# Market Highlights[1] (November 29–December 12)

- The average DLAP price in the integrated forward market was $39.42. The maximum and minimum DLAP prices were $117.27 and $13.70, respectively. The maximum and minimum PNode prices in the integrated forward market were $125.08 and $7.04 respectively.

- The top two interties congested in the integrated forward market were MALIN500 and NOB_ITC. Congestion rents in these two weeks totaled $48,849,915.17.

- The average day-ahead ancillary service prices were between $0.00 and $45.00.

- Approximately 99.16 percent of the RUC requirements were met from RA units.

- The average real-time FMM DLAP price was $40.10, with a maximum price of $1,043.98 and a minimum price of -$133.04. The maximum and minimum PNode prices in the FMM were $1,044.98 and -$262.22, respectively.

- Out of the total 1,344 FMM intervals, 3 intervals saw DLAP prices above $250, and 0 intervals saw DLAP prices below -$150.

- Out of the total 1,344 FMM intervals, 42 intervals saw ELAP prices above $250 and 13 intervals saw ELAP prices below -$150. The average real-time FMM ELAP price was $30.32, with a maximum price of $1,063.15 and a minimum price of -$168.61.

- The average real-time RTD DLAP price was $38.97, with a maximum price of $1,628.52 and a minimum price of -$182.75. The maximum and minimum PNode prices in the RTD were $1,628.72 and -$1,049.24, respectively.

- Out of the total 4,032 RTD intervals, 42 intervals saw DLAP prices above $250 and 1 interval saw DLAP prices below -$150.

- Out of the total 4,032 RTD intervals, 79 intervals saw ELAP prices above $250 and 40 intervals saw ELAP prices below -$150. The average real-time RTD ELAP price was $28.30, with a maximum price of $1,085.43 and a minimum price of -$464.02.

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

| Table 1 FMM Intervals	
Trade Date	**Root Cause**
FMM Nov 30 HE 19	Congestion on 24086_LUGO _500_26105_VICTORVL_500_BR_1 _1
FMM Dec 9 HE 17	Load changes and change in renewable forecast
FMM Dec 11 HE 18	Load changes, change in renewable forecast and congestion on 24086_LUGO _500_26105_VICTORVL_500_BR_1 _1

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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 Nov 30 HE 8	Congestion on OMS 4646120 ELD_MKP_SCIT_NG, load changes, and reduction of net imports.
RTD Nov 30 HE 17	Reduction of net imports, load changes and generator outage.
RTD Dec 2 HE 8	Renewable deviation.
RTD Dec 2 HE 16	Generator outage, renewable deviation and load changes.
RTD Dec 5 HE 7; Dec 9 HE 17	Load changes and renewable deviation.
RTD Dec 6 HE 16	Renewable deviation and re-dispatch of resources
RTD Dec 7 HE 17; Dec 11 HE 22, 23	Congestion on OMS 4646120 ELD_MKP_SCIT_NG and load changes.
RTD Dec 8 HE 22	Congestion on 24086_LUGO _500_26105_VICTORVL_500_BR_1 _1
RTD Dec 12 HE 7	Congestion on OMS 4646120 ELD_MKP_SCIT_NG and 30060_MIDWAY _500_29402_WIRLWIND_500_BR_1 _2, and load changes.
RTD Dec 12 HE 22	Congestion on OMS 4646120 ELD_MKP_SCIT_NG and 30060_MIDWAY _500_29402_WIRLWIND_500_BR_1 _2, and re-dispatch of resources.

Figure 1: Day-Ahead (IFM) LAP LMP and Cleared Bid-In Demand
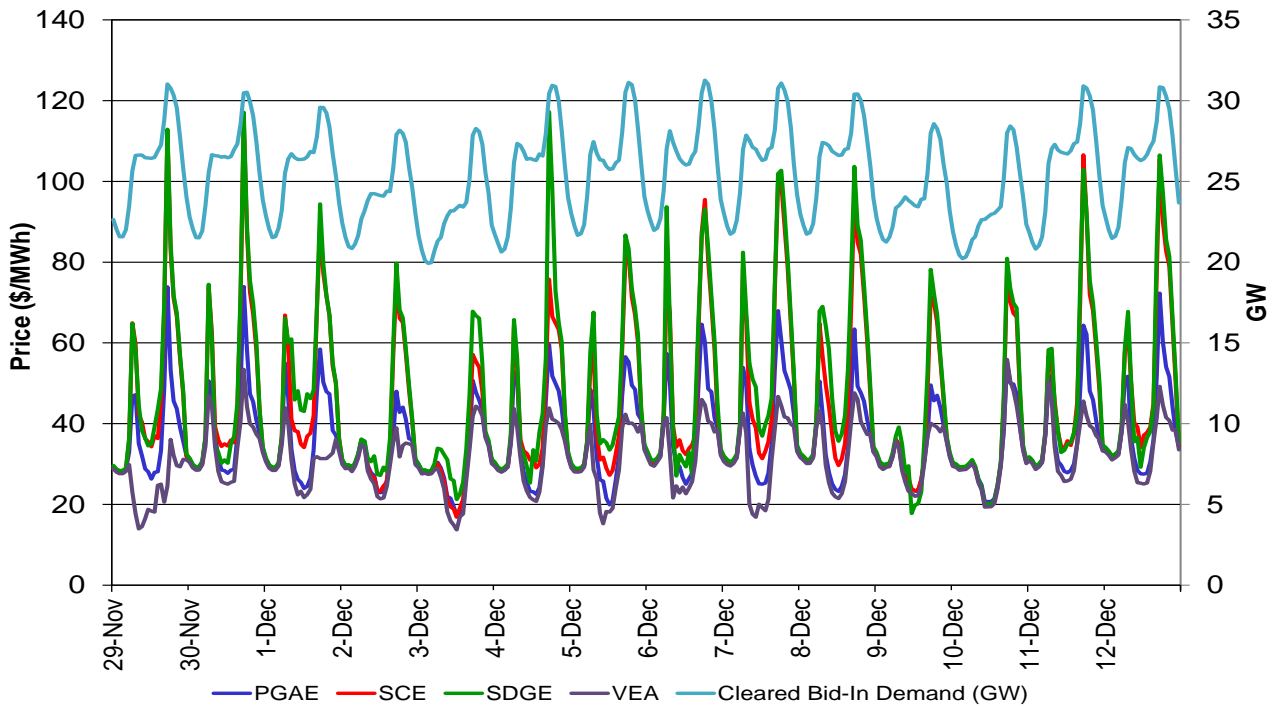
Figure 2: Day-Ahead Congestion Rents
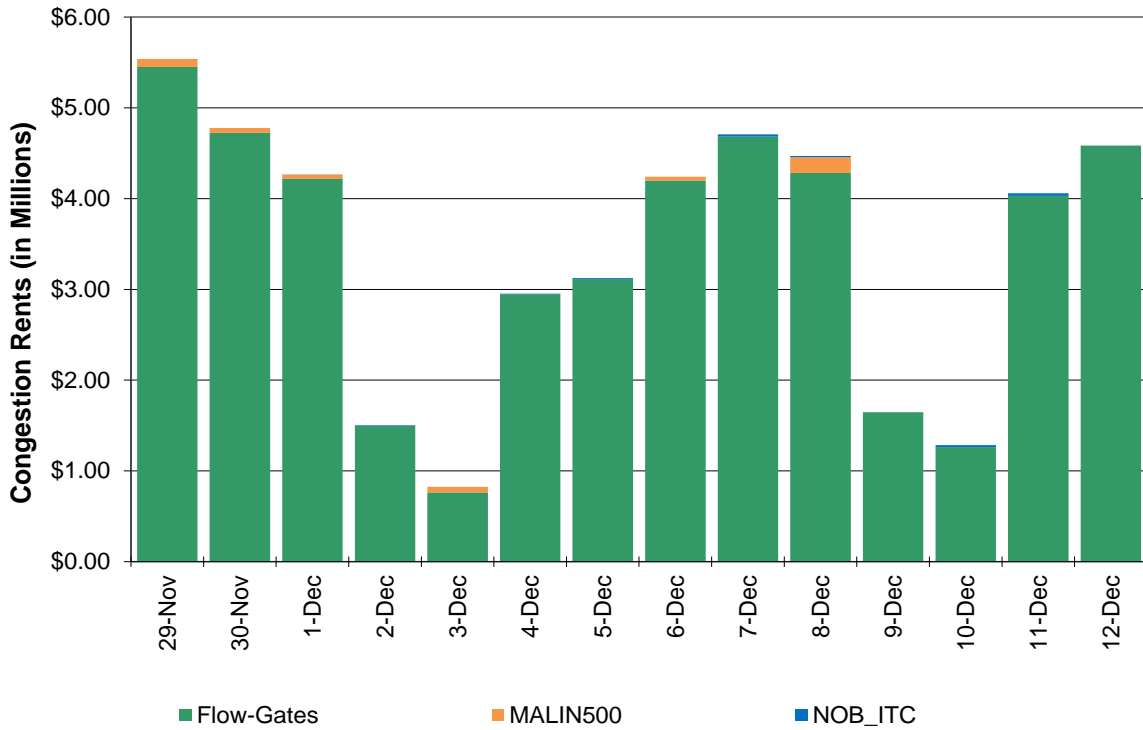
**Figure 3: Day-Ahead Congestion Rents for Flow-Based Constraints**

Transmission Constraint	Congestion Rent
OMS 4646120 ELD_MKP_SCIT_NG	$ 25,925,898.24
24138_SERRANO _500_24137_SERRANO _230_XF_1 _P	$ 9,297,802.10
OMS 4646112_OP-6610	$ 6,078,429.81
22192_DOUBLTTP_138_22300_FRIARS _138_BR_1 _1	$ 2,582,956.65
24036_EAGLROCK_230_24059_GOULD _230_BR_1 _1	$ 1,407,307.10
OMS 5459385 VIC-RNL_SCIT	$ 1,228,622.12
7820_TL 230S_OVERLOAD_NG	$ 220,696.98
7820_TL23040_IV_SPS_NG	$ 129,011.74
6310_CP8_NG	$ 94,283.26
22831_SYCAMORE_138_22124_CHCARITA_138_BR_1 _1	$ 87,678.18
33970_INGRM C._115_33965_SALADO J_115_BR_1 _1	$ 73,964.11
31512_BIG BEN2_115_31516_WYANDJT2_115_BR_1 _2	$ 69,139.38
OMS 5305814 50002_OOS_TDM	$ 48,774.73
22692_ROSCYNTP_69.0_22696_ROSE CYN_69.0_BR_1 _1	$ 43,528.13
24086_LUGO _500_26105_VICTORVL_500_BR_1 _1	$ 42,479.70
IID-SCE_BG	$ 36,100.12
31336_HPLND JT_60.0_31206_HPLND JT_115_XF_2	$ 13,258.24

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

Transmission Constraint	Congestion Rent
31334_CLER LKE_60.0_31338_KONOCTI6_60.0_BR_1 _1	$ 12,138.99
31555_MSS TAP2_60.0_31553_BIG BAR _60.0_BR_1 _1	$ 4,294.34
HUMBOLDT_IMP_NG	$ 4,219.44
31336_HPLND JT_60.0_31370_CLVRDLJT_60.0_BR_1 _1	$ 1,664.05
22664_POMERADO_69.0_22828_SYCAMORE_69.0_BR_2 _1	$ 1,634.24
31306_WILLITS _60.0_31308_LYTNVLLE_60.0_BR_1 _1	$ 543.52
31093_HYMPOMJT_60.0_31553_BIG BAR _60.0_BR_1 _1	$ 505.22
31080_HUMBOLDT_60.0_31088_HMBLT JT_60.0_BR_1 _1	$ 425.57
31108_SWNS FLT_60.0_31110_BRDGVLLE_60.0_BR_1 _1	$ 414.77
33045_FIBRJCT1_115_33049_RIVERVEW_115_BR_1 _1	$ 369.65
33914_MI-WUK _115_33917_FBERBORD_115_BR_1 _1	$ 207.38
31227_HGHLNDJ2_115_31950_CORTINA _115_BR_1 _1	$ 175.02
31110_BRDGVLLE_60.0_31112_FRUITLND_60.0_BR_1 _1	$ 94.74
31080_HUMBOLDT_60.0_31092_MPLE CRK_60.0_BR_1 _1	$ 85.05
22324_GLENCLIF_69.0_22328_GLNCLFTP_69.0_BR_1 _1	$ 15.42
Total	**$ 47,406,717.97**

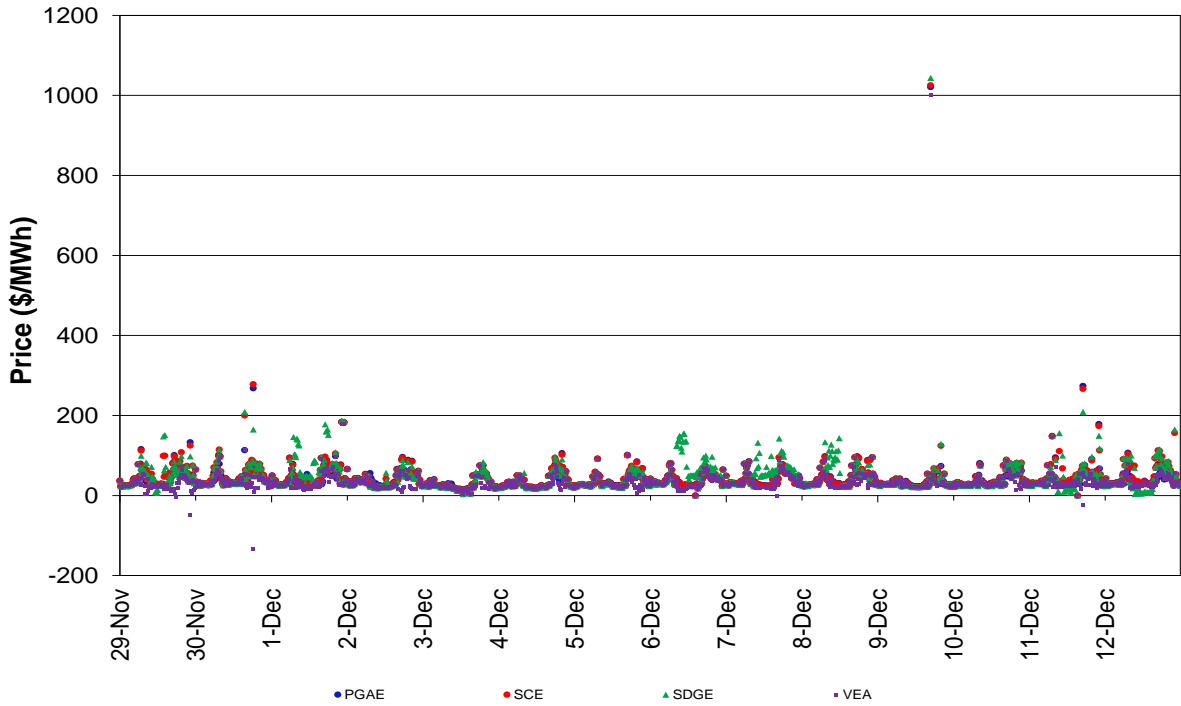**Figure 4: Day-Ahead (IFM) Average A/S Price**
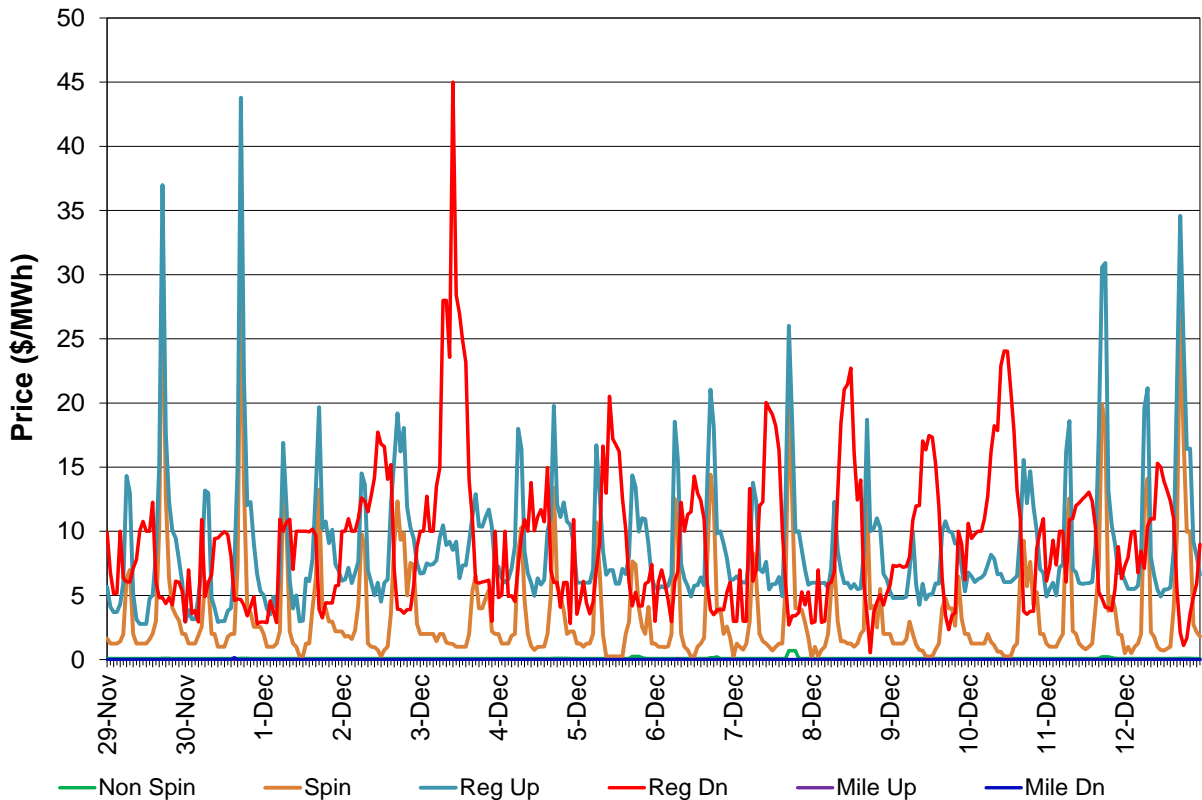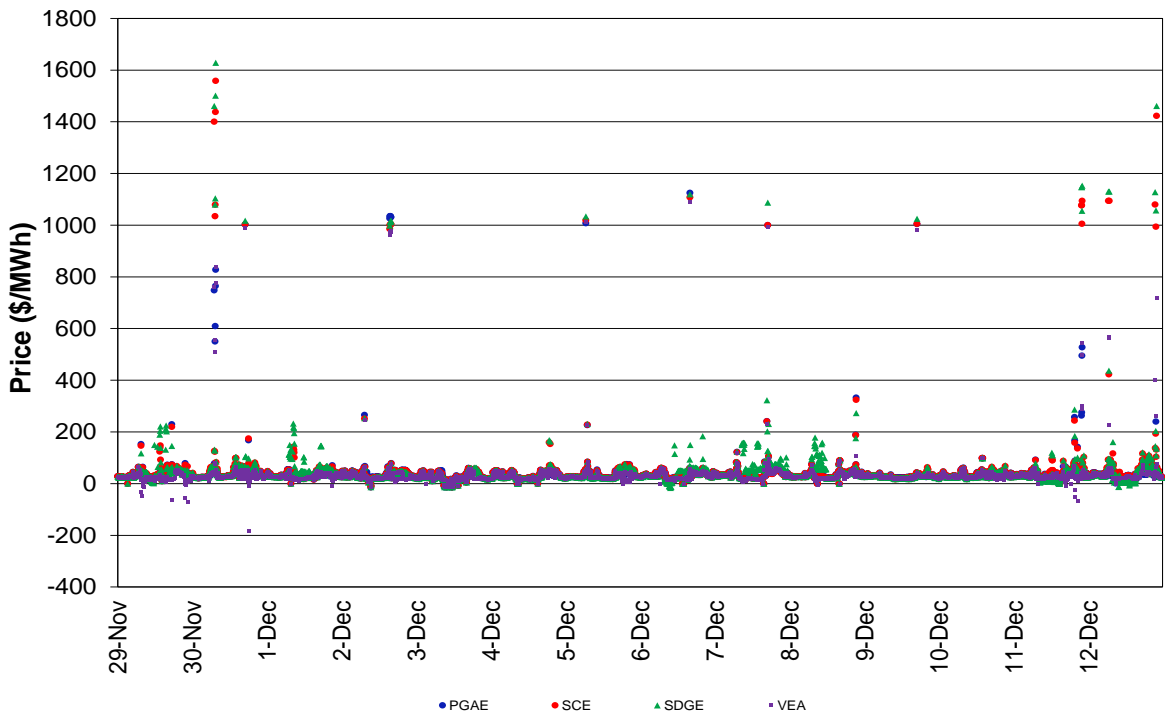
Figure 5: Day-Ahead Average RUC Price
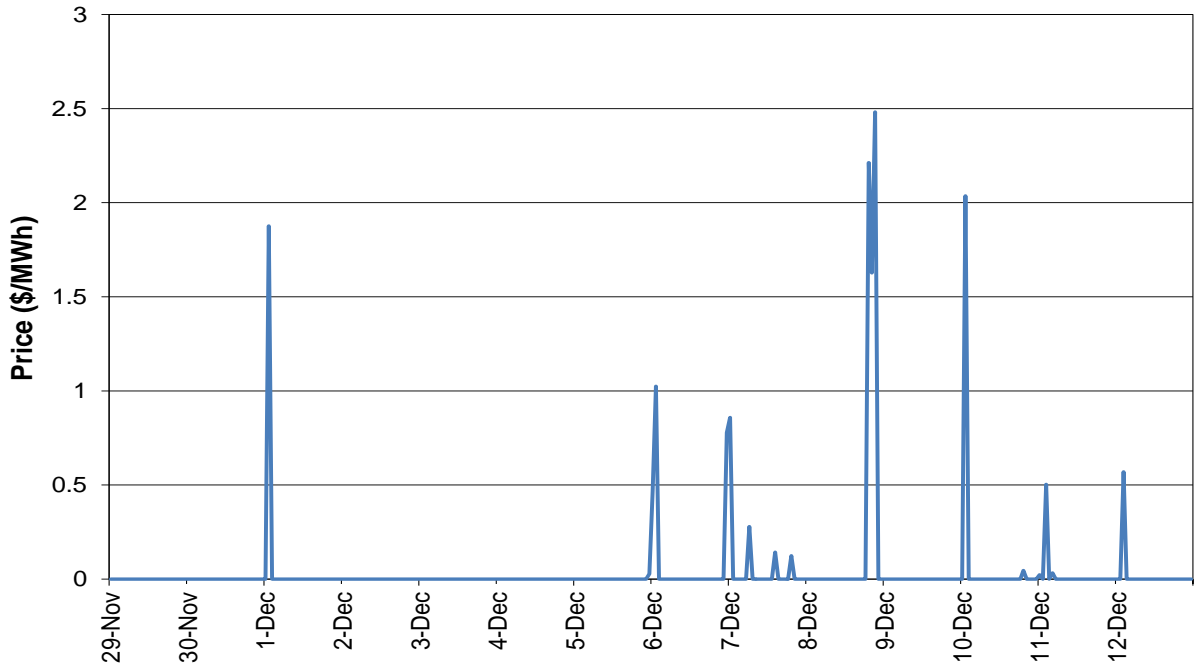
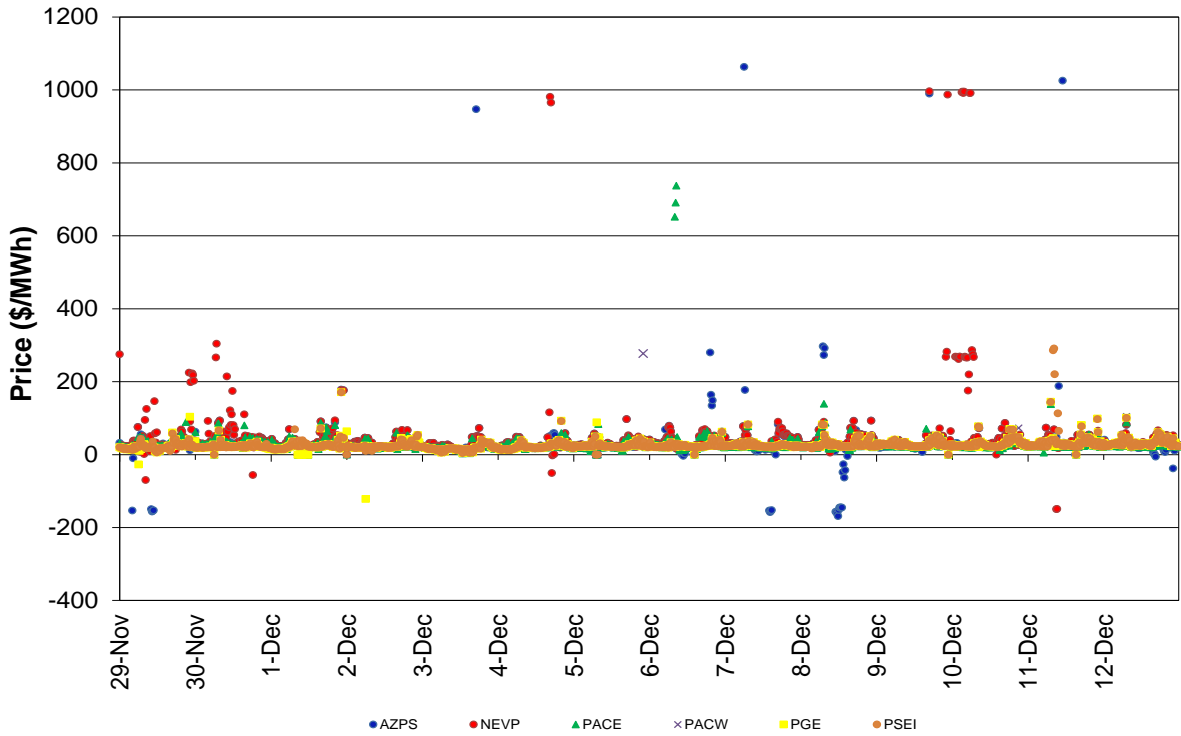**Figure 6: Real-Time FMM Average A/S Price**
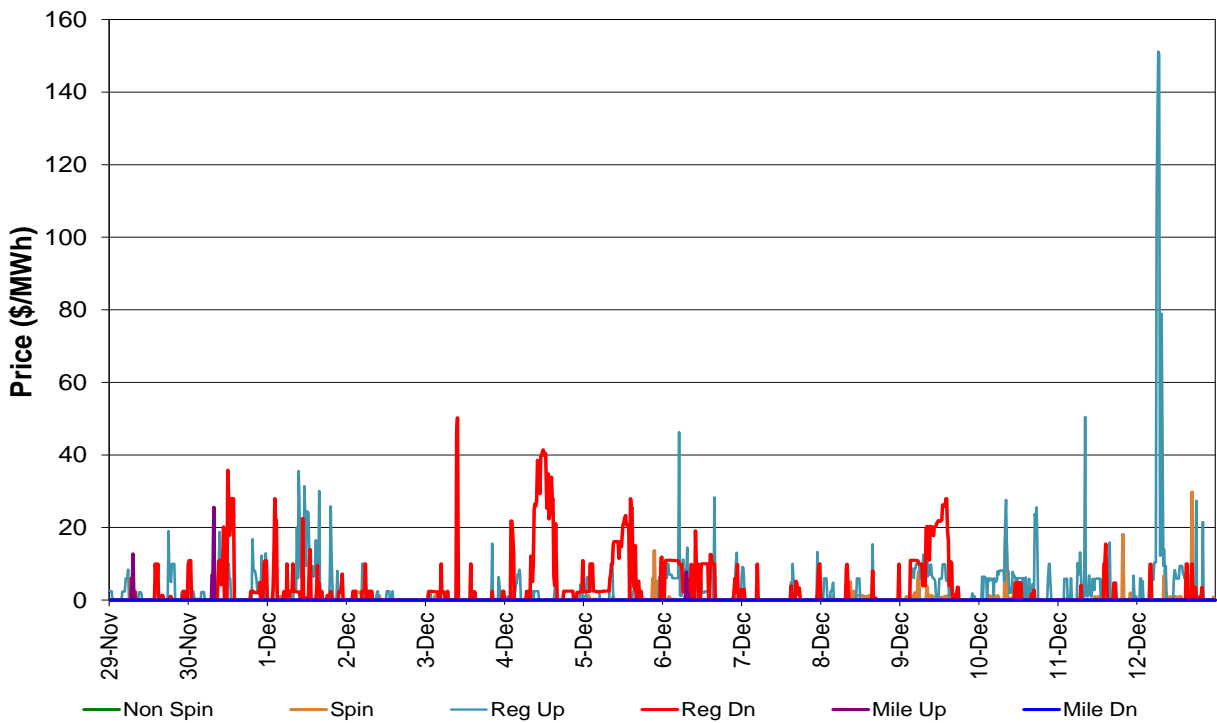
Figure 7: Real-Time FMM DLAP LMP

Figure 8: Real-Time RTD DLAP LMP

Figure 9: Real-Time FMM ELAP LMP

Legend: ● AZPS ● NEVP ▲ PACE ✕ PACW ■ PGE ● PSEI

Figure 10: Real-Time RTD ELAP LMP

Legend: ● AZPS ● NEVP ▲ PACE ✕ PACW ■ PGE ● PSEI