



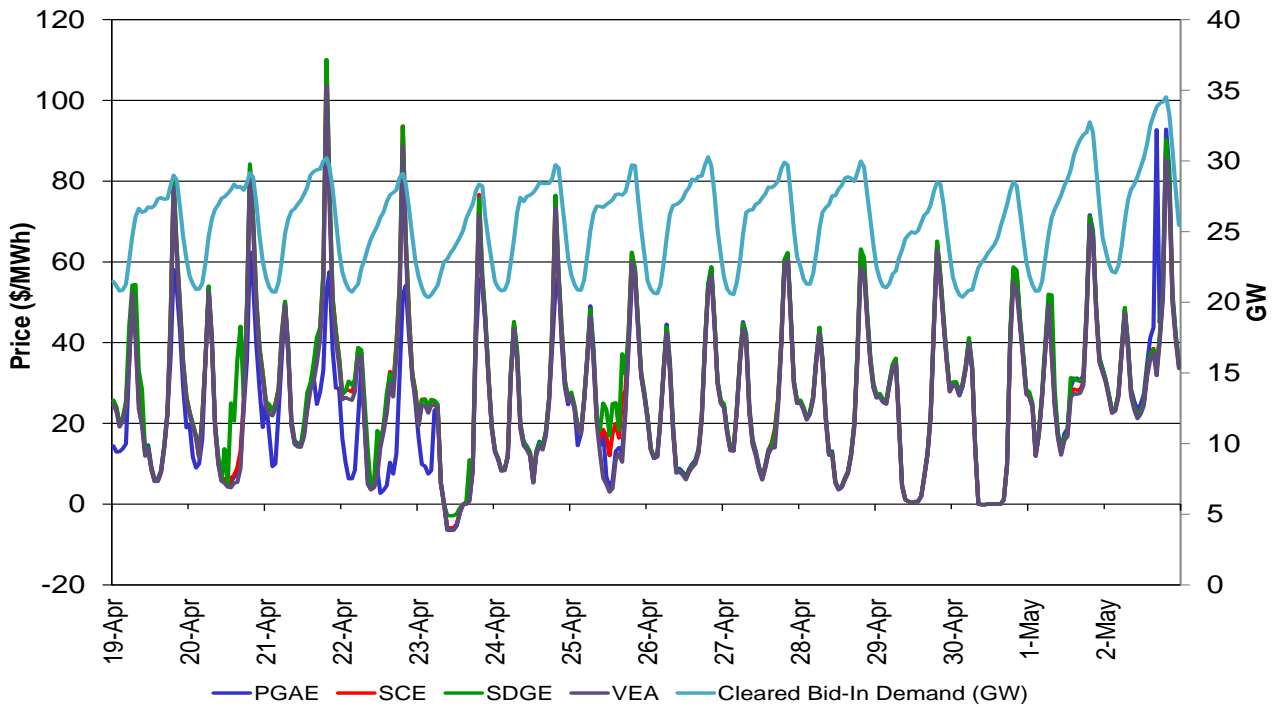
## Market Highlights<sup>1</sup> (April 19–May 2)

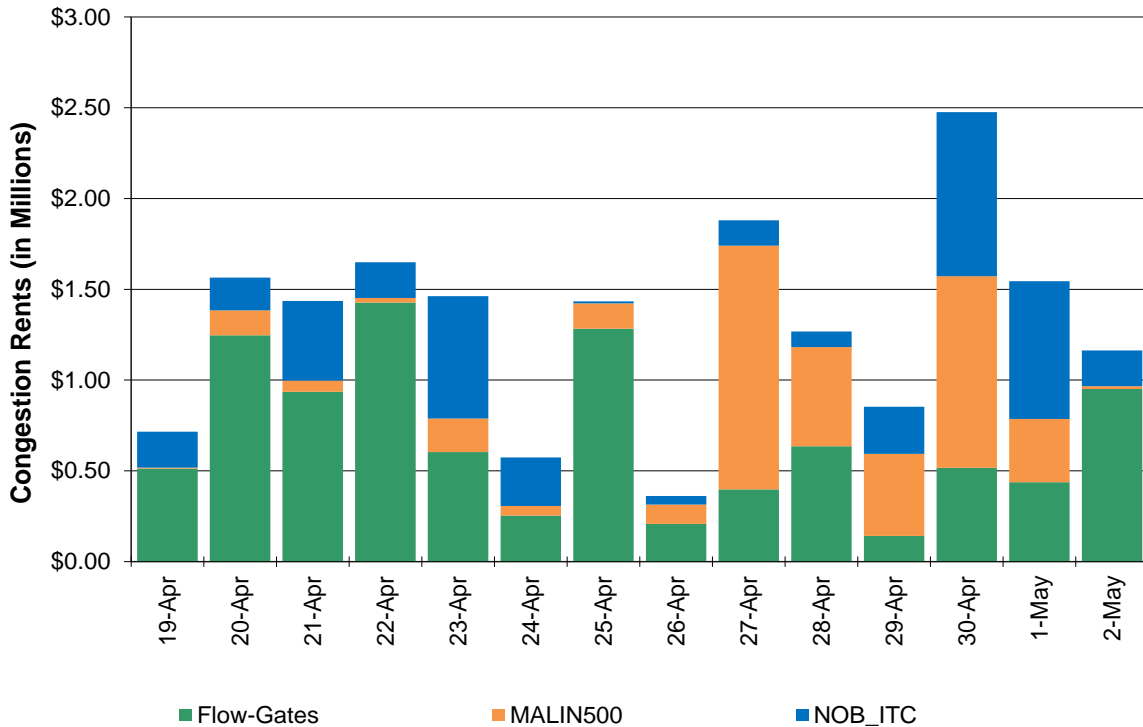
- The average DLAP price in the integrated forward market was \$26.78. The maximum and minimum DLAP prices were \$110.12 and -\$6.51, respectively. The maximum and minimum PNode prices in the integrated forward market were \$450.00 and -\$260.92 respectively.
- The top two interties congested in the integrated forward market were MALIN500 and NOB\_ITC. Congestion rents in these two weeks totaled \$18,781,679.94.
- The average day-ahead ancillary service prices were between \$0.00 and \$55.19.
- Approximately 79.51 percent of the RUC requirements were met from RA units.
- The average real-time FMM DLAP price was \$27.24, with a maximum price of \$1,087.84 and a minimum price of -\$15.67. The maximum and minimum PNode prices in the FMM were \$1,288.47 and -\$1,081.40, respectively.
- Out of the total 1,344 FMM intervals, 6 intervals saw DLAP prices above \$250, and 0 intervals saw DLAP prices below -\$150.
- Out of the total 1,344 FMM intervals, 16 intervals saw ELAP prices above \$250 and 45 intervals saw ELAP prices below -\$150. The average real-time FMM ELAP price was \$17.54, with a maximum price of \$1,052.65 and a minimum price of -\$988.30.
- The average real-time RTD DLAP price was \$25.21, with a maximum price of \$1,122.41 and a minimum price of -\$158.57. The maximum and minimum PNode prices in the RTD were \$1,758.10 and -\$975.66, respectively.
- Out of the total 4,032 RTD intervals, 46 intervals saw DLAP prices above \$250 and 3 intervals saw DLAP prices below -\$150.
- Out of the total 4,032 RTD intervals, 140 intervals saw ELAP prices above \$250 and 185 intervals saw ELAP prices below -\$150. The average real-time RTD ELAP price was \$16.52, with a maximum price of \$1,074.94 and a minimum price of -\$158.63.
- Root cause for daily high price events are noted in Tables 1 and 2.

Table 1 FMM Intervals	
Trade Date	Root Cause
FMM Apr 26 HE 20	Load changes and change in renewable forecast
FMM Apr 28 HE 6	Load changes and reduction in net import
FMM Apr 29 HE 7	Change in renewable forecast and reduction in net import
FMM Apr 30 HE 21	Load changes
FMM May 2 HE 21	Load changes, generator de-rate and re-dispatch of resources

<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 Apr 20 HE 19	Load changes and renewable deviation
RTD Apr 21 HE 20, 22	Congestion on 6410_CP5_NG, re-dispatch of resources and load changes
RTD Apr 23 HE 5	Congestion on 6410_CP5_NG, load changes and renewable deviation
RTD Apr 23 HE 19	Renewable deviation and load changes
RTD Apr 24 HE 1, 2	Congestion on 6410_CP5_NG
RTD Apr 26 HE 16, 17	Load changes and renewable deviation
RTD Apr 26 HE 19	Renewable deviation
RTD Apr 27 HE 8	Load changes and reduction of net import
RTD Apr 27 HE 19	Renewable deviation
RTD Apr 28 HE 22; Apr 29 HE 18	Renewable deviation and load changes
RTD Apr 29 HE 23	Generator outage and load changes
RTD Apr 29 HE 24	Generator outage and re-dispatch of resources
RTD May 1 HE 6	Load changes, reduction of net import and renewable deviation

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


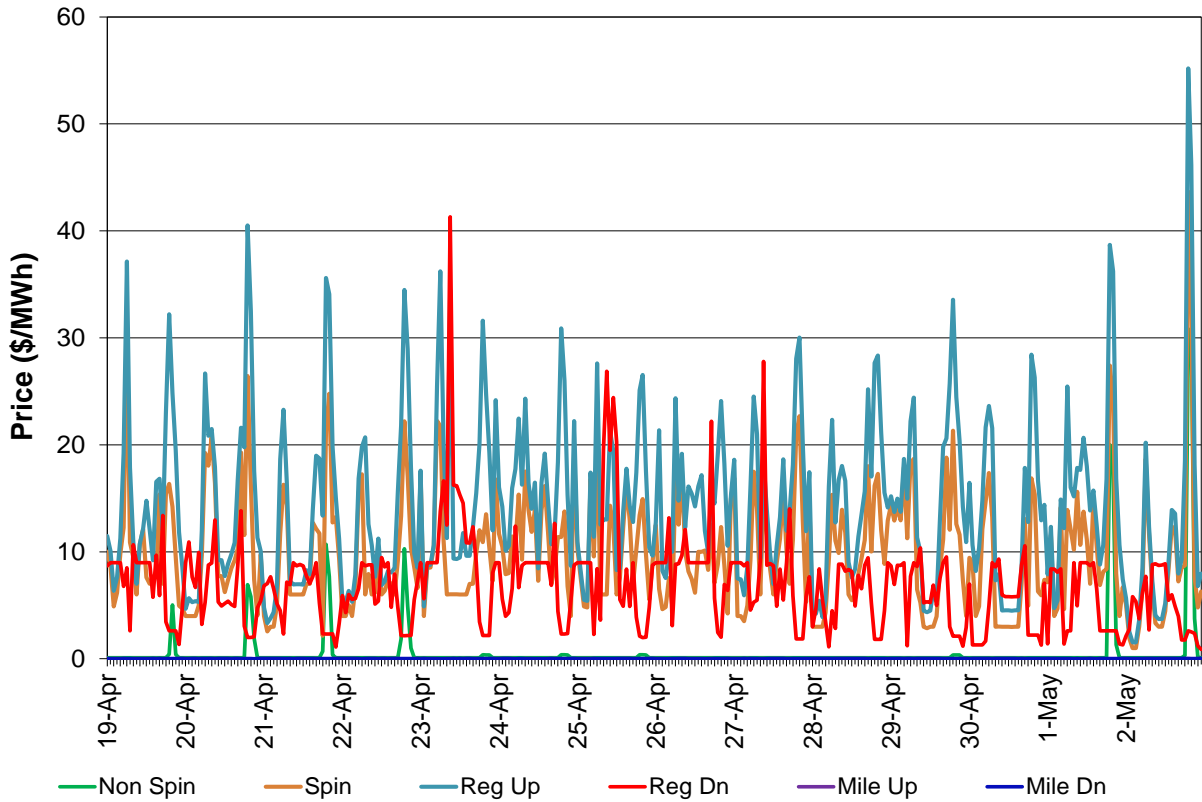
**Figure 2: Day-Ahead Congestion Rents**

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

Transmission Constraint	Congestion Rent
6410_CP5_NG	\$ 1,562,756.24
30005_ROUND MT_500_30015_TABLE MT_500_BR_1_2	\$ 1,310,860.40
24138_SERRANO_500_24137_SERRANO_230_XF_2_P	\$ 1,007,171.60
7820_TL23040_IV_SPS_NG	\$ 744,835.97
32212_E.NICOLS_115_32214_RIO OSO_115_BR_1_1	\$ 722,931.83
OMS_3831848_TMS_DLO	\$ 713,915.55
33020_MORAGA_115_32780_CLARMNT_115_BR_1_1	\$ 673,185.55
33936_MELNS JB_115_33951_VLYHMTP1_115_BR_1_1	\$ 592,878.03
34112_EXCHEQUR_115_34116_LE GRAND_115_BR_1_1	\$ 284,995.28
32228_PLACER_115_32238_BELL PGE_115_BR_1_1	\$ 262,588.07
7820_TL 230S_OVERLOAD_NG	\$ 258,098.85
34548_KETTLEMN_70.0_34552_GATES_70.0_BR_1_1	\$ 186,457.67
32218_DRUM_115_32220_DTCH FL1_115_BR_1_1	\$ 147,233.08
34418_KINGSBRG_115_34405_FRWT TAP_115_BR_1_1	\$ 133,270.46
34410_MANCHSTR_115_34357_AIRWAYJ1_115_BR_1_1	\$ 96,916.13
31990_DAVIS_115_31962_WDLND_BM_115_BR_1_1	\$ 93,200.66
33020_MORAGA_115_30550_MORAGA_230_XF_3_P	\$ 71,111.71
33016_ALHAMTP2_115_32754_OLEUM_115_BR_1_1	\$ 65,648.03

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

<b>Transmission Constraint</b>	<b>Congestion Rent</b>
33932_MELONES_115_33936_MELNS JB_115_BR_1_1	\$ 62,032.55
24016_BARRE_230_25201_LEWIS_230_BR_1_1	\$ 59,859.17
33541_AEC_TP1_115_33540_TESLA_115_BR_1_1	\$ 56,066.94
34746_GANSO_115_34774_MIDWAY_115_BR_1_1	\$ 40,201.14
34116_LE GRAND_115_34134_WILSONAB_115_BR_1_1	\$ 35,611.81
22192_DOUBLTTP_138_22300_FRIARS_138_BR_1_1	\$ 34,286.24
22604_OTAY_69.0_22616_OTAYLKTP_69.0_BR_1_1	\$ 32,882.27
34807_ARVINJ2_115_34758_LAMONT_115_BR_1_1	\$ 31,718.05
34742_SEMITRPJ_115_34746_GANSO_115_BR_1_1	\$ 29,796.38
31336_HPLND JT_60.0_31370_CLVRDLJT_60.0_BR_1_1	\$ 26,019.54
HUMBOLDT_IMP_NG	\$ 25,351.18
34358_KERCKHF2_115_34360_WWARD JT_115_BR_1_1	\$ 24,278.17
34882_SAN EMDO_70.0_34904_OLD RIVR_70.0_BR_1_1	\$ 20,952.56
34704_SEMITRPC_115_34774_MIDWAY_115_BR_1_1	\$ 20,697.67
33916_CURTISS_115_33917_FBERBORD_115_BR_1_1	\$ 16,222.69
34887_TAP SKRN_70.0_34882_SAN EMDO_70.0_BR_1_1	\$ 14,048.25
24153_VESTAL_230_24235_RECTOR_230_BR_1_1	\$ 13,262.03
34359_AIRWAYJ2_115_34408_BARTON_115_BR_1_1	\$ 12,936.03
32218_DRUM_115_32222_DTCH2TAP_115_BR_1_1	\$ 9,810.67
30114_DELEVAN_230_30450_CORTINA_230_BR_1_1	\$ 8,594.37
22884_WARNERS_69.0_22688_RINCON_69.0_BR_1_1	\$ 7,432.50
31378_FULTON_60.0_31382_FTCHMTNP_60.0_BR_1_1	\$ 6,364.19
33516_RIPON J_115_33514_MANTECA_115_BR_1_1	\$ 5,356.13
22668_POWAY_69.0_22664_POMERADO_69.0_BR_1_1	\$ 4,289.91
OMS 4510294_Devers N Bus_NG	\$ 4,183.92
31566_KESWICK_60.0_31582_STLLWATR_60.0_BR_1_1	\$ 3,048.25
31000_HUMBOLDT_115_31452_TRINITY_115_BR_1_1	\$ 2,834.18
34149_CHENYT_115_34158_PANOCHÉ_115_BR_1_1	\$ 2,026.22
32056_CORTINA_60.0_30451_CRTNA M_1.0_XF_1	\$ 1,995.11
31464_COTWDPGE_115_30105_COTTNWD_230_XF_1	\$ 1,746.24
33920_RCTRK J_115_33922_R.TRACK_115_BR_1_1	\$ 1,719.26
31080_HUMBOLDT_60.0_31088_HMBLT JT_60.0_BR_1_1	\$ 982.35
31461_JESSTAP_115_31464_COTWDPGE_115_BR_1_1	\$ 935.14
6410_CP10_NG	\$ 886.68
33926_CH.STNJT_115_33930_PEORIA_115_BR_1_1	\$ 783.70
33951_VLYHMTP1_115_33516_RIPON J_115_BR_1_1	\$ 776.11
31080_HUMBOLDT_60.0_31092_MPLE CRK_60.0_BR_1_1	\$ 713.31
34540_HENRITTA_70.0_39217_S650ABS_70.0_BR_1_1	\$ 677.45
33950_RVRBK TP_115_33934_TULLOCH_115_BR_1_1	\$ 510.61
6310_CP3_NG	\$ 273.44
31580_CASCADE_60.0_31582_STLLWATR_60.0_BR_1_1	\$ 212.66
31092_MPLE CRK_60.0_31093_HYMPOMJT_60.0_BR_1_1	\$ 118.35
32218_DRUM_115_32244_BRNSWKT2_115_BR_2_1	\$ 65.92
<b>Total</b>	<b>\$ 9,550,614.45</b>

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



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

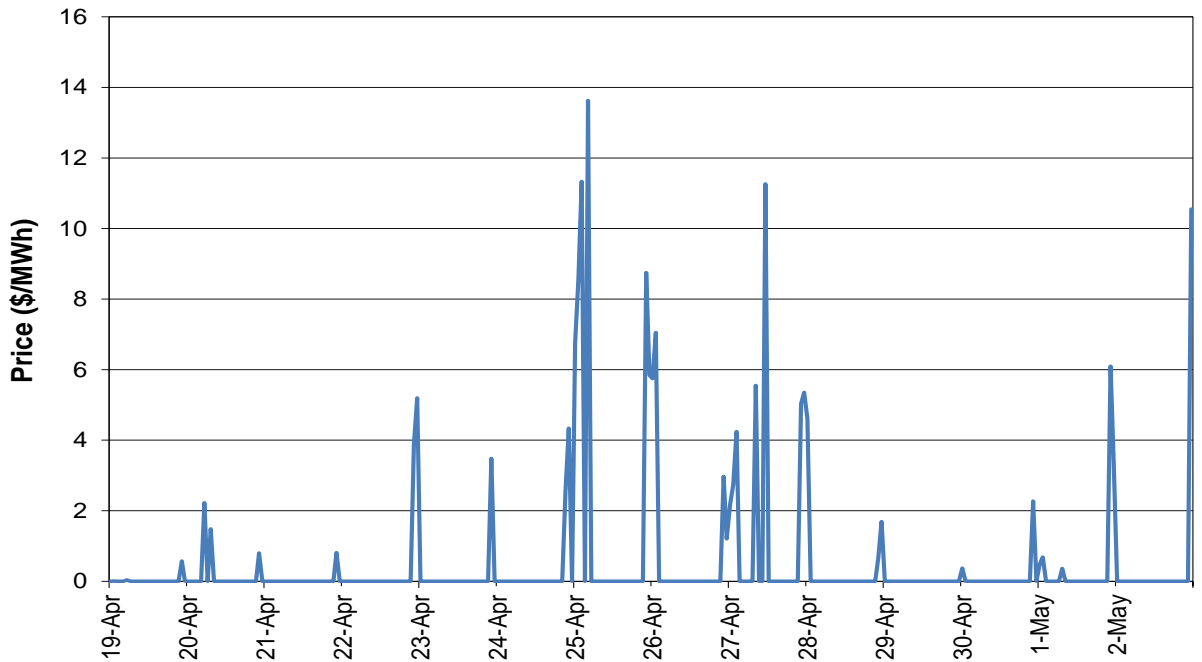




Figure 6: Real-Time FMM Average A/S Price

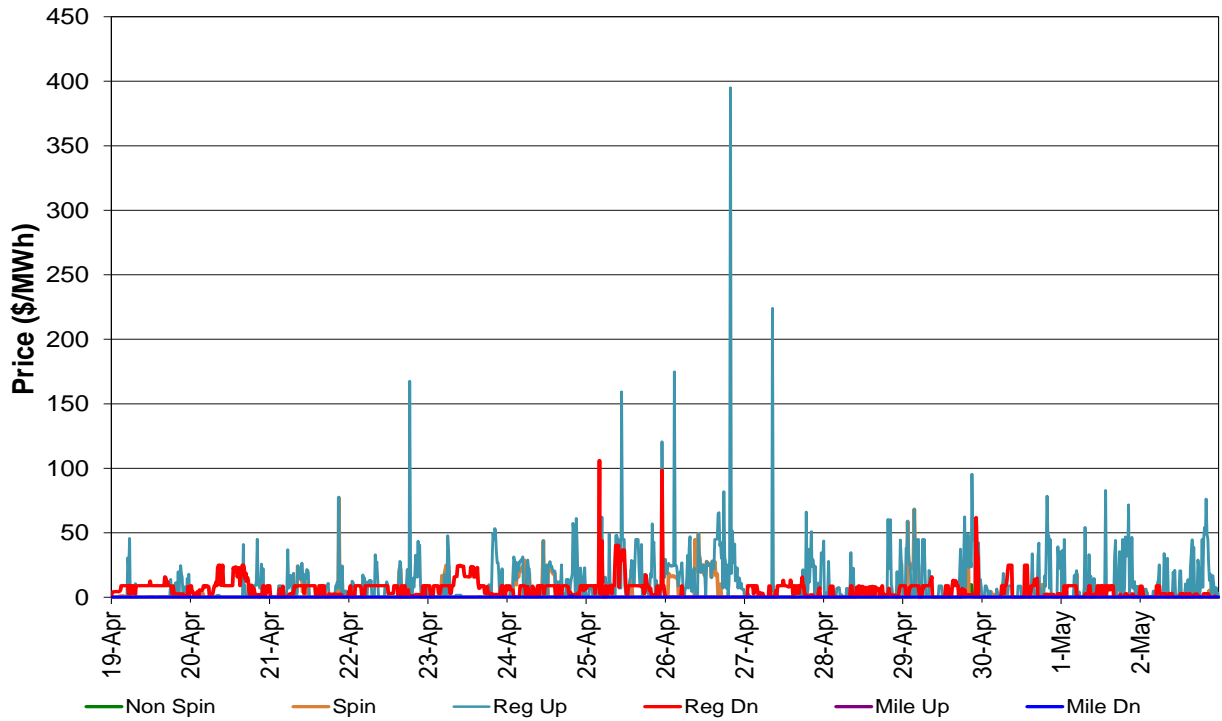
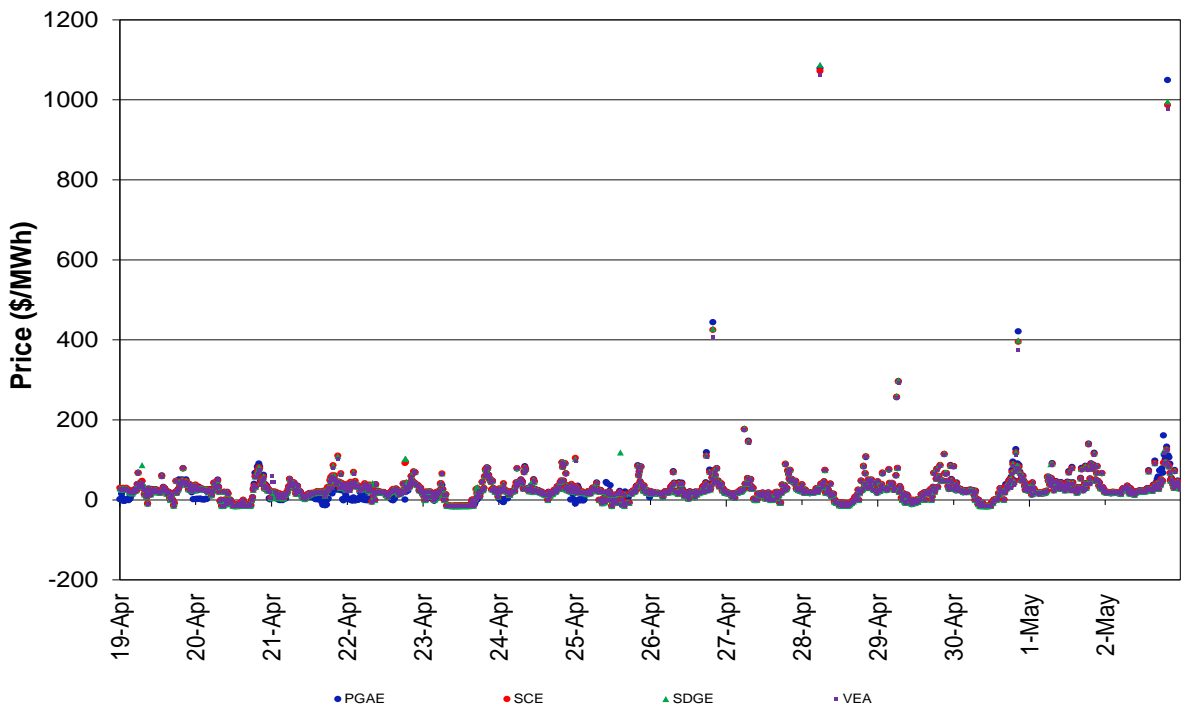
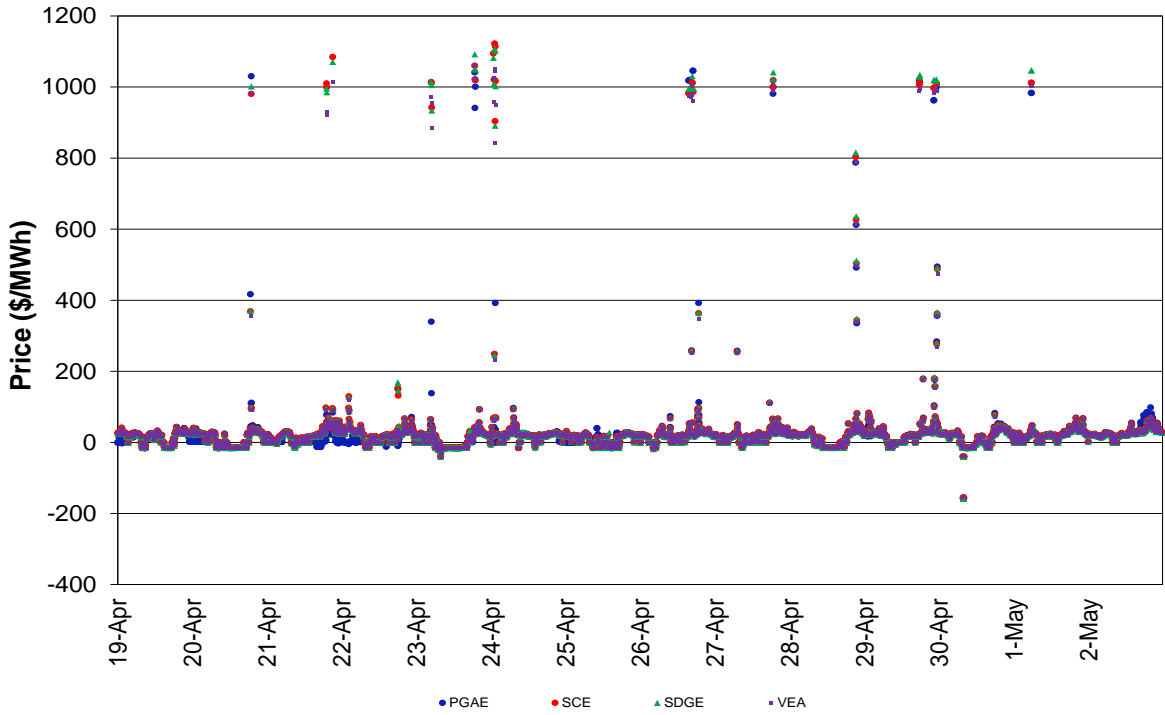


Figure 7: Real-Time FMM DLAP LMP



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



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

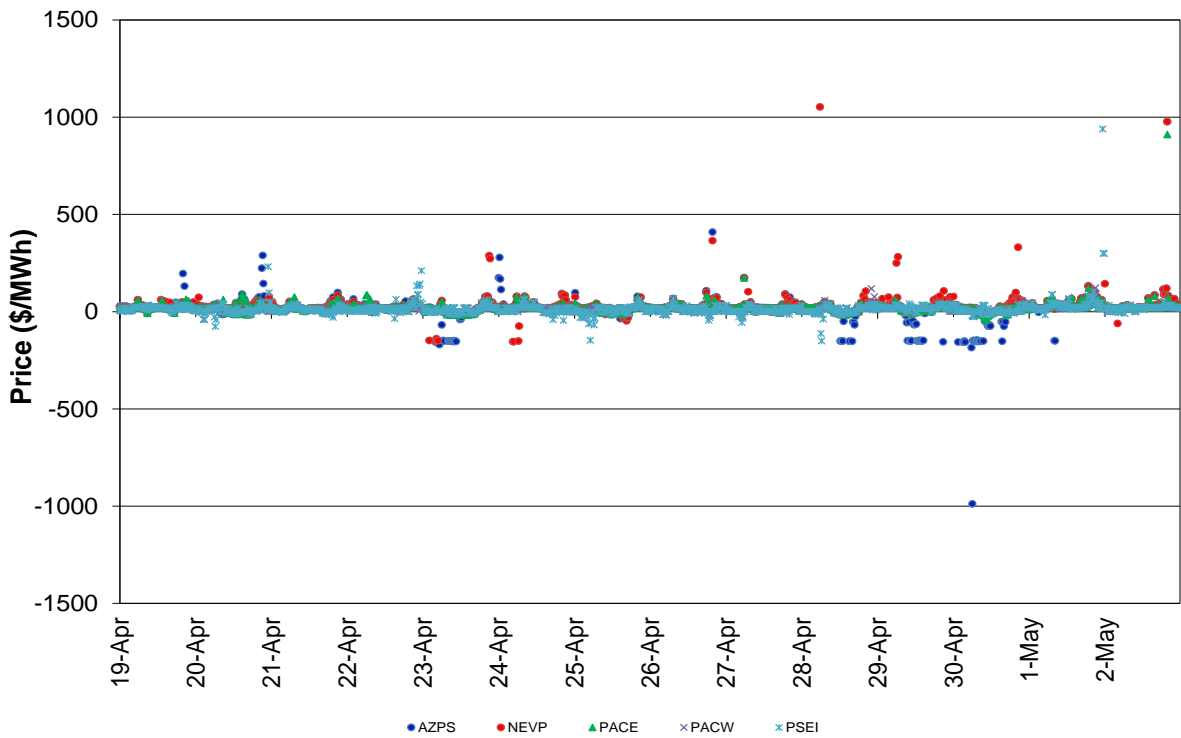




Figure 10: Real-Time RTD ELAP LMP

