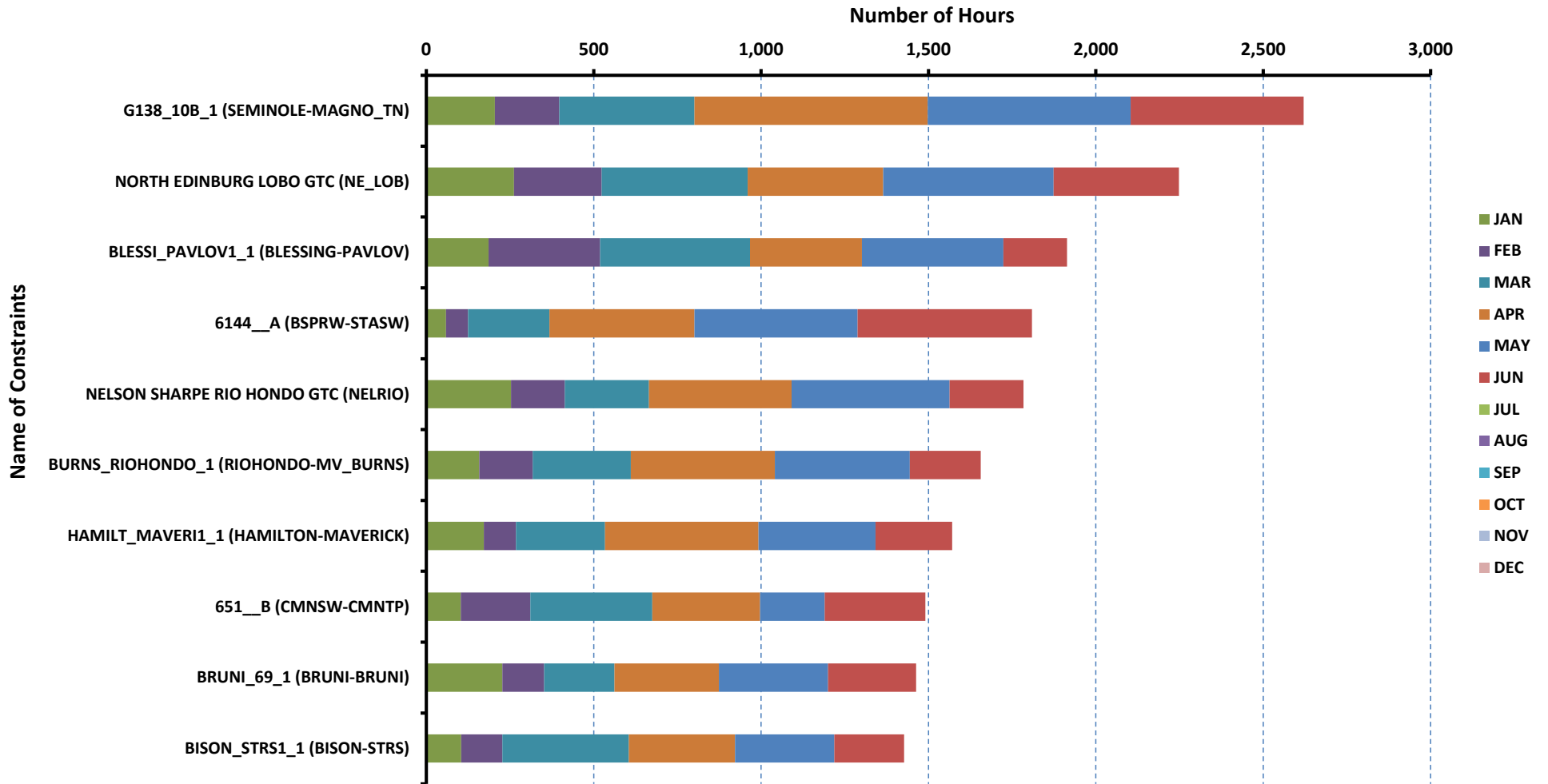
# DA Congestion Constraint Rankings - 1

## Top 10 Constraints by Total Congestion Value - 2022



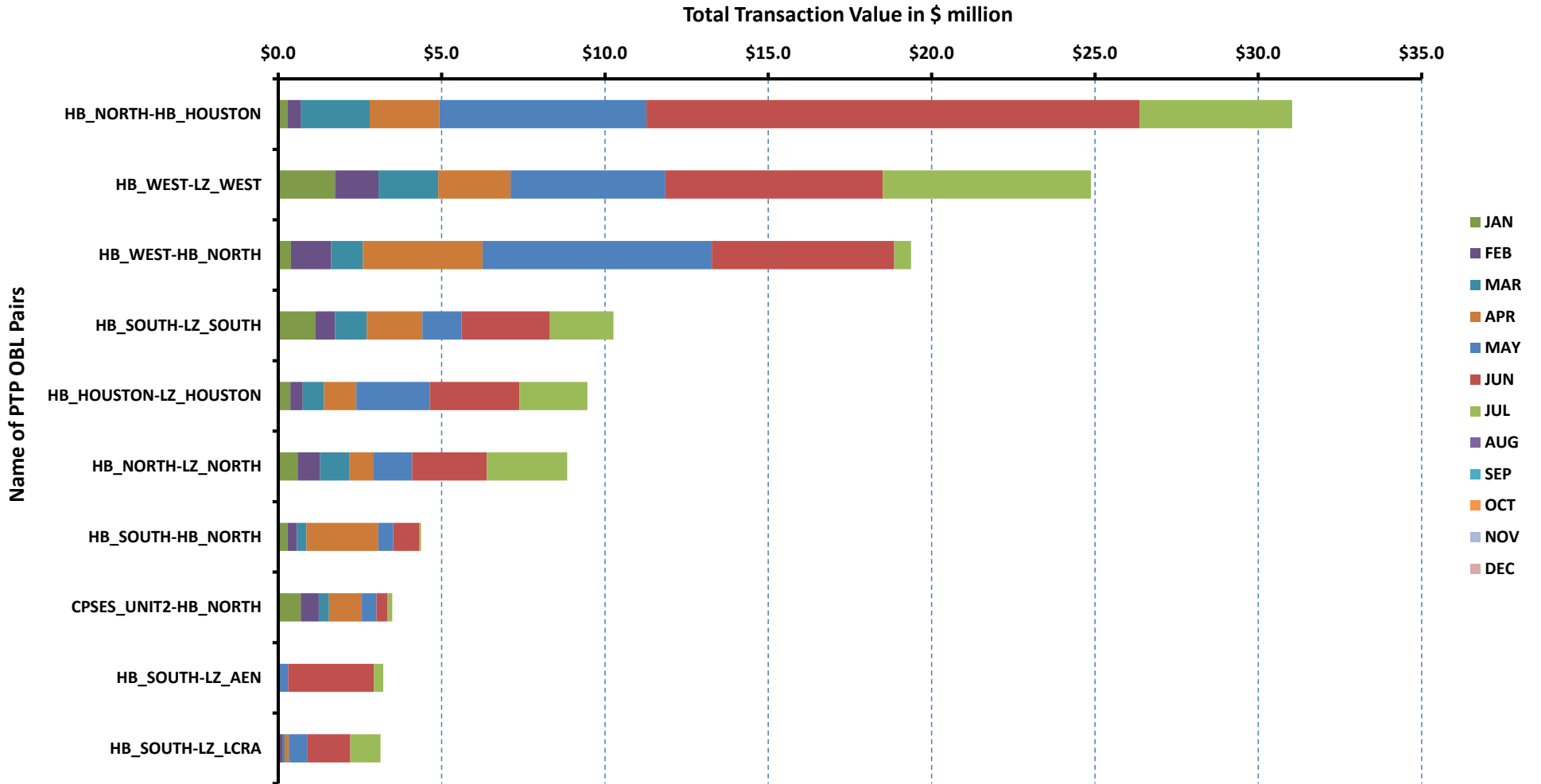
# DA Congestion Constraint Rankings - 2

## Top 10 Constraints by Binding Frequency - 2022



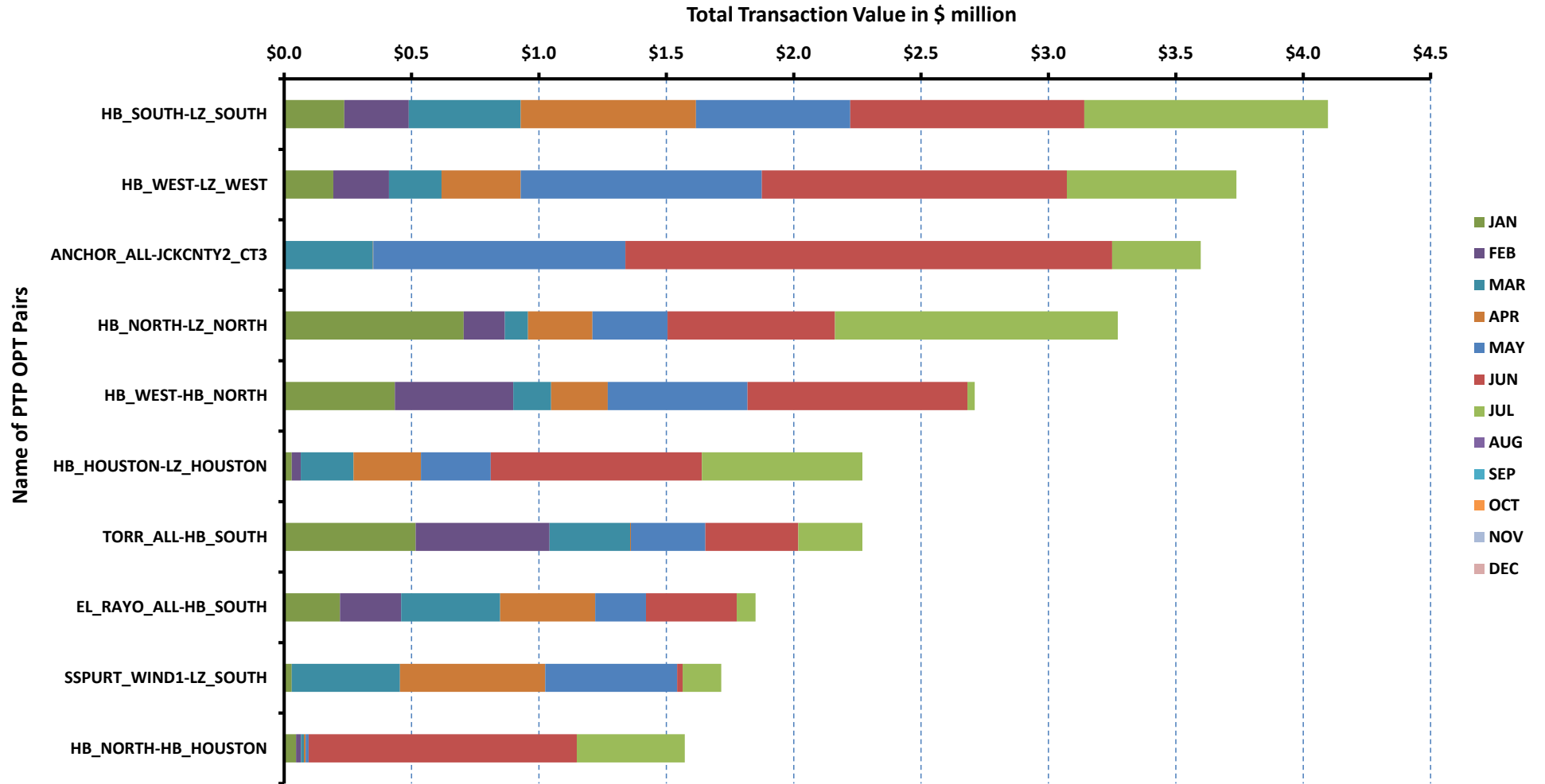
# Top 10 CRR Pairs Ranked by Monthly Auction Values - 1

## Top 10 PTP Obligations by Total Transaction Value - 2022



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

## Top 10 PTP Options by Total Transaction Value - 2022



ERCOT-wide Avg. Energy Price - DA vs. RT			
year	month	dam_spp	rtm_spp
2021	1	\$ 22.60	\$ 21.96
	2	\$ 1,723.84	\$ 1,784.27
	3	\$ 22.49	\$ 22.33
	4	\$ 33.56	\$ 56.73
	5	\$ 27.60	\$ 25.76
	6	\$ 48.37	\$ 44.49
	7	\$ 45.89	\$ 40.84
	8	\$ 44.50	\$ 38.22
	9	\$ 48.95	\$ 46.17
	10	\$ 57.97	\$ 52.94
	11	\$ 41.41	\$ 43.56
	12	\$ 29.94	\$ 27.69
2022	1	\$ 34.35	\$ 31.53
	2	\$ 43.07	\$ 56.44
	3	\$ 40.77	\$ 36.50
	4	\$ 59.57	\$ 56.75
	5	\$ 100.35	\$ 105.15
	6	\$ 90.59	\$ 70.82
	7	\$ -	\$ -
	8	\$ -	\$ -
	9	\$ -	\$ -
	10	\$ -	\$ -
	11	\$ -	\$ -
	12	\$ -	\$ -







ERCOT-wide Monthly Implied Heat Rate - DA vs. RT						
year	month	gasprice	rtm_spp	HR_rtm	dam_spp	HR_dam
2021	1	\$ 2.57	\$ 21.96	8.53	\$ 22.60	8.78
	2	\$ 51.48	\$ 1,784.27	34.66	\$ 1,723.84	33.49
	3	\$ 2.44	\$ 22.33	9.14	\$ 22.49	9.21
	4	\$ 2.61	\$ 56.73	21.74	\$ 33.56	12.86
	5	\$ 2.87	\$ 25.76	8.96	\$ 27.60	9.60
	6	\$ 3.17	\$ 44.49	14.04	\$ 48.37	15.27
	7	\$ 3.71	\$ 40.84	11.00	\$ 45.89	12.36
	8	\$ 3.98	\$ 38.22	9.60	\$ 44.50	11.18
	9	\$ 4.92	\$ 46.17	9.38	\$ 48.95	9.95
	10	\$ 5.29	\$ 52.94	10.01	\$ 57.97	10.97
	11	\$ 4.81	\$ 43.56	9.06	\$ 41.41	8.62
	12	\$ 3.54	\$ 27.69	7.83	\$ 29.94	8.47
2022	1	\$ 4.01	\$ 31.53	7.86	\$ 34.35	8.56
	2	\$ 4.45	\$ 56.44	12.70	\$ 43.07	9.69
	3	\$ 4.53	\$ 36.50	8.06	\$ 40.77	9.00
	4	\$ 6.29	\$ 56.75	9.02	\$ 59.57	9.46
	5	\$ 7.83	\$ 105.15	13.43	\$ 100.35	12.82
	6	\$ 7.40	\$ 70.82	9.57	\$ 90.59	12.24
	7	\$ -	\$ -	-	\$ -	-
	8	\$ -	\$ -	-	\$ -	-
	9	\$ -	\$ -	-	\$ -	-
	10	\$ -	\$ -	-	\$ -	-
	11	\$ -	\$ -	-	\$ -	-
	12	\$ -	\$ -	-	\$ -	-



Daily ORDC Adders Average Values and Interval Duration								
YEAR	MONTH	DAY	PRICE_RS	PRICE_RDP	RS_CNT	RDP_CNT	RS_POS	RDP_POS
2022	6	1	\$ 0.04	\$ 0.26	4	16	80	90
2022	6	2	\$ 0.23	\$ 1.08	16	21	80	90
2022	6	3	\$ -	\$ 0.96	0	13	80	90
2022	6	4	\$ 0.94	\$ -	14	0	80	90
2022	6	5	\$ -	\$ -	0	0	80	90
2022	6	6	\$ 0.12	\$ -	12	0	80	90
2022	6	7	\$ 0.15	\$ -	20	0	80	90
2022	6	8	\$ 0.01	\$ 0.35	3	19	80	90
2022	6	9	\$ -	\$ -	0	0	80	90
2022	6	10	\$ 0.31	\$ 0.90	8	21	80	90
2022	6	11	\$ -	\$ -	0	0	80	90
2022	6	12	\$ -	\$ -	0	0	80	90
2022	6	13	\$ -	\$ 2.26	0	28	80	90
2022	6	14	\$ -	\$ 2.47	0	36	80	90
2022	6	15	\$ -	\$ 2.58	0	28	80	90
2022	6	16	\$ 0.01	\$ -	1	0	80	90
2022	6	17	\$ 0.02	\$ 0.72	3	21	80	90
2022	6	18	\$ -	\$ -	0	0	80	90
2022	6	19	\$ -	\$ -	0	0	80	90
2022	6	20	\$ 14.43	\$ 5.35	19	13	80	90
2022	6	21	\$ 7.23	\$ 1.96	15	31	80	90
2022	6	22	\$ 12.61	\$ 2.56	33	32	80	90
2022	6	23	\$ 9.70	\$ 5.17	35	13	80	90
2022	6	24	\$ 0.04	\$ -	19	0	80	90
2022	6	25	\$ 1.96	\$ 6.00	25	29	80	90
2022	6	26	\$ -	\$ -	0	0	80	90
2022	6	27	\$ 13.59	\$ 2.53	15	32	80	90
2022	6	28	\$ 0.01	\$ 2.69	6	30	80	90
2022	6	29	\$ 0.97	\$ 1.36	33	38	80	90
2022	6	30	\$ 7.65	\$ 1.44	35	76	80	90
0	0	0	\$ -	\$ -	0	0	0	0

Monthly Average of Ancillary Services Required MW					
year	month	ASMW_REGDN	ASMW_NSPIN	ASMW_RRS	ASMW_REGUP
2021	1	317	1,535	2,964	345
	2	360	1,604	3,024	374
	3	373	1,500	3,023	374
	4	362	1,531	3,059	391
	5	382	1,481	2,794	403
	6	327	1,527	2,548	343
	7	300	2,858	2,508	306
	8	322	3,835	2,530	328
	9	318	4,910	2,665	321
	10	318	4,880	2,908	330
	11	290	4,911	3,067	299
	12	280	4,914	2,951	296
2022	1	325	3,867	2,926	346
	2	388	4,267	2,950	372
	3	387	3,782	3,070	395
	4	372	4,069	3,014	373
	5	397	4,551	2,893	399
	6	339	4,197	2,694	372
	7	-	-	-	-
	8	-	-	-	-
	9	-	-	-	-
	10	-	-	-	-
	11	-	-	-	-
	12	-	-	-	-

**Hourly Average of Ancillary Services Required MW**

year	DELIVERY_HOUR	ASMW_REGDN	ASMW_NSPIN	ASMW_RRS	ASMW_REGUP
2021	1	359	2,840	2,905	208
	2	277	2,849	2,905	195
	3	235	2,918	2,939	208
	4	198	2,896	2,940	234
	5	198	2,866	2,940	294
	6	256	2,797	2,940	438
	7	221	3,082	2,816	548
	8	259	3,161	2,816	352
	9	358	3,144	2,816	359
	10	377	3,119	2,816	428
	11	357	2,972	2,716	474
	12	330	2,977	2,716	478
	13	306	2,989	2,716	456
	14	342	3,012	2,745	420
	15	328	2,911	2,803	403
	16	313	2,929	2,803	397
	17	334	2,917	2,803	418
	18	352	2,914	2,803	446
	19	404	3,013	2,832	368
	20	358	3,038	2,832	278
	21	378	3,052	2,832	225
	22	455	3,073	2,803	205
	23	471	2,847	2,905	199
	24	428	2,853	2,905	182
2022	1	363	3,658	2,986	239
	2	288	3,658	2,986	215
	3	254	3,812	3,024	229
	4	218	3,812	3,025	265
	5	226	3,812	3,025	317
	6	309	3,812	3,025	441
	7	259	4,315	2,910	555
	8	311	4,317	2,910	375
	9	449	4,317	2,910	375
	10	490	4,317	2,910	453
	11	461	4,287	2,845	463
	12	394	4,292	2,845	472
	13	394	4,302	2,845	470
	14	399	4,304	2,845	444
	15	397	4,450	2,892	438
	16	396	4,450	2,892	452
	17	393	4,450	2,892	506
	18	392	4,450	2,892	523
	19	391	4,053	2,892	476
	20	351	4,053	2,892	371
	21	365	4,053	2,892	269
	22	446	4,048	2,892	258
	23	461	3,923	2,986	232
	24	418	3,923	2,986	194

Monthly Average Ancillary Services Price					
year	month	MCPC_REGDN	MCPC_NSPIN	MCPC_RRS	MCPC_REGUP
2021	1	\$ 9.98	\$ 2.16	\$ 11.85	\$ 14.31
	2	\$ 1,272.06	\$ 1,676.26	\$ 3,808.44	\$ 3,218.92
	3	\$ 28.66	\$ 3.93	\$ 30.23	\$ 23.61
	4	\$ 24.82	\$ 12.43	\$ 29.20	\$ 31.78
	5	\$ 25.78	\$ 3.45	\$ 20.49	\$ 19.60
	6	\$ 11.14	\$ 19.82	\$ 29.28	\$ 26.37
	7	\$ 6.66	\$ 20.88	\$ 19.92	\$ 19.94
	8	\$ 8.53	\$ 18.12	\$ 17.90	\$ 18.91
	9	\$ 9.89	\$ 15.91	\$ 18.39	\$ 19.54
	10	\$ 12.69	\$ 25.49	\$ 27.86	\$ 27.63
	11	\$ 14.74	\$ 14.39	\$ 20.28	\$ 19.93
	12	\$ 9.08	\$ 7.35	\$ 12.94	\$ 15.62
2022	1	\$ 6.15	\$ 5.07	\$ 8.39	\$ 11.56
	2	\$ 9.60	\$ 16.07	\$ 12.93	\$ 17.69
	3	\$ 17.94	\$ 12.43	\$ 18.67	\$ 22.69
	4	\$ 13.88	\$ 19.17	\$ 18.04	\$ 20.99
	5	\$ 18.03	\$ 51.85	\$ 31.29	\$ 38.71
	6	\$ 7.01	\$ 23.22	\$ 22.48	\$ 24.71
	7	\$ -	\$ -	\$ -	\$ -
	8	\$ -	\$ -	\$ -	\$ -
	9	\$ -	\$ -	\$ -	\$ -
	10	\$ -	\$ -	\$ -	\$ -
	11	\$ -	\$ -	\$ -	\$ -
	12	\$ -	\$ -	\$ -	\$ -

Monthly Average A/S Cost per MWh Load					
year	month	AScost_REGDN	AScost_NSPIIN	AScost_RRS	AScost_REGUP
2021	1	\$ 0.08	\$ 0.08	\$ 0.85	\$ 0.12
	2	\$ 10.56	\$ 62.11	\$ 265.95	\$ 27.81
	3	\$ 0.29	\$ 0.16	\$ 2.49	\$ 0.24
	4	\$ 0.23	\$ 0.49	\$ 2.29	\$ 0.32
	5	\$ 0.23	\$ 0.12	\$ 1.34	\$ 0.18
	6	\$ 0.07	\$ 0.58	\$ 1.44	\$ 0.17
	7	\$ 0.04	\$ 1.12	\$ 0.94	\$ 0.11
	8	\$ 0.05	\$ 1.25	\$ 0.81	\$ 0.11
	9	\$ 0.06	\$ 1.54	\$ 0.97	\$ 0.12
	10	\$ 0.09	\$ 2.83	\$ 1.85	\$ 0.21
	11	\$ 0.11	\$ 1.82	\$ 1.60	\$ 0.15
	12	\$ 0.06	\$ 0.89	\$ 0.94	\$ 0.11
2022	1	\$ 0.04	\$ 0.44	\$ 0.55	\$ 0.09
	2	\$ 0.08	\$ 1.47	\$ 0.82	\$ 0.14
	3	\$ 0.17	\$ 1.15	\$ 1.40	\$ 0.22
	4	\$ 0.12	\$ 1.82	\$ 1.27	\$ 0.18
	5	\$ 0.14	\$ 4.56	\$ 1.75	\$ 0.30
	6	\$ 0.04	\$ 1.67	\$ 1.04	\$ 0.16
	7	\$ -	\$ -	\$ -	\$ -
	8	\$ -	\$ -	\$ -	\$ -
	9	\$ -	\$ -	\$ -	\$ -
	10	\$ -	\$ -	\$ -	\$ -
	11	\$ -	\$ -	\$ -	\$ -
	12	\$ -	\$ -	\$ -	\$ -

ERCOT-wide Cumulative PNM			
year	month	pnm	pnm_accum
2021	0	\$ -	\$ -
	1	\$ 1,930.83	\$ 1,930.83
	2	\$ 705,718.36	\$ 707,649.19
	3	\$ 3,356.50	\$ 711,005.69
	4	\$ 19,870.21	\$ 730,875.90
	5	\$ 2,917.28	\$ 733,793.18
	6	\$ 10,048.24	\$ 743,841.42
	7	\$ 5,447.42	\$ 749,288.84
	8	\$ 3,062.97	\$ 752,351.81
	9	\$ 3,075.26	\$ 755,427.07
	10	\$ 5,596.65	\$ 761,023.72
	11	\$ 5,656.41	\$ 766,680.13
	12	\$ 2,293.71	\$ 768,973.84
2022	0	\$ -	\$ -
	1	\$ 2,245.58	\$ 2,245.58
	2	\$ 14,589.18	\$ 16,834.76
	3	\$ 4,492.68	\$ 21,327.44
	4	\$ 7,843.68	\$ 29,171.12
	5	\$ 25,120.79	\$ 54,291.91
	6	\$ 4,444.47	\$ 58,736.38
	7	\$ -	\$ -
	8	\$ -	\$ -
	9	\$ -	\$ -
	10	\$ -	\$ -
	11	\$ -	\$ -
	12	\$ -	\$ -



DA vs. RT Load Forecast Error by Hour Ending							
year	month	HE_1_4	HE_13_16	HE_17_20	HE_21_24	HE_5_8	HE_9_12
2021	1	58	(284)	(66)	(9)	302	(394)
	2	1,889	2,270	2,503	2,331	3,083	2,824
	3	(263)	440	452	119	(125)	(99)
	4	(349)	184	312	(233)	(428)	(384)
	5	(410)	(586)	(665)	(468)	(489)	(422)
	6	(663)	622	645	(158)	(535)	78
	7	(383)	971	950	302	(501)	530
	8	106	1,519	1,062	247	32	627
	9	26	1,548	410	113	172	1,049
	10	25	872	154	52	80	435
	11	(208)	36	77	(72)	(98)	(166)
	12	(568)	(297)	180	(395)	256	135
2022	1	(408)	171	670	86	190	25
	2	(1,031)	155	689	(222)	(62)	442
	3	(897)	(126)	(168)	(643)	(588)	(395)
	4	(946)	302	(321)	(854)	(1,173)	(532)
	5	(1,877)	992	(191)	(1,445)	(1,812)	(395)
	6	(1,009)	1,448	1,149	(347)	(431)	530
	7	-	-	-	-	-	-
	8	-	-	-	-	-	-
	9	-	-	-	-	-	-
	10	-	-	-	-	-	-
	11	-	-	-	-	-	-
	12	-	-	-	-	-	-

Monthly Average of Wind Generation by Hour Ending							
year	month	HE_1_4	HE_13_16	HE_17_20	HE_21_24	HE_5_8	HE_9_12
2021	1	11,491	9,270	9,037	10,939	11,606	10,274
	2	9,300	8,420	8,532	10,575	8,759	8,461
	3	15,685	12,889	13,380	15,467	14,598	13,338
	4	13,724	11,336	11,823	13,261	12,803	11,939
	5	13,861	10,718	12,533	14,784	11,494	10,984
	6	12,577	7,161	9,179	12,511	9,782	7,803
	7	9,833	5,215	7,223	9,405	7,174	5,318
	8	12,425	7,508	10,092	12,428	9,872	7,849
	9	13,114	6,136	7,634	12,472	10,567	7,265
	10	13,538	9,761	10,995	14,051	11,991	9,768
	11	14,149	9,423	10,265	13,841	13,372	10,657
	12	14,855	11,289	12,050	14,740	13,604	11,416
2022	1	13,020	9,623	9,868	12,555	13,127	10,415
	2	14,195	10,245	11,028	13,744	13,920	11,206
	3	16,027	13,581	13,844	15,591	16,250	14,236
	4	17,675	15,266	15,674	16,702	16,996	16,211
	5	19,060	14,380	16,476	18,635	17,225	15,650
	6	16,762	10,737	13,012	15,837	13,740	11,588
	7	-	-	-	-	-	-
	8	-	-	-	-	-	-
	9	-	-	-	-	-	-
	10	-	-	-	-	-	-
	11	-	-	-	-	-	-
	12	-	-	-	-	-	-



RT Congestion Constraint Rankings - Top 10 Constraints by Binding Frequency and Top 10 Constraints by Total Congestion Rent																
CATEGORY	YEAR	CONSTRAINT	RANKVAR	RANK	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
FREQ_EXIST	2022	NORTH EDINBURG LOBO GTC (NE_LOB)	15990	1	2040	2071	2855	2745	4082	2197	0	0	0	0	0	0
FREQ_EXIST	2022	NELSON SHARPE RIO HONDO GTC (NELRIO)	12390	2	1256	755	2156	3044	3560	1619	0	0	0	0	0	0
FREQ_EXIST	2022	BURNS RIOHONDO 1 (RIOHONDO-MV_BURNS)	8904	3	280	592	2245	3279	1667	841	0	0	0	0	0	0
FREQ_EXIST	2022	WEST TEXAS EXPORT GTC (WESTEX)	7762	4	950	618	507	3167	1603	917	0	0	0	0	0	0
FREQ_EXIST	2022	G138 10B 1 (SEMINOLE-MAGNO TN)	6544	5	120	226	703	3481	879	1135	0	0	0	0	0	0
FREQ_EXIST	2022	LASPUL RAYMND1 1 (LASPULGA-RAYMND2)	6357	6	40	125	1454	2258	2092	388	0	0	0	0	0	0
FREQ_EXIST	2022	KLNSW XFMRS (KLNSW-KLNSW)	5847	7	752	745	2872	637	841	0	0	0	0	0	0	0
FREQ_EXIST	2022	PANHANDLE GTC (PNHNDL)	5710	8	182	230	18	2040	2334	906	0	0	0	0	0	0
FREQ_EXIST	2022	651 B (CMNSW-CMNTF)	5554	9	500	537	898	1982	844	793	0	0	0	0	0	0
FREQ_EXIST	2022	HAMILT MAVERI1 1 (HAMILTON-MAVERICK)	5423	10	162	376	1359	2048	1254	224	0	0	0	0	0	0
TOP10_RENT	2022	WEST TEXAS EXPORT GTC (WESTEX)	\$ 216.36	1	\$ 17.32	\$ 8.97	\$ 6.98	\$ 88.01	\$ 57.18	\$ 37.91	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOP10_RENT	2022	JEWET-SNG LINES (JEWET-SNG)	\$ 169.98	2	\$ -	\$ -	\$ -	\$ 0.04	\$136.25	\$ 33.70	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOP10_RENT	2022	KLNSW XFMRS (KLNSW-KLNSW)	\$ 98.24	3	\$ 7.00	\$ 7.77	\$ 43.13	\$ 7.47	\$ 32.88	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOP10_RENT	2022	CKT 3124 1 (STP-HLJ)	\$ 80.97	4	\$ -	\$ 15.25	\$ 17.63	\$ 1.28	\$ 46.80	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOP10_RENT	2022	NORTH EDINBURG LOBO GTC (NE_LOB)	\$ 80.14	5	\$ 6.50	\$ 5.42	\$ 12.38	\$ 12.92	\$ 27.32	\$ 15.61	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOP10_RENT	2022	NORTH TO HOUSTON GTC (N_TO_H)	\$ 73.72	6	\$ -	\$ -	\$ -	\$ 0.61	\$ 73.04	\$ 0.07	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOP10_RENT	2022	G138 10B 1 (SEMINOLE-MAGNO TN)	\$ 55.21	7	\$ 0.18	\$ 0.55	\$ 2.94	\$ 21.21	\$ 12.27	\$ 18.06	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOP10_RENT	2022	PANHANDLE GTC (PNHNDL)	\$ 45.47	8	\$ 0.52	\$ 0.94	\$ 0.08	\$ 12.75	\$ 23.31	\$ 7.88	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOP10_RENT	2022	6462 C (MCNSW-MKNGB)	\$ 44.26	9	\$ -	\$ -	\$ -	\$ 0.49	\$ 32.66	\$ 11.11	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOP10_RENT	2022	6125 C (MSTLT-HMPHL)	\$ 41.27	10	\$ 23.80	\$ 17.47	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

MONTH	RENT TOTAL
1	108.54
2	131.29
3	237.76
4	382.41
5	701.20
6	250.92
7	0.00
8	0.00
9	0.00
10	0.00
11	0.00
12	0.00
Sum-Total	1812.12

DA Congestion Constraint Rankings - Top 10 Constraints by Binding Frequency and Top 10 Constraints by Total Congestion Rent																
category	year	item	rankvar	rank	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
FREQ_EXIST	2022	G138_10B_1 (SEMINOLE-MAGNO_TN)	2,621	1	205	192	404	697	606	517	-	-	-	-	-	-
FREQ_EXIST	2022	NORTH EDINBURG LOBO GTC (NE_LOB)	2,248	2	262	262	436	405	509	374	-	-	-	-	-	-
FREQ_EXIST	2022	BLESSI_PAVLOV1_1 (BLESSING-PAVLOV)	1,914	3	186	333	448	334	423	190	-	-	-	-	-	-
FREQ_EXIST	2022	6144_A (BSPRW-STASW)	1,809	4	59	66	243	433	487	521	-	-	-	-	-	-
FREQ_EXIST	2022	NELSON SHARPE RIO HONDO GTC (NELRIO)	1,784	5	253	161	251	426	472	221	-	-	-	-	-	-
FREQ_EXIST	2022	BURNS RIOHONDO_1 (RIOHONDO-MV_BURNS)	1,656	6	158	160	293	430	403	212	-	-	-	-	-	-
FREQ_EXIST	2022	HAMILT_MAVERI1_1 (HAMILTON-MAVERICK)	1,571	7	172	96	266	458	350	229	-	-	-	-	-	-
FREQ_EXIST	2022	651_B (CMNSW-CMNTP)	1,491	8	103	208	364	322	193	301	-	-	-	-	-	-
FREQ_EXIST	2022	BRUNI_69_1 (BRUNI-BRUNI)	1,463	9	227	125	210	312	326	263	-	-	-	-	-	-
FREQ_EXIST	2022	BISON_STRS1_1 (BISON-STRS)	1,427	10	104	123	378	317	297	208	-	-	-	-	-	-
TOP10_RENT	2022	WEST EXPORT GTC (WESTEX)	\$ 158.47	1	\$ 12.11	\$ 8.42	\$ 13.08	\$ 59.40	\$ 41.34	\$ 24.11	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOP10_RENT	2022	JEWET-SNG LINES (JEWET-SNG)	\$ 130.69	2	\$ -	\$ -	\$ 0.08	\$ 0.04	\$ 84.02	\$ 46.56	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOP10_RENT	2022	KLNSW XFMRs (KLNSW-KLNSW)	\$ 88.64	3	\$ 4.79	\$ 8.24	\$ 34.77	\$ 15.27	\$ 25.58	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOP10_RENT	2022	G138_10B_1 (SEMINOLE-MAGNO_TN)	\$ 78.04	4	\$ 0.85	\$ 0.98	\$ 4.66	\$ 31.20	\$ 24.53	\$ 15.83	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOP10_RENT	2022	NORTH EDINBURG LOBO GTC (NE_LOB)	\$ 74.04	5	\$ 6.96	\$ 5.11	\$ 11.10	\$ 11.39	\$ 22.27	\$ 17.21	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOP10_RENT	2022	CKT_3124_1 (STP-HLJ)	\$ 54.62	6	\$ 0.04	\$ 11.02	\$ 14.99	\$ 2.26	\$ 24.75	\$ 1.57	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOP10_RENT	2022	BLESSI_PAVLOV1_1 (BLESSING-PAVLOV)	\$ 43.61	7	\$ 2.41	\$ 7.27	\$ 8.58	\$ 4.78	\$ 15.20	\$ 5.38	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOP10_RENT	2022	CAGNON XFMRs (CAGNON-CAGNON)	\$ 39.71	8	\$ 0.50	\$ 0.08	\$ 1.34	\$ 2.98	\$ 29.57	\$ 5.23	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOP10_RENT	2022	PANHANDLE GTC (PNHNDL)	\$ 39.23	9	\$ 0.07	\$ -	\$ 0.27	\$ 11.37	\$ 18.02	\$ 9.50	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOP10_RENT	2022	BURNS RIOHONDO_1 (RIOHONDO-MV_BURNS)	\$ 36.24	10	\$ 1.95	\$ 1.81	\$ 4.33	\$ 9.99	\$ 12.75	\$ 5.40	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

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																	
fr_option	year	pair	total_value	rank	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
N	2022	HB NORTH-HB HOUSTON	\$ 31.04	1	\$ 0.29	\$ 0.41	\$ 2.10	\$ 2.13	\$ 6.34	\$ 15.09	\$ 4.67	\$ -	\$ -	\$ -	\$ -	\$ -	
N	2022	HB WEST-LZ WEST	\$ 24.88	2	\$ 1.74	\$ 1.33	\$ 1.83	\$ 2.21	\$ 4.74	\$ 6.66	\$ 6.37	\$ -	\$ -	\$ -	\$ -	\$ -	
N	2022	HB WEST-HB NORTH	\$ 19.37	3	\$ 0.39	\$ 1.23	\$ 0.97	\$ 3.67	\$ 7.02	\$ 5.58	\$ 0.51	\$ -	\$ -	\$ -	\$ -	\$ -	
N	2022	HB SOUTH-LZ SOUTH	\$ 10.26	4	\$ 1.15	\$ 0.60	\$ 0.97	\$ 1.71	\$ 1.20	\$ 2.70	\$ 1.94	\$ -	\$ -	\$ -	\$ -	\$ -	
N	2022	HB HOUSTON-LZ HOUSTON	\$ 9.46	5	\$ 0.37	\$ 0.38	\$ 0.65	\$ 0.99	\$ 2.25	\$ 2.74	\$ 2.08	\$ -	\$ -	\$ -	\$ -	\$ -	
N	2022	HB NORTH-LZ NORTH	\$ 8.85	6	\$ 0.59	\$ 0.69	\$ 0.89	\$ 0.73	\$ 1.20	\$ 2.28	\$ 2.46	\$ -	\$ -	\$ -	\$ -	\$ -	
N	2022	HB SOUTH-HB NORTH	\$ 4.37	7	\$ 0.28	\$ 0.29	\$ 0.29	\$ 2.21	\$ 0.45	\$ 0.81	\$ 0.05	\$ -	\$ -	\$ -	\$ -	\$ -	
N	2022	CPSES_UNIT2-HB NORTH	\$ 3.49	8	\$ 0.69	\$ 0.55	\$ 0.31	\$ 1.01	\$ 0.45	\$ 0.33	\$ 0.15	\$ -	\$ -	\$ -	\$ -	\$ -	
N	2022	HB SOUTH-LZ AEN	\$ 3.22	9	\$ -	\$ -	\$ -	\$ -	\$ 0.30	\$ 2.63	\$ 0.29	\$ -	\$ -	\$ -	\$ -	\$ -	
N	2022	HB SOUTH-LZ LCRA	\$ 3.13	10	\$ 0.03	\$ 0.12	\$ 0.06	\$ 0.13	\$ 0.58	\$ 1.31	\$ 0.92	\$ -	\$ -	\$ -	\$ -	\$ -	
Y	2022	HB SOUTH-LZ SOUTH	\$ 4.10	1	\$ 0.24	\$ 0.25	\$ 0.44	\$ 0.69	\$ 0.61	\$ 0.92	\$ 0.96	\$ -	\$ -	\$ -	\$ -	\$ -	
Y	2022	HB WEST-LZ WEST	\$ 3.74	2	\$ 0.19	\$ 0.22	\$ 0.21	\$ 0.31	\$ 0.95	\$ 1.20	\$ 0.67	\$ -	\$ -	\$ -	\$ -	\$ -	
Y	2022	ANCHOR_ALL-JCKCNTY2_CT3	\$ 3.60	3	\$ -	\$ -	\$ 0.35	\$ 0.00	\$ 0.99	\$ 1.91	\$ 0.35	\$ -	\$ -	\$ -	\$ -	\$ -	
Y	2022	HB NORTH-LZ NORTH	\$ 3.27	4	\$ 0.70	\$ 0.16	\$ 0.09	\$ 0.25	\$ 0.29	\$ 0.66	\$ 1.11	\$ -	\$ -	\$ -	\$ -	\$ -	
Y	2022	HB WEST-HB NORTH	\$ 2.71	5	\$ 0.43	\$ 0.47	\$ 0.15	\$ 0.22	\$ 0.55	\$ 0.86	\$ 0.03	\$ -	\$ -	\$ -	\$ -	\$ -	
Y	2022	HB HOUSTON-LZ HOUSTON	\$ 2.27	6	\$ 0.03	\$ 0.04	\$ 0.21	\$ 0.26	\$ 0.27	\$ 0.83	\$ 0.63	\$ -	\$ -	\$ -	\$ -	\$ -	
Y	2022	TORR_ALL-HB SOUTH	\$ 2.27	7	\$ 0.52	\$ 0.53	\$ 0.32	\$ 0.00	\$ 0.29	\$ 0.37	\$ 0.25	\$ -	\$ -	\$ -	\$ -	\$ -	
Y	2022	EL_RAYO_ALL-HB SOUTH	\$ 1.85	8	\$ 0.22	\$ 0.24	\$ 0.39	\$ 0.37	\$ 0.20	\$ 0.36	\$ 0.07	\$ -	\$ -	\$ -	\$ -	\$ -	
Y	2022	SSPURT_WIND1-LZ SOUTH	\$ 1.72	9	\$ 0.03	\$ -	\$ 0.43	\$ 0.57	\$ 0.52	\$ 0.02	\$ 0.15	\$ -	\$ -	\$ -	\$ -	\$ -	
Y	2022	HB NORTH-HB HOUSTON	\$ 1.57	10	\$ 0.05	\$ 0.02	\$ 0.01	\$ 0.01	\$ 0.01	\$ 1.05	\$ 0.42	\$ -	\$ -	\$ -	\$ -	\$ -	