

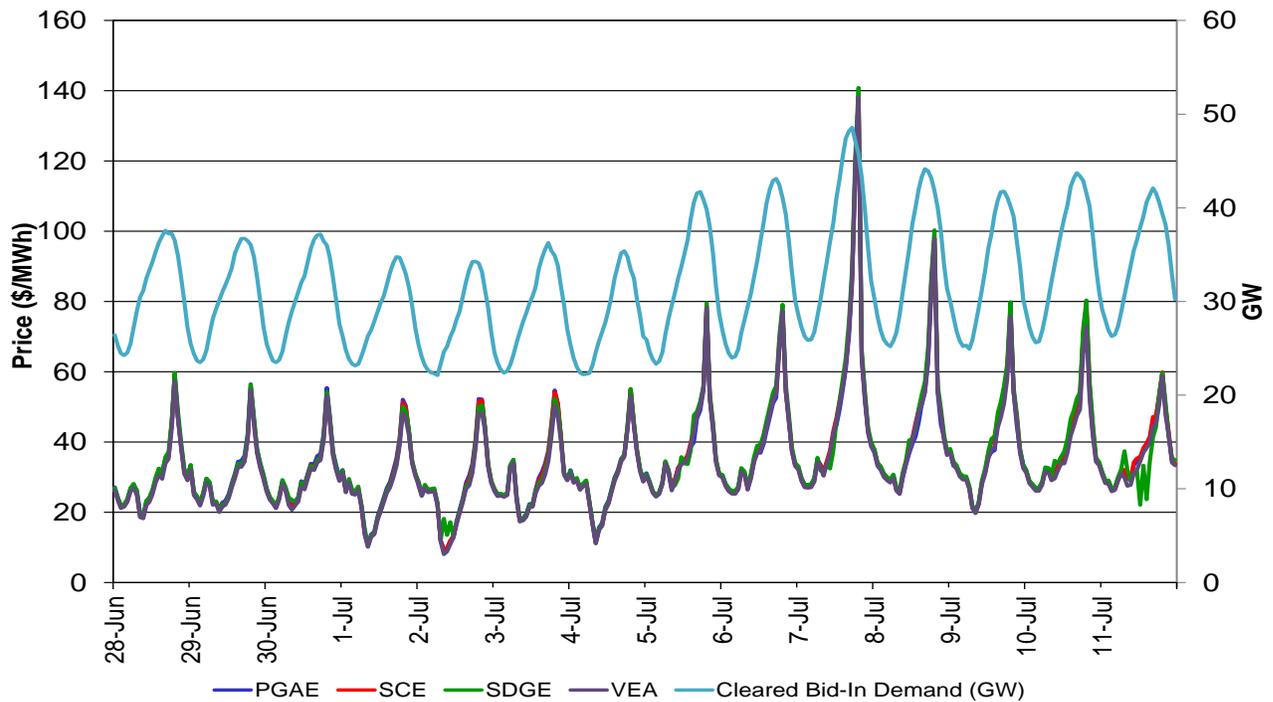
## Market Highlights<sup>1</sup> (June 28–July 11)

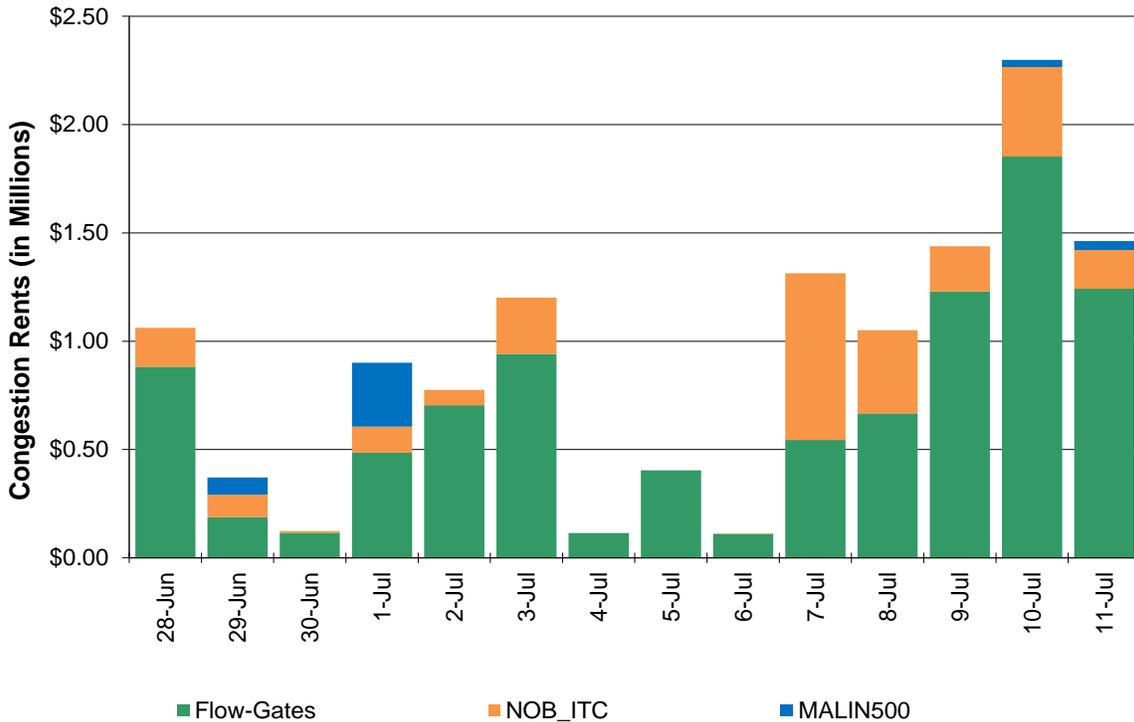
- The average DLAP price in the integrated forward market was \$34.93. The maximum and minimum DLAP prices were \$140.88 and \$7.96, respectively. The maximum and minimum PNode prices in the integrated forward market were \$169.66 and -\$48.22 respectively.
- The top two interties congested in the integrated forward market were NOB\_ITC and MALIN500. Congestion rents in these two weeks totaled \$12,653,021.85.
- The average day-ahead ancillary service prices were between \$0.00 and \$93.12.
- Approximately 92.58 percent of the RUC requirements were met from RA units.
- The average real-time FMM DLAP price was \$35.57, with a maximum price of \$1,025.24 and a minimum price of -\$8.01. The maximum and minimum PNode prices in the FMM were \$1,461.85 and -\$868.84, respectively.
- Out of the total 1,344 FMM intervals, 10 intervals saw DLAP prices above \$250, and 0 intervals saw DLAP prices below -\$150.
- Out of the total 1,344 FMM intervals, 40 intervals saw ELAP prices above \$250 and 7 intervals saw ELAP prices below -\$150. The average real-time FMM ELAP price was \$28.46, with a maximum price of \$1,193.06 and a minimum price of -\$154.65.
- The average real-time RTD DLAP price was \$43.78, with a maximum price of \$1,134.36 and a minimum price of -\$13.44. The maximum and minimum PNode prices in the RTD were \$1,534.27 and -\$861.63, respectively.
- Out of the total 4,032 RTD intervals, 88 intervals saw DLAP prices above \$250 and 0 interval saw DLAP prices below -\$150.
- Out of the total 4,032 RTD intervals, 167 intervals saw ELAP prices above \$250 and 51 intervals saw ELAP prices below -\$150. The average real-time RTD ELAP price was \$33.05, with a maximum price of \$1,056.21 and a minimum price of -\$155.00.
- Root cause for daily high price events are noted in Tables 1 and 2.

Table 1 FMM Intervals	
Trade Date	Root Cause
FMM Jul 7 HE 18	Load changes, generator outages and congestion on RM_TM12_NG
FMM Jul 7 HE 19, 20	Load changes
FMM Jul 7 HE 21	Load changes and reduction of net import

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

Table 2 RTD Intervals	
Trade Date	Root Cause
RTD Jul 2 HE 17	Renewable deviation and generator outage
RTD Jul 2 HE 18	Renewable deviation, load changes, and generator outage
RTD Jul 3 HE 17, 18	Load changes and renewable deviation
RTD Jul 4 HE 19	Re-dispatch of resources and renewable deviation
RTD Jul 5 HE 15, 16	Congestion on 30060_MIDWAY _500_24156_VINCENT _500_BR_2 _2, load changes, and renewable deviation
RTD Jul 5 HE 18	Load changes and renewable deviation
RTD Jul 7 HE 11	Renewable deviation and re-dispatch of resources
RTD Jul 7 HE 16, 17, 18	Load changes, congestion on RM_TM12_NG, generator outage, and re-dispatch of resources
RTD Jul 7 HE 19, 20, 21	Load changes and congestion on RM_TM12_NG
RTD Jul 8 HE 1	Load changes and re-dispatch of resources
RTD Jul 8 HE 13	Renewable deviation
RTD Jul 9 HE 16, 17	Renewable deviation and load changes
RTD Jul 9 HE 19	Congestion on RM_TM12_NG

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


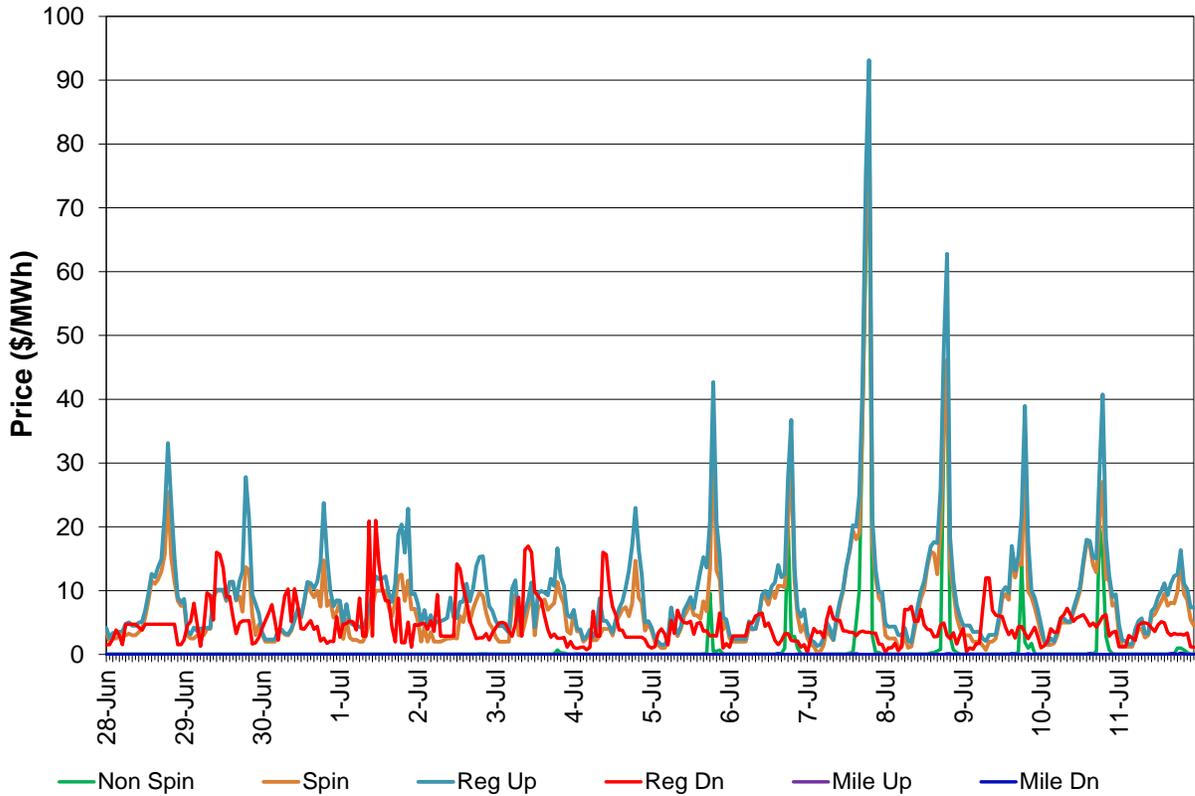
**Figure 2: Day-Ahead Congestion Rents**

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

Transmission Constraint	Congestion Rent
RM_TM12_NG	\$5,149,395
30515_WARNERVL_230_30800_WILSON_230_BR_1_1	\$1,175,633
22192_DOUBLTTP_138_22300_FRIARS_138_BR_1_1	\$982,006
34112_EXCHEQUR_115_34116_LE GRAND_115_BR_1_1	\$545,270
22208_EL CAJON_69.0_22408_LOSCOCHS_69.0_BR_1_1	\$292,585
6310_CP3_NG	\$218,598
7820_TL 230S_OVERLOAD_NG	\$194,402
31512_BIG BEN2_115_31516_WYANDJT2_115_BR_1_2	\$191,923
38136_MARBLE_69.0_64281_MARBLSP_60.0_XF_1	\$73,767
34427_ATWELL_115_34701_SMYRNA_1_115_BR_1_1	\$71,756
31336_HPLNDJT_60.0_31370_CLVRDLJT_60.0_BR_1_1	\$58,745
22604_OTAY_69.0_22616_OTAYLKTP_69.0_BR_1_1	\$50,486
34548_KETTLEMN_70.0_34552_GATES_70.0_BR_1_1	\$45,707
34469_GFFNJCT_70.0_34470_GIFFEN_70.0_BR_1_1	\$42,197
6410_CP1_NG	\$41,883
32056_CORTINA_60.0_30451_CRTNA_M_1.0_XF_1	\$41,120
22136_CLAIRMNT_69.0_22140_CLARMTTP_69.0_BR_1_1	\$32,704
32290_OLIVH J1_115_32214_RIO OSO_115_BR_1_1	\$32,437

**Figure 3: Day-Ahead Congestion Rents for Flow-Based Constraints (cont)**

<b>Transmission Constraint</b>	<b>Congestion Rent</b>
22696_ROSE CYN_69.0_22140_CLARMTTP_69.0_BR_1_1	\$31,014
22300_FRIARS_138_22500_MISSION_138_BR_1_1	\$28,763
32218_DRUM_115_32244_BRNSWKT2_115_BR_2_1	\$21,344
6110_SOL8_NG	\$17,755
6110_PEASERIO_TMS_DLO_NG	\$16,349
32212_E.NICOLS_115_32214_RIO OSO_115_BR_1_1	\$15,680
32225_BRNSWKT1_115_32222_DTCH2TAP_115_BR_1_1	\$15,418
6110_SOL7_NG	\$15,291
32326_ENCL TAP_60.0_32332_PEASE_60.0_BR_1_1	\$12,016
34418_KINGSBRG_115_34405_FRWT TAP_115_BR_1_1	\$11,468
22884_WARNERS_69.0_22688_RINCON_69.0_BR_1_1	\$8,835
OMS 4864218_Humboldt_IMP	\$8,264
6110_SOL10_NG	\$6,816
31464_COTWDPGE_115_30105_COTTNWD_230_XF_1	\$4,892
34116_LE GRAND_115_34134_WILSONAB_115_BR_1_1	\$4,636
34807_ARVINJ2_115_34758_LAMONT_115_BR_1_1	\$3,648
38000_LODI_230_30622_EIGHT MI_230_BR_1_1	\$3,642
22480_MIRAMAR_69.0_22756_SCRIPPS_69.0_BR_1_1	\$2,783
HUMBOLDT_IMP_NG	\$2,230
31658_BANGOR_60.0_32308_COLGATE_60.0_BR_1_1	\$2,193
33724_LOCKEFRD_60.0_33736_LODI JCT_60.0_BR_1_1	\$2,051
33506_STANISLS_115_33503_FRGTNTP2_115_BR_1_1	\$1,710
34126_CORSGOLD_115_34128_OAKH_JCT_115_BR_1_1	\$1,239
34134_WILSONAB_115_30800_WILSON_230_XF_1	\$1,144
31080_HUMBOLDT_60.0_31088_HMBL JT_60.0_BR_1_1	\$982
31334_CLER LKE_60.0_31338_KONOCIT6_60.0_BR_1_1	\$702
31378_FULTON_60.0_31382_FTCHMTNP_60.0_BR_1_1	\$632
34107_CERTANTP_115_34101_CERTANJ2_115_BR_1_1	\$571
31580_CASCADE_60.0_31582_STLLWATR_60.0_BR_1_1	\$300
30500_BELLOTA_230_30515_WARNERVL_230_BR_1_1	\$105
31108_SWNS FLT_60.0_31110_BRDGVLE_60.0_BR_1_1	\$99
34158_PANOCHÉ_115_34350_KAMM_115_BR_1_1	\$68
<b>Totals</b>	<b>\$ 9,483,253.12</b>

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



**Figure 5: Day-Ahead Average RUC Price**

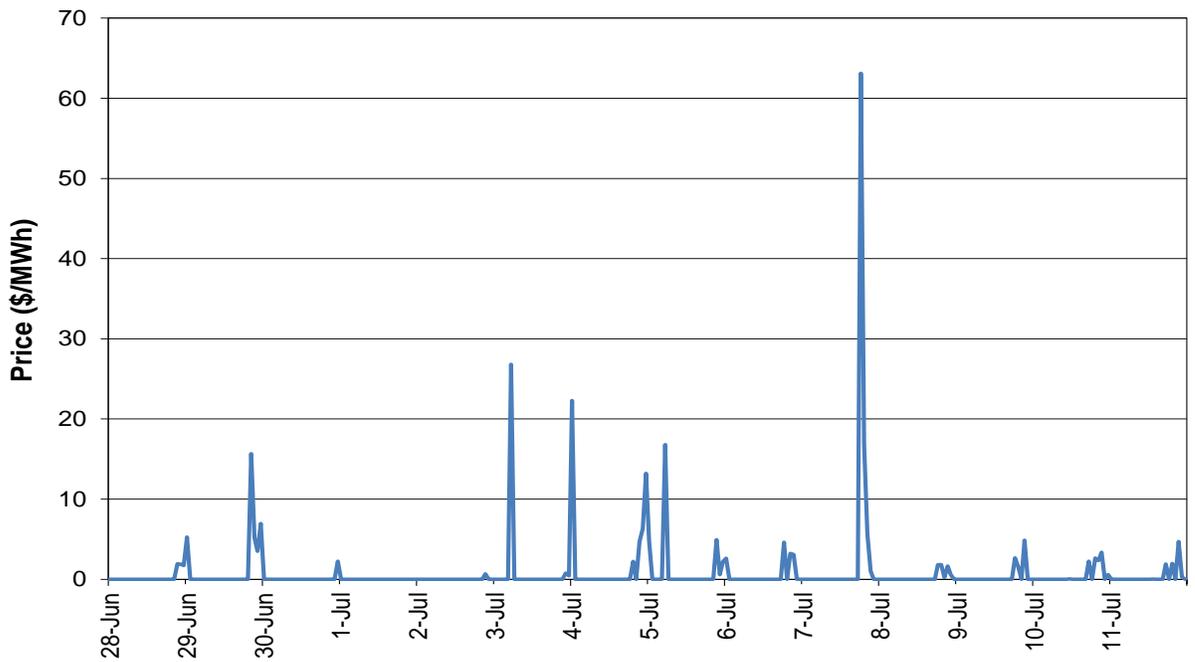




Figure 6: Real-Time FMM Average A/S Price

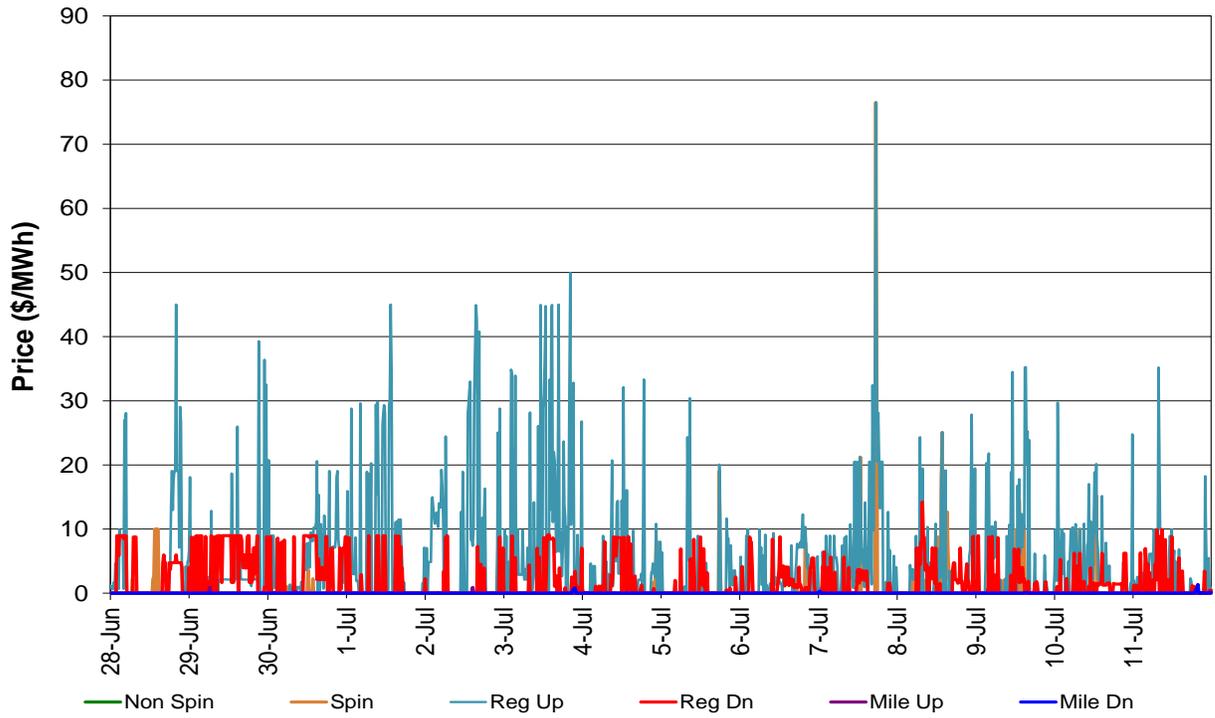
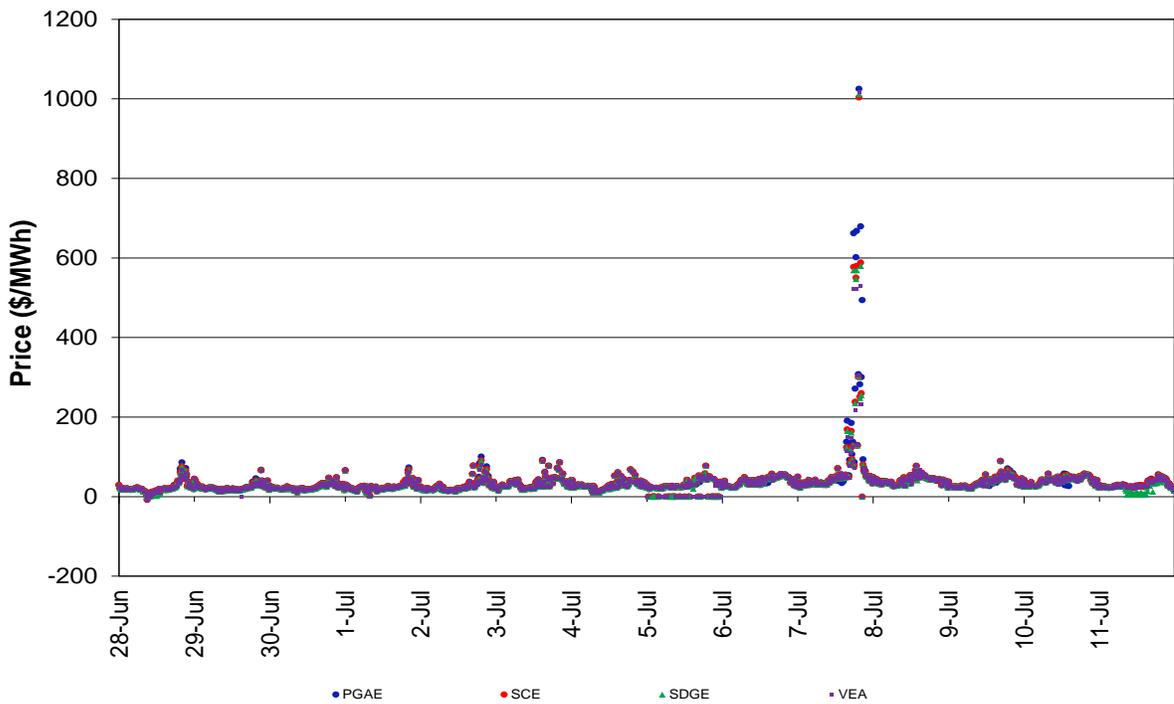
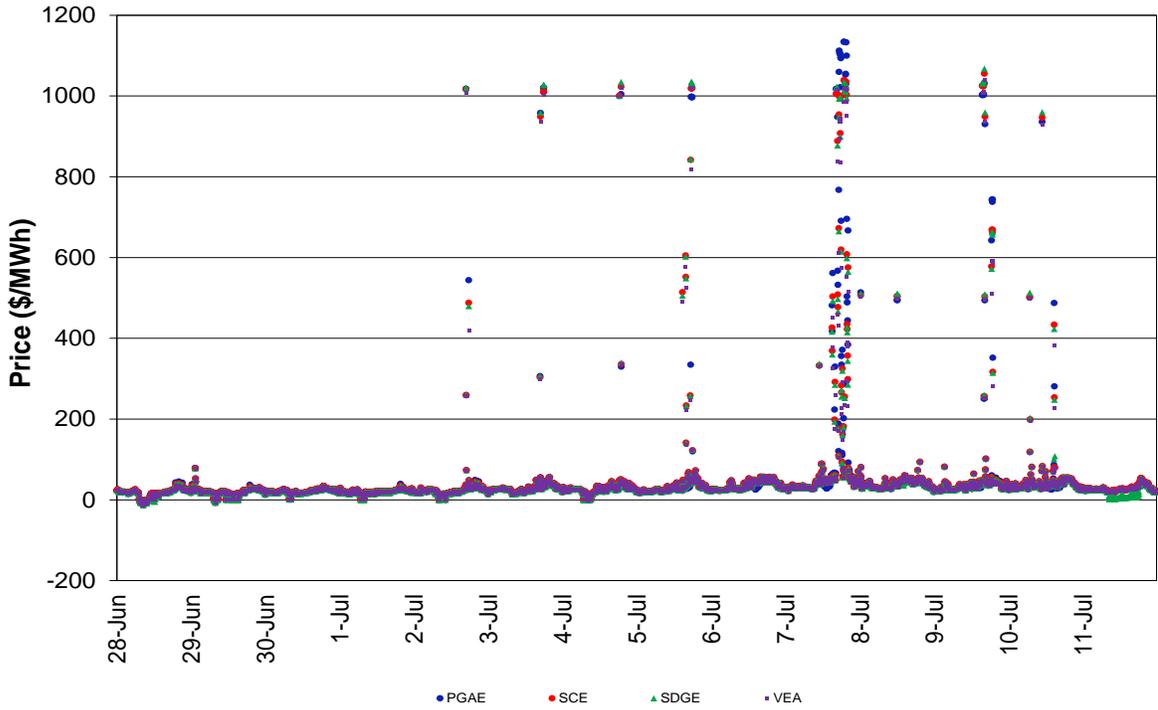


Figure 7: Real-Time FMM DLAP LMP



**Figure 8: Real-Time RTD DLAP LMP**



**Figure 9: Real-Time FMM ELAP LMP**

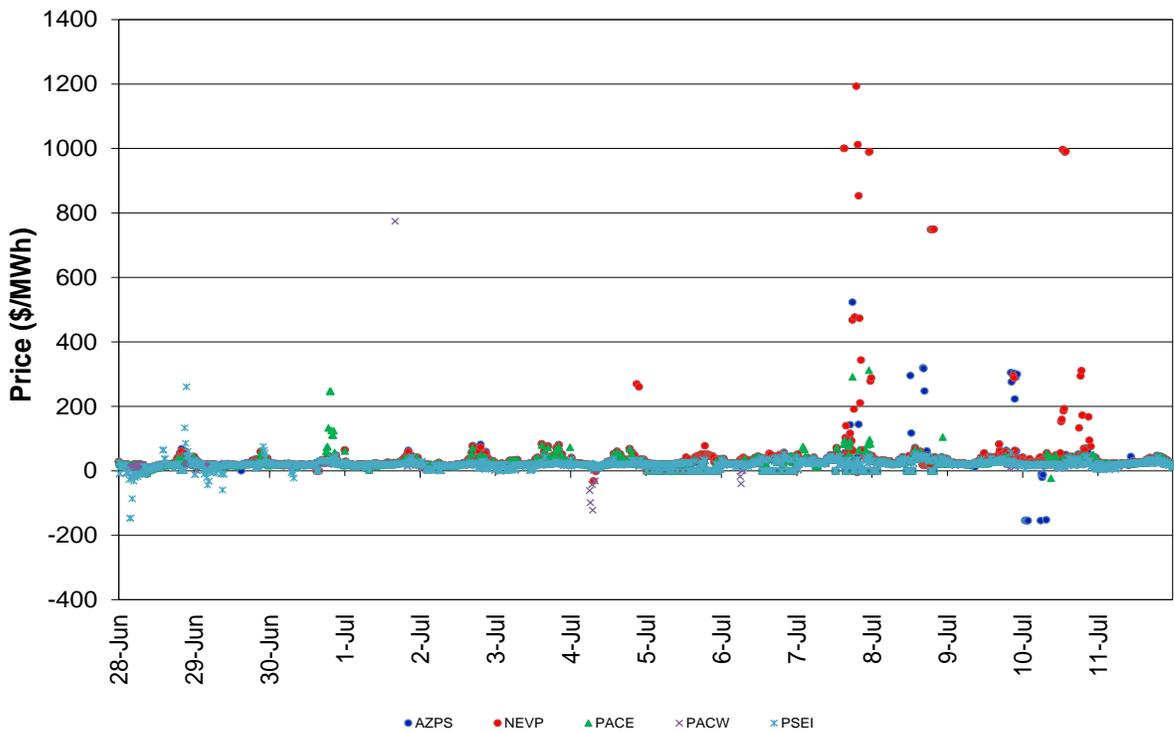


Figure 10: Real-Time RTD ELAP LMP

