Market Highlights[1] (July 12–July 25)

- The average DLAP price in the integrated forward market was $37.29. The maximum and minimum DLAP prices were $89.35 and $17.13, respectively. The maximum and minimum PNode prices in the integrated forward market were $174.02 and -$18.34 respectively.

- The top two interties congested in the integrated forward market were MALIN500 and NOB_ITC. Congestion rents in these two weeks totaled $15,993,801.31.

- The average day-ahead ancillary service prices were between $0.00 and $48.39.

- Approximately 92.63 percent of the RUC requirements were met from RA units.

- The average real-time FMM DLAP price was $32.84, with a maximum price of $444.91 and a minimum price of -$14.50. The maximum and minimum PNode prices in the FMM were $1,098.40 and -$354.99, respectively.

- Out of the total 1,344 FMM intervals, 2 intervals saw DLAP prices above $250, and 0 intervals saw DLAP prices below -$150.

- Out of the total 1,344 FMM intervals, 36 intervals saw ELAP prices above $250 and 5 intervals saw ELAP prices below -$150. The average real-time FMM ELAP price was $29.39, with a maximum price of $1,000.57 and a minimum price of -$155.15.

- The average real-time RTD DLAP price was $33.87, with a maximum price of $1,043.03 and a minimum price of -$9.12. The maximum and minimum PNode prices in the RTD were $1,210.43 and -$677.07, respectively.

- Out of the total 4,032 RTD intervals, 23 intervals saw DLAP prices above $250 and 0 interval saw DLAP prices below -$150.

- Out of the total 4,032 RTD intervals, 121 intervals saw ELAP prices above $250 and 29 intervals saw ELAP prices below -$150. The average real-time RTD ELAP price was $30.63, with a maximum price of $1,008.67 and a minimum price of -$631.46.

- Root cause for daily high price events are noted in Tables 1 and 2.

Table 1 FMM Intervals	
Trade Date	**Root Cause**
FMM Jul 13 HE 16	Congestion on 30060_MIDWAY _500_24156_VINCENT _500 and re-dispatch of resources
FMM Jul 13 HE 19	Load changes

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[1] 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 12 HE 19	Renewable deviation and load changes
RTD Jul 12 HE 20	Re-dispatch of resources
RTD Jul 13 HE 16	Congestion on 24016_BARRE _230_24154_VILLA PK_230 and 30060_MIDWAY _500_24156_VINCENT _500
RTD Jul 13 HE 17	Congestion on 30060_MIDWAY _500_24156_VINCENT _500 and re-dispatch of resources
RTD Jul 15 HE 20	Load changes, and re-dispatch of resources
RTD Jul 17 HE 19	Load changes, renewable deviation and re-dispatch of resources
RTD Jul 18 HE 18	Renewable deviation and load changes
RTD Jul 19 HE 13	Load changes
RTD Jul 19 HE 19	Renewable deviation, load changes and congestion on RM_TM12_NG
RTD Jul 20 HE 16	Congestion on 30060_MIDWAY _500_24156_VINCENT _500_BR_2 _2 and RM_TM12_NG
RTD Jul 22 HE 19	Load changes and renewable deviation

Figure 1: Day-Ahead (IFM) LAP LMP and Cleared Bid-In Demand
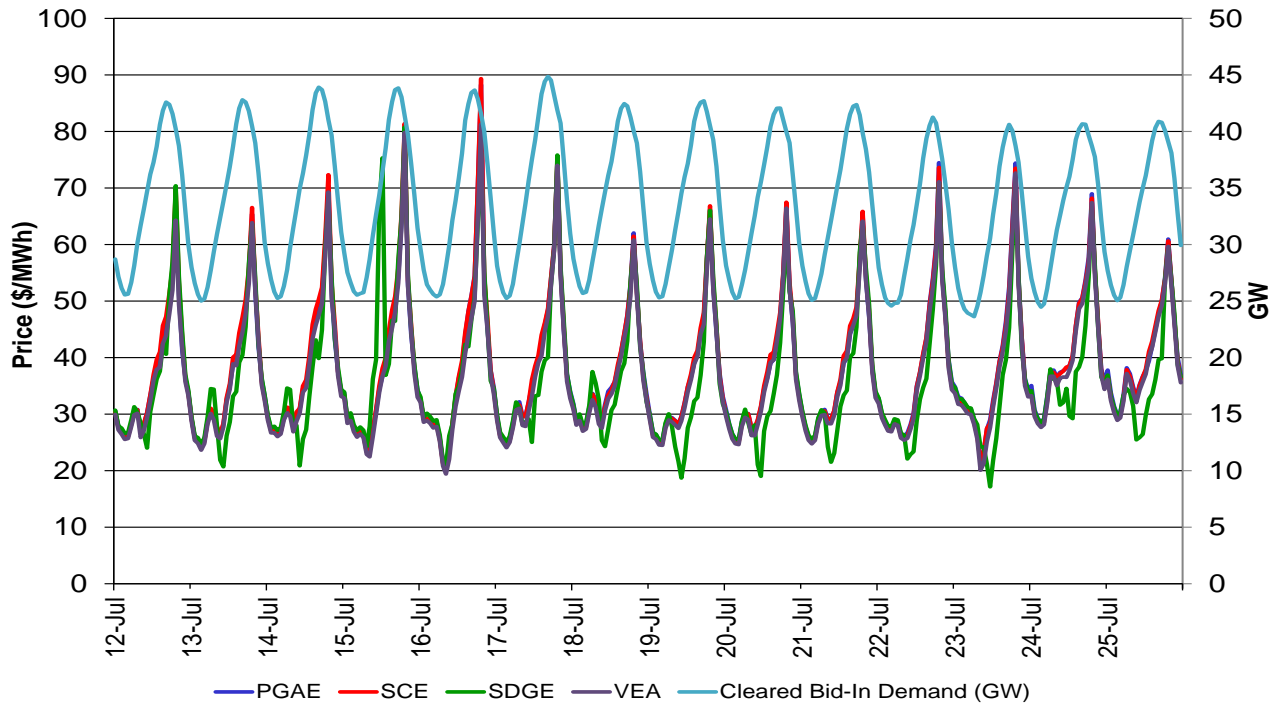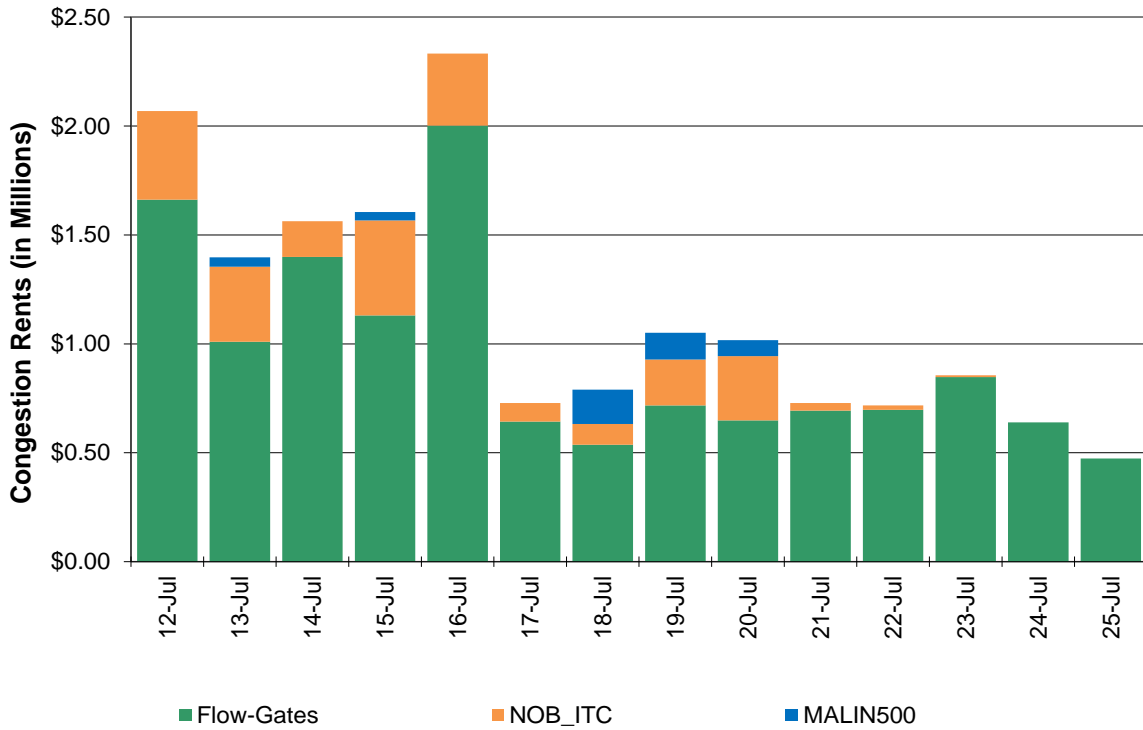
Figure 2: Day-Ahead Congestion Rents

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_MARBLSPP_60.0_XF_1	$73,767
34427_ATWELL _115_34701_SMYRNA 1_115_BR_1 _1	$71,756
31336_HPLND JT_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)

Transmission Constraint	Congestion Rent
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_HMBLT JT_60.0_BR_1_1	$982
31334_CLER LKE_60.0_31338_KONOCTI6_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_BRDGVLLE_60.0_BR_1_1	$99
34158_PANOCHE_115_34350_KAMM_115_BR_1_1	$68
Totals	**$ 9,483,253.12**

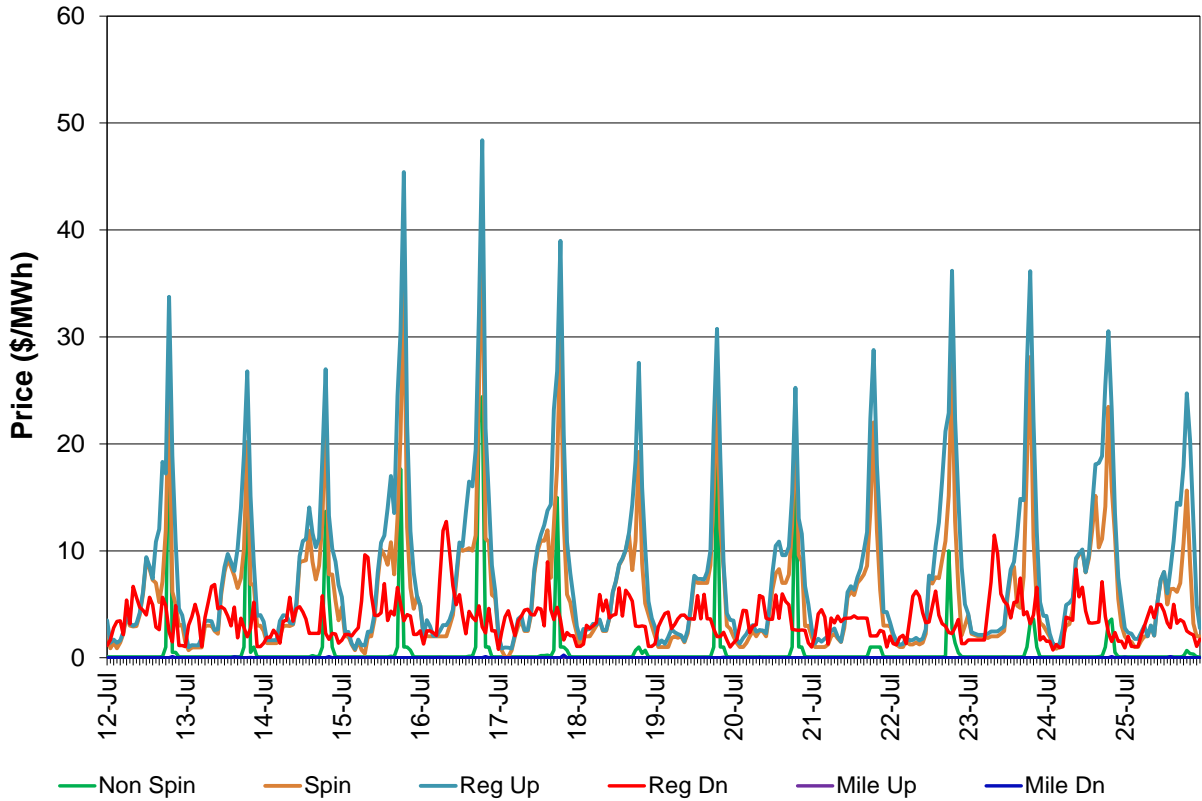## Figure 4: Day-Ahead (IFM) Average A/S Price

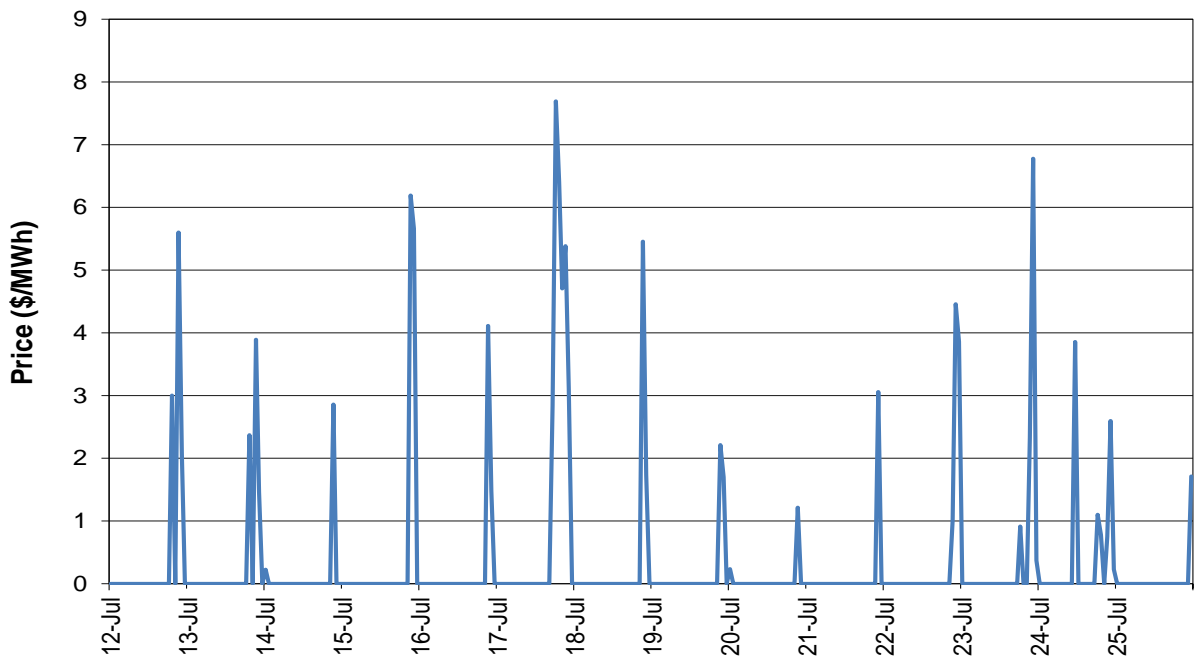

Figure 5: Day-Ahead Average RUC Price
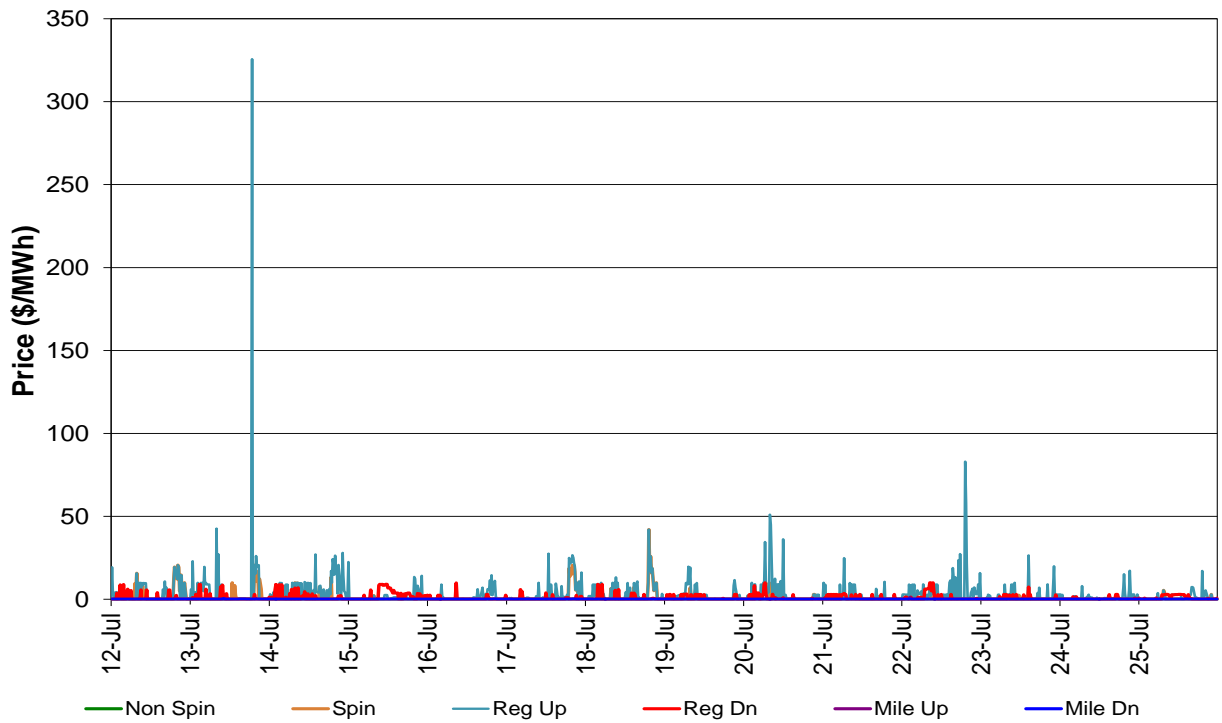
Figure 6: Real-Time FMM Average A/S Price
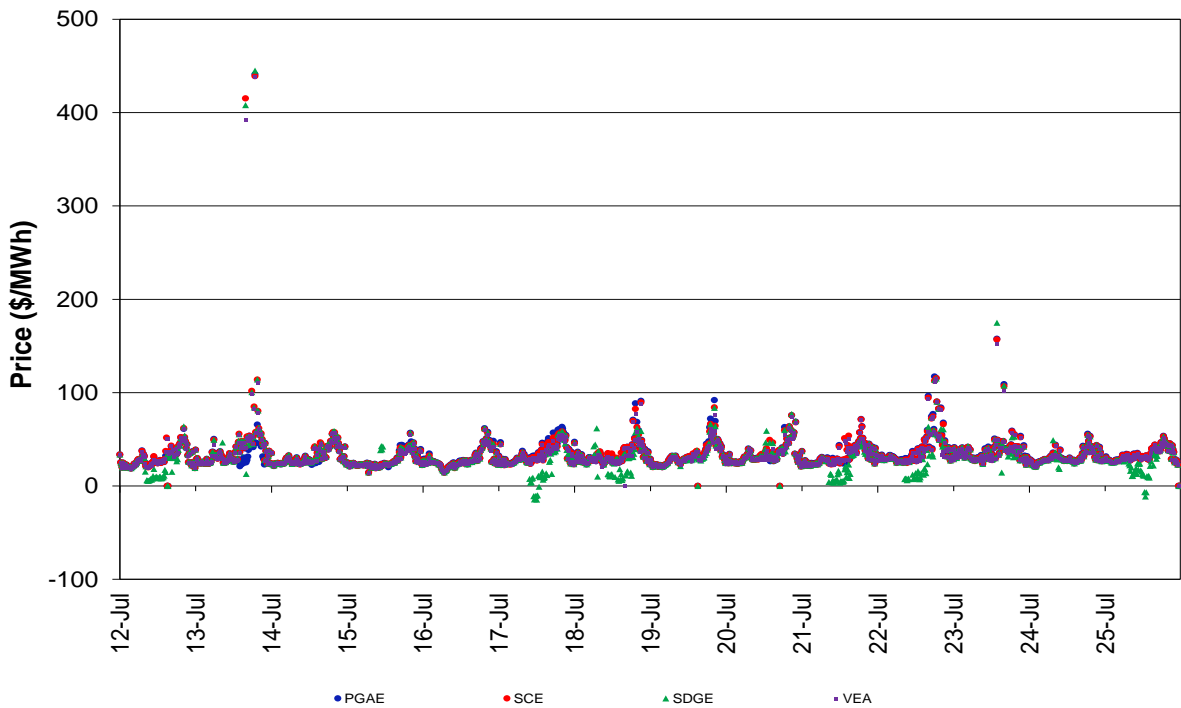

Figure 7: Real-Time FMM DLAP LMP
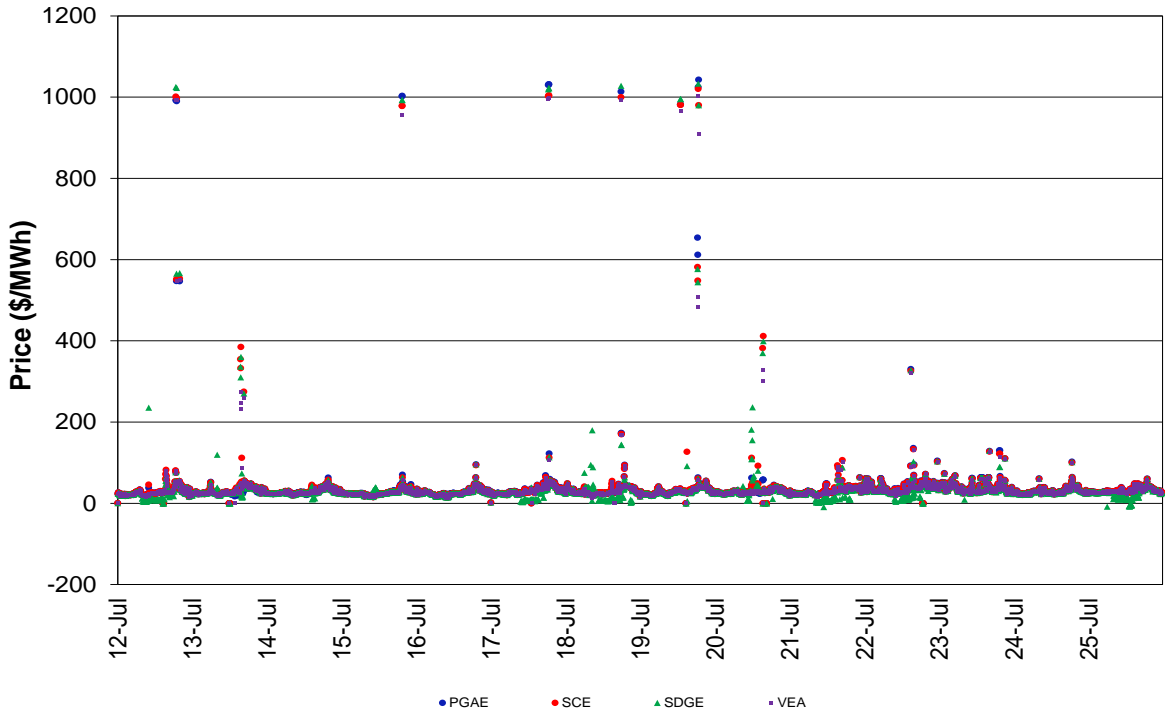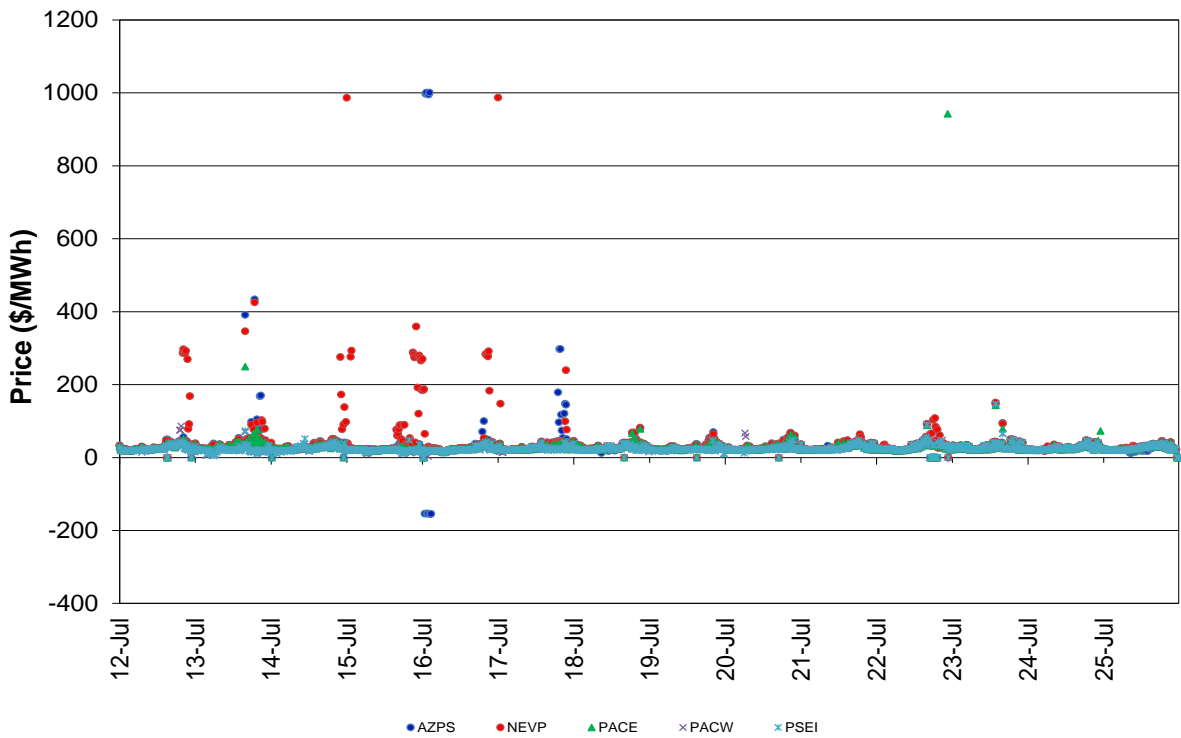
Figure 8: Real-Time RTD DLAP LMP

Figure 9: Real-Time FMM ELAP LMP

Figure 10: Real-Time RTD ELAP LMP