

## Market Highlights<sup>1</sup> (August 23–September 5)

- The average DLAP price in the integrated forward market was \$62.11. The maximum and minimum DLAP prices were \$806.26 and \$22.54, respectively. The maximum and minimum PNode prices in the integrated forward market were \$870.78 and -\$3.14 respectively.
- The top two interties congested in the integrated forward market were MALIN500 and NOB\_ITC. Congestion rents in these two weeks totaled \$13,080,104.13.
- The average day-ahead ancillary service prices were between \$0.00 and \$710.69.
- Approximately 98.98 percent of the RUC requirements were met from RA units.
- The average real-time FMM DLAP price was \$65.40, with a maximum price of \$1,267.99 and a minimum price of -\$187.52. The maximum and minimum PNode prices in the FMM were \$1,609.79 and -\$197.56, respectively.
- Out of the total 1,344 FMM intervals, 44 intervals saw DLAP prices above \$250, and 1 intervals saw DLAP prices below -\$150.
- Out of the total 1,344 FMM intervals, 148 intervals saw ELAP prices above \$250 and 0 intervals saw ELAP prices below -\$150.
- The average real-time FMM ELAP price was \$50.26, with a maximum price of \$1,032.75 and a minimum price of -\$92.88.
- The average real-time RTD DLAP price was \$59.12, with a maximum price of \$1,134.41 and a minimum price of -\$242.77. The maximum and minimum PNode prices in the RTD were \$1,355.23 and -\$156.59, respectively.
- Out of the total 4,032 RTD intervals, 125 intervals saw DLAP prices above \$250 and 5 interval saw DLAP prices below -\$150.
- Out of the total 4,032 RTD intervals, 127 intervals saw ELAP prices above \$250 and 17 intervals saw ELAP prices below -\$150. The average real-time RTD ELAP price was \$45.35, with a maximum price of \$1,077.19 and a minimum price of -\$249.76.
- Root cause for daily high price events are noted in Tables 1 and Table 2.

Table 1 FMM Intervals	
Trade Date	Root Cause
FMM Aug 27 HE 19; Aug 28 HE 16, 17, 18	Load changes and renewable deviation

<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 Aug 28 HE 19	Load changes, renewable deviation, forced generator outage and net import reduction
FMM Aug 28 HE 20, 21	Load changes and net import reduction
FMM Aug 29 HE 19	Load changes, renewable deviation and forced generator outage
FMM Aug 29 HE 20	Load changes and renewable deviation
FMM Sep 1 HE 17	Congestion on 24086_LUGO _500_26105_VICTORVL_500_BR_1_1 and net import reduction.
FMM Sep 1 HE 18, 19, 20, 21	Load changes, congestion on RM_TM12_NG and 24086_LUGO _500_26105_VICTORVL_500_BR_1_1
FMM Sep 2 HE 18, 19, 20	Load changes, renewable deviation, and congestion on 24086_LUGO _500_26105_VICTORVL_500_BR_1_1
FMM Sep 5 HE 18, 19	Load changes, net import reduction, and renewable deviation

Table 2 RTD Intervals	
Trade Date	Root Cause
RTD Aug 24 HE 8, 18; Aug 25 HE 16; Aug 26 HE 15; Aug 28 HE 16, 17; Aug 29 HE 16; Aug 31 HE 16	Load changes and renewable deviation
RTD Aug 25 HE 6	Renewable deviation and re-dispatch of resources
RTD Aug 25 HE 8	Renewable deviation
RTD Aug 25 HE 15	Load changes and re-dispatch of resources
RTD Aug 26 HE 23; Aug 28 HE 14	Load changes
RTD Aug 27 HE 18; Aug 29 HE 18	Load changes and generator outage
RTD Aug 28 HE 18	Load changes, renewable deviation, and generator outage.
RTD Aug 28 HE 19	Generator outage
RTD Aug 28 HE 20	Load changes and net import reduction
RTD Aug 30 HE 15	Congestion on 6410_CP1_NG
RTD Sep 1 HE 17	Congestion on 24086_LUGO _500_26105_VICTORVL_500_BR_1_1 and net import reduction
RTD Sep 1 HE 19, 20, 23	Load changes, renewable deviation, congestion on RM_TM12_NG, and congestion on 24086_LUGO _500_26105_VICTORVL_500_BR_1_1
RTD Sep 2 HE 15	Congestion on 24086_LUGO _500_26105_VICTORVL_500_BR_1_1
RTD Sep 2 HE 17, 18, 19, 20	Load changes, renewable deviation, congestion on 24086_LUGO _500_26105_VICTORVL_500_BR_1_1, and congestion on RM_TM12_NG
RTD Sep 2 HE 22, 23, 24	Load changes and congestion on 24086_LUGO _500_26105_VICTORVL_500_BR_1_1
RTD Sep 3 HE 17	Renewable deviation
RTD Sep 5 HE 19	Load changes and net import reduction



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

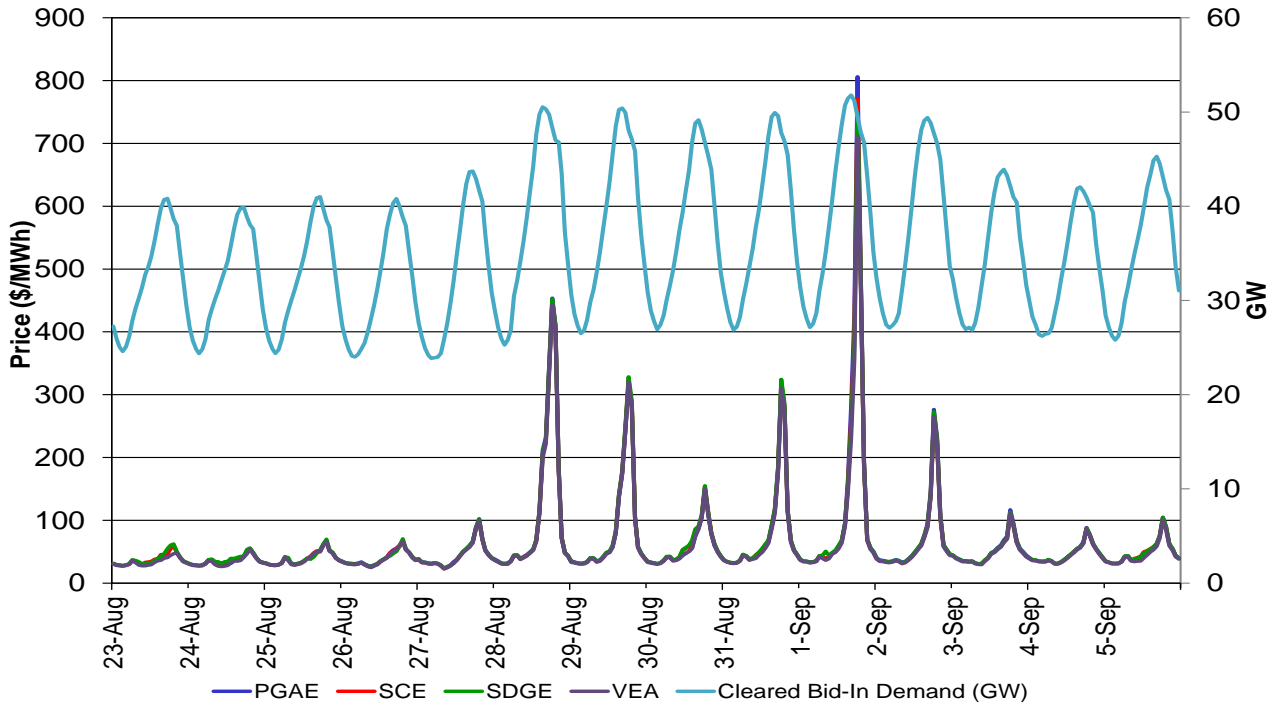
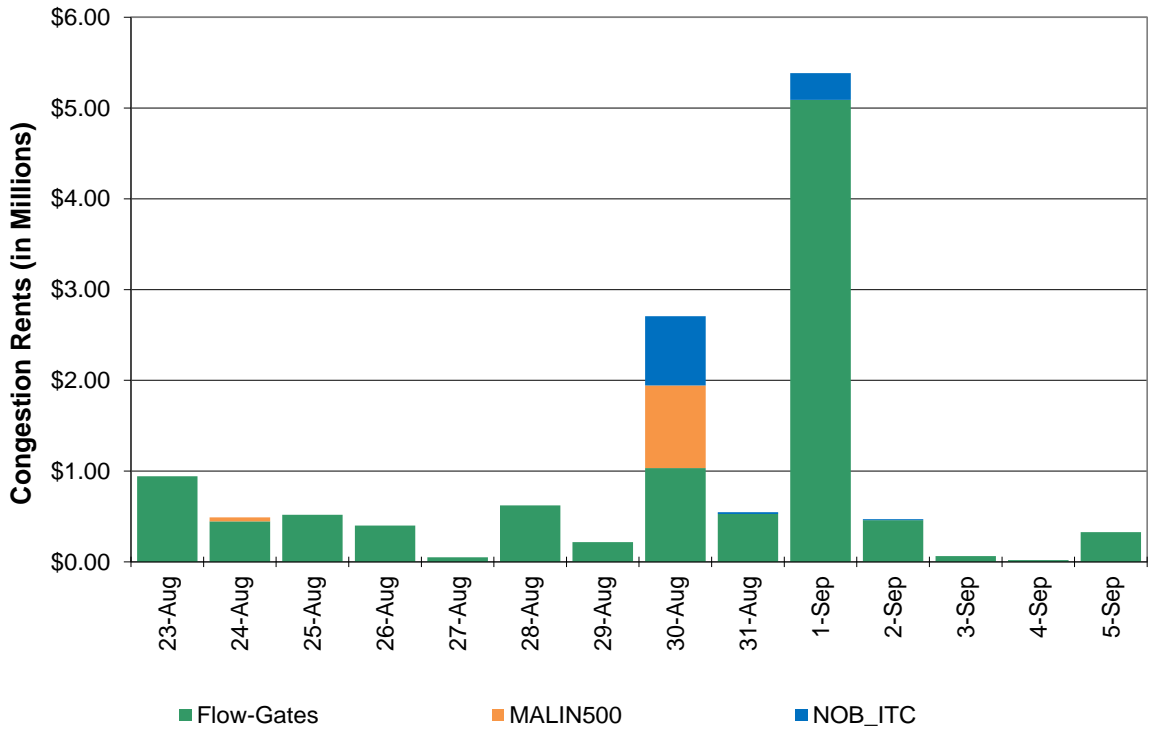


Figure 2: Day-Ahead Congestion Rents

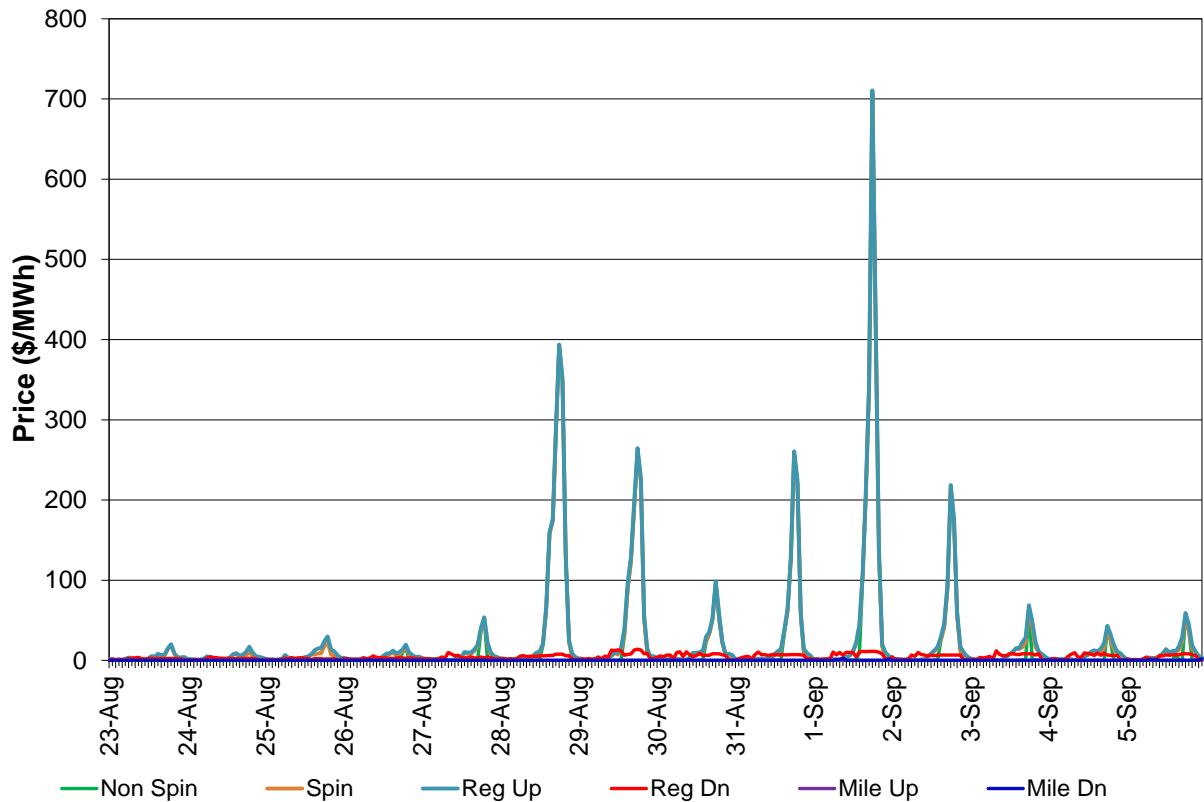


**Figure 3: Day-Ahead Congestion Rents for Flow-Based Constraints**

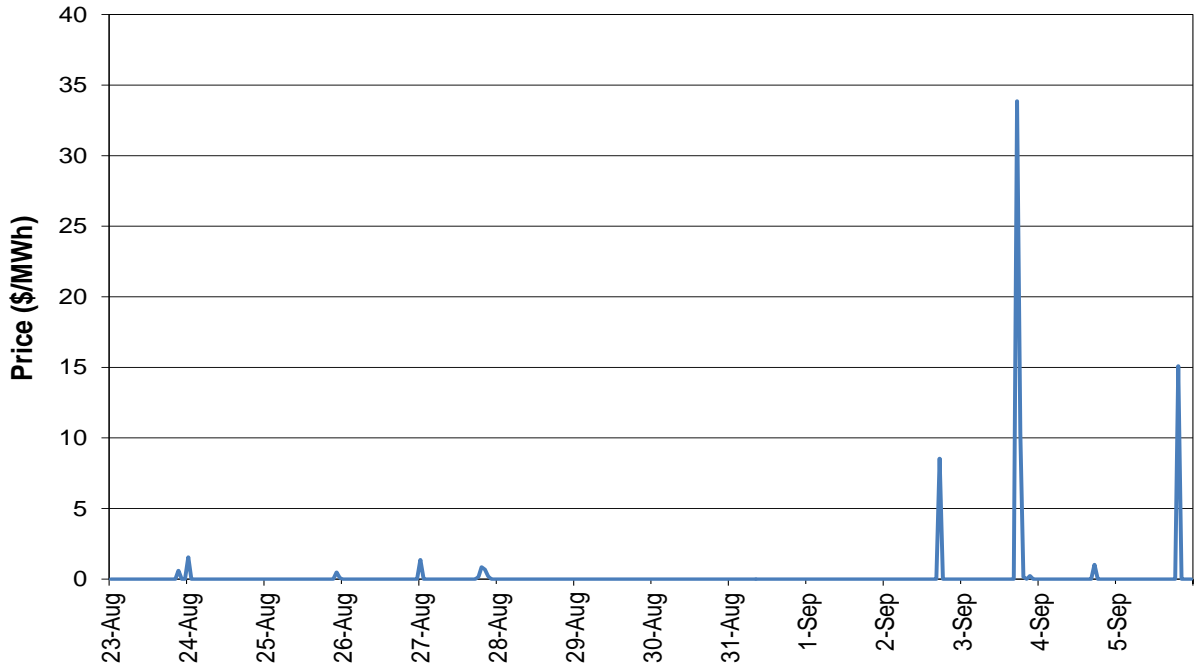
<b>Transmission Constraint</b>	<b>Congestion Rent</b>
RM_TM12_NG	\$ 4,122,618.30
22192_DOUBLTTP_138_22300_FRIARS_138_BR_1_1	\$ 1,280,172.53
30515_WARNERVL_230_30800_WILSON_230_BR_1_1	\$ 891,788.76
6510_CP1_NG	\$ 812,892.11
30280_POE_230_30330_RIO_OSO_230_BR_1_1	\$ 576,222.66
24016_BARRE_230_24154_VILLA_PK_230_BR_1_1	\$ 561,004.33
24086_LUGO_500_26105_VICTORVL_500_BR_1_1	\$ 407,150.90
34112_EXCHEQUR_115_34116_LE_GRAND_115_BR_1_1	\$ 272,235.83
22300_FRIARS_138_22500_MISSION_138_BR_1_1	\$ 261,376.67
99254_J.HINDS2_230_24806_MIRAGE_230_BR_1_1	\$ 229,633.12
24016_BARRE_230_25201_LEWIS_230_BR_1_1	\$ 214,200.29
30805_BORDEN_230_30810_GREGG_230_BR_1_1	\$ 193,485.35
32056_CORTINA_60.0_30451_CRTNA_M_1.0_XF_1	\$ 133,975.26
6110_SOL7_NG	\$ 133,971.62
33549_GWFTRACY_115_33529_LAMMERS_115_BR_1_1	\$ 108,208.83
22136_CLAIRMNT_69.0_22140_CLARMTTP_69.0_BR_1_1	\$ 93,003.56
22208_EL_CAJON_69.0_22408_LOSCOCHS_69.0_BR_1_1	\$ 58,061.38
22256_ESCNDIDO_69.0_22724_SANMRCOS_69.0_BR_1_1	\$ 56,523.94
7820_TL_230S_OVERLOAD_NG	\$ 47,779.55
30523_CC_SUB_230_30525_C.COSTA_230_BR_1_1	\$ 37,090.55
31090_HMBLT_BY_60.0_31100_EEL_RIVR_60.0_BR_1_1	\$ 34,834.47
34469_GFFNJCT_70.0_34470_GIFFEN_70.0_BR_1_1	\$ 22,920.14
HUMBOLDT_IMP_NG	\$ 21,358.26
24087_MAGUNDEN_230_24153_VESTAL_230_BR_1_1	\$ 19,460.00
22480_MIRAMAR_69.0_22756_SCRIPPS_69.0_BR_1_1	\$ 19,194.06
38000_LODI_230_30622_EIGHT_MI_230_BR_1_1	\$ 12,788.14
31334_CLER_LKE_60.0_31338_KONOCIT6_60.0_BR_1_1	\$ 12,077.27
34548_KETTLEMN_70.0_34552_GATES_70.0_BR_1_1	\$ 8,500.21
31220_EGLE_RCK_115_31228_HOMSTKTP_115_BR_1_1	\$ 8,104.31
31566_KESWICK_60.0_31582_STLLWATR_60.0_BR_1_1	\$ 7,658.38
31110_BRDGVLL_60.0_31112_FRUITLND_60.0_BR_1_1	\$ 7,548.05
32218_DRUM_115_32244_BRNSWKT2_115_BR_2_1	\$ 7,542.22
OMS_5227525_HUMBOLDT_IMP_NG	\$ 7,186.12
31104_CARLOTTA_60.0_31105_RIODLLTP_60.0_BR_1_1	\$ 6,314.63
38136_MARBLE_69.0_64281_MARBLSP_60.0_XF_1	\$ 5,876.96
33208_MARTIN_C_115_33301_DLY_CTYP_115_BR_2_1	\$ 4,448.08
32326_ENCL_TAP_60.0_32332_PEASE_60.0_BR_1_1	\$ 3,967.48
31580_CASCADE_60.0_31582_STLLWATR_60.0_BR_1_1	\$ 3,335.16
34427_ATWELL_115_34701_SMYRNA_1_115_BR_1_1	\$ 3,079.23
34887_TAP_SKRN_70.0_34882_SAN_EMDO_70.0_BR_1_1	\$ 3,075.92
31336_HPLND_JT_60.0_31370_CLVRDLJT_60.0_BR_1_1	\$ 2,141.02
33047_CC_JCT1_115_33045_FIBRJCT1_115_BR_1_1	\$ 1,839.25
34116_LE_GRAND_115_34134_WILSONAB_115_BR_1_1	\$ 1,583.87
31306_WILLITS_60.0_31308_LYTNVLL_60.0_BR_1_1	\$ 1,576.62

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

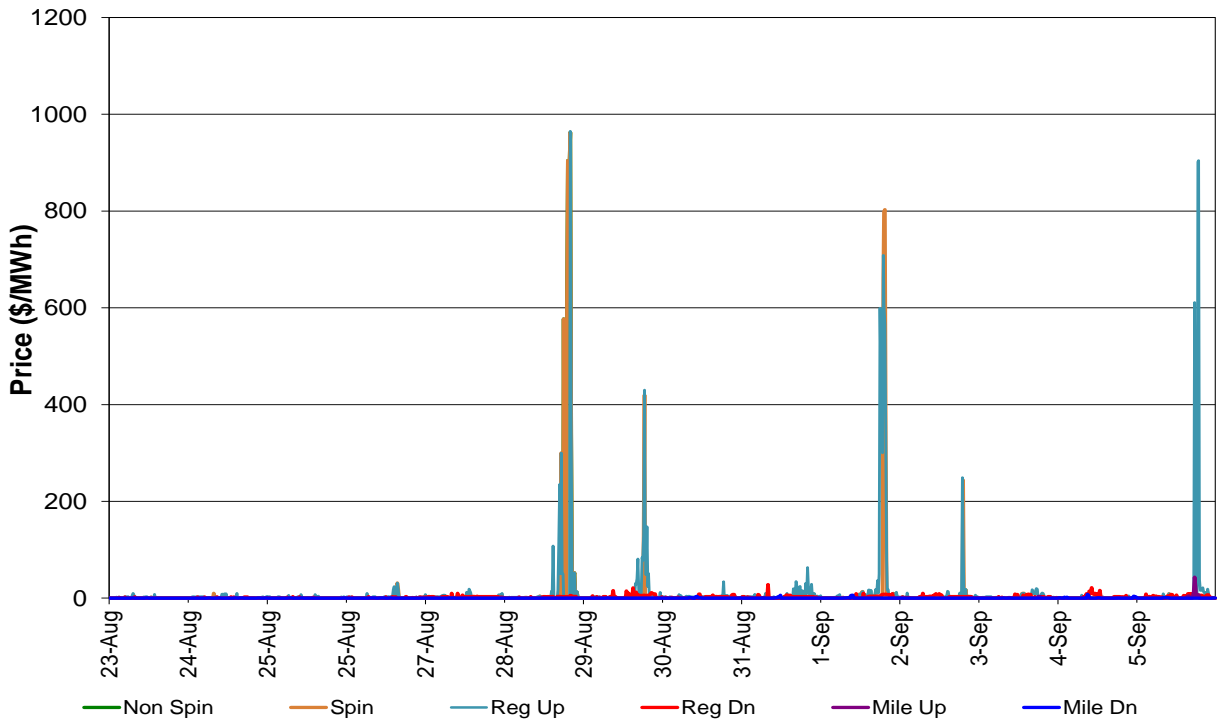
Transmission Constraint	Congestion Rent
31338_KONOCTI6_60.0_31344_EGLE RCK_60.0_BR_1_1	\$ 1,551.60
31108_SWNS FLT_60.0_31110_BRDGVILLE_60.0_BR_1_1	\$ 654.43
31114_FRT SWRD_60.0_31116_GRBRVLE_60.0_BR_1_1	\$ 420.09
31116_GRBRVLE_60.0_31118_KEKAWAKA_60.0_BR_1_1	\$ 160.44
33724_LOCKEFRD_60.0_33736_LODI JCT_60.0_BR_1_1	\$ 71.96
<b>Totals</b>	<b>\$ 10,720,663.93</b>

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


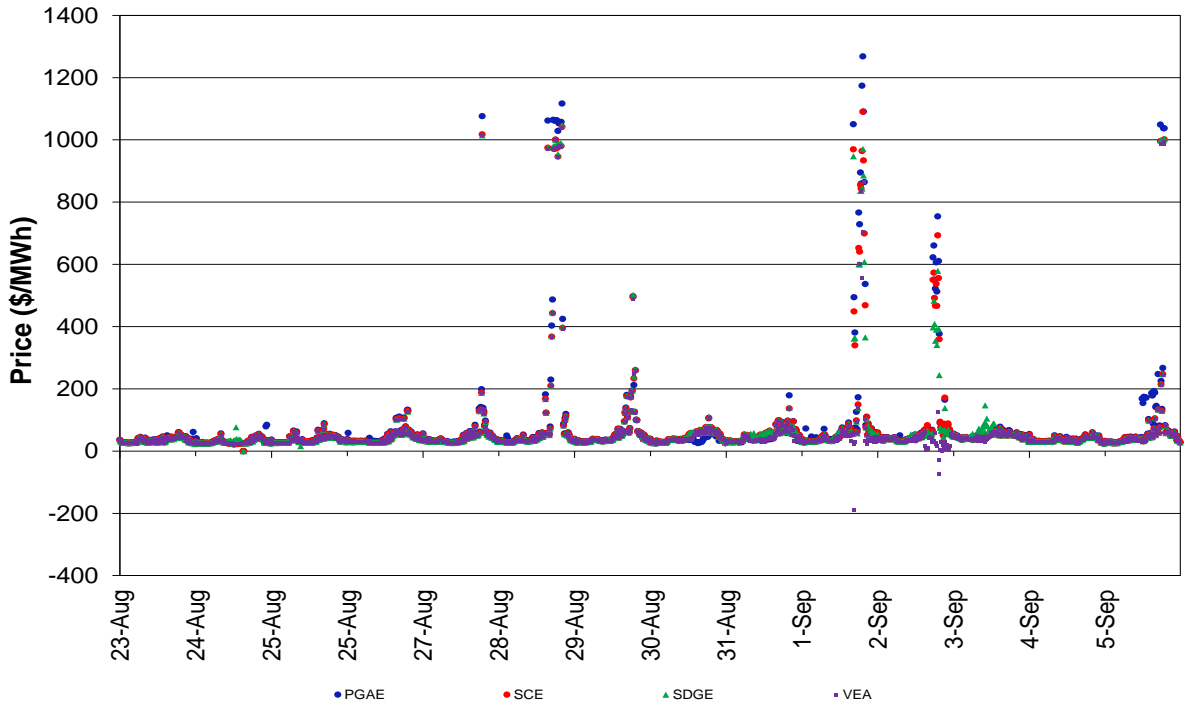
**Figure 5: Day-Ahead Average RUC Price**



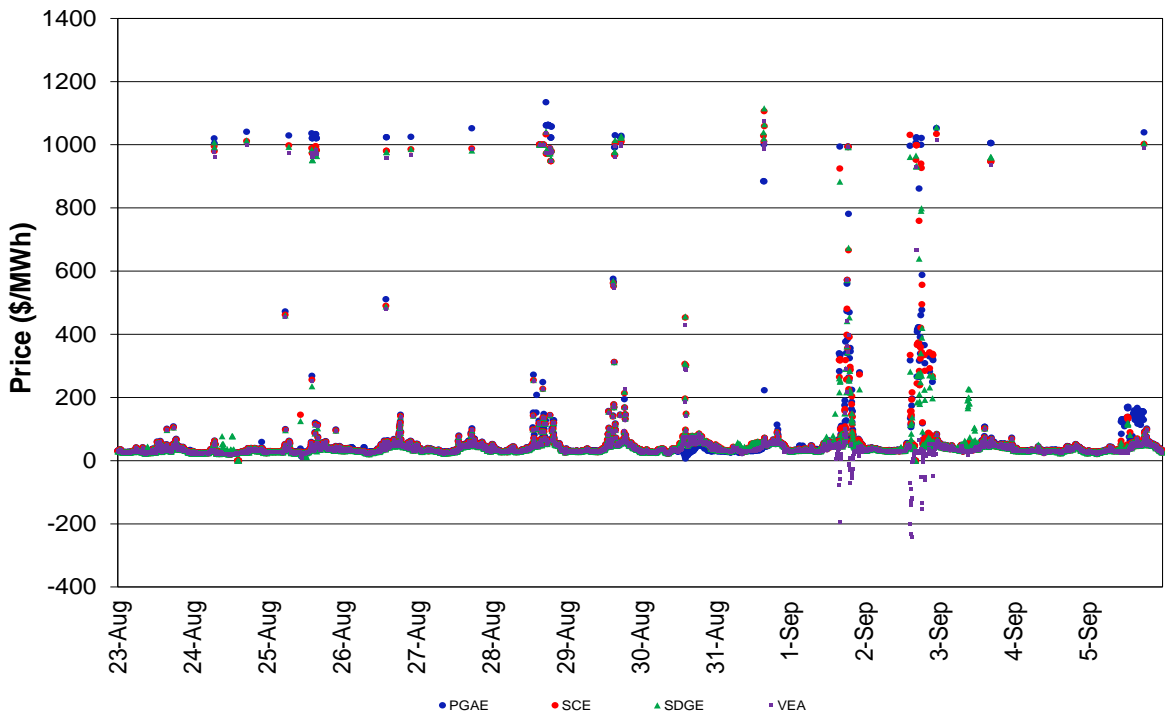
**Figure 6: Real-Time FMM Average A/S Price**



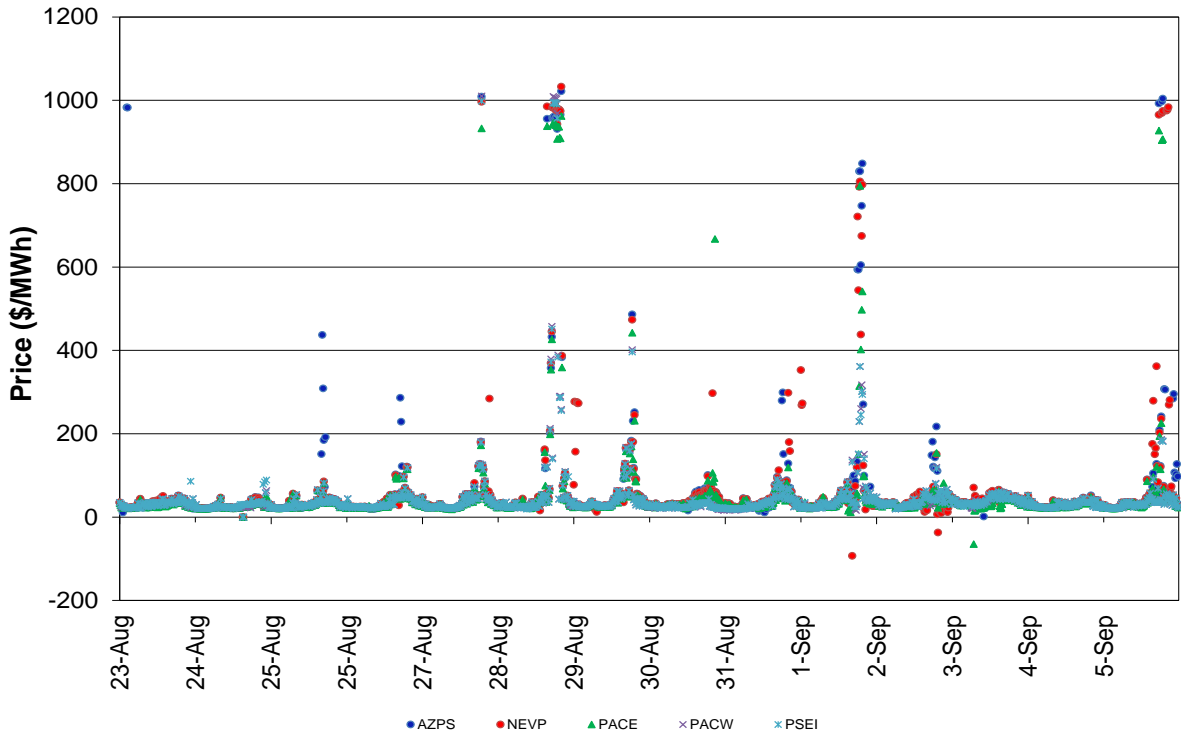
**Figure 7: Real-Time FMM DLAP LMP**



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



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



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

