

Item 5: IMM Report

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512-225-7077

Board of Directors

April 8, 2014

Item 5

ERCOT Public

To the Public Utility Commission of Texas

ERCOT Wholesale Electricity Market Monthly Report

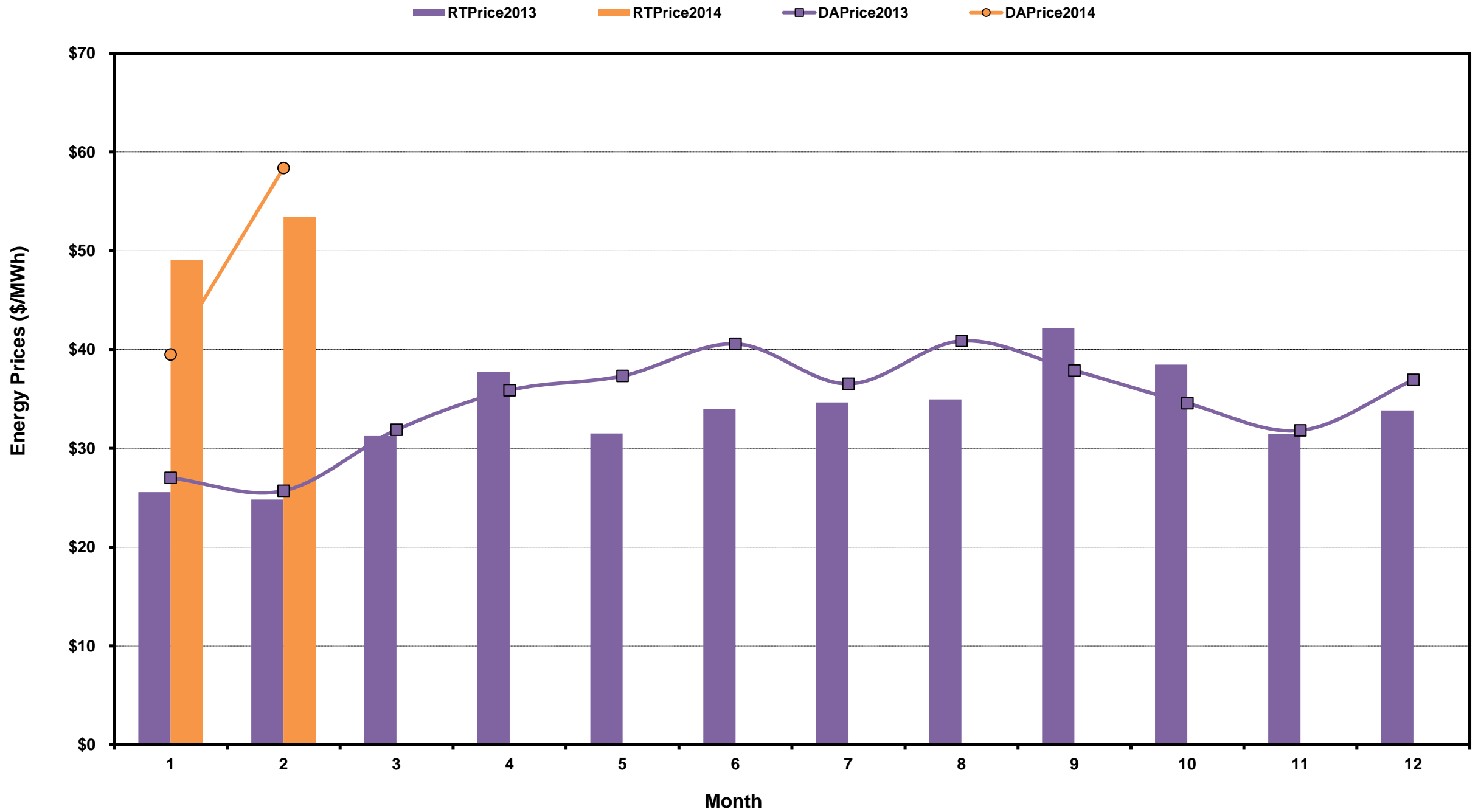
Friday, March 14, 2014

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)



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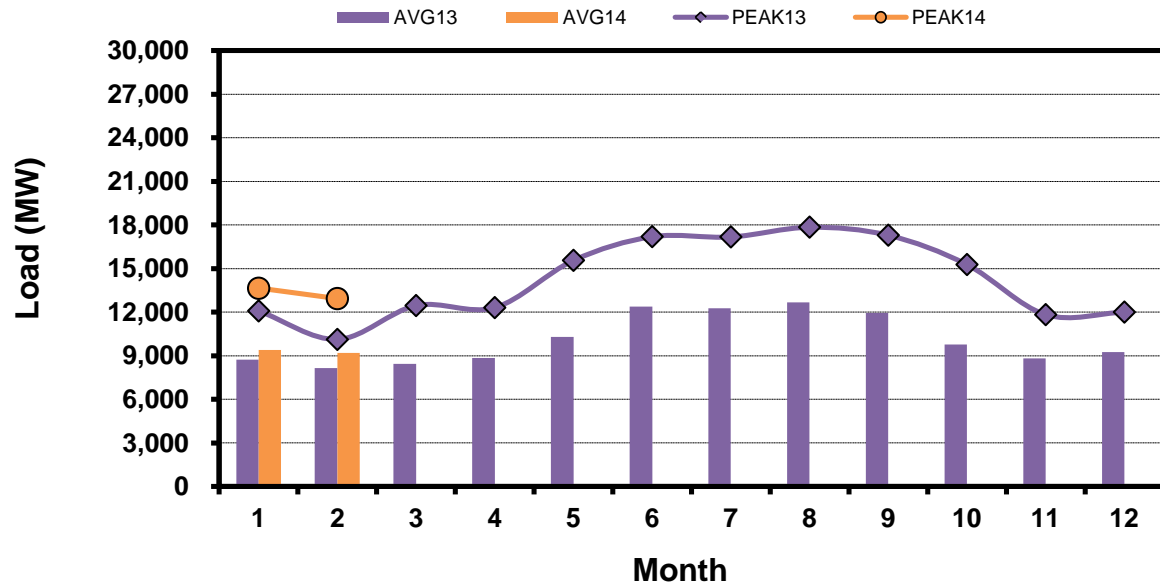
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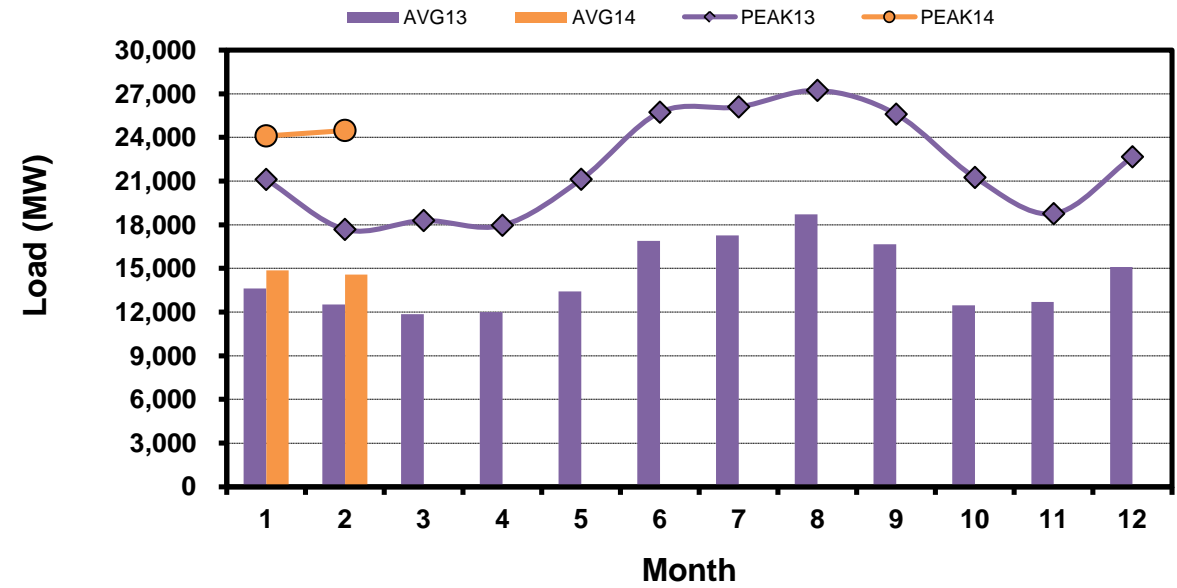
Load Zone Load Statistics

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

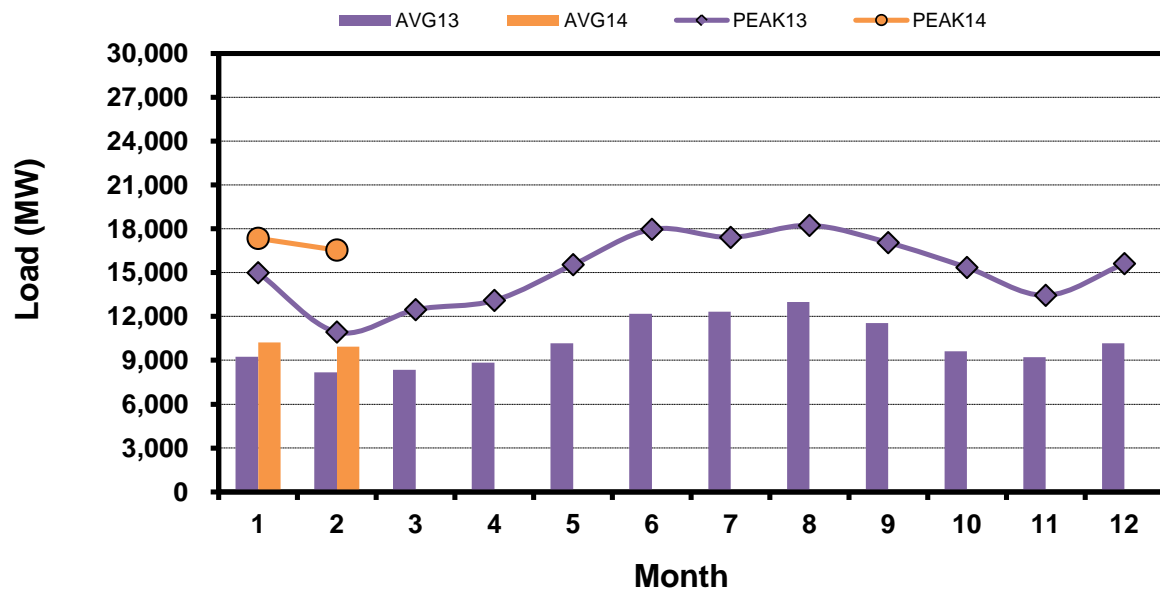
Houston Zone



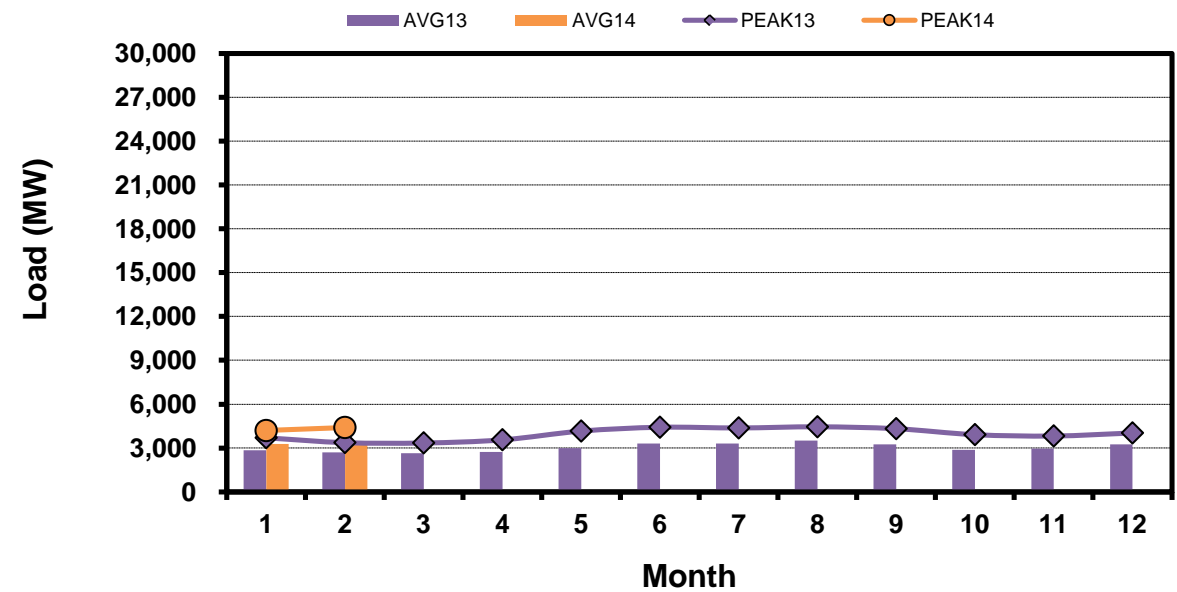
North Zone



South Zone



West Zone



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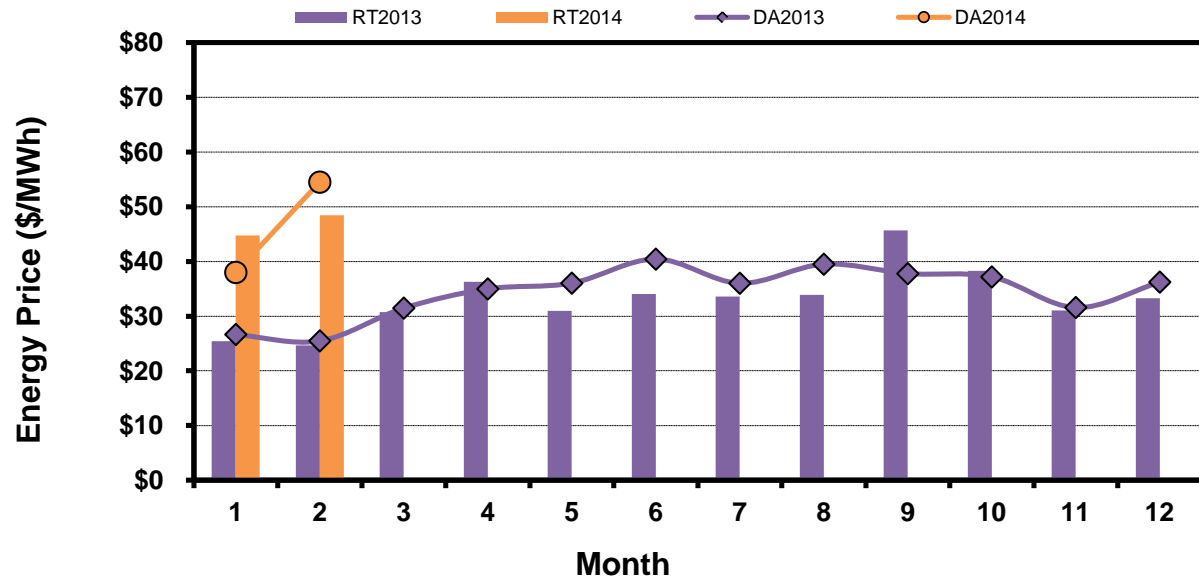
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Note: * Zonal load zone definition vs. Nodal comparable load zone definition: LZ_Houston=LZ_Houston; LZ_West=LZ_West; LZ_North=(LZ_North,LZ_RAYBN); LZ_South=(LZ_South,LZ_CPS,LZ_AEN,LZ_LCRA)

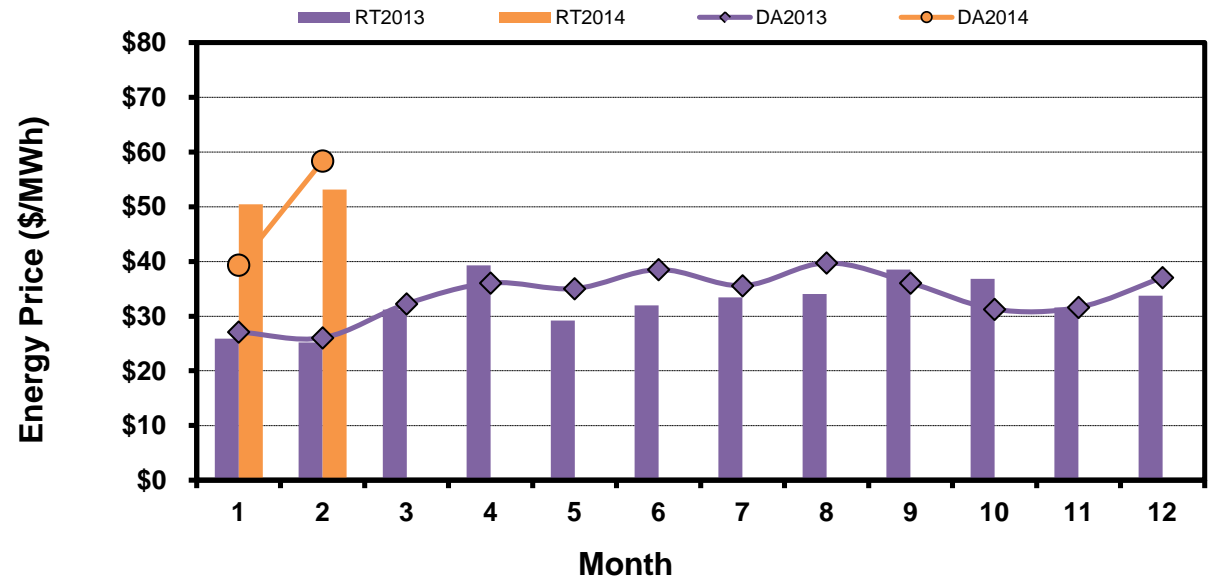
Load Zone Monthly Average Energy Price DA vs RT

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

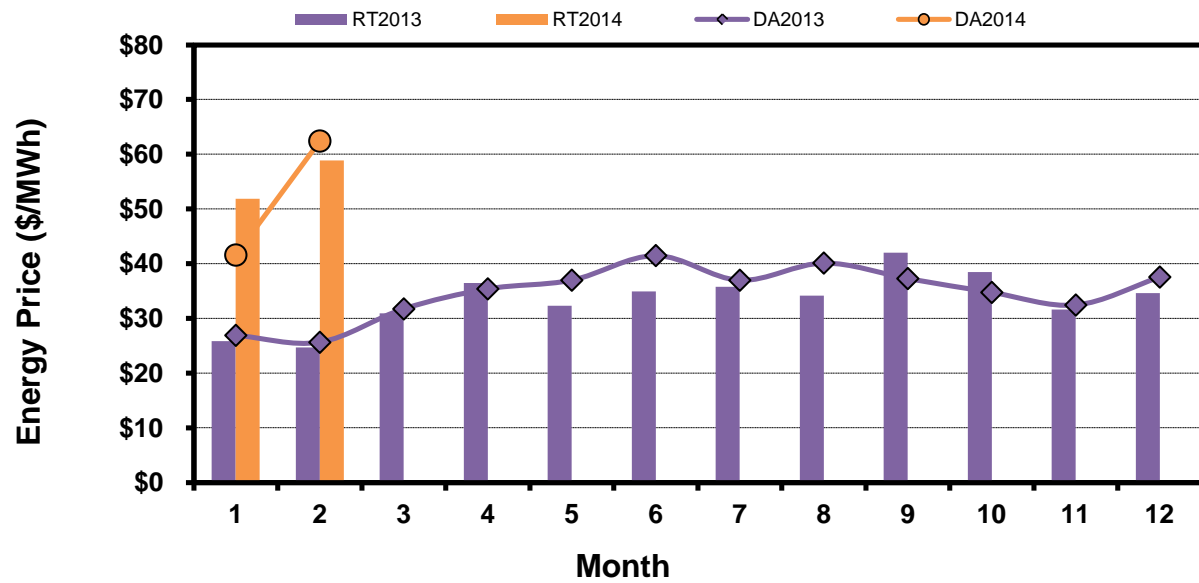
Houston Zone



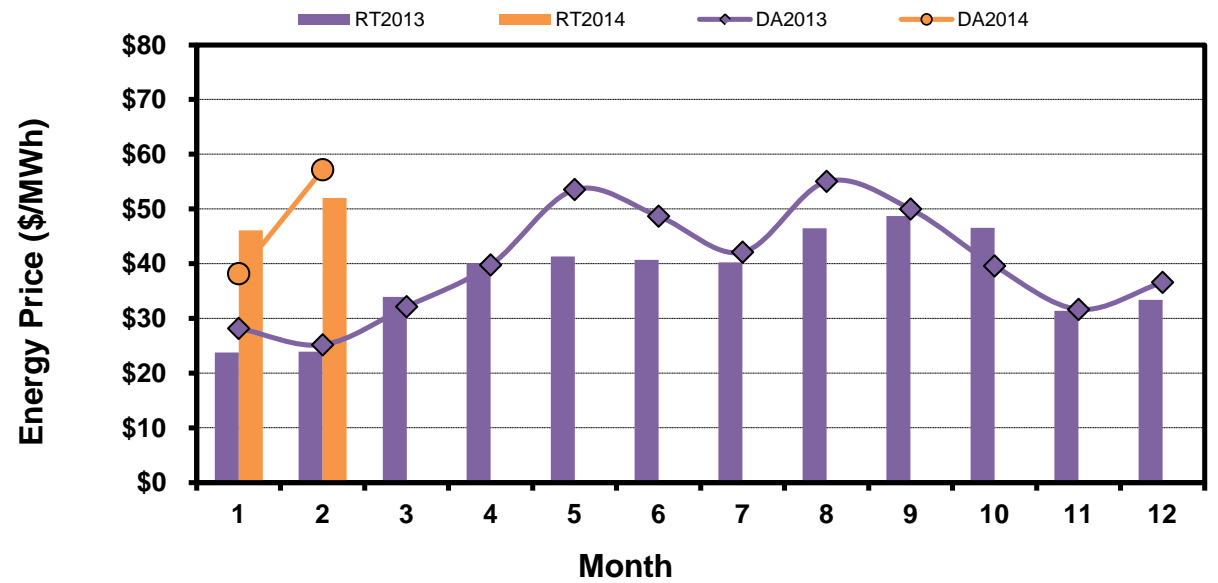
North Zone



South Zone



West Zone



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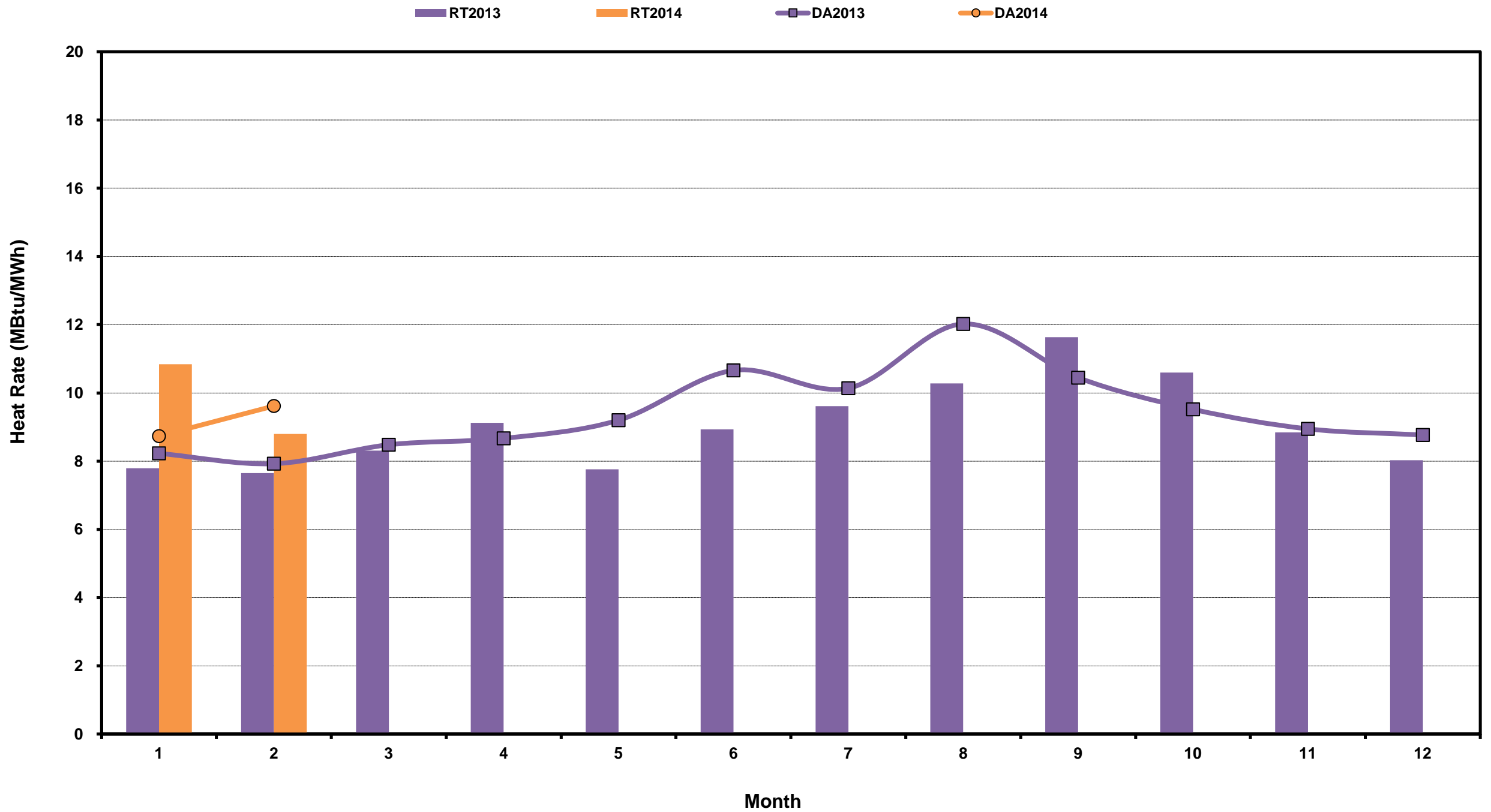
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Note: * Zonal load zone definition vs. Nodal comparable load zone definition: LZ_Houston=LZ_Houston; LZ_West=LZ_West; LZ_North=(LZ_North,LZ_RAYBN); LZ_South=(LZ_South,LZ_CPS,LZ_AEN,LZ_LCRA)

ERCOT-Wide Monthly Implied Heat Rate DA vs RT

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



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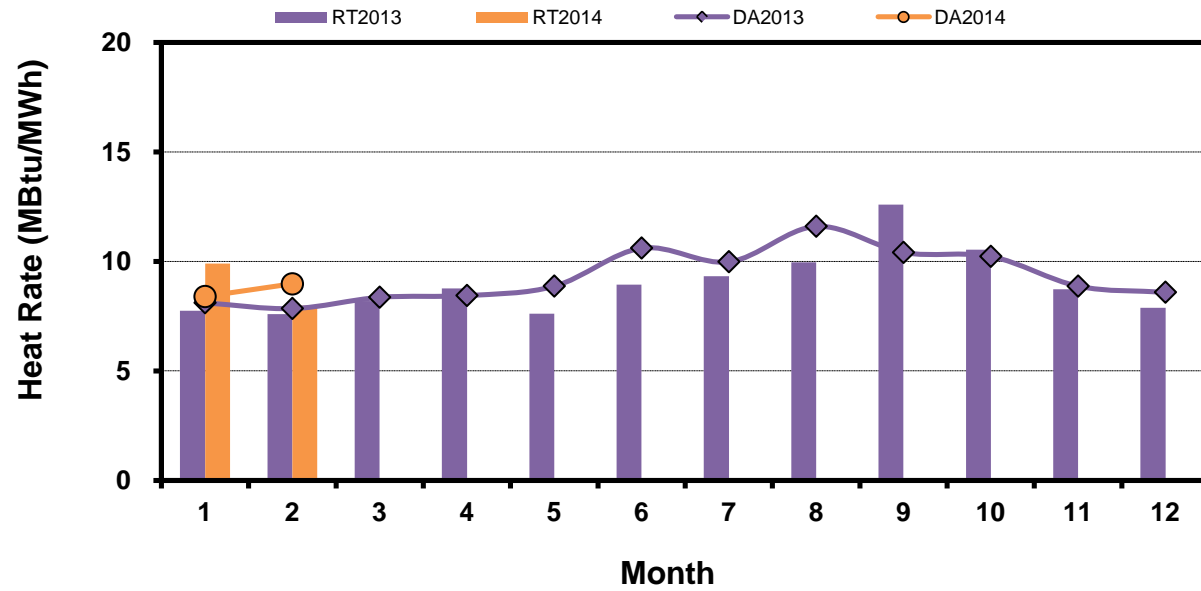
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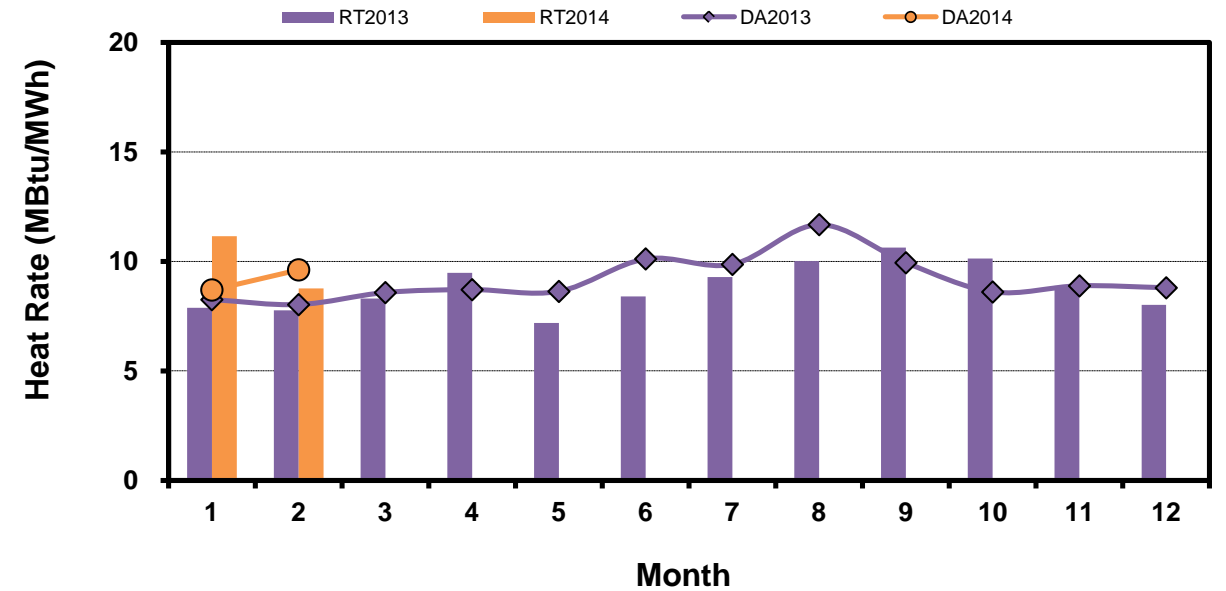
Load Zone Monthly Implied Heat Rate DA vs RT

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

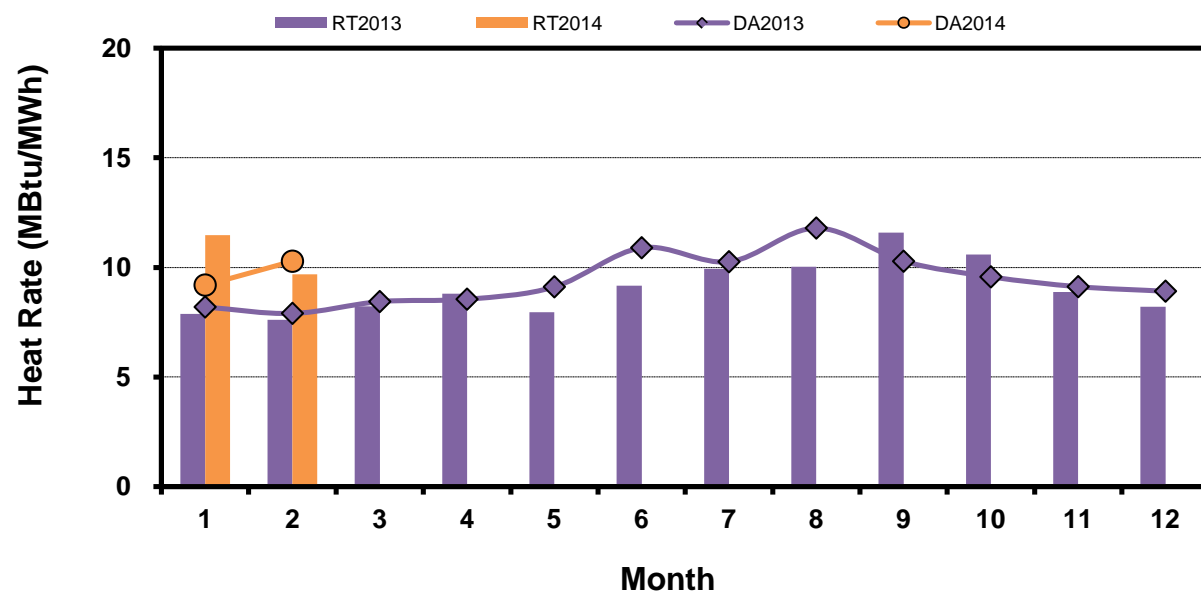
Houston Zone



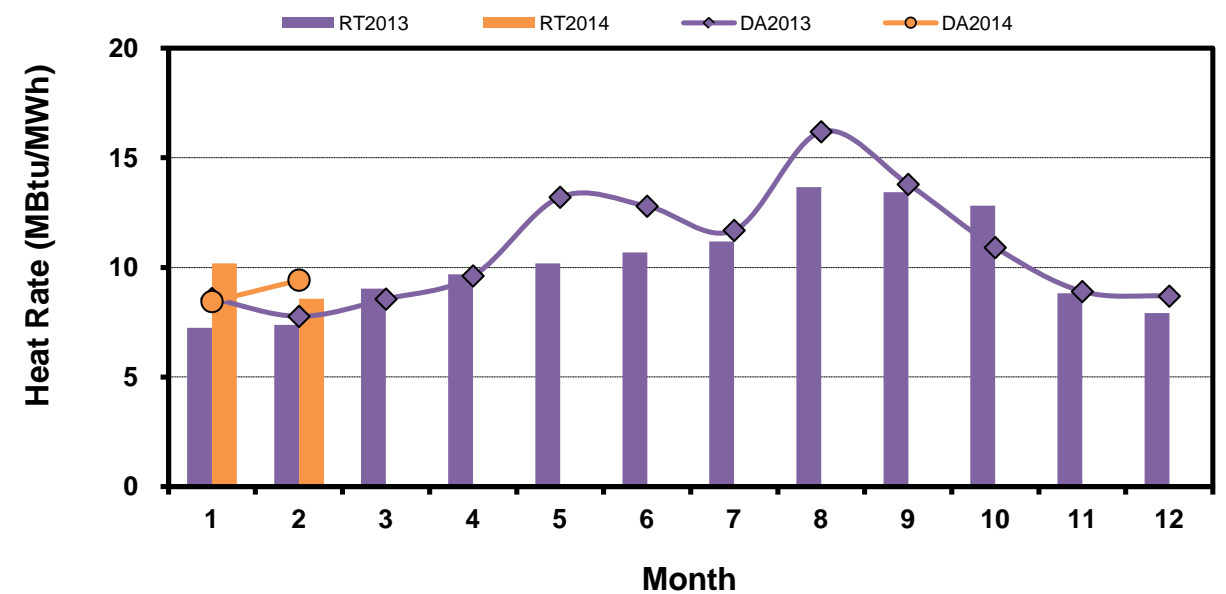
North Zone



South Zone



West Zone



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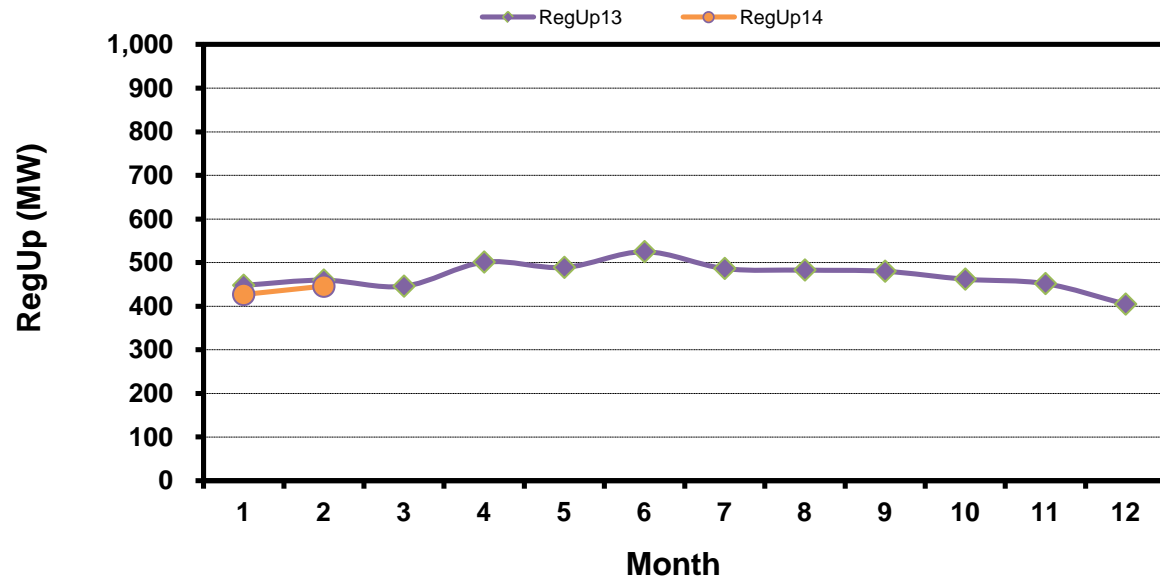
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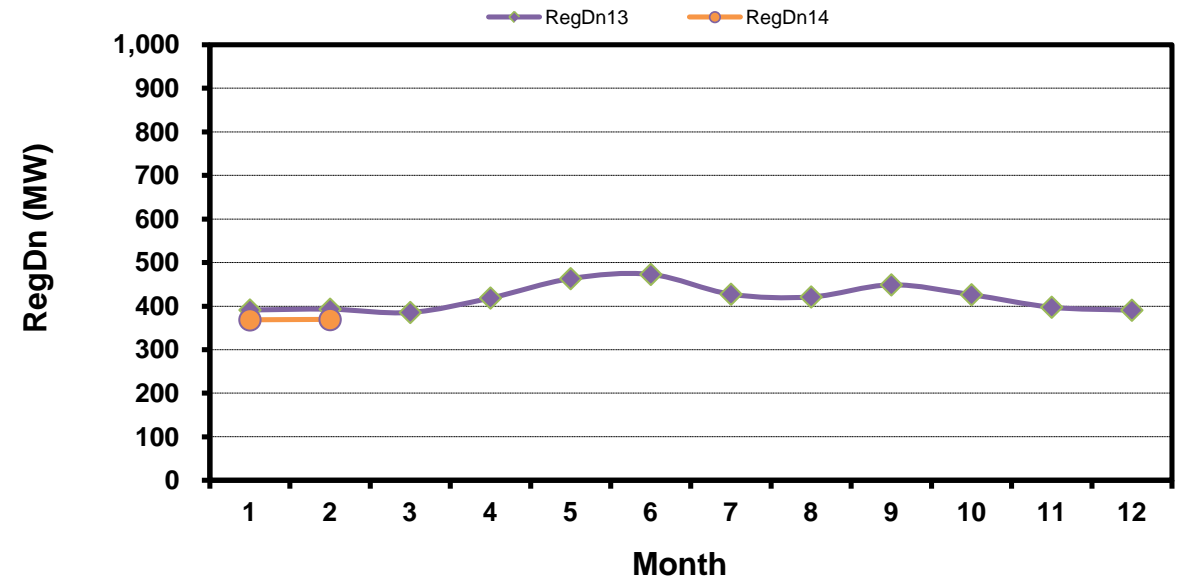
Note: * Zonal load zone definition vs. Nodal comparable load zone definition: LZ_Houston=LZ_Houston; LZ_West=LZ_West; LZ_North=(LZ_North,LZ_RAYBN); LZ_South=(LZ_South,LZ_CPS,LZ_AEN,LZ_LCRA)

Monthly Average of Ancillary Services Required MW

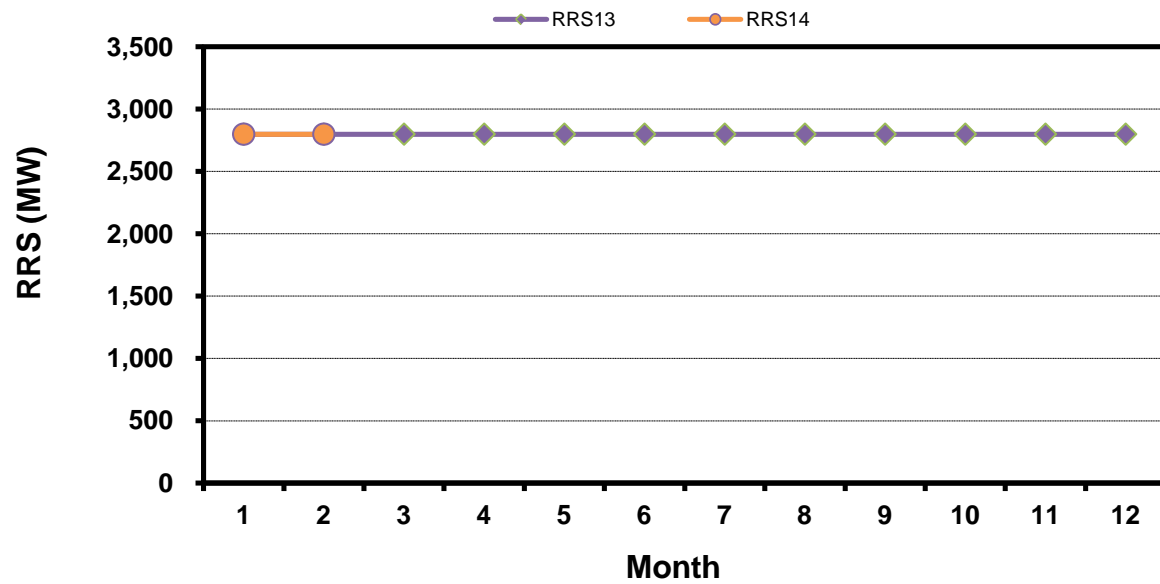
Regulation Up



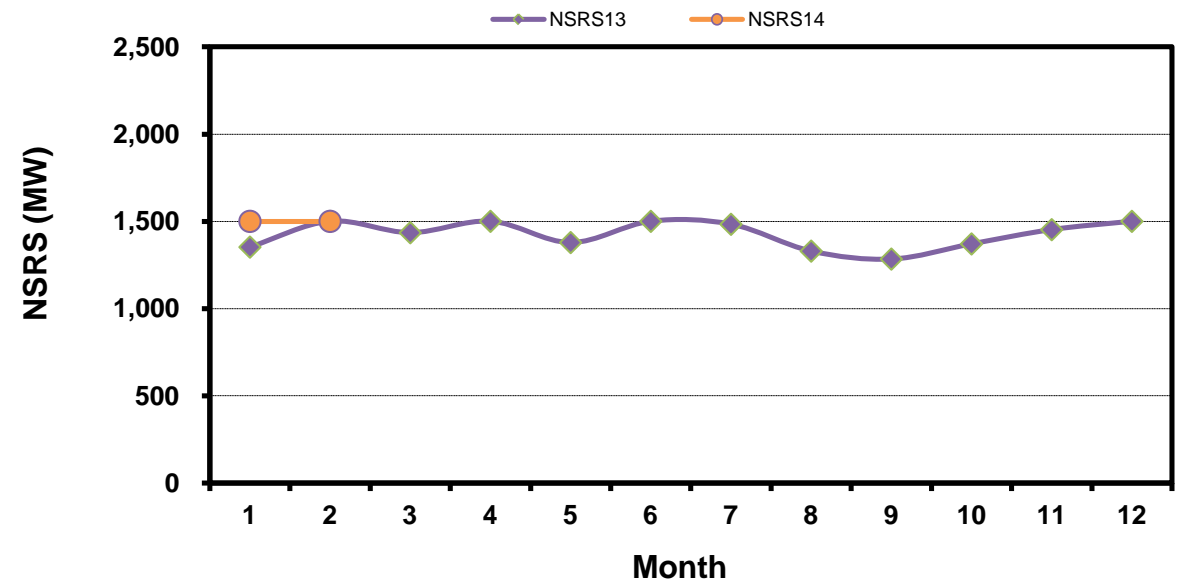
Regulation Down



Responsive Reserve



Non-Spin Reserve

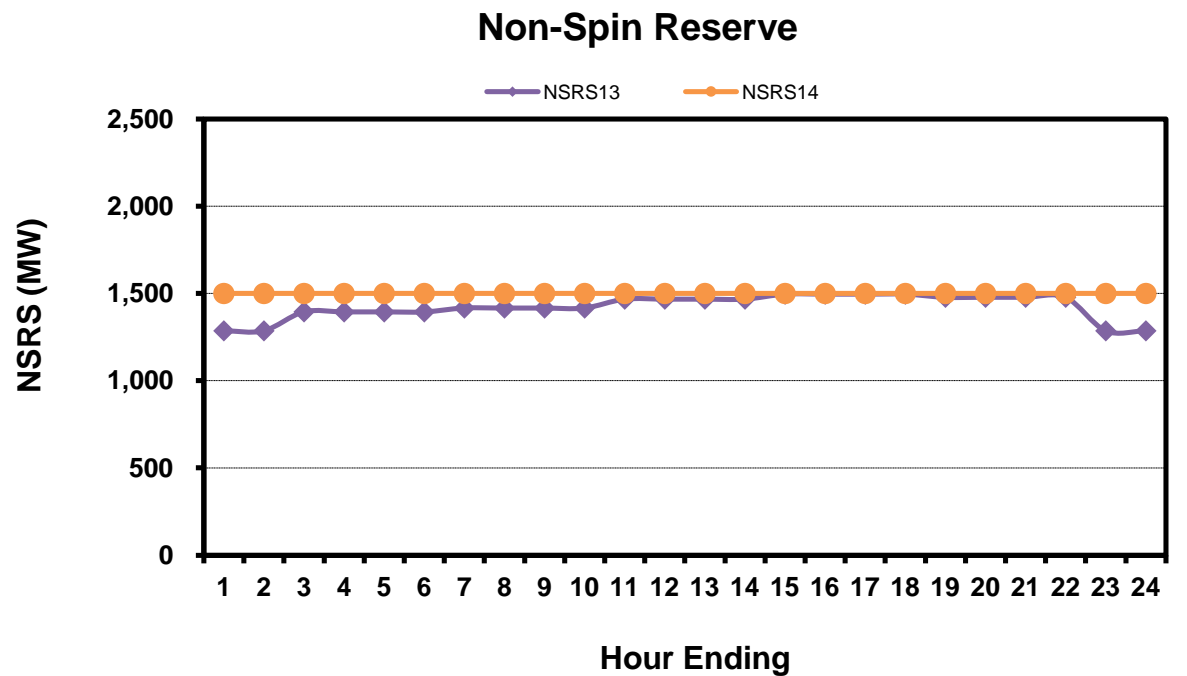
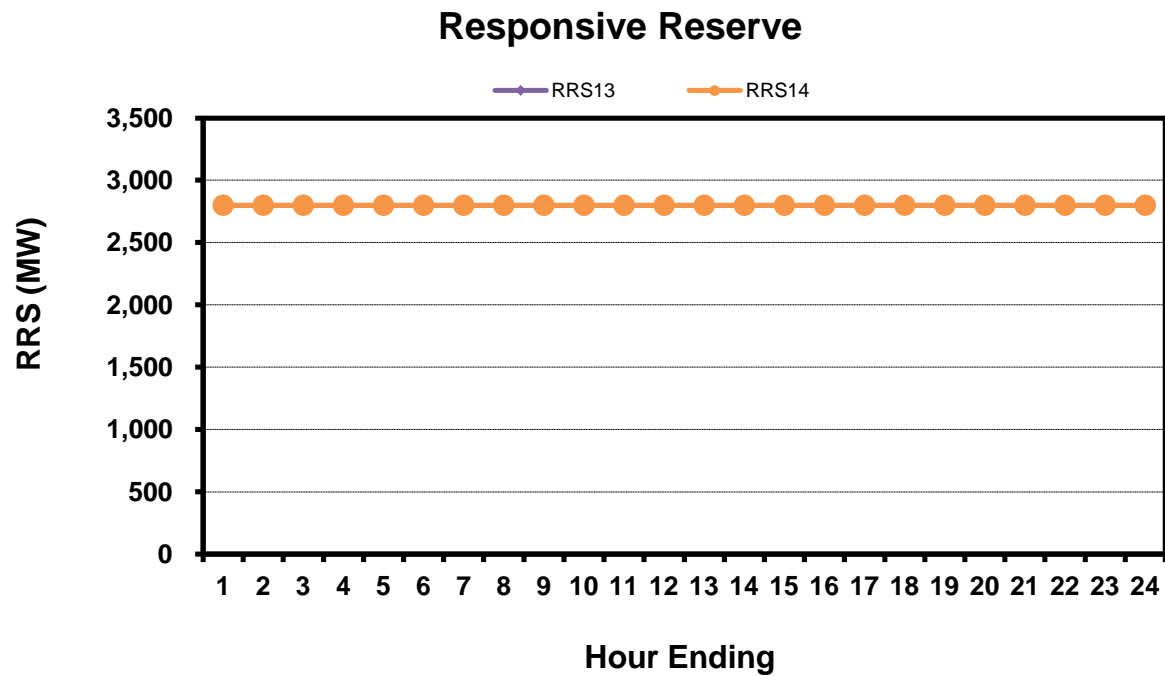
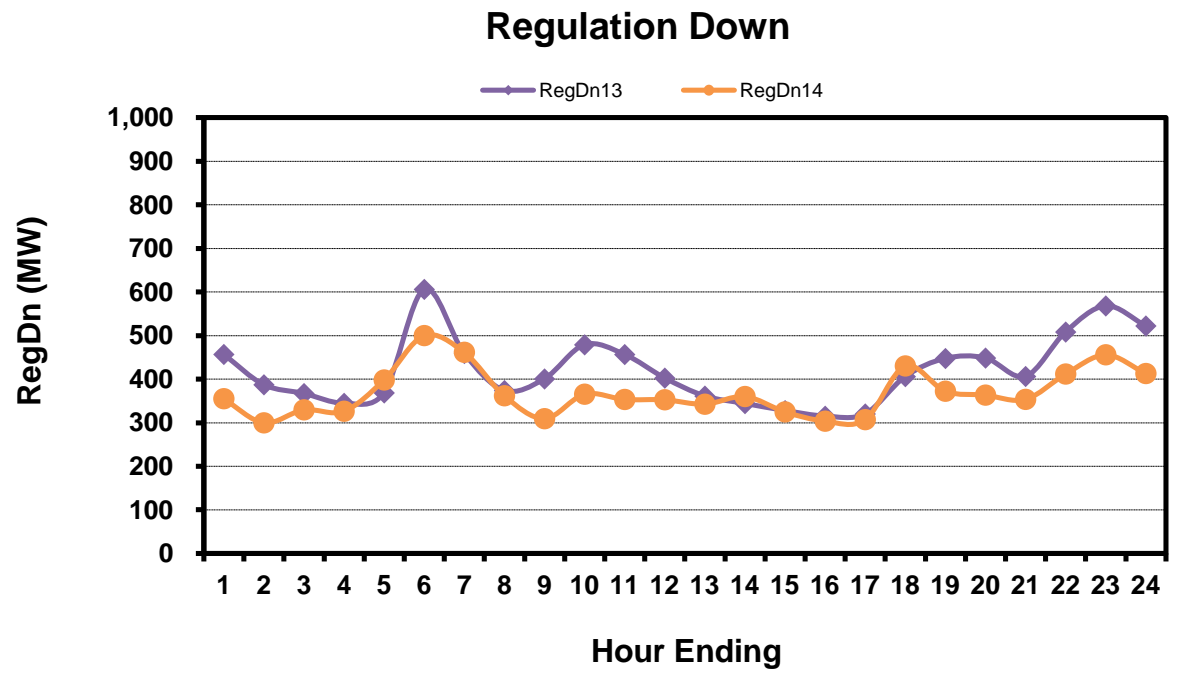
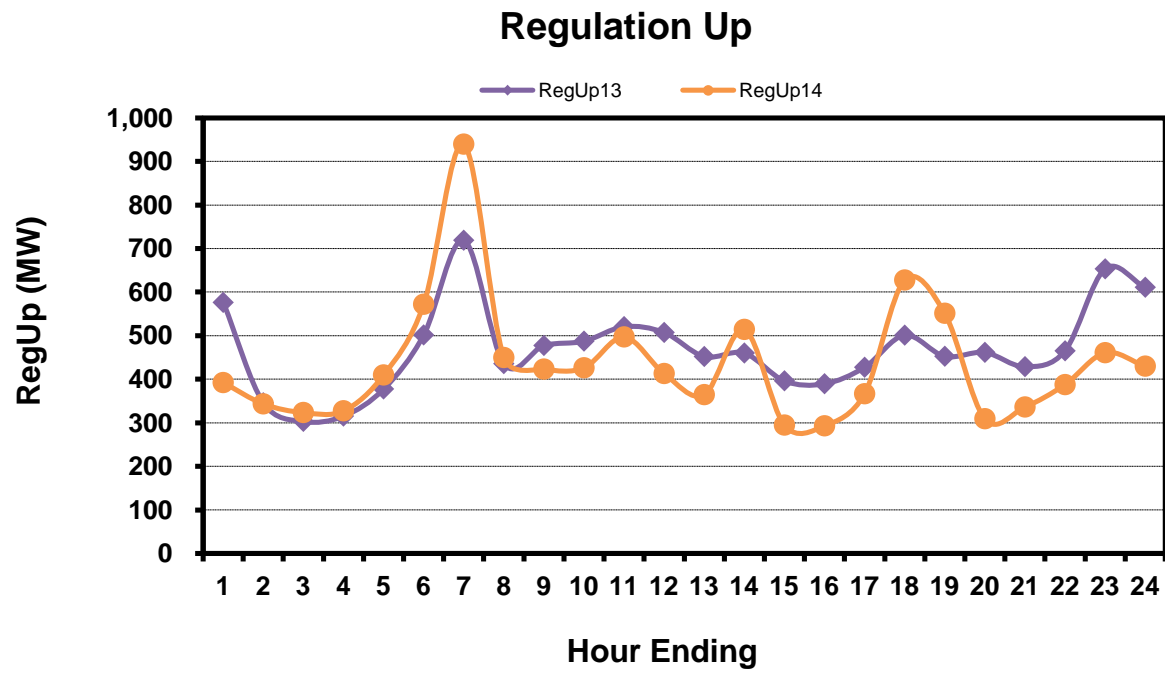


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Hourly Average of Ancillary Services Required MW



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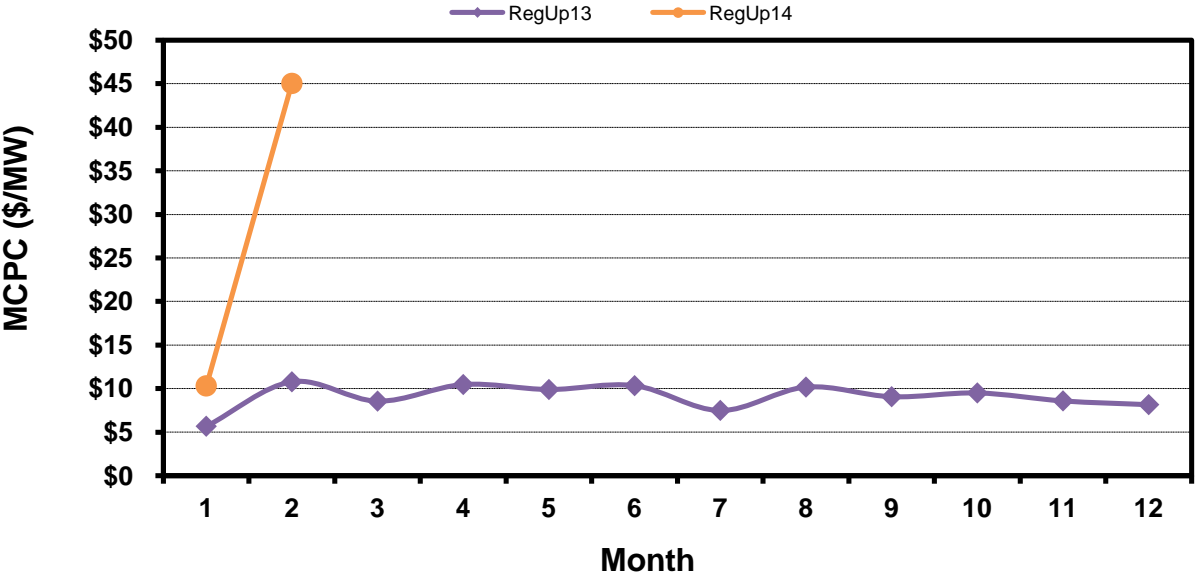
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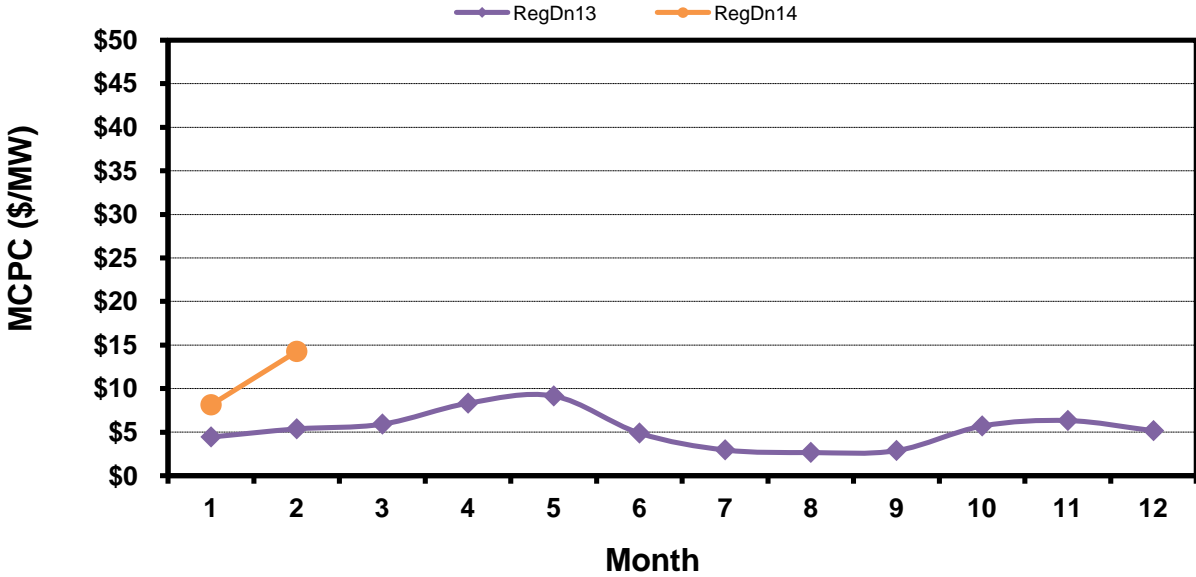
Monthly Average Ancillary Services Price

(weighted by A/S Quantities Required)

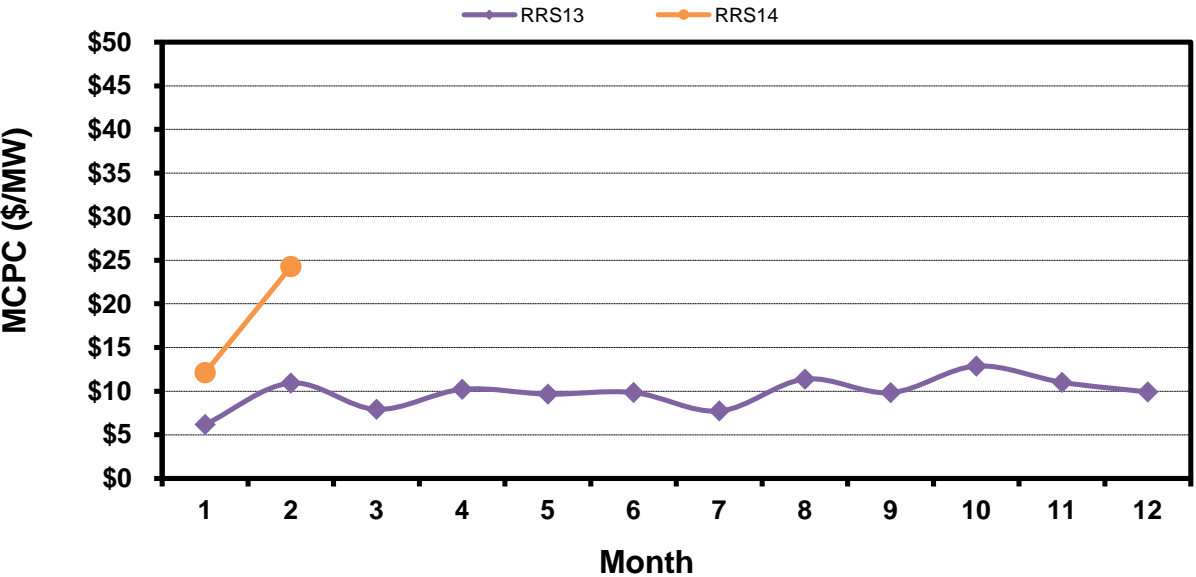
Regulation Up



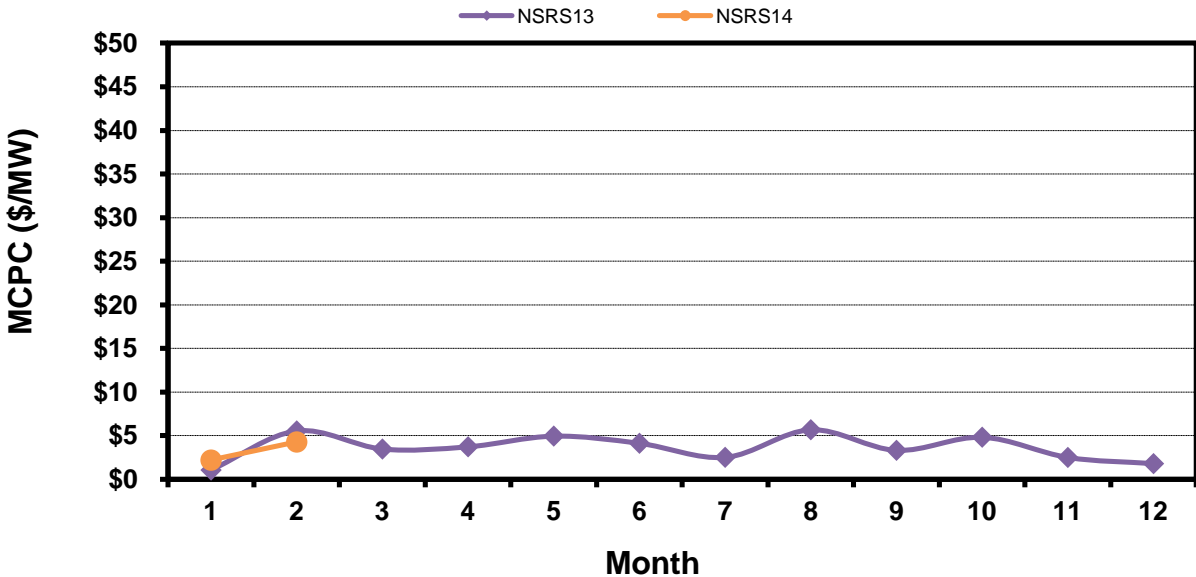
Regulation Down



Responsive Reserve



Non-Spin Reserve

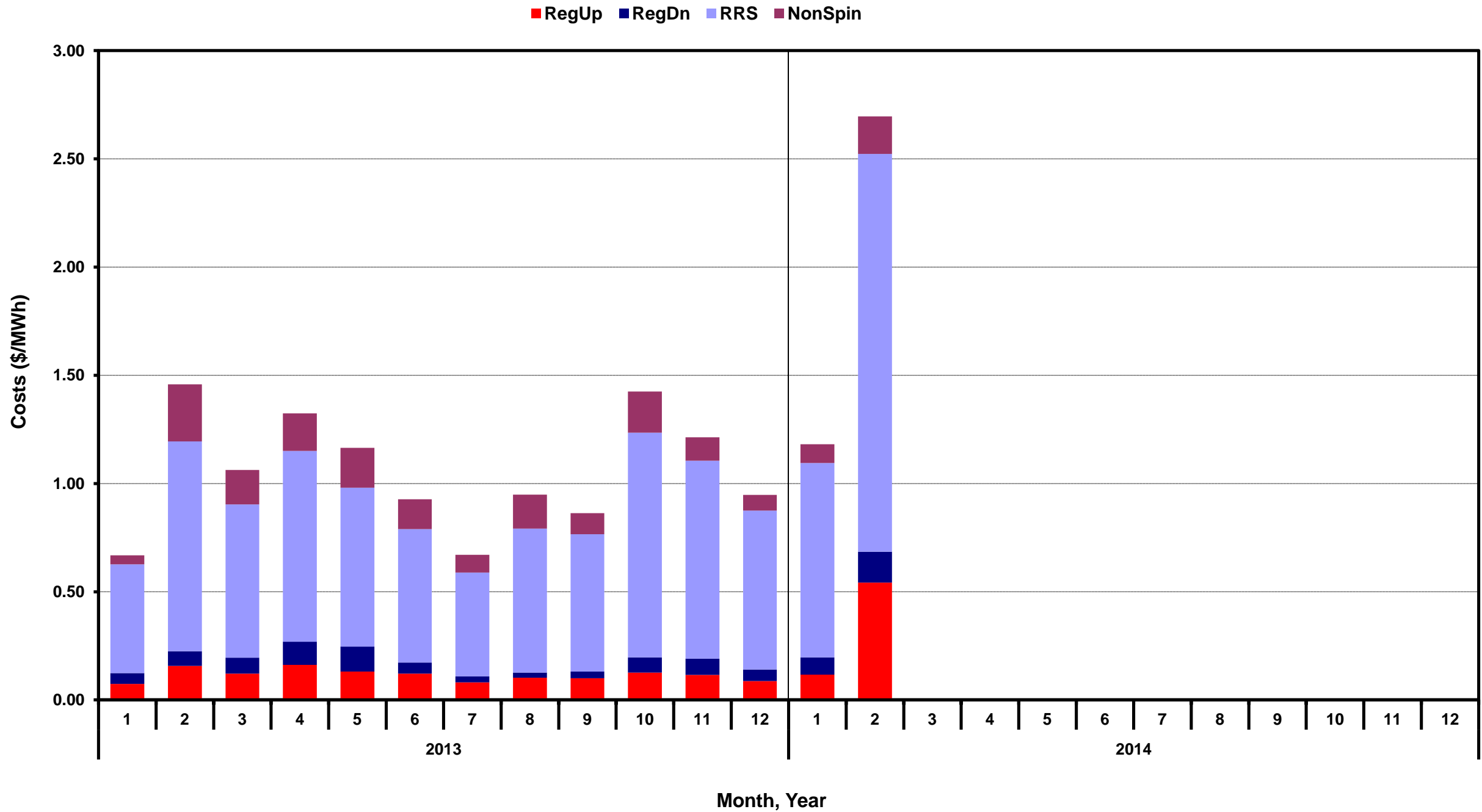


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Monthly Average A/S Cost per MWh Load



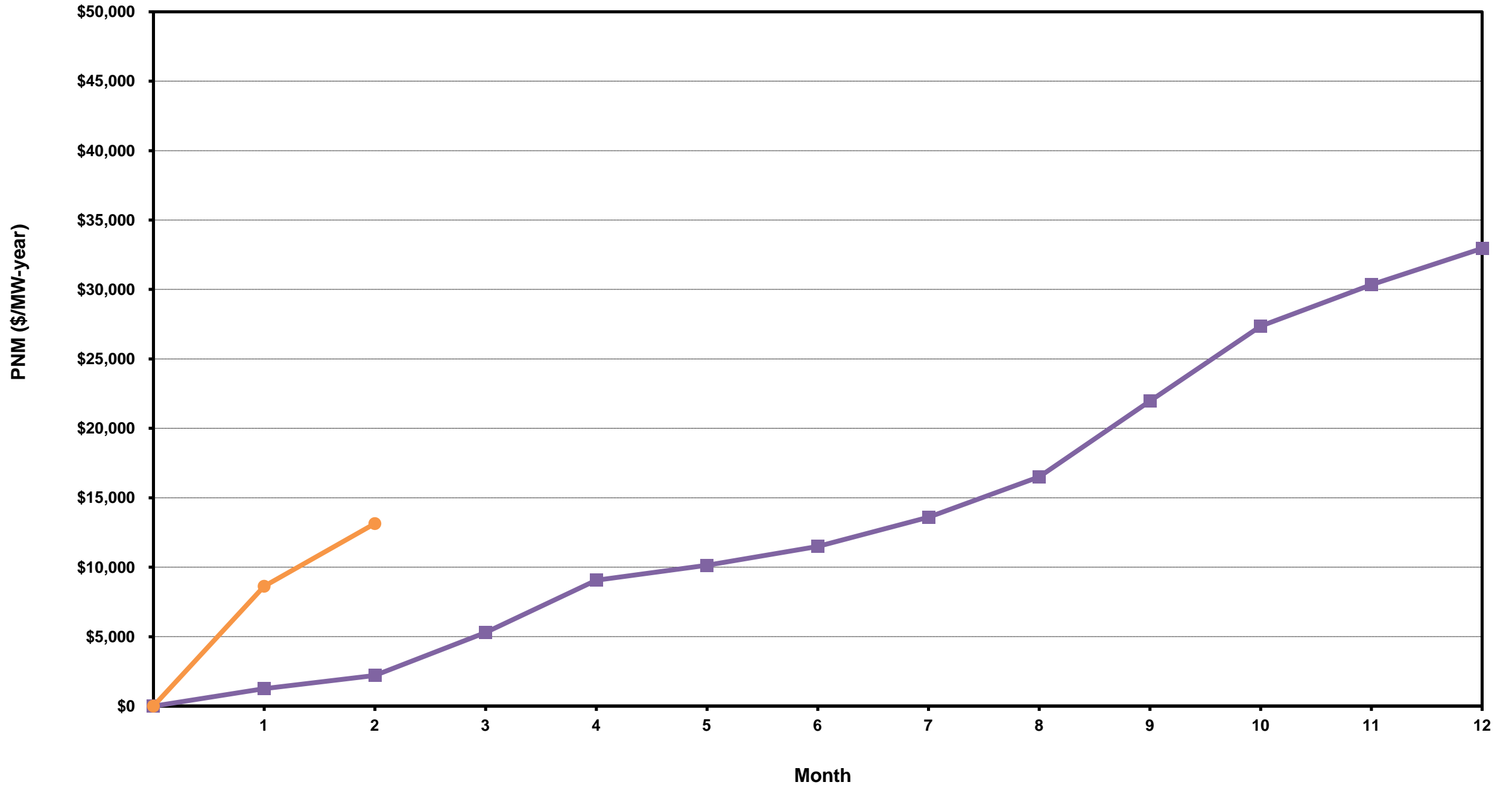
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ERCOT-Wide Cumulative Peaker Net Margin

PNM13 PNM14

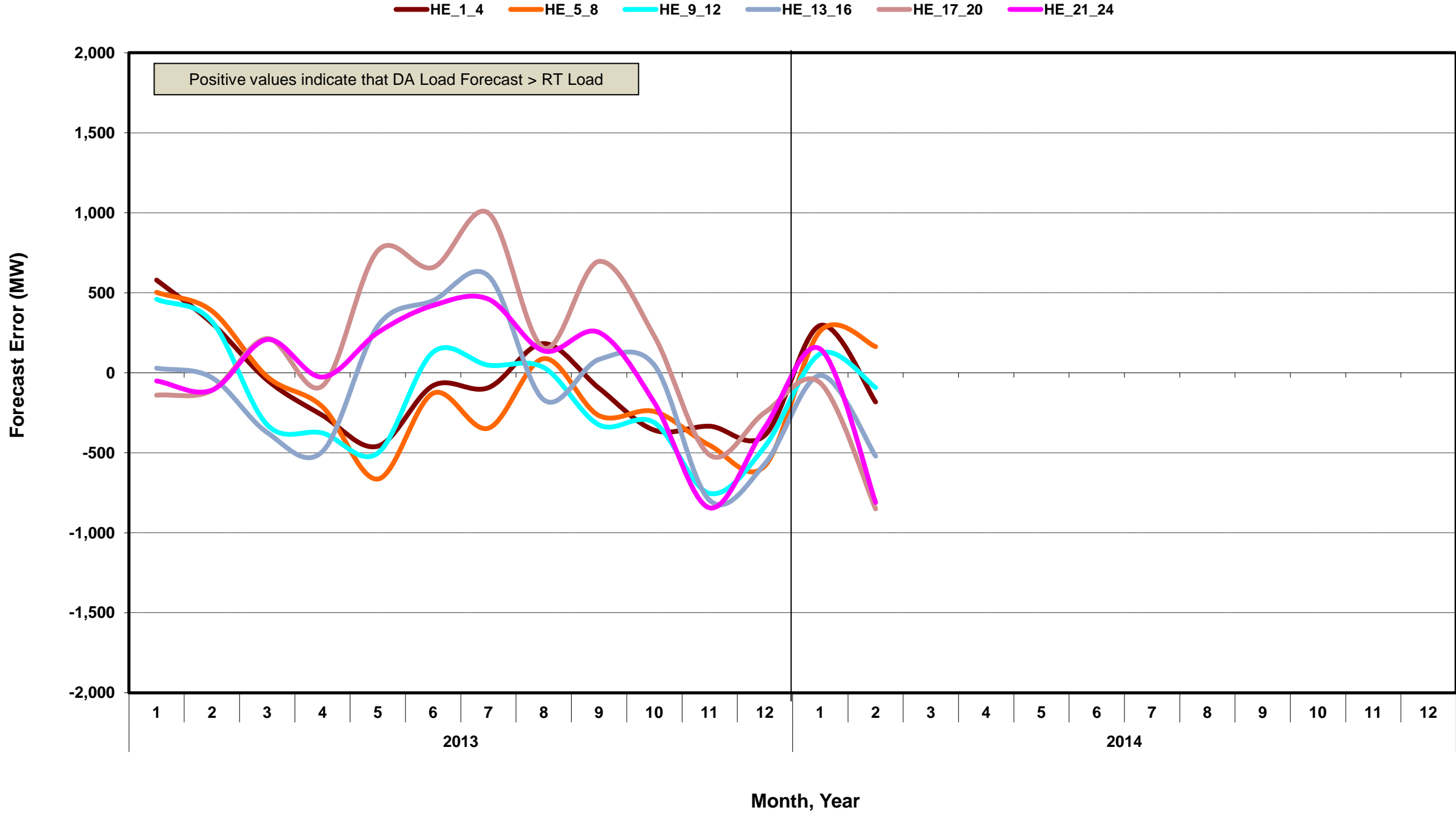


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DA vs. RT Load Forecast Error by Hour Ending

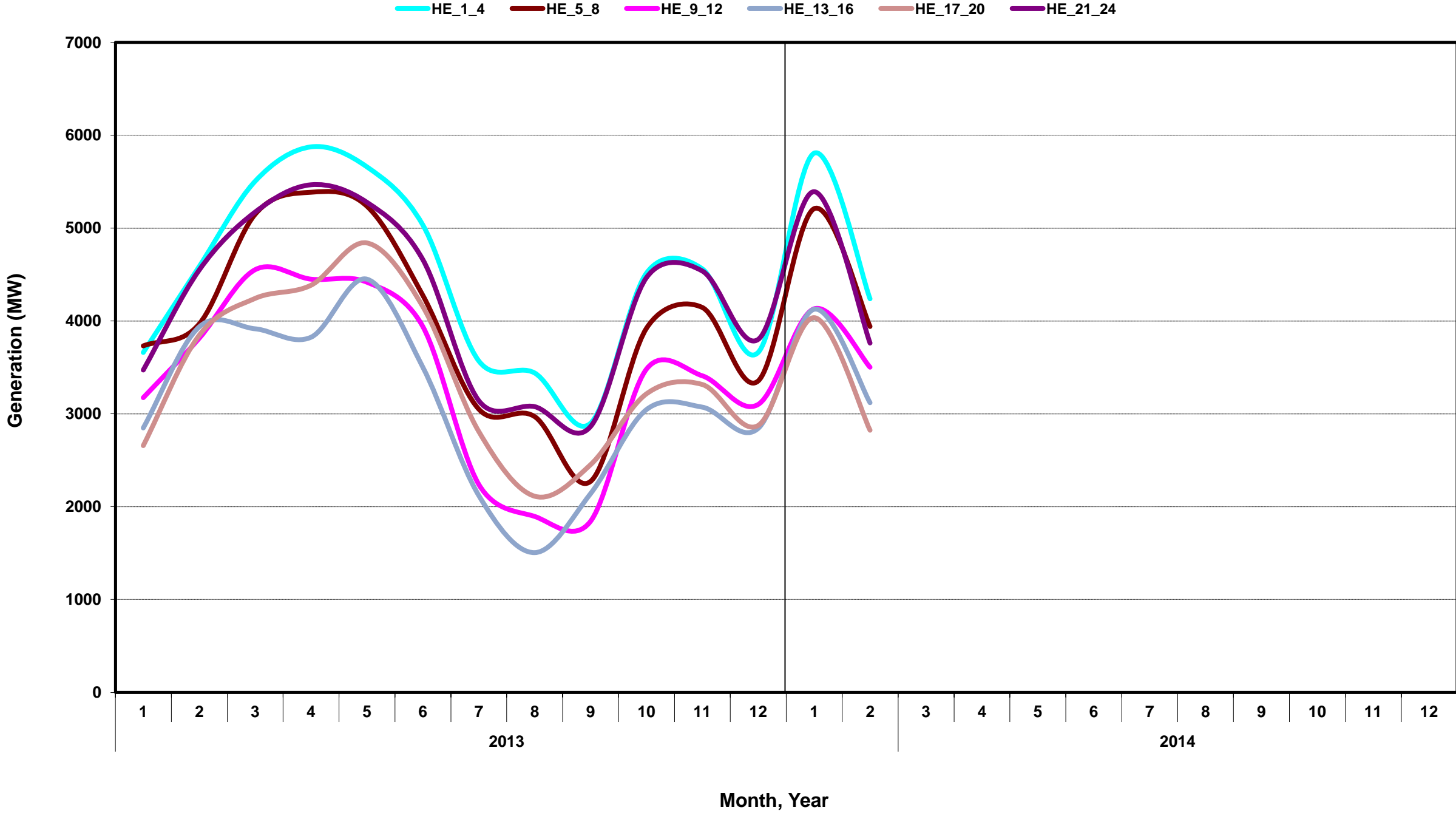


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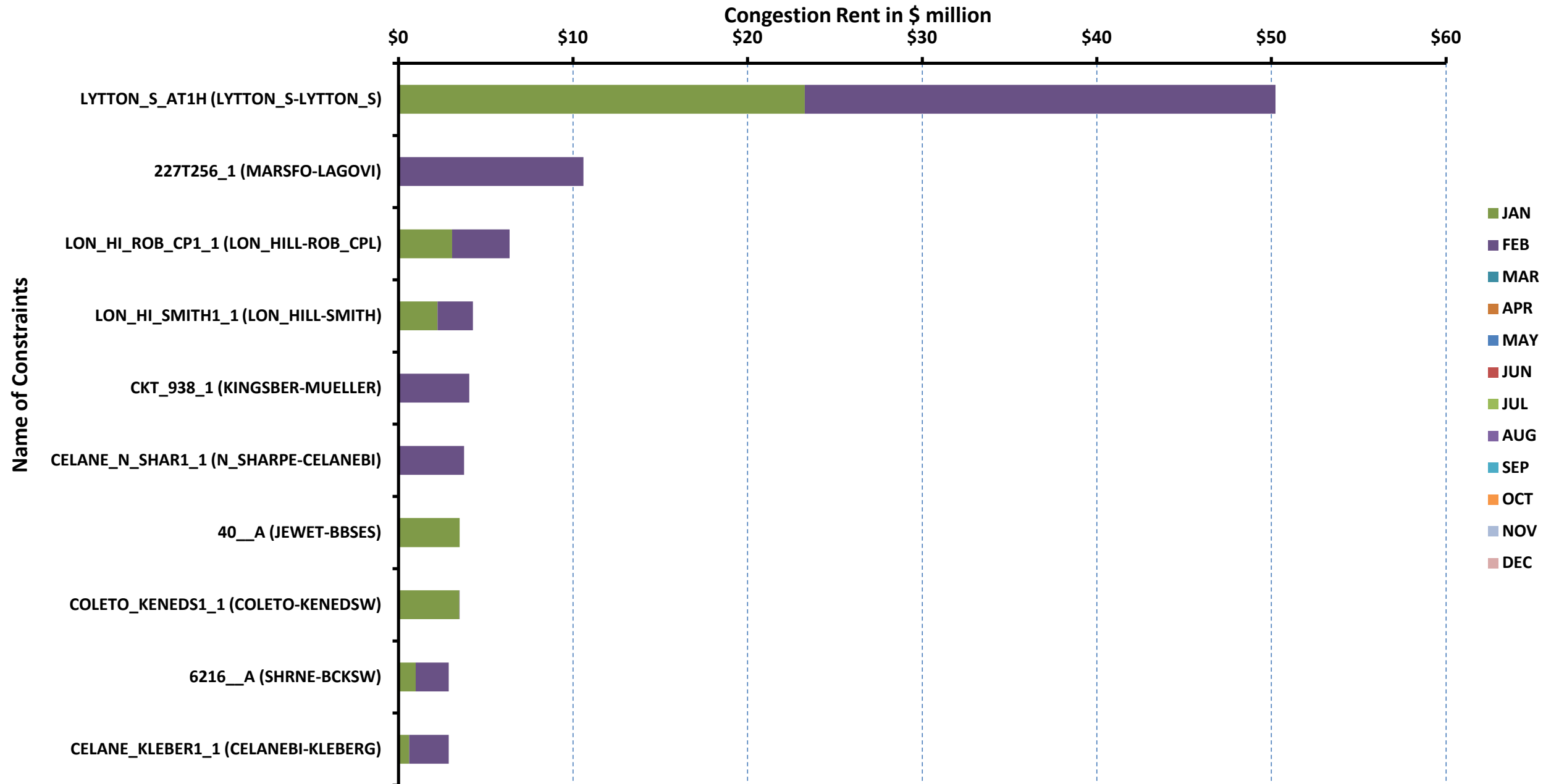
Monthly Average of Wind Generation by Hour Ending



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RT Congestion Constraint Rankings - 1

Top 10 Constraints by Total Congestion Rent



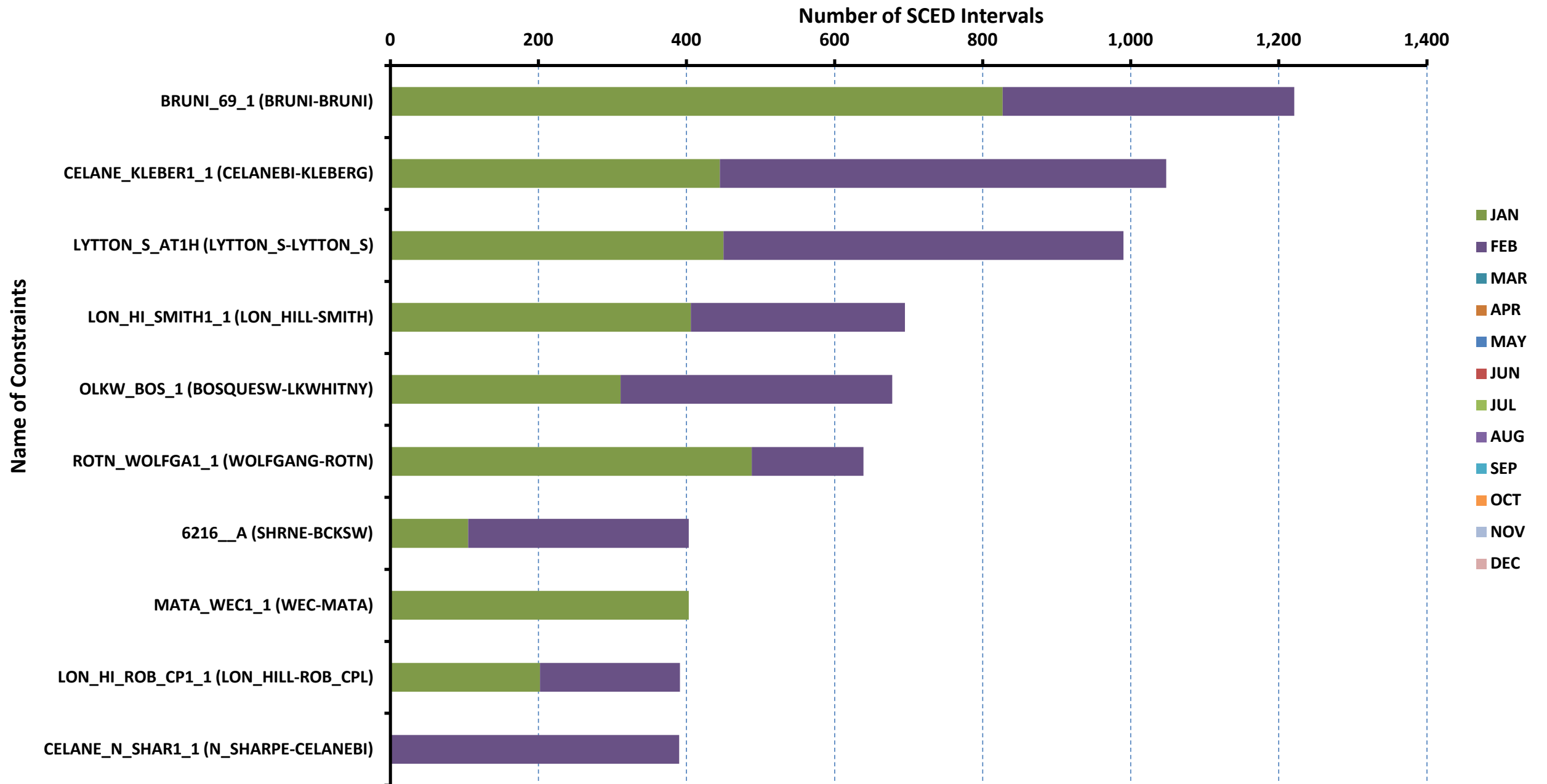
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RT Congestion Constraint Rankings - 2

Top 10 Constraints by Binding Frequency



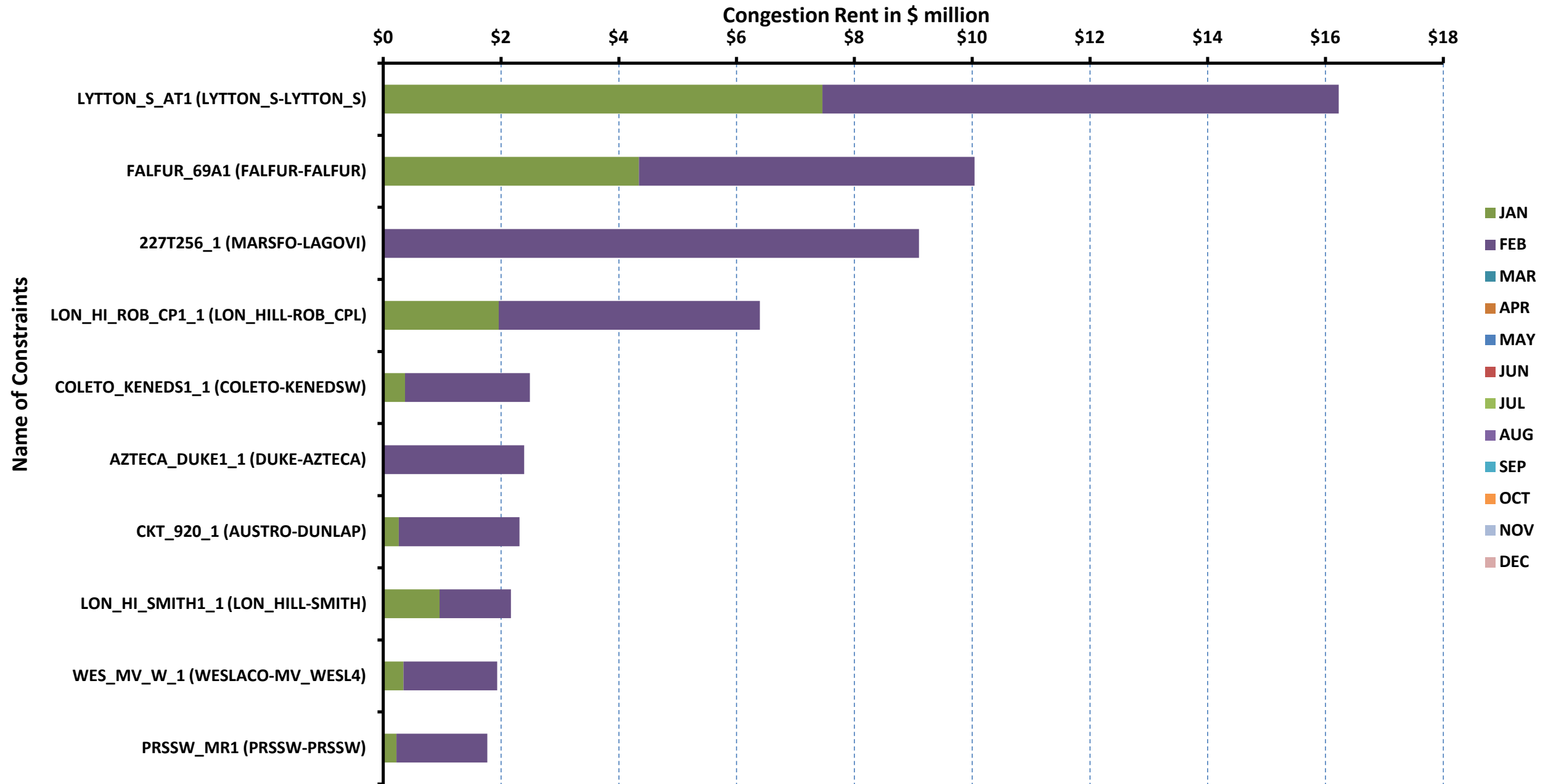
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DA Congestion Constraint Rankings - 1

Top 10 Constraints by Total Congestion Rent



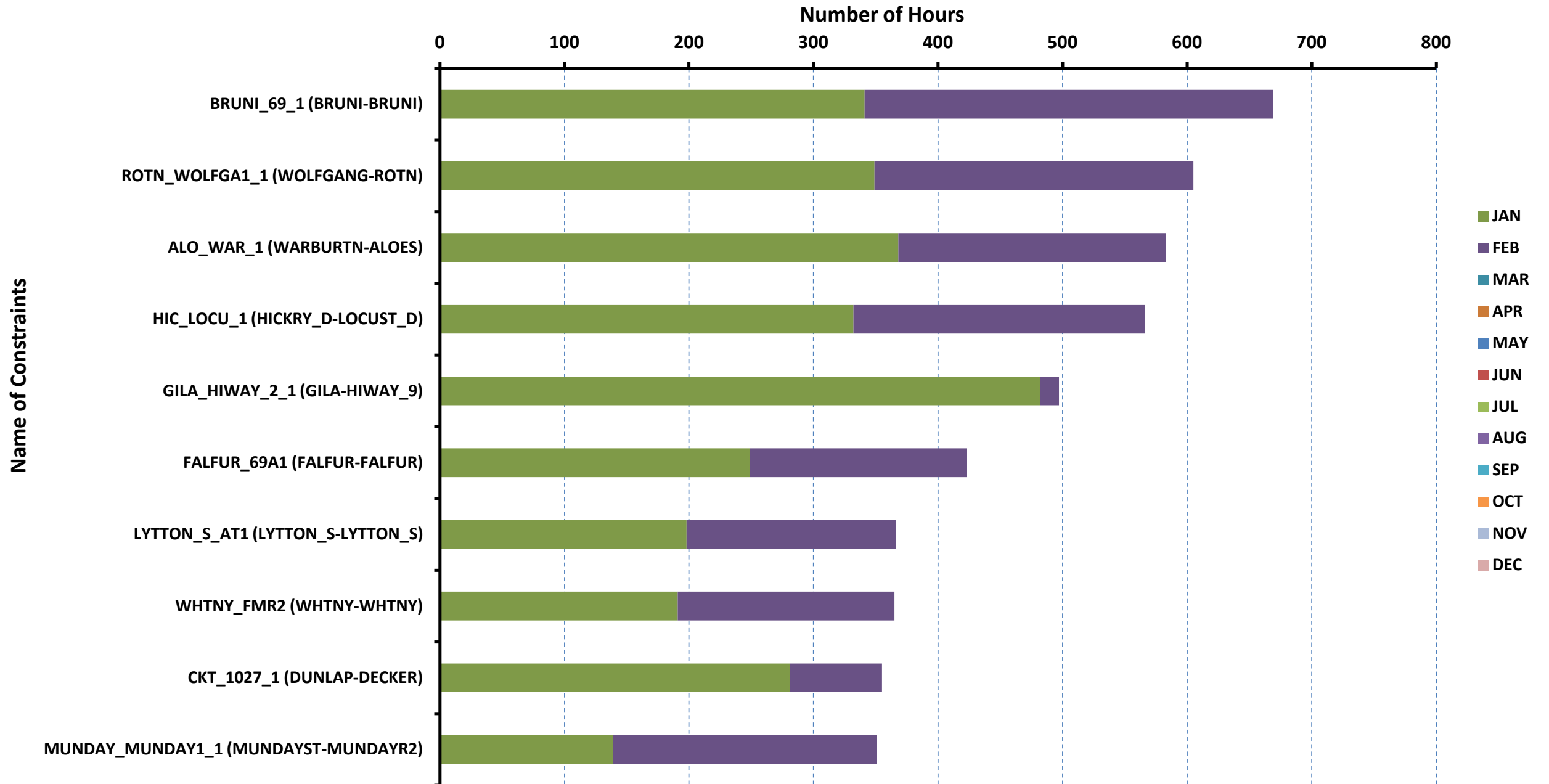
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DA Congestion Constraint Rankings - 2

Top 10 Constraints by Binding Frequency



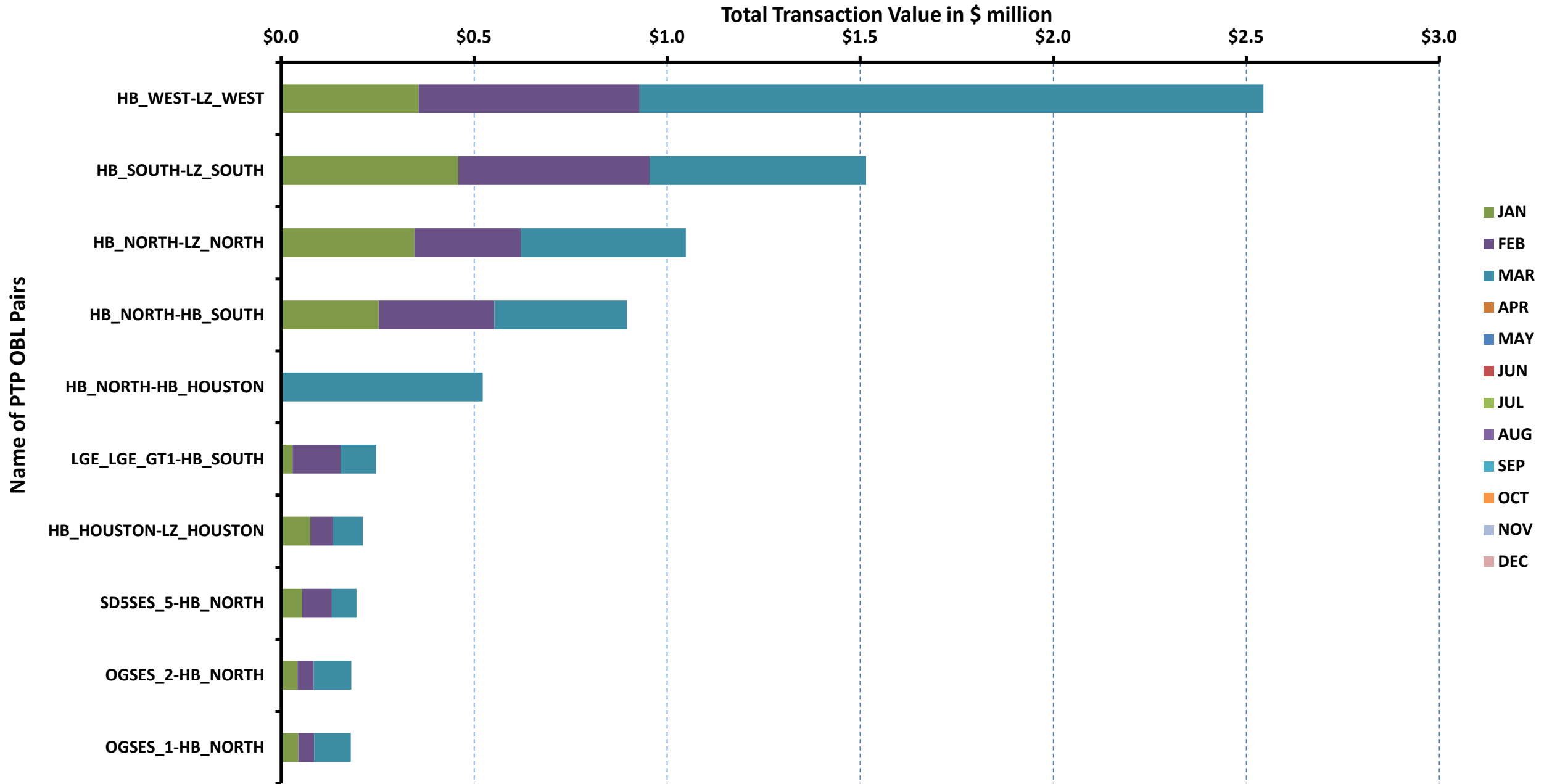
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Top 10 CRR Pairs Ranked by Monthly Auction Values - 1

Top 10 PTP Obligations by Total Transaction Value



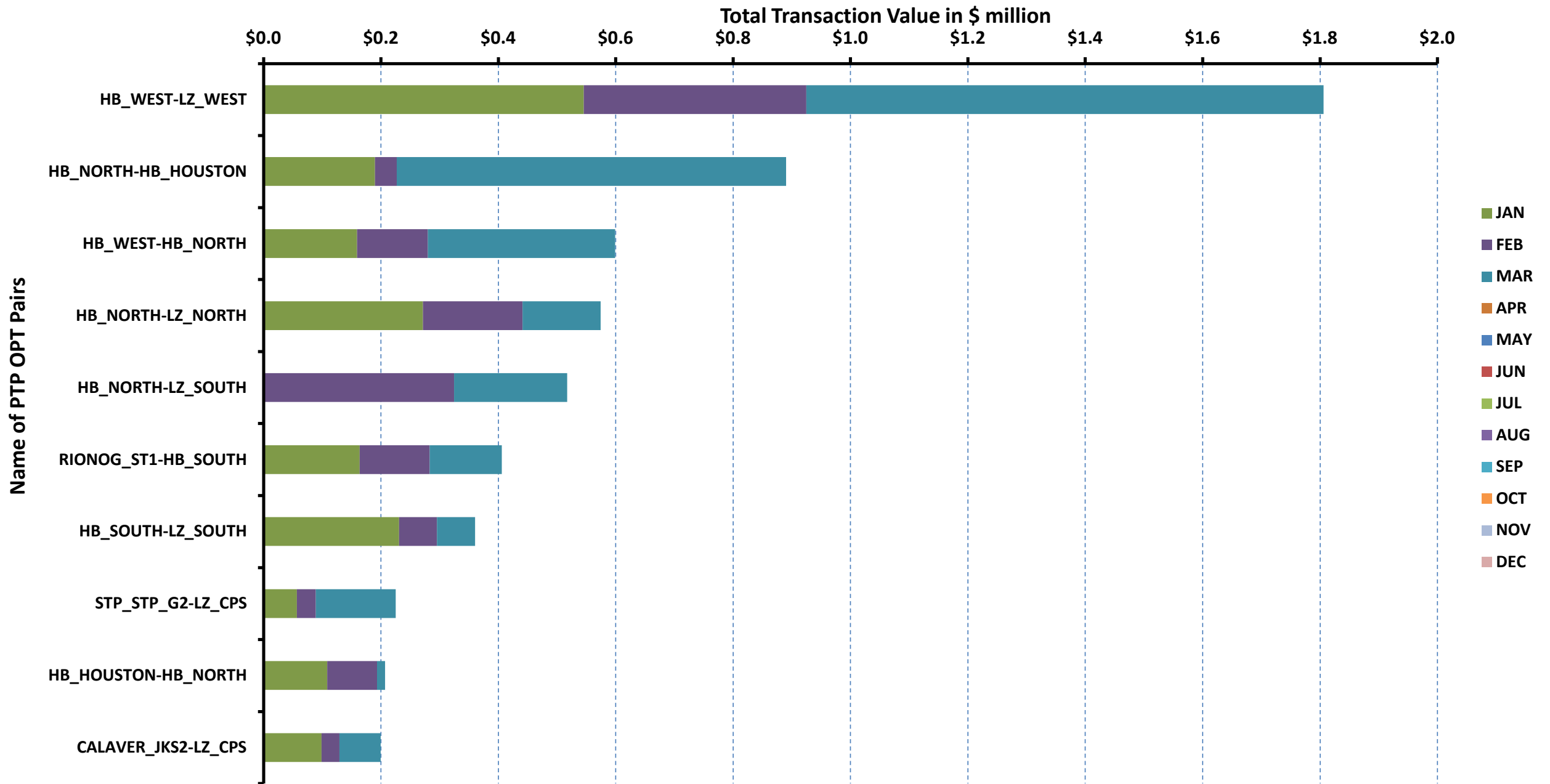
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Top 10 CRR Pairs Ranked by Monthly Auction Values - 2

Top 10 PTP Options by Total Transaction Value



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year	month	ASMW_REGDN	ASMW_NSPIN	ASMW_RRS	ASMW_REGUP
2013	1	391	1,352	2,800	448
2013	2	393	1,500	2,800	460
2013	3	385	1,435	2,800	446
2013	4	419	1,500	2,800	501
2013	5	463	1,378	2,800	489
2013	6	473	1,500	2,800	525
2013	7	427	1,483	2,800	487
2013	8	421	1,329	2,800	483
2013	9	449	1,284	2,800	480
2013	10	426	1,371	2,800	462
2013	11	397	1,452	2,800	452
2013	12	391	1,500	2,800	405
2014	1	368	1,500	2,800	427
2014	2	369	1,500	2,800	446

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year	ELIVERY HOUR	ASMW_REGDN	ASMW_NSPIN	ASMW_RRS	ASMW_REGUP
2013	1	457	1,286	2,800	576
2013	2	387	1,286	2,800	346
2013	3	367	1,394	2,800	303
2013	4	344	1,394	2,800	316
2013	5	368	1,394	2,800	378
2013	6	606	1,394	2,800	502
2013	7	459	1,416	2,800	719
2013	8	374	1,416	2,800	436
2013	9	400	1,416	2,800	478
2013	10	479	1,416	2,800	488
2013	11	456	1,467	2,800	521
2013	12	402	1,467	2,800	508
2013	13	361	1,467	2,800	452
2013	14	344	1,467	2,800	460
2013	15	328	1,496	2,800	397
2013	16	315	1,496	2,800	390
2013	17	320	1,496	2,800	428
2013	18	406	1,496	2,800	501
2013	19	447	1,478	2,800	453
2013	20	448	1,478	2,800	462
2013	21	406	1,478	2,800	429
2013	22	508	1,478	2,800	465
2013	23	568	1,286	2,800	653
2013	24	522	1,286	2,800	611
2014	1	355	1,500	2,800	392
2014	2	300	1,500	2,800	344
2014	3	330	1,500	2,800	324
2014	4	326	1,500	2,800	328
2014	5	398	1,500	2,800	410
2014	6	500	1,500	2,800	572
2014	7	462	1,500	2,800	940
2014	8	362	1,500	2,800	450
2014	9	309	1,500	2,800	423
2014	10	365	1,500	2,800	426
2014	11	353	1,500	2,800	497
2014	12	353	1,500	2,800	413
2014	13	342	1,500	2,800	365
2014	14	360	1,500	2,800	515
2014	15	325	1,500	2,800	295
2014	16	304	1,500	2,800	293
2014	17	307	1,500	2,800	367
2014	18	430	1,500	2,800	628
2014	19	372	1,500	2,800	552
2014	20	363	1,500	2,800	310
2014	21	354	1,500	2,800	336
2014	22	412	1,500	2,800	388
2014	23	456	1,500	2,800	461
2014	24	413	1,500	2,800	430

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year	month	MCPC REGDN	MCPC NSPIN	MCPC RRS	MCPC REGUP
2013	1	\$4.46	\$1.06	\$6.18	\$5.69
	2	\$5.40	\$5.55	\$10.92	\$10.79
	3	\$5.94	\$3.47	\$7.92	\$8.57
	4	\$8.34	\$3.73	\$10.21	\$10.47
	5	\$9.17	\$4.95	\$9.66	\$9.90
	6	\$4.91	\$4.13	\$9.84	\$10.34
	7	\$2.98	\$2.52	\$7.73	\$7.50
	8	\$2.69	\$5.68	\$11.37	\$10.18
	9	\$2.91	\$3.32	\$9.83	\$9.08
	10	\$5.73	\$4.83	\$12.87	\$9.51
	11	\$6.35	\$2.51	\$11.00	\$8.60
	12	\$5.19	\$1.80	\$9.90	\$8.17
2014	1	\$8.15	\$2.20	\$12.12	\$10.32
	2	\$14.28	\$4.28	\$24.28	\$45.03
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year	month	AScost REGDN	AScost NSPIN	AScost RRS	AScost REGUP
2013	1	\$0.05	\$0.04	\$0.50	\$0.07
	2	\$0.07	\$0.26	\$0.97	\$0.16
	3	\$0.07	\$0.16	\$0.71	\$0.12
	4	\$0.11	\$0.17	\$0.88	\$0.16
	5	\$0.12	\$0.19	\$0.73	\$0.13
	6	\$0.05	\$0.14	\$0.62	\$0.12
	7	\$0.03	\$0.08	\$0.48	\$0.08
	8	\$0.02	\$0.16	\$0.66	\$0.10
	9	\$0.03	\$0.10	\$0.63	\$0.10
	10	\$0.07	\$0.19	\$1.04	\$0.13
	11	\$0.07	\$0.11	\$0.92	\$0.12
	12	\$0.05	\$0.07	\$0.73	\$0.09
2014	1	\$0.08	\$0.09	\$0.90	\$0.12
	2	\$0.14	\$0.17	\$1.84	\$0.54
	3				
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	11				
	12				

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year	month	HE 1 4	HE 13 16	HE 17 20	HE 21 24	HE 5 8	HE 9 12
2013	1	579	29	-141	-51	503	459
	2	310	-30	-111	-109	386	320
	3	-47	-373	214	208	-24	-326
	4	-267	-491	-83	-27	-213	-377
	5	-460	293	763	251	-664	-503
	6	-81	451	658	421	-128	129
	7	-94	606	997	460	-346	47
	8	182	-168	155	136	89	32
	9	-97	84	695	252	-268	-326
	10	-360	48	228	-187	-242	-312
	11	-335	-797	-515	-844	-453	-755
	12	-390	-567	-248	-340	-581	-461
2014	1	295	-16	-64	148	261	118
	2	-183	-520	-851	-810	163	-93
	3						
	4						
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	10						
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year	month	HE 1 4	HE 13 16	HE 17 20	HE 21 24	HE 5 8	HE 9 12
2013	1	3660	2849	2659	3471	3733	3174
	2	4586	3937	3846	4547	3968	3812
	3	5504	3917	4243	5172	5149	4551
	4	5876	3826	4385	5466	5387	4449
	5	5660	4452	4840	5277	5237	4417
	6	5035	3504	4155	4661	4278	3940
	7	3570	2122	2812	3143	3052	2242
	8	3440	1505	2114	3077	2972	1897
	9	2898	2140	2453	2863	2273	1843
	10	4514	3046	3216	4466	3921	3481
	11	4561	3073	3317	4537	4146	3410
	12	3661	2845	2876	3802	3355	3102
2013	1	5808	4127	4036	5391	5211	4131
	2	4238	3120	2824	3762	3941	3502
2014	3						
	4						
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	10						
	11						
	12						

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category	year	item	rankvar	rank	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
FREQ EXIST	2014	BRUNI 69 1 (BRUNI-BRUNI)	1221	1	827	394	0	0	0	0	0	0	0	0	0	0
FREQ EXIST	2014	CELANE KLEBER1 1 (CELANEBI-KLEBERG)	1048	2	445	603	0	0	0	0	0	0	0	0	0	0
FREQ EXIST	2014	LYTTON S AT1H (LYTTON S-LYTTON S)	990	3	450	540	0	0	0	0	0	0	0	0	0	0
FREQ EXIST	2014	LON HI SMITH1 1 (LON HILL-SMITH)	695	4	406	289	0	0	0	0	0	0	0	0	0	0
FREQ EXIST	2014	OLKW BOS 1 (BOSQUESW-LKWHITNY)	678	5	311	367	0	0	0	0	0	0	0	0	0	0
FREQ EXIST	2014	ROTN WOLFGA1 1 (WOLFGANG-ROTN)	639	6	488	151	0	0	0	0	0	0	0	0	0	0
FREQ EXIST	2014	6216 A (SHRNE-BCKSW)	403	7	105	298	0	0	0	0	0	0	0	0	0	0
FREQ EXIST	2014	MATA WEC1 1 (WEC-MATA)	403	8	403	0	0	0	0	0	0	0	0	0	0	0
FREQ EXIST	2014	LON HI ROB CP1 1 (LON HILL-ROB CPL)	391	9	202	189	0	0	0	0	0	0	0	0	0	0
FREQ EXIST	2014	CELANE N SHAR1 1 (N SHARPE-CELANEBI)	390	10	0	390	0	0	0	0	0	0	0	0	0	0
TOP10 RENT	2014	LYTTON S AT1H (LYTTON S-LYTTON S)	50.24	1	23.272	26.968	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOP10 RENT	2014	227T256 1 (MARSFO-LAGOVI)	10.59	2	0.000	10.594	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOP10 RENT	2014	LON HI ROB CP1 1 (LON HILL-ROB CPL)	6.37	3	3.070	3.301	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOP10 RENT	2014	LON HI SMITH1 1 (LON HILL-SMITH)	4.27	4	2.246	2.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOP10 RENT	2014	CKT 938 1 (KINGSBER-MUELLER)	4.06	5	0.000	4.063	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOP10 RENT	2014	CELANE N SHAR1 1 (N SHARPE-CELANEBI)	3.76	6	0.000	3.756	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOP10 RENT	2014	40 A (JEWET-BBSES)	3.51	7	3.509	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOP10 RENT	2014	COLETO KENEDS1 1 (COLETO-KENEDSW)	3.49	8	3.488	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOP10 RENT	2014	6216 A (SHRNE-BCKSW)	2.89	9	0.992	1.895	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOP10 RENT	2014	CELANE KLEBER1 1 (CELANEBI-KLEBERG)	2.88	10	0.615	2.262	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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category	year	item	rankvar	rank	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
FREQ EXIST	2014	BRUNI 69 1 (BRUNI-BRUNI)	669	1	341	328	0	0	0	0	0	0	0	0	0	0
FREQ EXIST	2014	ROTN WOLFGA1 1 (WOLFGANG-ROTN)	605	2	349	256	0	0	0	0	0	0	0	0	0	0
FREQ EXIST	2014	ALO WAR 1 (WARBURTN-ALOES)	583	3	368	215	0	0	0	0	0	0	0	0	0	0
FREQ EXIST	2014	HIC LOCU 1 (HICKRY D-LOCUST D)	566	4	332	234	0	0	0	0	0	0	0	0	0	0
FREQ EXIST	2014	GILA HIWAY 2 1 (GILA-HIWAY 9)	497	5	482	15	0	0	0	0	0	0	0	0	0	0
FREQ EXIST	2014	FALFUR 69A1 (FALFUR-FALFUR)	423	6	249	174	0	0	0	0	0	0	0	0	0	0
FREQ EXIST	2014	LYTTON S AT1 (LYTTON S-LYTTON S)	366	7	198	168	0	0	0	0	0	0	0	0	0	0
FREQ EXIST	2014	WHTNY FMR2 (WHTNY-WHTNY)	365	8	191	174	0	0	0	0	0	0	0	0	0	0
FREQ EXIST	2014	CKT 1027 1 (DUNLAP-DECKER)	355	9	281	74	0	0	0	0	0	0	0	0	0	0
FREQ EXIST	2014	MUNDAY MUNDAY1 1 (MUNDAYST-MUND)	351	10	139	212	0	0	0	0	0	0	0	0	0	0
TOP10 RENT	2014	LYTTON S AT1 (LYTTON S-LYTTON S)	16.22	1	7.457	8.767	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOP10 RENT	2014	FALFUR 69A1 (FALFUR-FALFUR)	10.04	2	4.339	5.702	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOP10 RENT	2014	227T256 1 (MARSFO-LAGOVI)	9.10	3	0.000	9.097	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOP10 RENT	2014	LON HI ROB CP1 1 (LON HILL-ROB CPL)	6.40	4	1.961	4.434	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOP10 RENT	2014	COLETO KENEDS1 1 (COLETO-KENEDSW)	2.49	5	0.371	2.119	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOP10 RENT	2014	AZTECA DUKE1 1 (DUKE-AZTECA)	2.39	6	0.000	2.392	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOP10 RENT	2014	CKT 920 1 (AUSTRO-DUNLAP)	2.31	7	0.263	2.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOP10 RENT	2014	LON HI SMITH1 1 (LON HILL-SMITH)	2.17	8	0.954	1.213	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOP10 RENT	2014	WES MV W 1 (WESLACO-MV WESL4)	1.93	9	0.342	1.590	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOP10 RENT	2014	PRSSW MR1 (PRSSW-PRSSW)	1.77	10	0.224	1.544	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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fr_option	year	pair	total_value	rank	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
N	2014	HB WEST-LZ WEST	2.54	1	0.356	0.572	1.616	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	2014	HB SOUTH-LZ SOUTH	1.52	2	0.459	0.495	0.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	2014	HB NORTH-LZ NORTH	1.05	3	0.345	0.276	0.427	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	2014	HB NORTH-HB SOUTH	0.90	4	0.252	0.300	0.343	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	2014	HB NORTH-HB HOUSTON	0.52	5	0.000	0.000	0.522	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	2014	LGE LGE GT1-HB SOUTH	0.25	6	0.030	0.124	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	2014	HB HOUSTON-LZ HOUSTON	0.21	7	0.076	0.059	0.077	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	2014	SD5SES 5-HB NORTH	0.20	8	0.054	0.077	0.064	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	2014	OGSES 2-HB NORTH	0.18	9	0.043	0.041	0.098	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	2014	OGSES 1-HB NORTH	0.18	10	0.045	0.041	0.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Y	2014	HB WEST-LZ WEST	1.81	1	0.545	0.379	0.881	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Y	2014	HB NORTH-HB HOUSTON	0.89	2	0.190	0.037	0.663	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Y	2014	HB WEST-HB NORTH	0.60	3	0.159	0.121	0.319	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Y	2014	HB NORTH-LZ NORTH	0.57	4	0.271	0.170	0.133	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Y	2014	HB NORTH-LZ SOUTH	0.52	5	0.000	0.324	0.193	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Y	2014	RIONOG ST1-HB SOUTH	0.41	6	0.164	0.119	0.123	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Y	2014	HB SOUTH-LZ SOUTH	0.36	7	0.231	0.065	0.065	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Y	2014	STP STP G2-LZ CPS	0.22	8	0.057	0.032	0.136	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Y	2014	HB HOUSTON-HB NORTH	0.21	9	0.108	0.085	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Y	2014	CALAVER JKS2-LZ CPS	0.20	10	0.099	0.031	0.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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