



Market Highlights¹ (August 8–August 21)

- The average DLAP price in the integrated forward market was \$70.43. The maximum and minimum DLAP prices were \$466.06 and -\$11.39, respectively. The maximum and minimum PNode prices in the integrated forward market were \$950.00 and -\$221.80 respectively.
- The top two interties congested in the integrated forward market were NOB_ITC and MALIN500. Congestion rents in these two weeks totaled \$57,975,892.15.
- The average day-ahead ancillary service prices were between \$0.00 and \$305.50.
- Approximately 98.49 percent of the RUC requirements were met from RA units.
- The average real-time FMM DLAP price was \$66.41, with a maximum price of \$1,053.10 and a minimum price of -\$151.11. The maximum and minimum PNode prices in the FMM were \$1,128.00 and -\$612.38, respectively.
- Out of the total 1,344 FMM intervals, 27 intervals saw DLAP prices above \$250, and 1 intervals saw DLAP prices below -\$150.
- Out of the total 1,344 FMM intervals, 148 intervals saw ELAP prices above \$250 And 1 intervals saw ELAP prices below -\$150.
- The average real-time FMM ELAP price was \$49.41, with a maximum price of \$1,127.20 and a minimum price of -\$167.25.
- The average real-time RTD DLAP price was \$58.52, with a maximum price of \$1,036.60 and a minimum price of -\$23.06. The maximum and minimum PNode prices in the RTD were \$1,283.21 and -\$611.64, respectively.
- Out of the total 4,032 RTD intervals, 99 intervals saw DLAP prices above \$250 and 0 interval saw DLAP prices below -\$150.
- Out of the total 4,032 RTD intervals, 189 intervals saw ELAP prices above \$250 and 11 intervals saw ELAP prices below -\$150. The average real-time RTD ELAP price was \$46.40, with a maximum price of \$1,051.19 and a minimum price of -\$168.12.
- Root cause for daily high price events are noted in Tables 1 and Table 2.

Table 1 FMM Intervals	
Trade Date	Root Cause
FMM Aug 8 HE 18, HE19, HE 20	Load changes, changes in renewable forecast, reduction of net imports.

¹ A description of the metrics presented in this report is available at <http://www.caiso.com/Documents/WeeklyPerformanceReportMetricsKey.pdf>



Table 1 FMM Intervals	
Trade Date	Root Cause
FMM Aug 9 HE 17, HE 18, HE 19, HE 20, HE 21	Load changes, changes in renewable forecast, generator de-rate.
FMM Aug 10 HE 11	Congestion on 30060_MIDWAY_500_24156_VINCENT_500_BR_1_1 and congestion on 7820_TL_230S_OVERLOAD_NG.
FMM Aug 15 HE 6	Load changes, congestion on 7820_TL_230S_OVERLOAD_NG, re-dispatch of resources.

Table 1 RTD Intervals	
Trade Date	Root Cause
RTD Aug 8 HE 14	Congestion on 22468_MIGUEL_500_22472_MIGUELMP_1.0_XF_80 and congestion on 30060_MIDWAY_500_24156_VINCENT_500_BR_1_1.
RTD Aug 9 HE 13	Load changes and congestion on 22192_DOUBLTTP_138_22300_FRIARS_138_BR_1_1, congestion on 24016_BARRE_230_24154_VILLA PK_230_BR_1_1, and congestion on 30060_MIDWAY_500_24156_VINCENT_500_BR_1_1.
RTD Aug 9 HE 14	Load changes and congestion 30060_MIDWAY_500_24156_VINCENT_500_BR_1_1.
RTD Aug 9 HE 15	Renewable deviation and congestion on 30060_MIDWAY_500_24156_VINCENT_500_BR_1_1.
RTD Aug 9 HE 16, HE 17, HE 18, HE 19, HE 20	Generator outages, load changes, and renewable deviation.
RTD Aug 10 HE 10	Load changes and renewable deviation.
RTD Aug 10 HE 12	Congestion on 22468_MIGUEL_500_22472_MIGUELMP_1.0_XF_80, congestion on 24016_BARRE_230_24154_VILLA PK_230_BR_1_1, congestion on 30060_MIDWAY_500_24156_VINCENT_500_BR_1_1, and congestion on 7820_TL_230S_OVERLOAD_NG.
RTD Aug 11 HE 1	Congestion on 7820_TL_230S_OVERLOAD_NG and re-dispatch of resources.
RTD Aug 11 HE 12; Aug 12 HE 1	Congestion on 7820_TL_230S_OVERLOAD_NG and renewable deviation.
RTD Aug 12 HE 16	Congestion on 30060_MIDWAY_500_24156_VINCENT_500_BR_1_1, congestion on 7820_TL_230S_OVERLOAD_NG, and renewable deviation.
RTD Aug 13 HE 18	Congestion on 22192_DOUBLTTP_138_22300_FRIARS_138_BR_1_1, congestion on 22192_DOUBLTTP_138_22648_PENSQTOS_138_BR_1_1, congestion on 22300_FRIARS_138_22500_MISSION_138_BR_1_1, and congestion on 24016_BARRE_230_24154_VILLA PK_230_BR_1_1.
RTD Aug 14 HE 15	Load changes, congestion on 24016_BARRE_230_24154_VILLA PK_230_BR_1_1, and congestion on 30060_MIDWAY_500_24156_VINCENT_500_BR_1_1.
RTD Aug 14 HE 16; Aug 15 HE 15; Aug 16 HE 17, HE 20	Load changes and congestion on 30060_MIDWAY_500_24156_VINCENT_500_BR_1_1.
RTD Aug 14 HE 24; Aug 15 HE 23, HE 24; Aug 19 HE 15	Congestion on 30060_MIDWAY_500_24156_VINCENT_500_BR_1_1.
RTD Aug 15 HE 16	Load changes, congestion on 30060_MIDWAY_500_24156_VINCENT_500_BR_1_1 and re-dispatch of resources.
RTD Aug 16 HE 16	Renewable deviation, generator outage, and congestion on



Table 1 RTD Intervals	
Trade Date	Root Cause
	30060_MIDWAY_500_24156_VINCENT_500_BR_1_1.
RTD Aug 16 HE 21	Congestion on 30060_MIDWAY_500_24156_VINCENT_500_BR_1_1, renewable deviation, and decrease of net imports.
RTD Aug 16 HE 22	Congestion on 30060_MIDWAY_500_24156_VINCENT_500_BR_1_1 and congestion on 24086_LUGO_500_26105_VICTORVL_500_BR_1_1.
RTD Aug 16 HE 23 and HE 24	Congestion on 30060_MIDWAY_500_24156_VINCENT_500_BR_1_1 and congestion on 7820_TL_230S_OVERLOAD_NG.

Figure 1: Day-Ahead (IFM) LAP LMP and Cleared Bid-In Demand

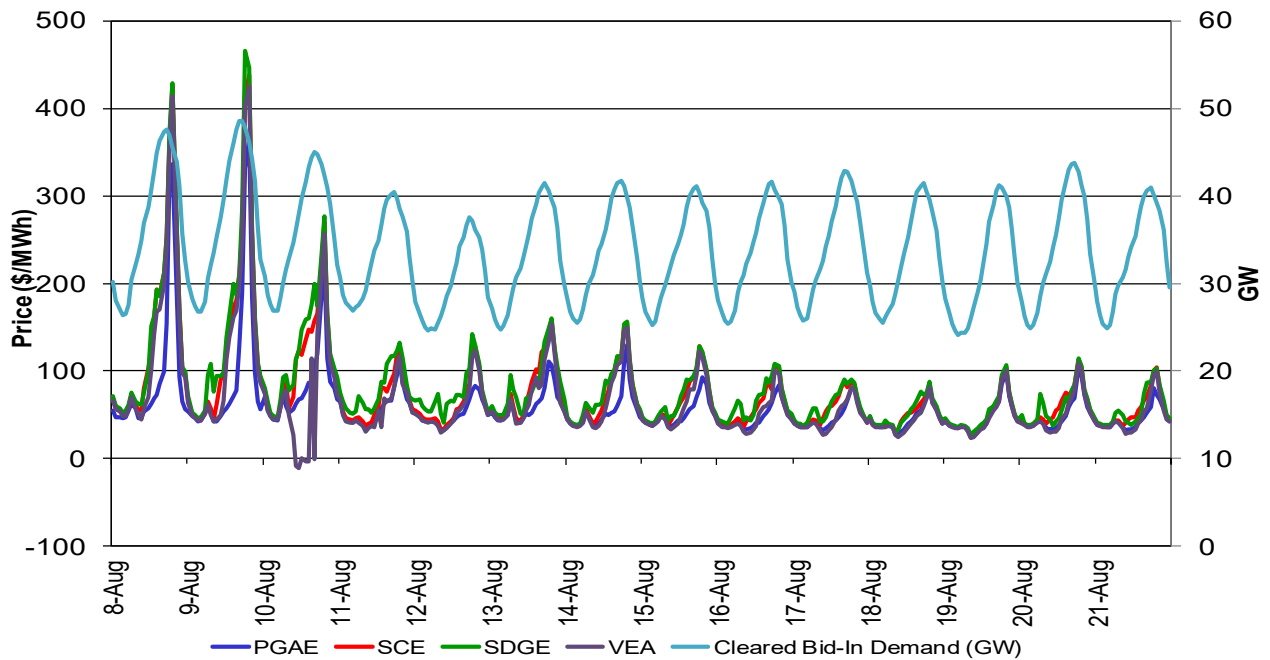




Figure 2: Day-Ahead Congestion Rents

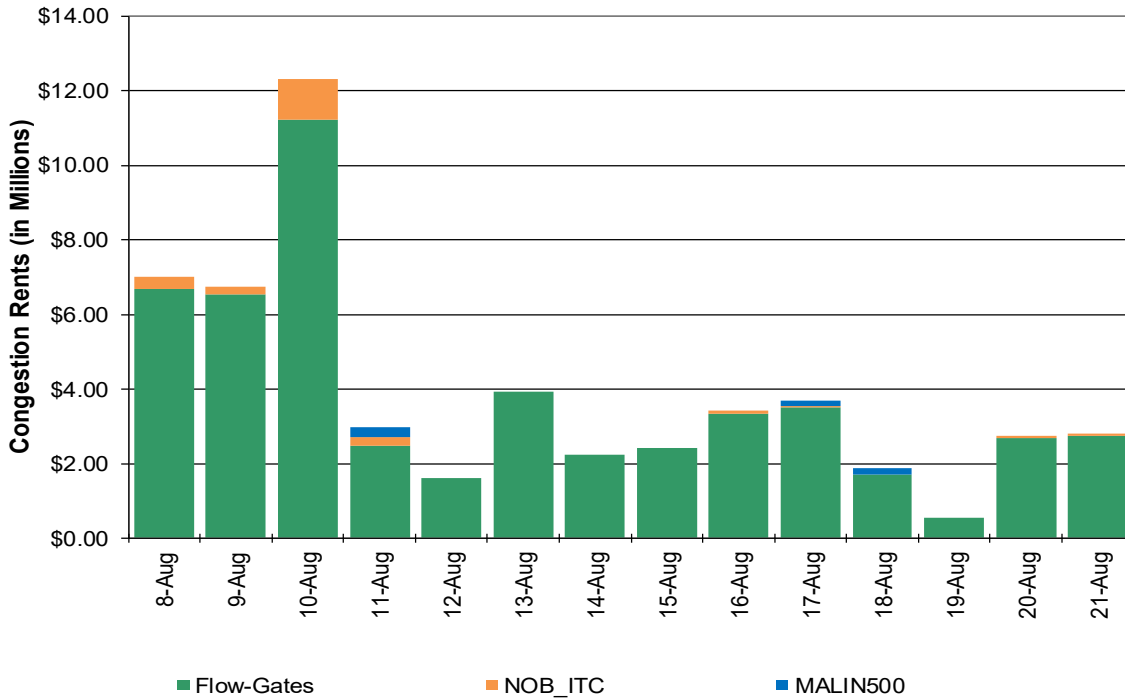


Figure 3: Day-Ahead Congestion Rents for Flow-Based Constraints

Transmission Constraint	Congestion Rent
30060 MIDWAY 500 24156 VINCENT 500 BR 1 1	\$ 16,723,948.89
24016 BARRE 230 24154 VILLA PK 230 BR 1 1	\$ 4,970,190.55
24016 BARRE 230 25201 LEWIS 230 BR 1 1	\$ 3,443,836.19
7820 TL23040 IV SPS NG	\$ 2,621,825.82
24092 MIRALOMA 500 24093 MIRALOM 230 XF 4 P	\$ 2,380,772.76
22192 DOUBLTTP 138 22300 FRIARS 138 BR 1 1	\$ 2,304,379.00
30575 WND MSTR 230 38610 DELTAPMP 230 BR 1 1	\$ 757,549.36
22596 OLD TOWN 230 22504 MISSION 230 BR 1 1	\$ 591,731.04
22208 EL CAJON 69.0 22408 LOSCOCHS 69.0 BR 1 1	\$ 424,939.36
24092 MIRALOMA 500 24093 MIRALOM 230 XF 1 P	\$ 423,338.96
22820 SWEETWTR 69.0 22476 MIGUELTP 69.0 BR 1 1	\$ 357,536.64
22500 MISSION 138 22496 MISSION 69.0 XF 1	\$ 269,341.78
22136 CLAIMNT 69.0 22140 CLARMTTP 69.0 BR 1 1	\$ 248,092.06
24156 VINCENT 500 24155 VINCENT 230 XF 3	\$ 231,805.63
34548 KETTLEMN 70.0 34552 GATES 70.0 BR 1 1	\$ 195,542.27
OMS 4790142 Caribou Bank	\$ 194,435.16
SUMMIT_BG	\$ 181,938.74
22256 ESCNDIDO 69.0 22724 SANMRCOS 69.0 BR 1 1	\$ 178,109.17
30280 POE 230 30330 RIO OSO 230 BR 1 1	\$ 133,951.47

Figure 3: Day-Ahead Congestion Rents for Flow-Based Constraints (contin.)

Transmission Constraint	Congestion Rent
34752 KERN PWR 115 34755 TEVISJ2 115 BR 1 1	\$ 128,529.35
30515 WARNERVL 230 30800 WILSON 230 BR 1 1	\$ 120,634.56
34480 KEARNEY 70.0 34512 CARUTHRS 70.0 BR 1 1	\$ 116,371.96
22604 OTAY 69.0 22616 OTAYLKTP 69.0 BR 1 1	\$ 108,509.45
34469 GFFNJCT 70.0 34470 GIFFEN 70.0 BR 1 1	\$ 95,958.45
32326 ENCL TAP 60.0 32332 PEASE 60.0 BR 1 1	\$ 91,444.95
31334 CLER LKE 60.0 31338 KONOCTI6 60.0 BR 1 1	\$ 83,715.47
22592 OLD TOWN 69.0 22596 OLD TOWN 230 XF 2	\$ 82,777.22
32225 BRNSWKT1 115 32222 DTCH2TAP 115 BR 1 1	\$ 81,909.24
OMS 6160255 ELNIDO-LAFRESA 4 NG	\$ 79,169.97
38136 MARBLE 69.0 64281 MARBLSP 60.0 XF 1	\$ 73,400.95
32218 DRUM 115 32244 BRNSWKT2 115 BR 2 1	\$ 69,675.76
30525 C.COSTA 230 30575 WND MSTR 230 BR 1 1	\$ 66,846.14
25001 GOODRICH 230 24076 LAGUBELL 230 BR 1 1	\$ 58,933.07
34860 TAFT 70.0 34943 Q356TAP 70.0 BR 1 1	\$ 55,402.25
22548 NATNLCTY 69.0 22824 SWTWTRTP 69.0 BR 1 1	\$ 48,402.70
33203 MISSON 115 33204 POTRERO 115 BR 1 1	\$ 46,017.22
22356 IMPRLVLY 230 21025 ELCENTRO 230 BR 1 1	\$ 42,777.42
31104 CARLOTTA 60.0 31105 RIODLLTP 60.0 BR 1 1	\$ 35,145.77
24126 RIOHONDO 230 24155 VINCENT 230 BR 2 1	\$ 34,479.14
34112 EXCHEQUR 115 34116 LE GRAND 115 BR 1 1	\$ 31,978.86
31090 HMBLT BY 60.0 31100 EEL RIVR 60.0 BR 1 1	\$ 31,019.85
30830 KEARNEY 230 30835 HERNDON 230 BR 1 1	\$ 26,598.54
34932 WASCO 70.0 34934 SEMITRPC 70.0 BR 1 1	\$ 15,451.52
22831 SYCAMORE 138 22832 SYCAMORE 230 XF 1	\$ 10,562.66
31336 HPLND JT 60.0 31206 HPLND JT 115 XF 2	\$ 10,197.29
31108 SWNS FLT 60.0 31110 BRDGVLE 60.0 BR 1 1	\$ 9,796.39
35646 MRGN HIL 115 35648 LLAGAS 115 BR 1 1	\$ 7,276.10
33506 STANISLS 115 33503 FRGTNTP2 115 BR 1 1	\$ 6,469.16
32301 GLEAF2TP 60.0 32328 YBA CTYJ 60.0 BR 1 1	\$ 4,979.56
31640 TRES VIS 60.0 31644 BIGGSJCT 60.0 BR 1 1	\$ 2,891.97
33050 CC SUB 60.0 33000 CC SUB 115 XF 2	\$ 2,854.48
31086 EUREKA 60.0 31090 HMBLT BY 60.0 BR 1 1	\$ 2,817.26
22372 KEARNY 69.0 22496 MISSION 69.0 BR 1 1	\$ 1,540.16
22740 SANYSRO 69.0 22616 OTAYLKTP 69.0 BR 1 1	\$ 1,200.36
22524 MORHILTP 69.0 22528 MOROHILL 69.0 BR 1 1	\$ 1,037.17
31080 HUMBOLDT 60.0 31088 HMBLT JT 60.0 BR 1 1	\$ 934.43
33950 RVRBK TP 115 33934 TULLOCH 115 BR 1 1	\$ 765.87
22296 FENTONTP 69.0 22292 FENTON 69.0 BR 1 1	\$ 738.85
32208 GLEAF TP 115 32214 RIO OSO 115 BR 1 1	\$ 722.64
34116 LE GRAND 115 34134 WILSONAB 115 BR 1 1	\$ 592.92

Figure 3: Day-Ahead Congestion Rents for Flow-Based Constraints (contin.)

Transmission Constraint	Congestion Rent
HUMBOLDT IMP NG	\$ 587.40
31566 KESWICK 60.0 31582 STLLWATR 60.0 BR 1 1	\$ 511.62
33543 AEC TP2 115 33540 TESLA 115 BR 1 1	\$ 431.34
34859 PRMTFMTP 70.0 34873 Q484TP 70.0 BR 1 1	\$ 346.62
99254 J.HINDS2 230 24806 MIRAGE 230 BR 1 1	\$ 343.96
31597 DESCHTP1 60.0 31592 DESCHUTS 60.0 BR 1 1	\$ 256.02
32218 DRUM 115 32219 DR360370 115 BR 1 1	\$ 175.62
32380 WEMR SWS 60.0 32382 FORST HL 60.0 BR 1 1	\$ 83.62
Totals	\$ 38,326,536.89

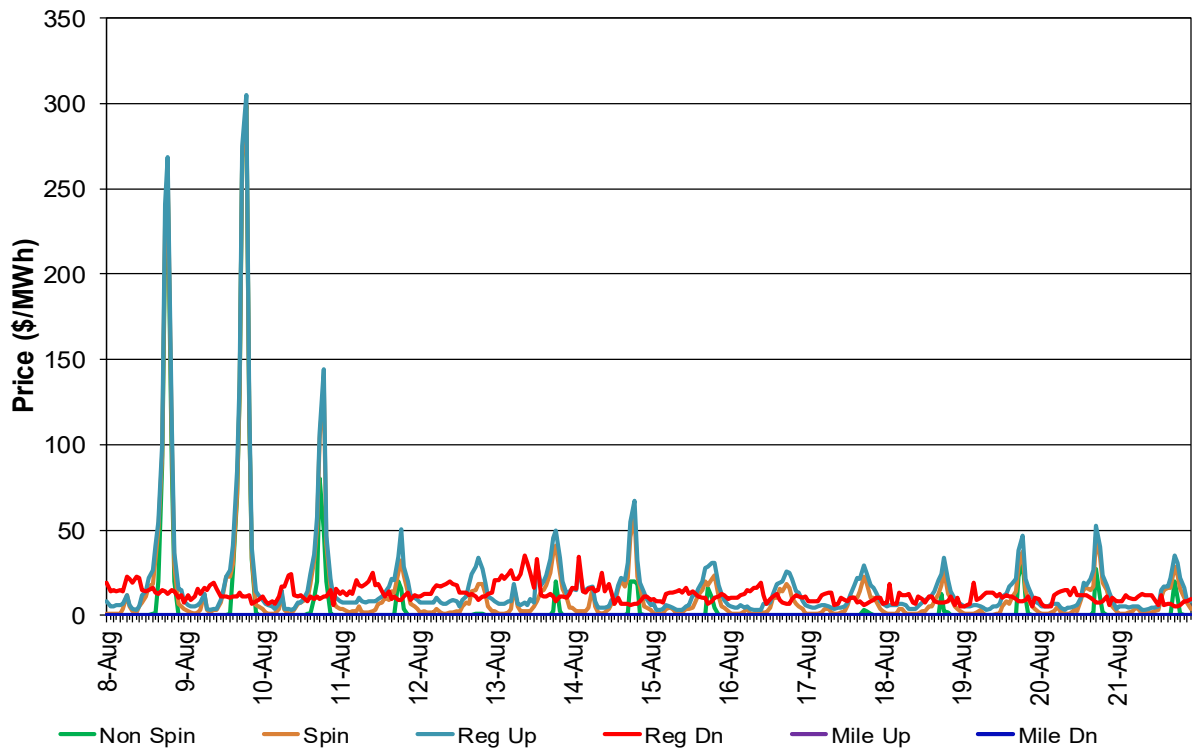
Figure 4: Day-Ahead (IFM) Average A/S Price




Figure 5: Day-Ahead Average RUC Price

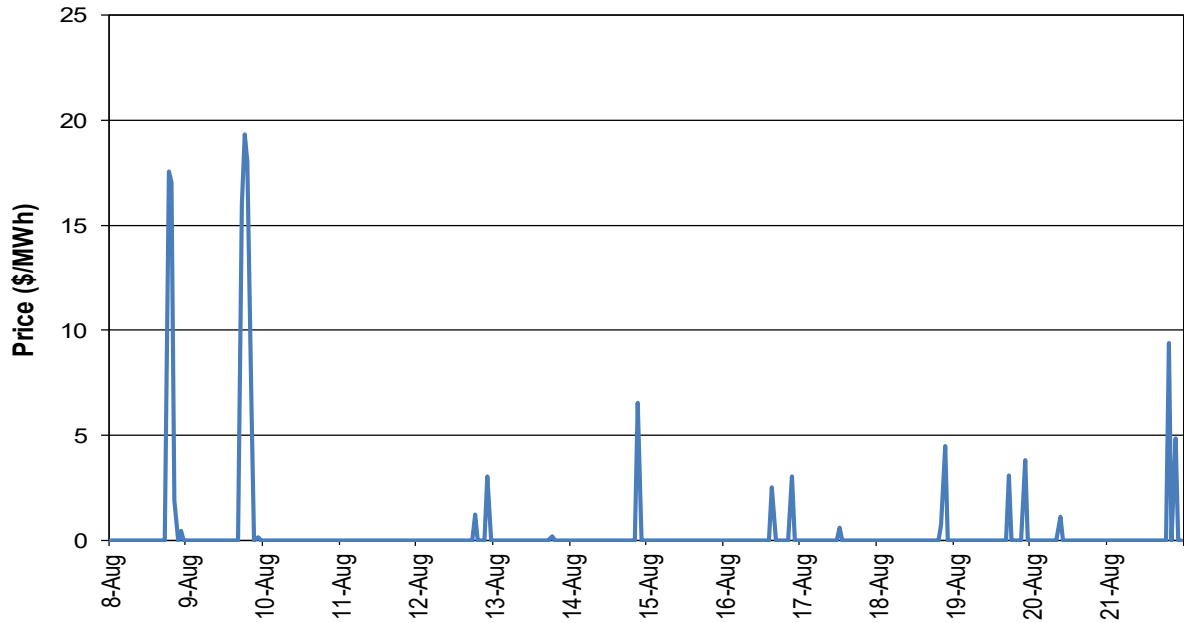


Figure 6: Real-Time FMM Average A/S Price

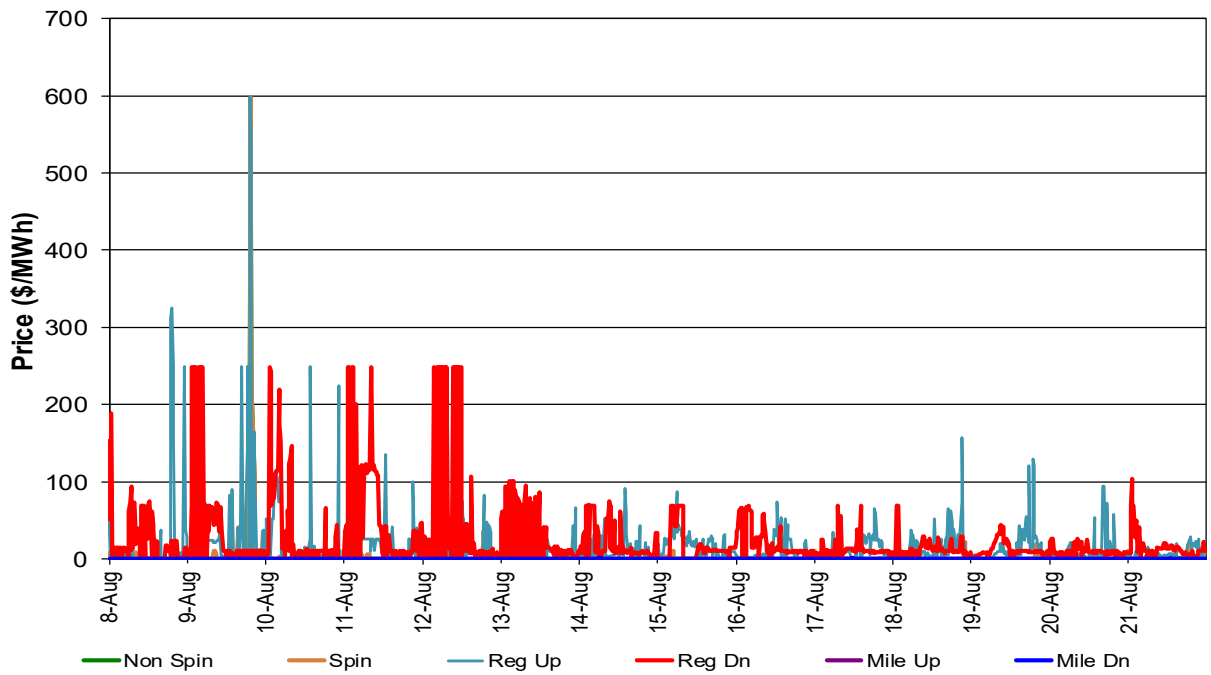




Figure 7: Real-Time FMM DLAP LMP

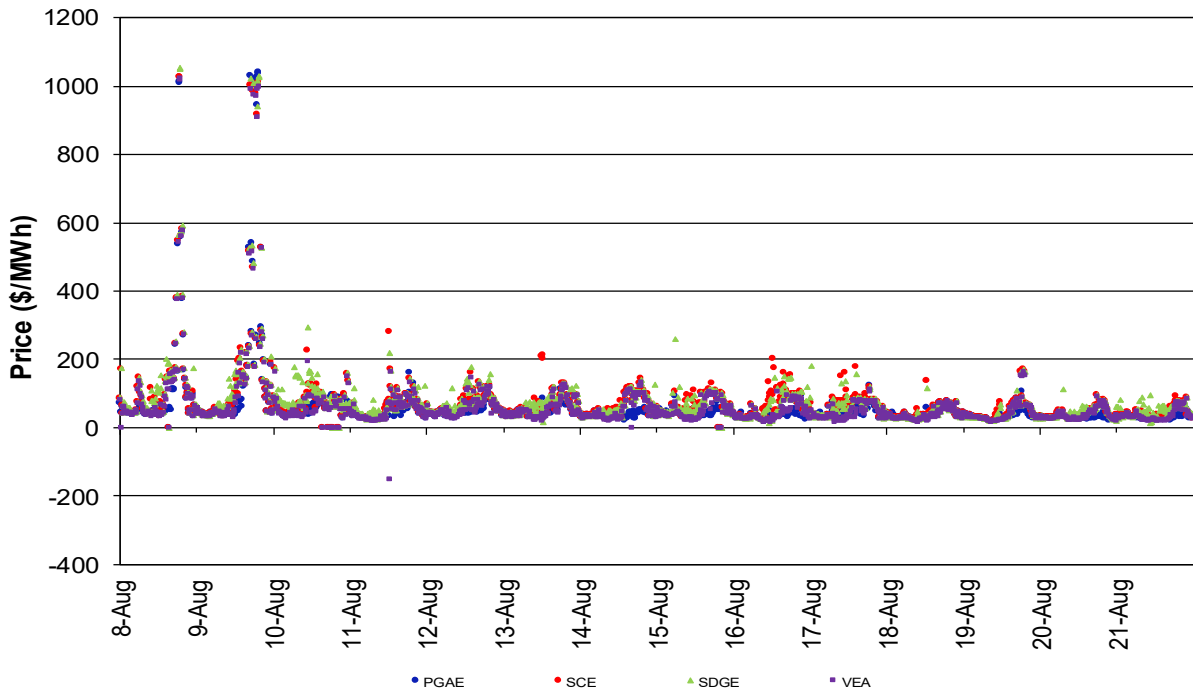


Figure 8: Real-Time RTD DLAP LMP

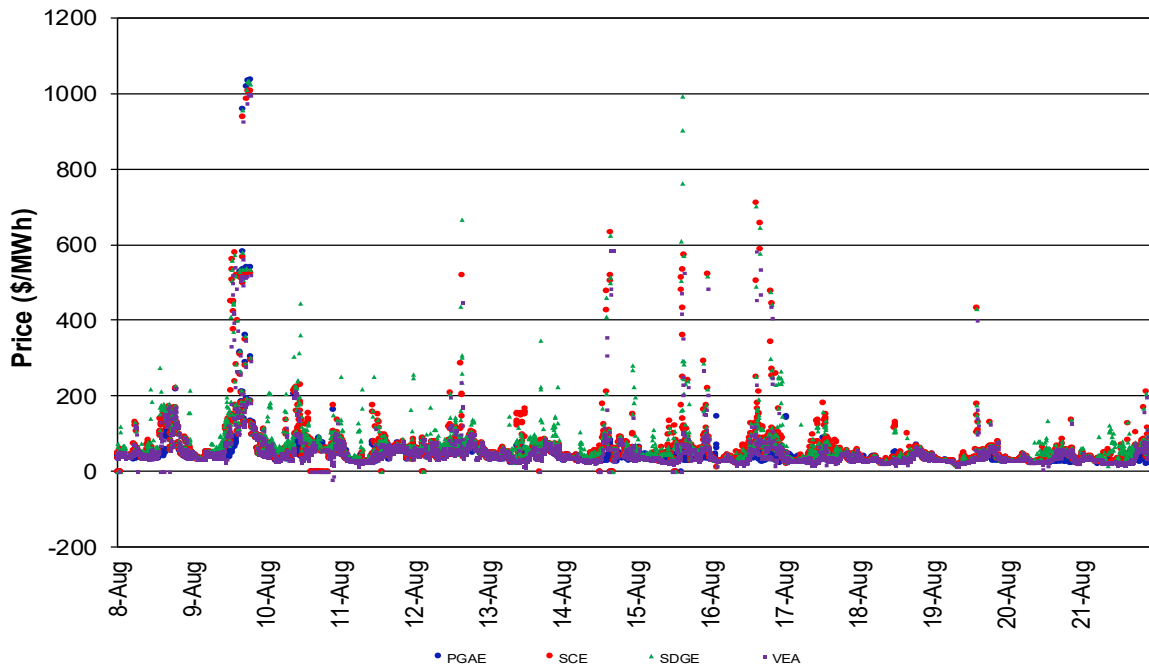




Figure 9: Real-Time FMM ELAP LMP

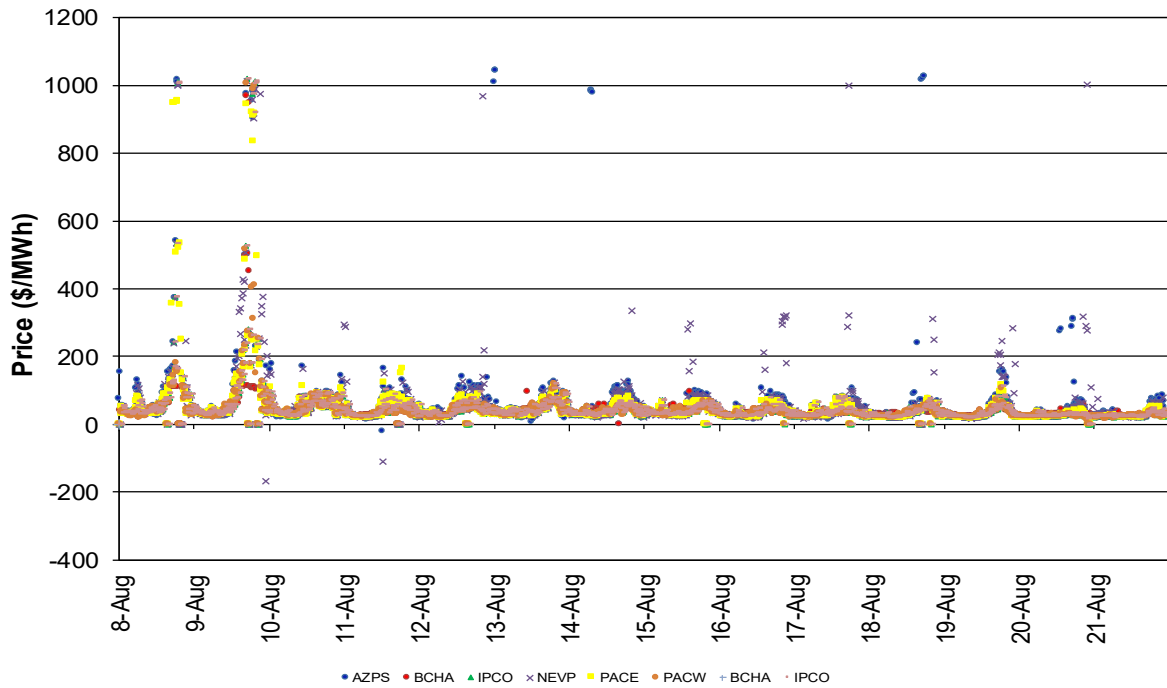


Figure 10: Real-Time RTD ELAP LMP

