

## Market Highlights<sup>1</sup> (December 13–December 26)

- The average DLAP price in the integrated forward market was \$38.67. The maximum and minimum DLAP prices were \$187.02 and \$14.42, respectively. The maximum and minimum PNode prices in the integrated forward market were \$141.15 and -\$4.68 respectively.
- The top two interties congested in the integrated forward market were NOB\_ITC and MALIN500. Congestion rents in these two weeks totaled \$35,702,807.60.
- The average day-ahead ancillary service prices were between \$0.00 and \$30.42.
- Approximately 99.19 percent of the RUC requirements were met from RA units.
- The average real-time FMM DLAP price was \$37.00, with a maximum price of \$462.85 and a minimum price of -\$116.32. The maximum and minimum PNode prices in the FMM were \$462.79 and -\$155.00, respectively.
- Out of the total 1,344 FMM intervals, 4 intervals saw DLAP prices above \$250, and 0 intervals saw DLAP prices below -\$150.
- Out of the total 1,344 FMM intervals, 13 intervals saw ELAP prices above \$250 and 0 intervals saw ELAP prices below -\$150. The average real-time FMM ELAP price was \$27.18, with a maximum price of \$1,051.15 and a minimum price of -\$148.64.
- The average real-time RTD DLAP price was \$38.45, with a maximum price of \$1,596.09 and a minimum price of -\$159.98. The maximum and minimum PNode prices in the RTD were \$1,596.49 and -\$176.07, respectively.
- Out of the total 4,032 RTD intervals, 13 intervals saw DLAP prices above \$250 and 1 interval saw DLAP prices below -\$150.
- Out of the total 4,032 RTD intervals, 36 intervals saw ELAP prices above \$250 and 13 intervals saw ELAP prices below -\$150. The average real-time RTD ELAP price was \$26.68, with a maximum price of \$1,053.11 and a minimum price of -\$863.34.
- Root cause for daily high price events are noted in Tables 1 and 2.

Table 1 FMM Intervals	
Trade Date	Root Cause
FMM Dec 13 HE 17	Congestion on OMS 4646120 ELD_MKP_SCIT_NG and load changes.
FMM Dec 13 HE 20	Congestion on 24138_SERRANO_500_24137_SERRANO_230_XF_1_P and load changes.
FMM Dec 13 HE 22	Congestion on 24138_SERRANO_500_24137_SERRANO_230_XF_1_P, load changes, and change of renewable forecast.

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

<b>Table 1 FMM Intervals</b>	
<b>Trade Date</b>	<b>Root Cause</b>
FMM Dec 19 HE 17	Load changes.

<b>Table 2 RTD Intervals</b>	
<b>Trade Date</b>	<b>Root Cause</b>
RTD Dec 13 HE 18	Congestion on OMS 4859482 MIDWAY_VINCENT_1, OMS 4646112_OP-6610, and load changes.
RTD Dec 14 HE 16; Dec 20 HE 8, 17	Renewable deviation and load changes.
RTD Dec 14 HE 23	Load changes.
RTD Dec 15 HE 8	Congestion on OMS 4646120 ELD_MKP_SCIT_NG.
RTD Dec 15 HE 16	Load changes and renewable deviation.
RTD Dec 16 HE 17, HE 22	Renewable deviation.
RTD Dec 18 HE 18	Congestion on OMS 4646120 ELD_MKP_SCIT_NG, and load changes, and re-dispatch of resources.
RTD Dec 20 HE 20	Renewable deviation, re-dispatch of resources, and congestion on OMS 4646120 ELD_MKP_SCIT_NG.
RTD Dec 20 HE 21	Congestion on OMS 4646120 ELD_MKP_SCIT_NG and re-dispatch of resources.
RTD Dec 21 HE 8	Congestion on OMS 4646120 ELD_MKP_SCIT_NG and renewable deviation.
RTD Dec 22 HE 19	Congestion on OMS 4646120 ELD_MKP_SCIT_NG, renewable deviation, and re-dispatch of resources.
RTD Dec 23 HE 9	Load changes and congestion on OMS 4646120 ELD_MKP_SCIT_NG.
RTD Dec 23 HE 23	Reduction of net imports, load changes, and congestion on OMS 4646120 ELD_MKP_SCIT_NG.



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

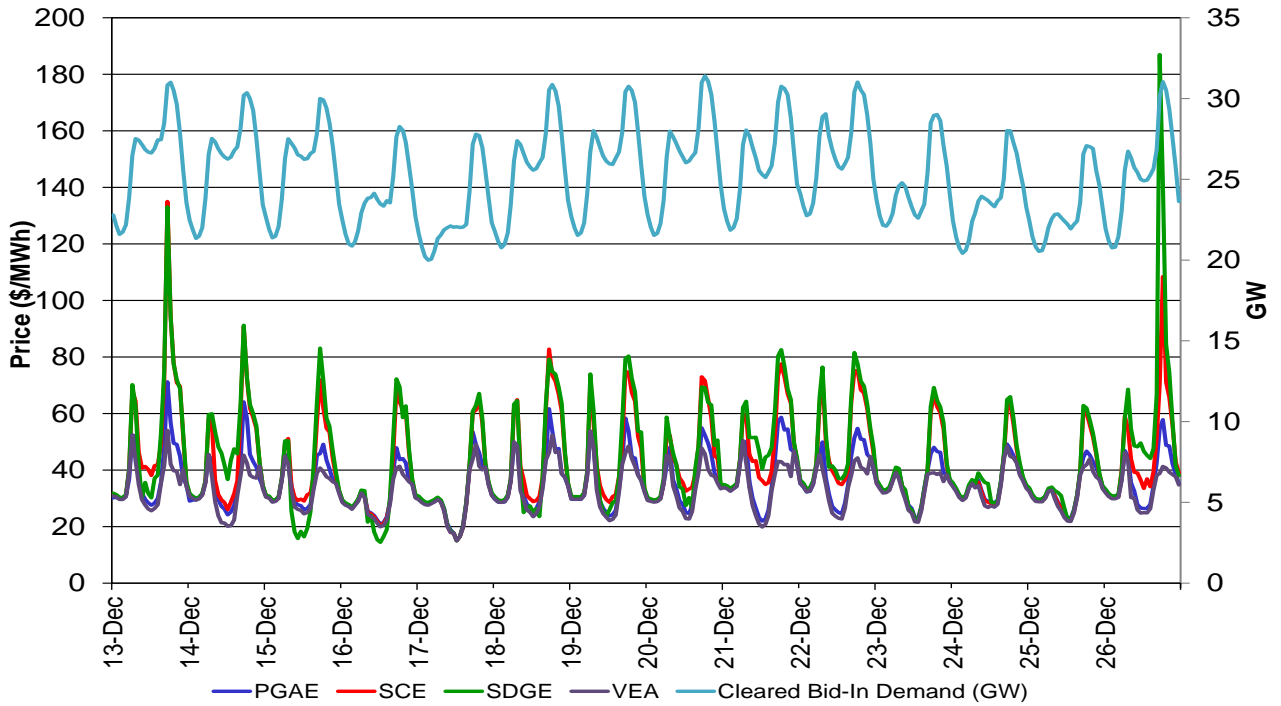
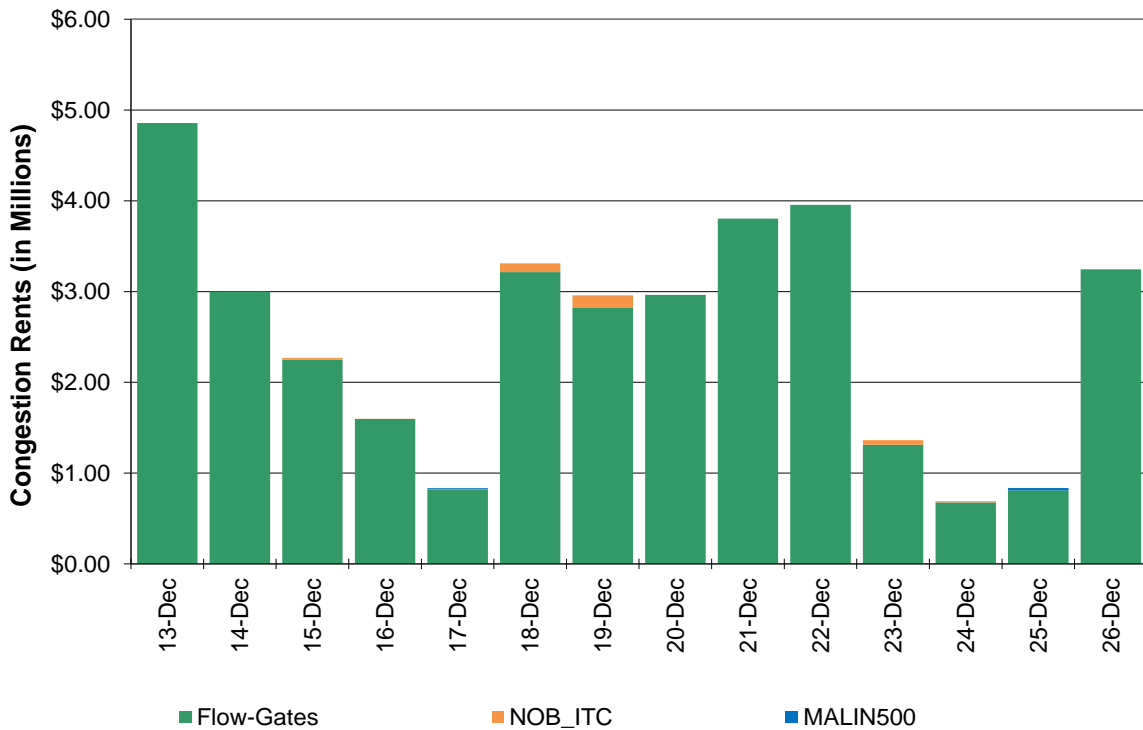


Figure 2: Day-Ahead Congestion Rents



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

<b>Transmission Constraint</b>	<b>Congestion Rent</b>
OMS 4646120 ELD_MKP_SCIT_NG	\$ 16,371,532.25
24138_SERRANO_500_24137_SERRANO_230_XF_1_P	\$ 9,176,606.62
22192_DOUBLTTP_138_22300_FRIARS_138_BR_1_1	\$ 3,221,123.66
OMS 4646112_OP-6610	\$ 3,211,760.79
IID-SCE_BG	\$ 838,491.46
22831_SYCAMORE_138_22832_SYCAMORE_230_XF_1	\$ 657,979.64
24036_EAGLROCK_230_24059_GOULD_230_BR_1_1	\$ 566,868.58
36075_COBURN_60.0_30760_COBURN_230_XF_2	\$ 348,560.96
30523_CC SUB_230_30525_C.COSTA_230_BR_1_1	\$ 320,604.92
30060_MIDWAY_500_29402_WIRLWIND_500_BR_1_2	\$ 200,788.62
7820_TL 230S_OVERLOAD_NG	\$ 183,048.12
31512_BIG BEN2_115_31516_WYANDJT2_115_BR_1_2	\$ 157,639.95
31336_HPLND JT_60.0_31206_HPLND JT_115_XF_2	\$ 35,767.35
31336_HPLND JT_60.0_31370_CLVRDLJT_60.0_BR_1_1	\$ 14,808.70
30060_MIDWAY_500_24156_VINCENT_500_BR_1_1	\$ 8,678.48
6410_CP5_NG	\$ 7,786.14
33045_FIBRJCT1_115_33049_RIVERVIEW_115_BR_1_1	\$ 3,858.51
31580_CASCADE_60.0_31582_STLLWATR_60.0_BR_1_1	\$ 3,074.19
31555_MSS TAP2_60.0_31553_BIG BAR_60.0_BR_1_1	\$ 2,507.48
31566_KESWICK_60.0_31582_STLLWATR_60.0_BR_1_1	\$ 1,241.97
HUMBOLDT_IMP_NG	\$ 1,232.51
31593_COWCREEK_60.0_31597_DESCHTP1_60.0_BR_1_1	\$ 1,056.47
31562_LEWISTON_60.0_31559_MSS TAP1_60.0_BR_1_1	\$ 1,004.91
30250_CARIBOU_230_30255_CARBOU M_1.0_XF_11	\$ 736.64
31597_DESCHTP1_60.0_31592_DESCHUTS_60.0_BR_1_1	\$ 644.04
31093_HYMPOMJT_60.0_31553_BIG BAR_60.0_BR_1_1	\$ 230.90
31000_HUMBOLDT_115_31452_TRINITY_115_BR_1_1	\$ 212.95
<b>Total</b>	<b>\$ 35,337,846.81</b>



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

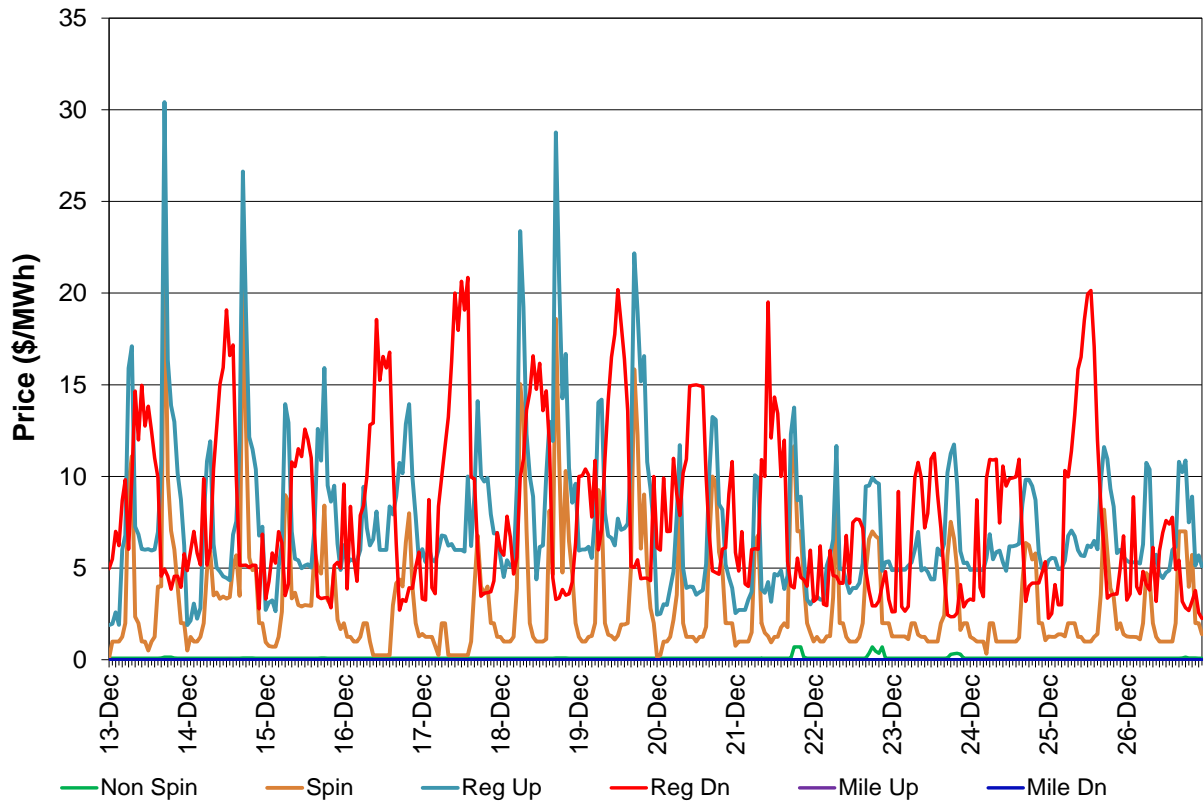
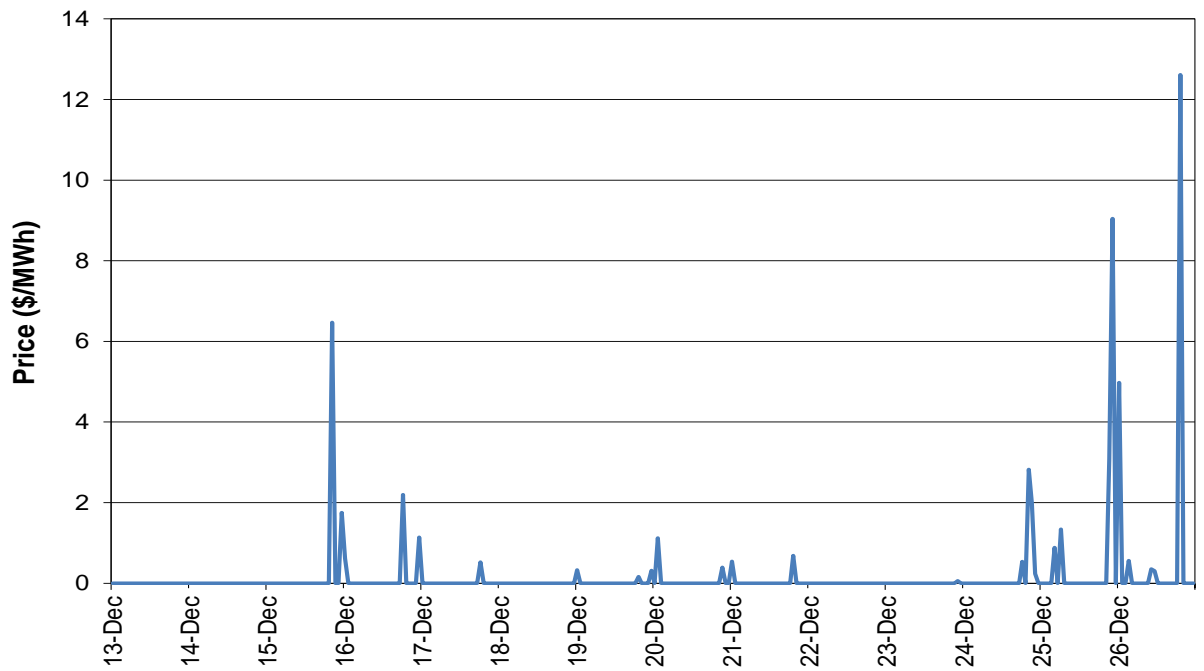
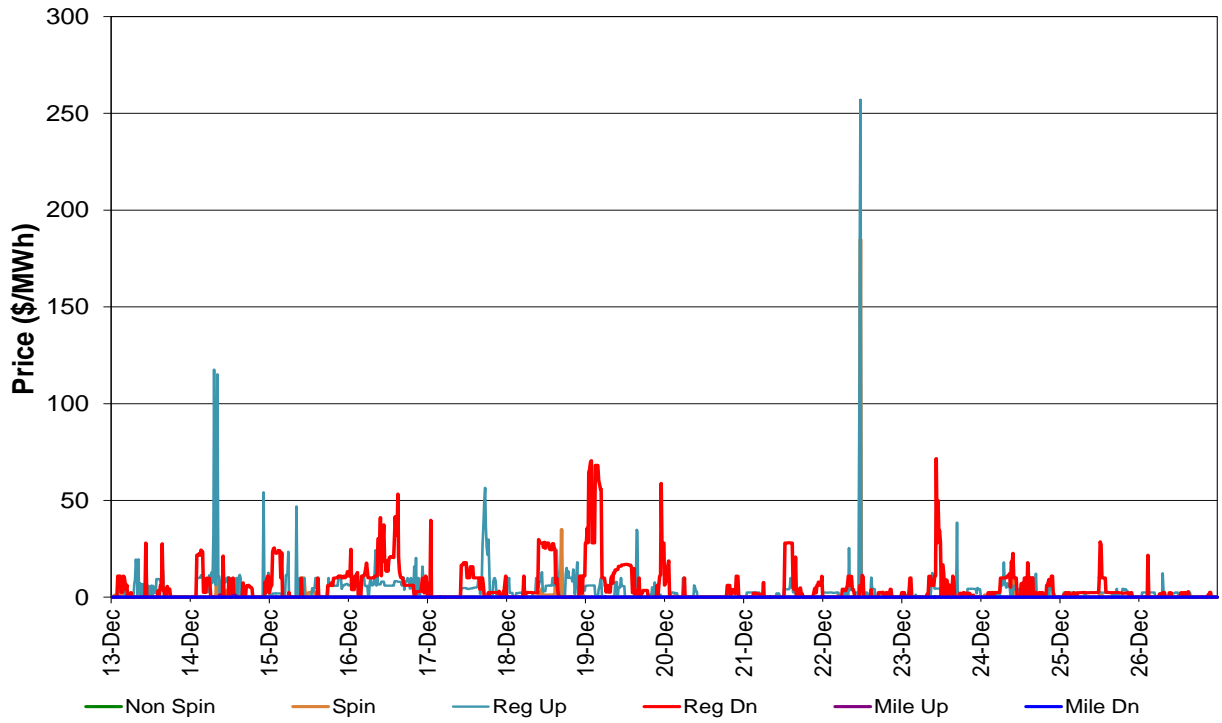


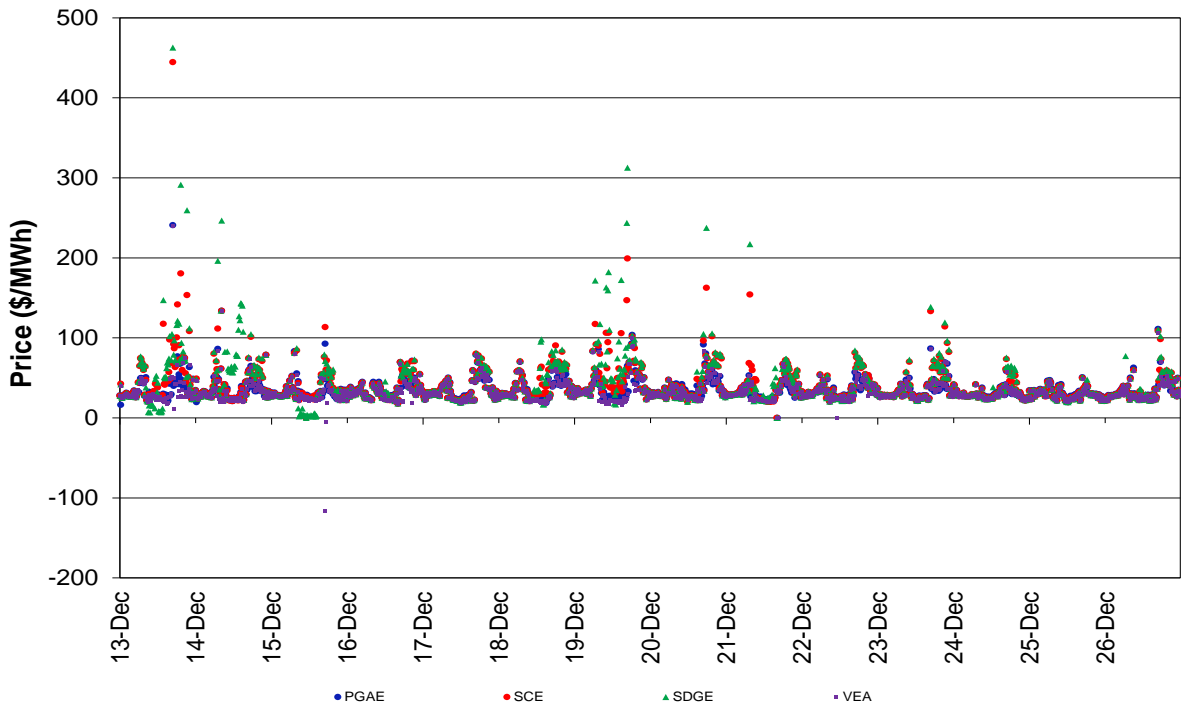
Figure 5: Day-Ahead Average RUC Price



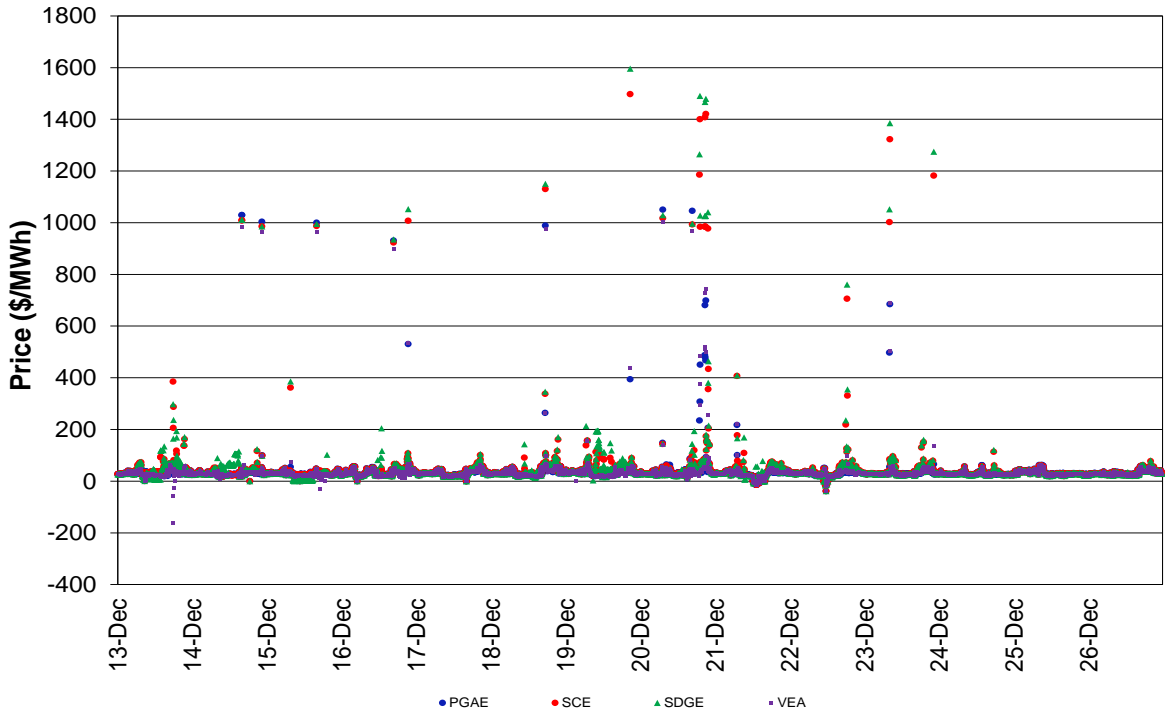
**Figure 6: Real-Time FMM Average A/S Price**



**Figure 7: Real-Time FMM DLAP LMP**



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



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

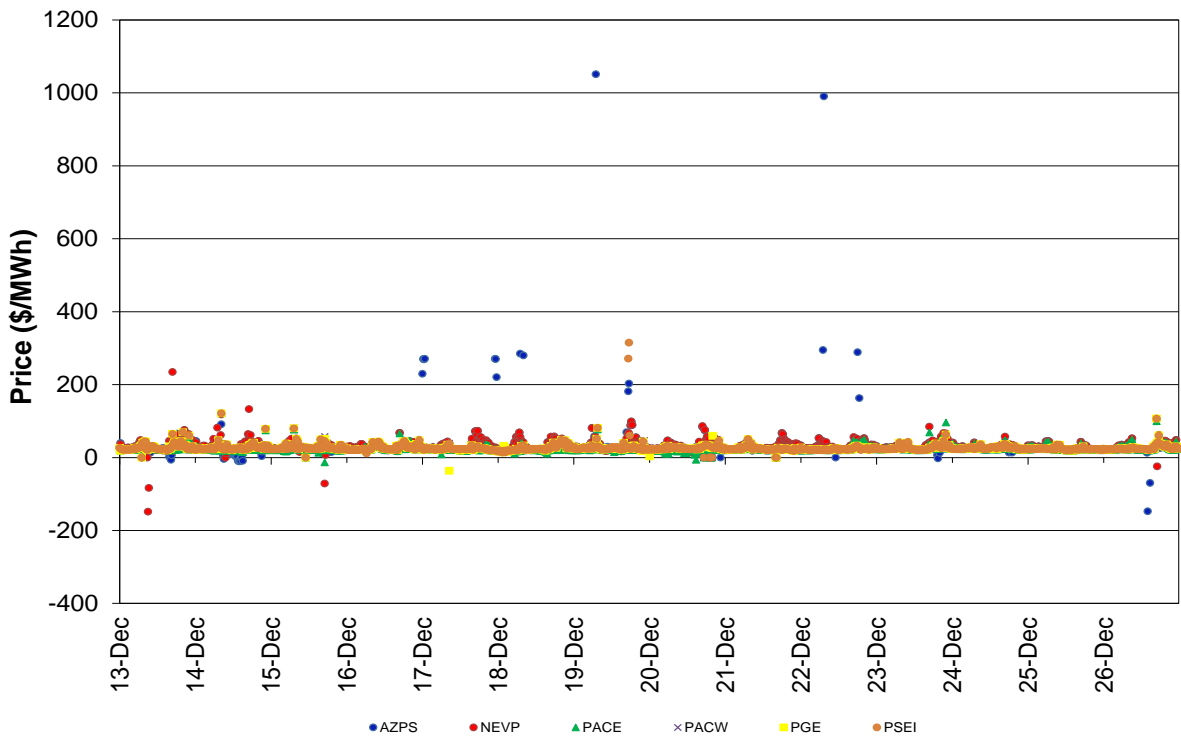




Figure 10: Real-Time RTD ELAP LMP

