

## Market Highlights<sup>1</sup> (November 14–November 27)

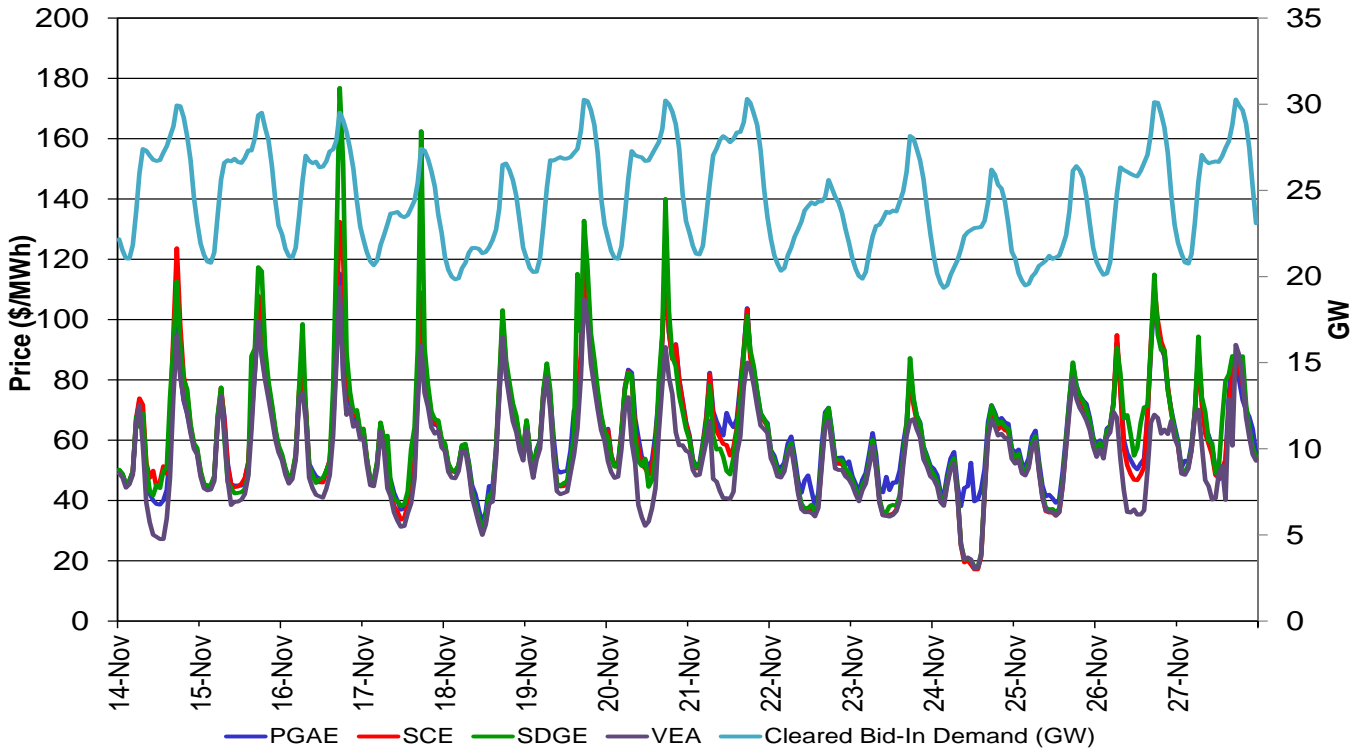
- The average DLAP price in the integrated forward market was \$59.44. The maximum and minimum DLAP prices were \$176.91 and \$17.07, respectively. The maximum and minimum PNode prices in the integrated forward market were \$116.16 and \$31.36 respectively.
- The top two interties congested in the integrated forward market were MALIN500 and PALOVRDE\_ITC. Congestion rents in these two weeks totaled \$28,063,603.03.
- The average day-ahead ancillary service prices were between \$0.00 and \$63.95.
- Approximately 95.65 percent of the RUC requirements were met from RA units.
- The average real-time FMM DLAP price was \$51.72, with a maximum price of \$271.30 and a minimum price of -\$90.91. The maximum and minimum PNode prices in the FMM were \$672.47 and -\$489.11, 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, 21 intervals saw ELAP prices above \$250 and 15 intervals saw ELAP prices below -\$150.
- The average real-time FMM ELAP price was \$42.38, with a maximum price of \$973.86 and a minimum price of -\$156.21.
- The average real-time RTD DLAP price was \$51.06, with a maximum price of \$1,012.39 and a minimum price of -\$284.65. The maximum and minimum PNode prices in the RTD were \$1,000.00 and -\$1,019.17, respectively.
- Out of the total 4,032 RTD intervals, 26 intervals saw DLAP prices above \$250 and 6 interval saw DLAP prices below -\$150.
- Out of the total 4,032 RTD intervals, 64 intervals saw ELAP prices above \$250 and 57 intervals saw ELAP prices below -\$150. The average real-time RTD ELAP price was \$42.38, with a maximum price of \$995.13 and a minimum price of -\$193.10.
- Root cause for daily high price events are noted in Tables 1 and 2.

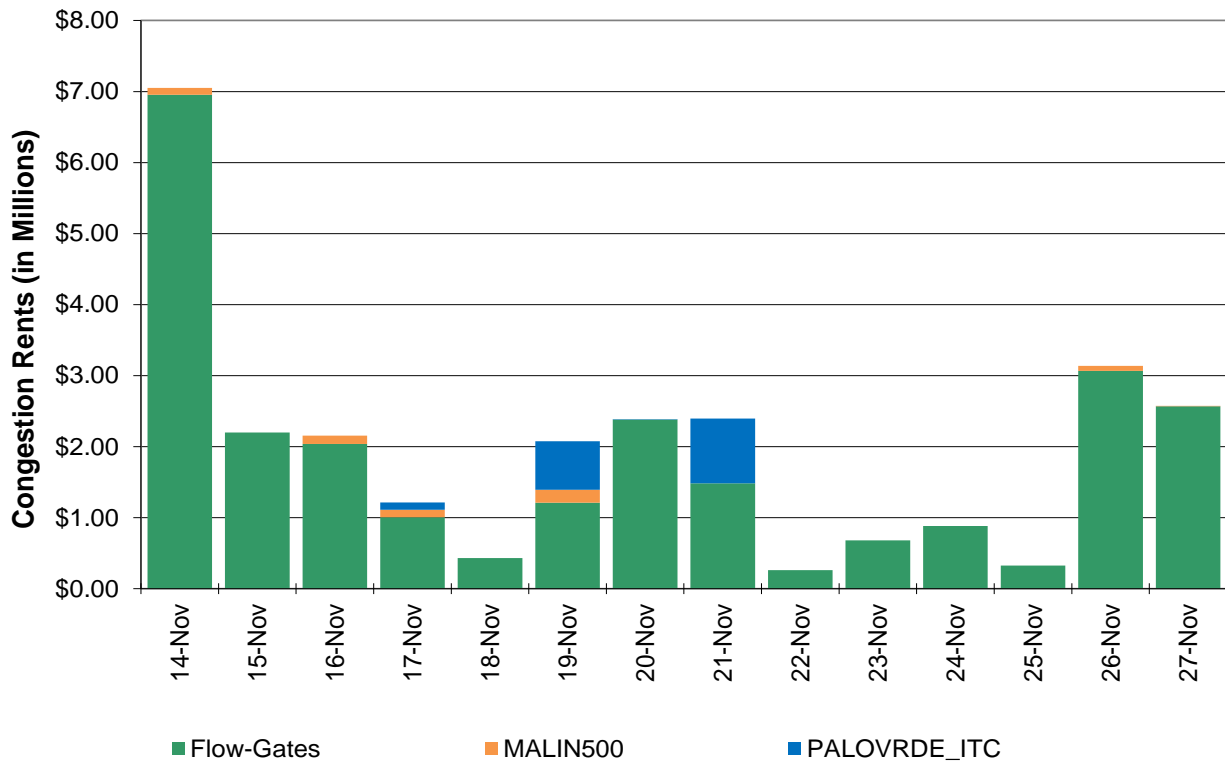
Table 1 FMM Intervals	
Trade Date	Root Cause
FMM Nov 15 HE 6	Load changes and renewable deviation.
FMM Nov 16 HE 15-19	Congestion on 24016_BARRE _230_24154_VILLA PK_230_BR_1_1 and 24156_VINCENT _500_24155_VINCENT _230_XF_4_P

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

Table 1 FMM Intervals	
Trade Date	Root Cause
FMM Nov 19 HE 18	Load changes and congestion on 7820_TL 230S_OVERLOAD_NG
FMM Nov 20 HE 21	Congestion on 7820_TL 230S_OVERLOAD_NG
FMM Nov 27 HE 18	Congestion on 24086_LUGO _500_26105_VICTORVL_500_BR_1_1

Table 2 RTD Intervals	
Trade Date	Root Cause
RTD Nov 14 HE 8	Renewable deviation
RTD Nov 14 HE 16, 18	Congestion on 24138_SERRANO_500_24137_SERRANO_230_XF_3
RTD Nov 15 HE 15	Congestion on 24016_BARRE_230_24154_VILLA PK_230_BR_1_1
RTD Nov 15 HE 20, 21	Load changes
RTD Nov 16 HE 15, 17-18	Congestion on 24016_BARRE_230_24154_VILLA PK_230_BR_1_1 and 24156_VINCENT_500_24155_VINCENT_230_XF_4_P
RTD Nov 16 HE 22	Congestion on 7820_TL 230S_OVERLOAD_NG
RTD Nov 17 HE 21-23	Congestion on 7820_TL 230S_OVERLOAD_NG
RTD Nov 18 HE 17	Congestion on 7820_TL23040_IV_SPS_NG
RTD Nov 19 HE 9, 10	Load changes, renewable deviation, and congestion on 24042_ELDORDO_500_24086_LUGO _500_BR_1_3
RTD Nov 19 HE 14-16	Load changes and renewable deviation.
RTD Nov 20 HR 21	Congestion on 7820_TL 230S_OVERLOAD_NG
RTD Nov 22 HE 8	Load changes and renewable deviation.
RTD Nov 25 HE 2	Load changes.
RTD Nov 27 HE 18, 20	Congestion on 24086_LUGO _500_26105_VICTORVL_500_BR_1_1

**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_6451207_TRACY-LOSBANOS	\$ 4,276,858.55
30763_Q0577SS_230_30765_LOSBANOS_230_BR_1_1	\$ 713,770.82
30885_MUSTANGS_230_30900_GATES_230_BR_2_1	\$ 516,239.64
24086_LUGO_500_24092_MIRALOMA_500_BR_2_1	\$ 393,453.41
30515_WARNERVL_230_30800_WILSON_230_BR_1_1	\$ 385,269.73
7820_TL_230S_OVERLOAD_NG	\$ 362,353.20
34116_LE GRAND_115_34115_ADRA TAP_115_BR_1_1	\$ 248,887.96
34519_LPNJCTSS_115_34429_GWF_HEP_115_BR_1_1	\$ 248,655.92
33008_GRIZLYJ2_115_33010_SOBRANTE_115_BR_2_1	\$ 213,021.47
33514_MANTECA_115_33526_KASSONJ1_115_BR_1_1	\$ 174,069.99
30114_DELEVAN_230_30450_CORTINA_230_BR_1_1	\$ 148,430.26
99254_J.HINDS2_230_24806_MIRAGE_230_BR_1_1	\$ 111,976.71
34150_NEWHALL_115_34154_DAIRYLND_115_BR_1_1	\$ 104,928.94
34105_CERTANJ1_115_34121_SHARON T_115_BR_1_1	\$ 92,179.44
IID-SCE_BG	\$ 88,492.25
7820_TL23040_IV_SPS_NG	\$ 63,766.90
34116_LE GRAND_115_34134_WILSONAB_115_BR_1_1	\$ 63,442.72
7510-PAS-BAI-PAR-OOS_NG	\$ 58,835.62

34366_SANGER _115_34370_MC CALL _115_BR_3_1	\$ 48,747.65
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**Figure 3: Day-Ahead Congestion Rents for Flow-Based Constraints (contin.)**

Transmission Constraint	Congestion Rent
34366_SANGER _115_34370_MC CALL _115_BR_3_1	\$ 48,747.65
34860_TAFT _70.0_34943_Q356TAP _70.0_BR_1_1	\$ 37,039.90
30879_HENTAP1 _230_30885_MUSTANGS _230_BR_1_1	\$ 31,912.96
34418_KINGSBRG _115_34428_CONTADNA _115_BR_1_1	\$ 29,677.66
32342_E.NICOLS _60.0_32305_CATLETJT _60.0_BR_2_1	\$ 28,028.31
34469_GFFNJCT _70.0_34470_GIFFEN _70.0_BR_1_1	\$ 27,842.37
32218_DRUM _115_32222_DTCH2TAP _115_BR_1_1	\$ 27,836.81
31336_HPLND JT _60.0_31206_HPLND JT _115_XF_2	\$ 21,564.78
32056_CORTINA _60.0_30451_CRTNA M _1.0_XF_1	\$ 20,046.14
34112_EXCHEQUR _115_34116_LE GRAND _115_BR_1_1	\$ 18,589.56
34429_GWF_HEP _115_34428_CONTADNA _115_BR_1_1	\$ 15,819.31
34157_PANOCHET _115_34156_MENDOTA _115_BR_1_1	\$ 12,298.22
22356_IMPRLVLY _230_21025_ELCENTRO _230_BR_1_1	\$ 12,042.54
34430_HENRETTA _115_34519_LPNJCTSS _115_BR_1_1	\$ 11,508.03
22331_MIRASNT0 _69.0_22644_PENSQTOS _69.0_BR_1_1	\$ 10,152.64
31640_TRES VIS _60.0_31718_TBLE MTN _60.0_BR_1_1	\$ 9,080.94
22256_ESCNDIDO _69.0_22724_SANMRCOS _69.0_BR_1_1	\$ 8,492.11
33530_KASSONJ2 _115_33548_TRACY _115_BR_1_1	\$ 8,415.83
30915_MORROBAY _230_30916_SOLARSS _230_BR_2_1	\$ 8,043.15
OMS 5548842_HUMB_TRNTY	\$ 7,972.64
24723_CONTROL _115_24728_INYO-SCE _115_BR_1_1	\$ 7,812.04
31604_COTTONWD _60.0_31611_RAWSON _60.0_BR_2_1	\$ 6,501.76
OMS 5849193_Devers SBus_NG	\$ 6,151.59
33540_TESLA _115_37650_TESLA TP _115_BR_1_1	\$ 5,318.79
32225_BRNSWKT1 _115_32222_DTCH2TAP _115_BR_1_1	\$ 5,174.45
32218_DRUM _115_32244_BRNSWKT2 _115_BR_2_1	\$ 4,666.65
7510-PAR-PAS-WAR-OOS_NG	\$ 4,548.31
34859_PRMTFMTP _70.0_34873_Q484TP _70.0_BR_1_1	\$ 4,331.75
31110_BRDGVLL0 _60.0_31112_FRUITLND _60.0_BR_1_1	\$ 3,974.04
31104_CARLOTTA _60.0_31105_RIODLLTP _60.0_BR_1_1	\$ 3,639.60
32218_DRUM _115_32220_DTCH FL1 _115_BR_1_1	\$ 2,288.09
31556_TRINITY _60.0_31555_MSS TAP2 _60.0_BR_1_1	\$ 1,507.12
31114_FRT SWRD _60.0_31116_GRBRVLL0 _60.0_BR_1_1	\$ 1,376.46
33541_AEC_TP1 _115_33540_TESLA _115_BR_1_1	\$ 1,067.86
32314_SMRTSVLE _60.0_32316_YUBAGOLD _60.0_BR_1_1	\$ 1,013.12
32214_RIO OSO _115_32244_BRNSWKT2 _115_BR_2_1	\$ 1,010.83
22296_FENTONTP _69.0_22292_FENTON _69.0_BR_1_1	\$ 934.22
38136_MARBLE _69.0_64281_MARBLSP0 _60.0_XF_1	\$ 861.77
32314_SMRTSVLE _60.0_32345_BEALE1J2 _60.0_BR_2_1	\$ 462.60
34474_HELM _70.0_34556_STRD JCT _70.0_BR_1_1	\$ 458.05
32342_E.NICOLS _60.0_32353_WHTLND1 _60.0_BR_1_1	\$ 299.63
31512_BIG BEN2 _115_31516_WYANDJT2 _115_BR_1_2	\$ 246.13

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

Transmission Constraint	Congestion Rent
32208_GLEAF TP_115_32214_RIO OSO_115_BR_1_1	\$ 133.84
31080_HUMBOLDT_60.0_31092_MPLE CRK_60.0_BR_1_1	\$ 57.87
34321_MCSWAINJ_70.0_34232_EXCHEQUR_70.0_BR_1_1	\$ 47.11
32380_WEMR SWS_60.0_32382_FORST HL_60.0_BR_1_1	\$ 0.87
<b>Totals</b>	<b>\$ 8,723,629.64</b>

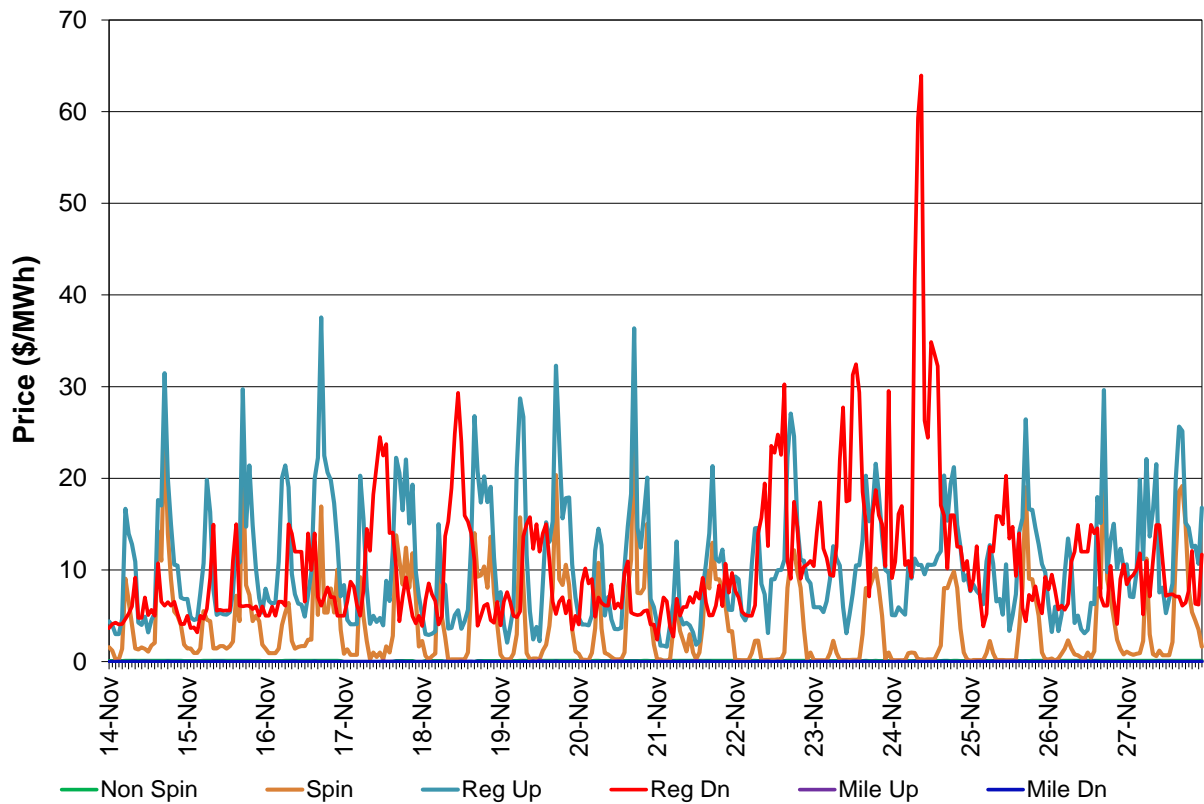
**Figure 4: Day-Ahead (IFM) Average A/S Price**




Figure 5: Day-Ahead Average RUC Price

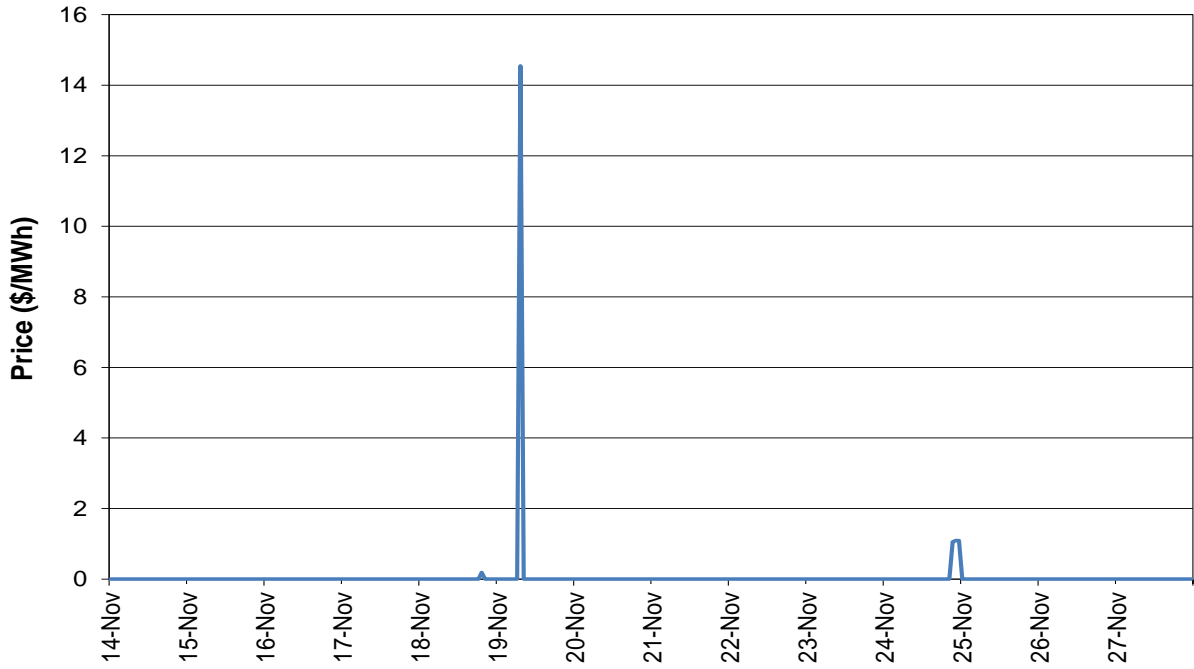
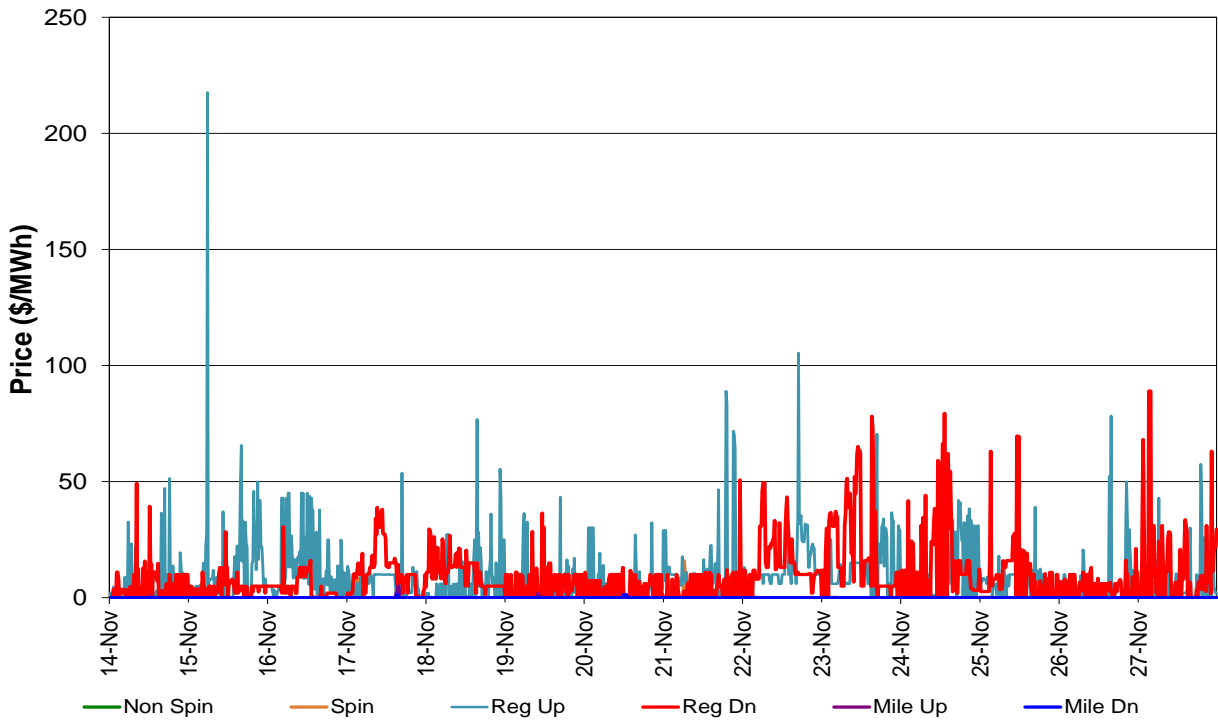
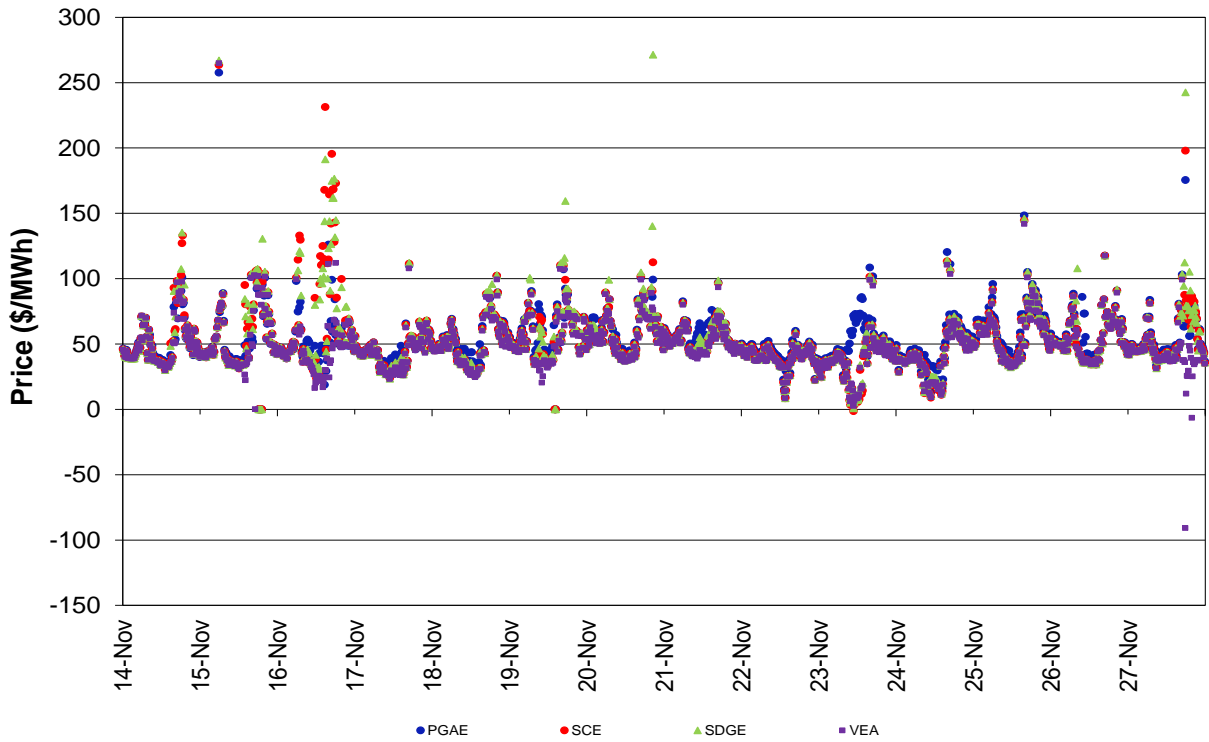


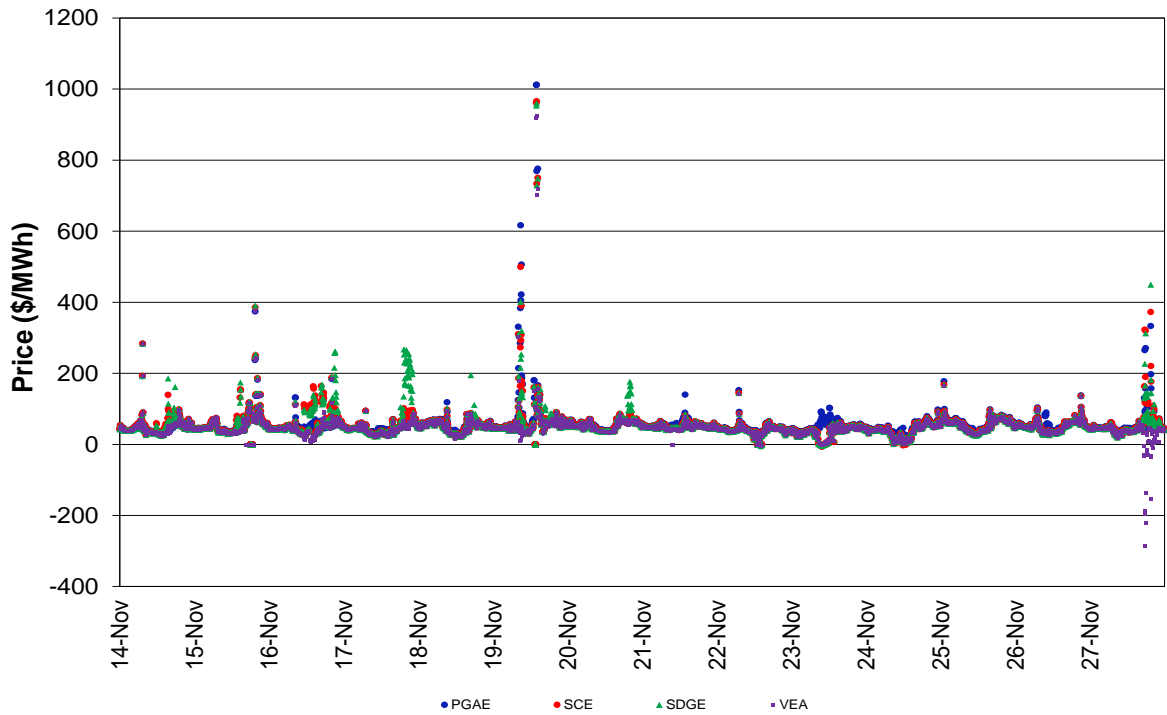
Figure 6: Real-Time FMM Average A/S Price



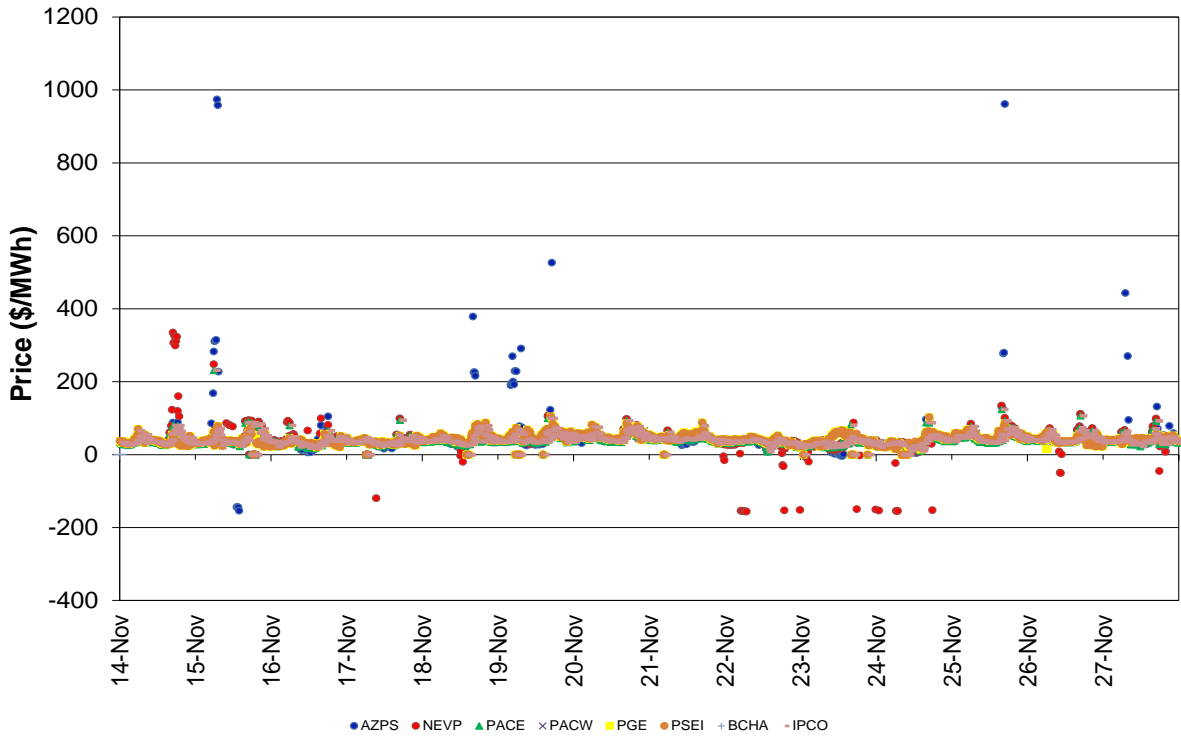
**Figure 7: Real-Time FMM DLAP LMP**



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



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



**Figure 10: Real-Time RTD ELAP LMP**

