

SECTION 7 – CONGESTION

Congestion occurs when available, least-cost energy cannot be delivered to all loads for a period because transmission facilities are not adequate to deliver that energy to some loads. When the least-cost available energy cannot be delivered to load in a transmission-constrained area, higher cost units in the constrained area must be dispatched to meet that load.¹ The result is that the price of energy in the constrained area is higher than in the unconstrained area because of the combination of transmission limitations and the cost of local generation. Locational marginal prices (LMPs) reflect the price of the lowest-cost resources available to meet loads, taking into account actual delivery constraints imposed by the transmission system. Thus LMP is an efficient way to price energy when transmission constraints exist. Congestion reflects this efficient pricing.

Congestion reflects the underlying characteristics of the power system including the nature and capability of transmission facilities and the cost and geographical distribution of generation facilities. Congestion is neither good nor bad but is a direct measure of the extent to which there are differences in the cost of generation that cannot be equalized because of transmission constraints. A complete set of markets would require direct competition between investments in transmission and generation. The transmission system provides a physical hedge against congestion. The transmission system is paid for by firm load and, as a result, firm load receives the corollary financial hedge in the form of Auction Revenue Rights (ARRs) and/or Financial Transmission Rights (FTRs). While the transmission system and, therefore, ARRs/FTRs are not guaranteed to be a complete hedge against congestion, ARRs/FTRs do provide a substantial offset to the cost of congestion to firm load.²

The Market Monitoring Unit (MMU) analyzed congestion and its influence on PJM markets during the first six months of 2009.

¹ This is referred to as dispatching units out of economic merit order. Economic merit order is the order of all generator offers from lowest to highest cost. Congestion occurs when loadings on transmission facilities mean the next unit in merit order cannot be used and a higher cost unit must be used in its place.

² See the 2008 State of the Market Report for PJM, Volume II, Section 8, "Financial Transmission and Auction Revenue Rights," at "ARR and FTR Revenue and Congestion."

Overview

Congestion Cost

- Total Congestion.** During the first six months of 2009, total congestion costs decreased by \$757.9 million or 65 percent, from \$1.116 billion to \$408.2 million. Day-ahead congestion costs decreased by \$882.4 million or 63 percent, from \$1.403.8 billion during the first six months of 2008 to \$521.7 million during the first six months of 2009. Balancing congestion costs increased by \$124.1 million or 52 percent, from -\$237.7 million during the first six months of 2008 to -\$113.6 during the first six months of 2009. Total congestion costs have ranged from 6 percent to 9 percent of PJM annual total billings since 2003. Congestion costs were 3 percent of total PJM billings for the first six months of 2009. Total PJM billings for the first six months of 2009 were \$13.457 billion, an 18 percent decrease from the \$16.369 billion billed during the first six months of 2008.
- Monthly Congestion.** Fluctuations in monthly congestion costs continued to be substantial. During the first six months of 2009, these differences were driven by varying load and energy import levels, different patterns of generation, weather-induced changes in demand and variations in congestion frequency on constraints affecting large portions of PJM load.

Congestion Component of LMP and Facility or Zonal Congestion

- Congestion Component of Locational Marginal Price (LMP).** To provide an indication of the geographic dispersion of congestion costs, the congestion component of LMP (CLMP) was calculated for control zones in PJM. Price separation between eastern, southern and western control zones in PJM was primarily a result of congestion on the AP South interface. This interface had the effect of increasing prices in eastern and southern control zones located on the constrained side of the affected facilities while reducing prices in the unconstrained western control zones.

- Congested Facilities.** As was the case in 2008, congestion frequency was significantly higher in the Day-Ahead Market than in the Real-Time Market in 2008.³ Day-ahead congestion frequency increased during the first six months of 2009 compared to the first six months of 2008. During the first six months of 2009, there were 36,099 day-ahead, congestion-event hours compared to 34,707 congestion-event hours during the first six months of 2008. Day-ahead, congestion-event hours increased on PJM transmission lines and the flowgates between PJM and the Midwest Independent Transmission System Operator, Inc. (Midwest ISO) while congestion frequency on internal PJM interfaces and transformers decreased. Real-time congestion frequency decreased during the first six months of 2009 compared to the first six months of 2008. During the first six months of 2009, there were 8,605 real-time, congestion-event hours compared to 10,108 congestion-event hours. Real-time, congestion-event hours increased on the flowgates between PJM and the Midwest ISO, while interfaces, transmission lines and transformers saw decreases. The AP South Interface was the largest contributor to congestion costs during the first six months of 2009. With \$119.9 million in total congestion costs, it accounted for 29 percent of the total PJM congestion costs during the first six months of 2009. The top five constraints in terms of congestion costs together contributed \$228 million, or 56 percent, of the total PJM congestion costs during the first six months of 2009. The top five constraints included the AP South Interface, the West Interface, the East Frankfort - Crete line, the 5004/5005 Interface, and the Kammer transformer.
- Zonal Congestion.** During the first six months of 2009, the ComEd Control Zone experienced the highest congestion costs of the control zones in PJM. However, during the first six months of 2009, the average congestion component of LMP in ComEd was -\$6.40 and -\$7.26 for day-ahead and real-time, respectively. The negative congestion components in ComEd resulted in -\$153.0 million in load congestion payments, -\$279.2 million in generation congestion credits, and -\$3.1 in explicit congestion charges. The net positive congestion number in ComEd is an example of how accounting congestion can be a misleading measure of congestion when it results from generation congestion credits which are more negative than load congestion payments. In fact, congestion reduces prices in ComEd, and as a result, load incurs lower charges and generation receives lower credits. The \$123.1 million in net congestion costs in the ComEd Control Zone represented a 10.4 percent decrease from the \$137.4 million in congestion costs the zone had experienced during the first six months of 2008. The Pleasant Valley – Belvidere line, the East Frankfort – Crete line, and the Dunes Acres – Michigan City flowgate contributed \$43.1 million, or 35 percent of the total ComEd Control Zone congestion costs (Table 7-44). The Dominion Control Zone had the second highest congestion cost in PJM during the first six months of 2009. The \$59.2 million in congestion costs in the Dominion Control Zone represented a 68 percent decrease from the \$184.9 million in congestion costs the zone had experienced during the first six months of 2008. The AP South Interface contributed \$38.5 million, or 65 percent of the total Dominion Control Zone congestion cost.

Conclusion

Congestion reflects the underlying characteristics of the power system, including the nature and capability of transmission facilities and the cost and geographical distribution of generation facilities. Total congestion costs decreased by \$757.9 million or 65 percent, from \$1.116 billion to \$408.2 million. Day-ahead congestion costs decreased by \$882.4 million or 63 percent, from \$1.403 billion during the first six months of 2008 to \$521.7 million during the first six months of 2009. Balancing congestion costs increased by \$124.1 million or 52 percent, from -\$237.7 million during the first six months of 2008 to -\$113.6 million during the first six months of 2009. Congestion costs were significantly higher in the Day-Ahead Market than in the balancing market. Congestion frequency was also significantly higher in the Day-Ahead Market than in the Real-Time Market. During the first six months of 2009, there were 36,099 day-ahead, congestion-event

³ Prior state of the market reports measured real-time congestion frequency using the convention that a congestion-event hour exists if the particular facility is constrained for four or more of the 12 five-minute intervals comprising that hour. In the *2008 State of the Market Report for PJM*, in order to have a consistent metric for real-time and day-ahead congestion frequency, real-time congestion frequency is measured using the convention that an hour is constrained if any of its component five-minute intervals is constrained. Comparisons to previous periods use the new standard for both current and prior periods.

hours compared to 34,707 congestion-event hours during the first six months of 2008. During the first six months of 2009, there were 8,605 real-time, congestion-event hours compared to 10,108 congestion-event hours during the first six months of 2008.

ARRs and FTRs served as an effective, but not total, hedge against congestion. ARR and FTR revenues hedged 97.4 percent of the total congestion costs in the Day-Ahead Energy Market and the balancing energy market within PJM for the 2007 to 2008 planning period. For the 2008 to 2009 planning period, ARR and FTR revenue hedged more than 100 percent of the total congestion costs within PJM.⁴ FTRs were paid at 100 percent of their target allocation for the planning year ended May 31, 2008, and at 100 percent of their target allocation for the planning year ended May 31, 2009.

One constraint accounted for over a quarter of total congestion costs during the first six months of 2009 and the top five constraints accounted for more than half of total congestion costs. The AP South interface was the largest contributor to congestion costs during the first six months of 2009.

The congestion metric requires careful review. Net congestion, which includes both load congestion payments and generation congestion credits, is not a good measure of the congestion costs paid by load from the perspective of the wholesale market.⁵ While total congestion costs represent the overall charge or credit to a zone, the components of congestion costs measure the extent to which load or generation bear total congestion costs. Load congestion payments, when positive, measure the total congestion cost to load in an area. Load congestion payments, when negative, measure the total congestion credit to load in an area. Negative load congestion payments result when load is on the lower priced side of a constraint or constraints. For example, congestion across the AP South interface means lower prices in western control zones and higher prices in eastern and southern control zones. Load in western control zones will benefit from lower prices and receive a congestion credit (negative load congestion payment). Load in the eastern and southern control zones will incur a congestion charge (positive load congestion payment). The reverse is true for generation congestion credits. Generation congestion credits, when positive, measure the total congestion credit to generation in an area. Generation congestion credits, when negative, measure the total congestion cost to generation in an area. Negative generation congestion

credits result when generation is on the lower priced side of a constraint or constraints. For example, congestion across the AP South interface means lower prices in the western control zones and higher prices in the eastern and southern control zones. Generation in the western control zones will receive lower prices and incur a congestion charge (negative generation congestion credit). Generation in the eastern and southern control zones will receive higher prices and receive a congestion credit (positive generation congestion credit).

As an example, total congestion during the first six months of 2009 in PJM was \$408.2 million, which was comprised of load congestion payments of \$142.3 million, negative generation credits of \$301.8 million and negative explicit congestion of \$35.9 million (see Table 7-2).

⁴ See the 2008 State of the Market Report for PJM, Volume II, Section 8, "Financial Transmission and Auction Revenue Rights," at Table 8-28, "ARR and FTR congestion hedging: Planning periods 2007 to 2008 and 2008 to 2009."

⁵ The actual congestion payments by retail customers are a function of retail ratemaking policies and may or may not reflect an offset for congestion credits.

Congestion

Total Calendar Year Congestion

Table 7-1 Total annual PJM congestion (Dollars (Millions)): Calendar years 2003 through June 2009 (See 2008 SOM Table 7-1)

Year	Congestion Charges	Percent Change	Total PJM Billing	Percent of PJM Billing
2003	\$464	NA	\$6,900	7%
2004	\$750	62%	\$8,700	9%
2005	\$2,092	179%	\$22,630	9%
2006	\$1,603	(23%)	\$20,945	8%
2007	\$1,846	15%	\$30,556	6%
2008	\$2,117	15%	\$34,306	6%
2009	\$408	NA	\$13,457	3%
Total	\$9,280		\$137,494	7%

Table 7-2 Total annual PJM congestion costs by category (Dollars (Millions)): January through June 2008 and 2009

Year	Load Payments	Generation Credits	Explicit	Total
2008 (Jan - Jun)	\$625.2	(\$521.3)	\$19.6	\$1,166.1
2009 (Jan - Jun)	\$142.3	(\$301.8)	(\$35.9)	\$408.2

Monthly Congestion

Table 7-3 Monthly PJM congestion charges (Dollars (Millions)): January through June 2008 and 2009 (See 2008 SOM Table 7-2)

Month	2008	2009	Change
Jan	\$231.0	\$149.3	(\$81.7)
Feb	\$168.1	\$83.0	(\$85.2)
Mar	\$86.4	\$74.6	(\$11.8)
Apr	\$126.2	\$25.6	(\$100.6)
May	\$182.8	\$25.9	(\$157.0)
Jun	\$371.5	\$49.8	(\$321.7)

Congestion Component of LMP

Table 7-4 Annual average congestion component of LMP: January through June 2008 and 2009 (See 2008 SOM Table 7-3)

Control Zone	2008 (Jan - Jun)		2009 (Jan - Jun)	
	Day Ahead	Real Time	Day Ahead	Real Time
AECO	\$8.01	\$10.85	\$2.61	\$2.60
AEP	(\$10.69)	(\$11.32)	(\$2.41)	(\$2.38)
AP	(\$0.02)	\$0.30	\$0.75	\$1.79
BGE	\$11.68	\$11.44	\$3.72	\$3.49
ComEd	(\$12.30)	(\$13.81)	(\$6.40)	(\$7.26)
DAY	(\$11.10)	(\$11.86)	(\$3.37)	(\$3.22)
DLCO	(\$11.83)	(\$14.31)	(\$4.56)	(\$4.12)
Dominion	\$7.96	\$7.78	\$2.93	\$2.90
DPL	\$7.83	\$8.29	\$2.92	\$3.02
JCPL	\$11.02	\$12.25	\$2.51	\$2.72
Met-Ed	\$7.46	\$7.25	\$2.69	\$2.70
PECO	\$5.95	\$5.92	\$2.43	\$2.19
PENELEC	(\$0.21)	(\$1.69)	(\$0.01)	\$0.09
Pepco	\$13.25	\$12.51	\$3.67	\$3.60
PPL	\$6.61	\$6.56	\$2.46	\$2.29
PSEG	\$9.45	\$11.13	\$2.99	\$3.17
RECO	\$8.50	\$10.36	\$2.06	\$2.21

Congested Facilities

Congestion by Facility Type and Voltage

Table 7-5 Congestion summary (By facility type): January through June 2009 (See 2008 SOM Table 7-4)

Type	Congestion Costs (Millions)									Event Hours	
	Day Ahead				Balancing				Grand Total	Day Ahead	Real Time
	Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total			
Flowgate	\$12.4	(\$28.8)	\$12.3	\$53.4	(\$8.3)	\$3.3	(\$51.7)	(\$63.3)	(\$9.9)	3,601	1,963
Interface	\$31.1	(\$149.7)	\$2.3	\$183.1	\$2.9	(\$1.8)	\$1.3	\$6.1	\$189.2	2,580	837
Line	\$58.5	(\$118.8)	\$29.8	\$207.1	(\$3.6)	\$4.1	(\$23.3)	(\$31.0)	\$176.1	25,942	4,196
Transformer	\$55.2	(\$1.6)	\$18.2	\$75.0	(\$8.0)	(\$7.9)	(\$25.3)	(\$25.4)	\$49.7	3,976	1,609
Unclassified	\$2.2	(\$0.5)	\$0.5	\$3.1	\$0.0	\$0.0	\$0.0	\$0.0	\$3.1	NA	NA
Total	\$159.3	(\$299.4)	\$63.1	\$521.7	(\$17.0)	(\$2.4)	(\$99.0)	(\$113.6)	\$408.2	36,099	8,605

Table 7-6 Congestion summary (By facility type): January through June 2008 (See 2008 SOM Table 7-5)

Type	Congestion Costs (Millions)									Event Hours	
	Day Ahead				Balancing				Grand Total	Day Ahead	Real Time
	Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total			
Flowgate	\$2.2	(\$4.7)	\$3.9	\$10.8	(\$0.7)	\$2.8	(\$14.2)	(\$17.7)	(\$7.0)	1,024	641
Interface	\$236.5	(\$338.1)	\$23.0	\$597.6	(\$19.9)	\$11.7	\$0.5	(\$31.0)	\$566.6	4,226	1,260
Line	\$317.2	(\$182.5)	\$49.1	\$548.8	(\$51.7)	\$40.8	(\$48.9)	(\$141.4)	\$407.5	23,166	5,966
Transformer	\$169.4	(\$59.5)	\$9.8	\$238.7	(\$30.2)	\$12.9	(\$4.6)	(\$47.6)	\$191.1	6,291	2,241
Unclassified	\$2.4	(\$4.6)	\$0.9	\$7.8	\$0.0	\$0.0	\$0.0	\$0.0	\$7.8	NA	NA
Total	\$727.6	(\$589.4)	\$86.7	\$1,403.8	(\$102.4)	\$68.2	(\$67.1)	(\$237.7)	\$1,166.1	34,707	10,108

Table 7-7 Congestion summary (By facility voltage): January through June 2009 (See 2008 SOM Table 7-6)

Voltage (kV)	Congestion Costs (Millions)									Event Hours	
	Day Ahead				Balancing				Grand Total	Day Ahead	Real Time
	Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total			
765	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	7	0
500	\$68.1	(\$165.3)	\$10.6	\$244.0	\$1.2	(\$12.5)	(\$7.4)	\$6.3	\$250.3	5,455	1,704
345	\$23.2	(\$34.4)	\$29.7	\$87.3	(\$4.2)	\$2.0	(\$41.7)	(\$47.9)	\$39.4	4,767	1,310
230	\$15.0	(\$15.1)	\$5.2	\$35.2	\$0.0	\$3.6	(\$3.2)	(\$6.7)	\$28.5	7,590	1,038
138	\$42.9	(\$83.2)	\$16.7	\$142.8	(\$11.2)	\$3.0	(\$46.3)	(\$60.5)	\$82.3	14,098	4,010
115	\$4.2	(\$1.4)	\$0.3	\$5.9	\$0.4	\$0.7	(\$0.2)	(\$0.6)	\$5.3	2,133	346
69	\$3.7	\$0.4	\$0.2	\$3.5	(\$3.3)	\$0.8	(\$0.1)	(\$4.2)	(\$0.8)	1,877	197
12	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	172	0
Unclassified	\$2.2	(\$0.5)	\$0.5	\$3.1	\$0.0	\$0.0	\$0.0	\$0.0	\$3.1	NA	NA
Total	\$159.3	(\$299.4)	\$63.1	\$521.7	(\$17.0)	(\$2.4)	(\$99.0)	(\$113.6)	\$408.2	36,099	8,605

Table 7-8 Congestion summary (By facility voltage): January through June 2008 (See 2008 SOM Table 7-7)

Voltage (kV)	Congestion Costs (Millions)									Event Hours	
	Day Ahead				Balancing				Grand Total	Day Ahead	Real Time
	Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total			
765	\$1.6	(\$3.0)	\$0.1	\$4.7	\$1.4	\$0.6	(\$0.0)	\$0.8	\$5.5	83	19
500	\$393.4	(\$412.8)	\$38.3	\$844.5	(\$38.2)	\$6.8	\$3.8	(\$41.2)	\$803.3	7,975	3,202
345	\$17.8	(\$16.8)	\$10.3	\$45.0	(\$13.3)	\$5.3	(\$38.2)	(\$56.8)	(\$11.8)	1,378	800
230	\$159.7	(\$69.5)	\$19.1	\$248.4	(\$30.2)	\$37.9	(\$12.7)	(\$80.7)	\$167.6	7,819	2,285
138	\$91.8	(\$81.1)	\$17.2	\$190.0	(\$9.5)	\$5.0	(\$16.0)	(\$30.5)	\$159.5	10,064	2,656
115	\$46.2	(\$0.2)	\$0.6	\$46.9	(\$11.6)	\$10.1	(\$3.9)	(\$25.6)	\$21.3	3,463	712
69	\$14.8	(\$1.5)	\$0.2	\$16.5	(\$1.1)	\$2.4	(\$0.1)	(\$3.6)	\$12.9	3,925	420
34	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	0	14
12	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	0	0
Unclassified	\$2.4	(\$4.6)	\$0.9	\$7.8	\$0.0	\$0.0	\$0.0	\$0.0	\$7.8	NA	NA
Total	\$727.6	(\$589.4)	\$86.7	\$1,403.8	(\$102.4)	\$68.2	(\$67.1)	(\$237.7)	\$1,166.1	34,707	10,108

Constraint Duration

Table 7-9 Top 25 constraints with frequent occurrence: January through June 2008 and 2009 (See 2008 SOM Table 7-8)⁶

No.	Constraint	Type	Event Hours						Percent of Annual Hours					
			Day Ahead			Real Time			Day Ahead			Real Time		
			2008	2009	Change	2008	2009	Change	2008	2009	Change	2008	2009	Change
1	Dunes Acres - Michigan City	Flowgate	0	1,713	1,713	159	672	513	0%	39%	39%	4%	15%	12%
2	Cloverdale - Lexington	Line	1,975	666	(1,309)	890	239	(651)	45%	15%	(30%)	20%	6%	(15%)
3	Leonia - New Milford	Line	337	2,164	1,827	45	30	(15)	8%	50%	42%	1%	1%	(0%)
4	Pleasant Valley - Belvidere	Line	0	1,534	1,534	7	213	206	0%	35%	35%	0%	5%	5%
5	Atlantic - Larrabee	Line	1,466	188	(1,278)	341	45	(296)	34%	4%	(29%)	8%	1%	(7%)
6	Burlington - Croydon	Line	41	1,531	1,490	5	3	(2)	1%	35%	34%	0%	0%	(0%)
7	Branchburg - Readington	Line	1,103	21	(1,082)	271	0	(271)	25%	0%	(25%)	6%	0%	(6%)
8	East Frankfort - Crete	Line	61	1,333	1,272	0	0	0	1%	31%	29%	0%	0%	0%
9	Bedington - Black Oak	Interface	1,170	74	(1,096)	186	61	(125)	27%	2%	(25%)	4%	1%	(3%)
10	Pinehill - Stratford	Line	2,030	859	(1,171)	0	0	0	47%	20%	(27%)	0%	0%	0%
11	East Towanda	Transformer	803	0	(803)	306	0	(306)	18%	0%	(18%)	7%	0%	(7%)
12	Kammer - Ormet	Line	0	552	552	0	509	509	0%	13%	13%	0%	12%	12%
13	Tiltonville - Windsor	Line	0	794	794	5	198	193	0%	18%	18%	0%	5%	4%
14	Athenia - Saddlebrook	Line	70	979	909	74	130	56	2%	23%	21%	2%	3%	1%
15	Meadow Brook	Transformer	757	0	(757)	171	0	(171)	17%	0%	(17%)	4%	0%	(4%)
16	Waterman - West Dekalb	Line	16	911	895	1	28	27	0%	21%	21%	0%	1%	1%
17	Ruth - Turner	Line	0	639	639	0	275	275	0%	15%	15%	0%	6%	6%
18	State Line - Wolf Lake	Flowgate	834	109	(725)	133	18	(115)	19%	3%	(17%)	3%	0%	(3%)
19	Oak Grove - Galesburg	Flowgate	0	400	400	0	383	383	0%	9%	9%	0%	9%	9%
20	Wylie Ridge	Transformer	1	354	353	0	336	336	0%	8%	8%	0%	8%	8%
21	Crete - St Johns Tap	Flowgate	0	539	539	0	132	132	0%	12%	12%	0%	3%	3%
22	Glidden - West Dekalb	Line	1	668	667	0	1	1	0%	15%	15%	0%	0%	0%
23	Elrama - Mitchell	Line	563	21	(542)	116	1	(115)	13%	0%	(12%)	3%	0%	(3%)
24	Mahans Lane - Tidd	Line	498	15	(483)	121	23	(98)	11%	0%	(11%)	3%	1%	(2%)
25	Central	Interface	582	19	(563)	22	8	(14)	13%	0%	(13%)	1%	0%	(0%)

⁶ Presented in descending order of absolute change between January through June 2008 and January through June 2009 day-ahead and real-time congestion-event hours.

Constraint Costs

Table 7-10 Top 25 constraints affecting annual PJM congestion costs (By facility): January through June 2009 (See 2008 SOM Table 7-9)

No.	Constraint	Type	Location	Congestion Costs (Millions)									Grand Total	Percent of Total PJM Congestion Costs 2009 (Jan - Jun)
				Day Ahead				Balancing						
				Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total			
1	AP South	Interface	500	\$6.4	(\$106.1)	\$0.5	\$113.0	\$2.3	(\$2.7)	\$1.9	\$6.9	\$119.9	29%	
2	West	Interface	500	\$17.8	(\$21.4)	\$0.6	\$39.7	\$0.3	(\$0.1)	(\$0.1)	\$0.4	\$40.1	10%	
3	East Frankfort - Crete	Line	ComEd	\$4.5	(\$11.7)	\$7.0	\$23.2	\$0.0	\$0.0	\$0.0	\$0.0	\$23.2	6%	
4	5004/5005 Interface	Interface	500	\$5.6	(\$15.7)	\$0.8	\$22.1	\$0.9	\$0.3	\$0.1	\$0.6	\$22.7	6%	
5	Kammer	Transformer	500	\$28.2	\$9.4	\$6.4	\$25.1	(\$2.2)	(\$6.1)	(\$6.9)	(\$2.9)	\$22.2	5%	
6	Mount Storm - Pruntytown	Line	AP	\$1.8	(\$16.8)	\$0.5	\$19.1	\$1.1	(\$0.8)	(\$0.2)	\$1.7	\$20.8	5%	
7	Pleasant Valley - Belvidere	Line	ComEd	(\$2.7)	(\$20.9)	\$2.4	\$20.5	\$0.7	\$1.6	(\$3.5)	(\$4.5)	\$16.0	4%	
8	Cloverdale - Lexington	Line	AEP	\$6.2	(\$4.0)	\$1.5	\$11.7	(\$0.0)	(\$2.7)	(\$1.9)	\$0.7	\$12.4	3%	
9	Pana North	Flowgate	Midwest ISO	\$0.1	(\$1.6)	\$1.2	\$2.9	(\$0.4)	\$1.0	(\$11.5)	(\$13.0)	(\$10.1)	(2%)	
10	Ruth - Turner	Line	AEP	\$2.4	(\$6.3)	\$0.5	\$9.2	(\$1.3)	(\$0.7)	(\$0.6)	(\$1.2)	\$8.0	2%	
11	Crete - St Johns Tap	Flowgate	Midwest ISO	\$2.5	(\$8.3)	\$2.5	\$13.2	(\$0.7)	\$0.4	(\$4.3)	(\$5.4)	\$7.9	2%	
12	Dunes Acres - Michigan City	Flowgate	Midwest ISO	\$9.5	(\$14.4)	\$6.8	\$30.7	(\$5.4)	(\$1.2)	(\$19.8)	(\$24.0)	\$6.7	2%	
13	Kanawha River	Transformer	AEP	\$2.0	(\$3.6)	\$0.3	\$5.8	\$0.1	(\$0.5)	(\$0.1)	\$0.5	\$6.3	2%	
14	Kammer - Ormet	Line	AEP	\$4.3	(\$4.1)	(\$0.1)	\$8.3	(\$1.6)	\$0.5	(\$0.0)	(\$2.2)	\$6.2	2%	
15	Sammis - Wylie Ridge	Line	AP	\$3.1	(\$2.7)	\$3.4	\$9.2	(\$0.8)	(\$0.3)	(\$2.6)	(\$3.2)	\$6.0	1%	
16	Tiltonsville - Windsor	Line	AP	\$5.6	(\$0.4)	\$0.4	\$6.4	(\$0.3)	(\$0.6)	(\$0.9)	(\$0.6)	\$5.8	1%	
17	Kanawha - Kincaid	Line	AEP	\$1.9	(\$3.5)	\$0.2	\$5.6	\$0.0	\$0.0	\$0.0	\$0.0	\$5.6	1%	
18	Schahfer - Burr Oak	Flowgate	Midwest ISO	\$0.4	(\$1.3)	\$0.6	\$2.3	(\$2.0)	\$0.4	(\$5.4)	(\$7.8)	(\$5.6)	(1%)	
19	Kanawha River - Bradley	Line	AEP	(\$0.1)	(\$4.6)	\$0.3	\$4.7	(\$0.0)	\$0.1	(\$0.0)	(\$0.1)	\$4.7	1%	
20	Breed - Wheatland	Line	AEP	(\$0.1)	(\$4.2)	\$0.5	\$4.6	\$0.0	\$0.0	\$0.0	\$0.0	\$4.6	1%	
21	Mount Storm	Transformer	AP	\$0.8	(\$3.9)	(\$0.1)	\$4.7	(\$0.2)	(\$0.2)	(\$0.1)	(\$0.1)	\$4.5	1%	
22	Bedington - Black Oak	Interface	500	\$0.7	(\$3.7)	\$0.1	\$4.5	(\$0.4)	(\$0.0)	\$0.2	(\$0.3)	\$4.2	1%	
23	Glidden - West Dekalb	Line	ComEd	(\$0.3)	(\$4.0)	\$0.3	\$4.0	\$0.0	\$0.0	\$0.0	\$0.0	\$4.0	1%	
24	Crete - East Frankfort	Line	ComEd	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.6)	\$0.0	(\$3.3)	(\$3.9)	(\$3.9)	(1%)	
25	Graceton - Raphael Road	Line	BGE	\$0.9	(\$2.2)	\$0.4	\$3.4	\$1.0	\$0.3	(\$0.5)	\$0.2	\$3.6	1%	

Table 7-11 Top 25 constraints affecting annual PJM congestion costs (By facility): January through June 2008 (See 2008 SOM Table 7-10)

No.	Constraint	Type	Location	Congestion Costs (Millions)								Percent of Total PJM Congestion Costs	
				Day Ahead			Balancing					Grand Total	2008 (Jan - Jun)
				Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total		
1	AP South	Interface	500	\$131.8	(\$191.6)	\$11.2	\$334.5	(\$14.2)	\$3.9	(\$2.2)	(\$20.4)	\$314.2	27%
2	Bedington - Black Oak	Interface	500	\$43.7	(\$90.1)	\$5.9	\$139.7	(\$0.7)	(\$0.2)	\$1.0	\$0.5	\$140.2	12%
3	Cloverdale - Lexington	Line	AEP	\$83.9	(\$40.7)	\$7.6	\$132.2	(\$1.0)	(\$4.0)	(\$0.6)	\$2.4	\$134.5	12%
4	Mount Storm - Pruntytown	Line	AP	\$12.9	(\$44.7)	\$2.2	\$59.7	(\$4.3)	(\$1.8)	\$0.4	(\$2.0)	\$57.7	5%
5	West	Interface	500	\$34.7	(\$24.5)	\$2.8	\$62.0	(\$3.2)	\$5.6	\$0.9	(\$8.0)	\$54.0	5%
6	Kammer	Transformer	500	\$57.8	\$11.5	\$5.2	\$51.5	(\$11.1)	(\$1.1)	\$3.0	(\$7.0)	\$44.5	4%
7	Atlantic - Larrabee	Line	JCPL	\$40.2	(\$14.9)	\$5.3	\$60.4	(\$8.2)	\$7.6	(\$4.4)	(\$20.2)	\$40.2	3%
8	Meadow Brook	Transformer	AP	\$21.6	(\$17.3)	\$0.8	\$39.8	(\$4.4)	(\$1.2)	(\$0.4)	(\$3.6)	\$36.2	3%
9	Bedington	Transformer	AP	\$12.4	(\$22.4)	\$0.8	\$35.6	(\$0.8)	(\$0.6)	\$0.2	(\$0.0)	\$35.6	3%
10	Sammis - Wylie Ridge	Line	AP	\$1.9	(\$0.5)	\$3.9	\$6.3	(\$13.8)	\$1.4	(\$22.5)	(\$37.8)	(\$31.5)	(3%)
11	Branchburg - Readington	Line	PSEG	\$30.4	(\$11.8)	\$4.7	\$46.9	(\$6.4)	\$8.8	(\$2.0)	(\$17.2)	\$29.7	3%
12	5004/5005 Interface	Interface	500	\$9.0	(\$18.3)	\$1.4	\$28.7	(\$1.7)	\$2.2	\$0.9	(\$3.0)	\$25.6	2%
13	Harwood - Susquehanna	Line	PPL	\$8.9	(\$19.6)	\$0.4	\$28.9	(\$2.7)	\$2.7	(\$0.6)	(\$6.0)	\$22.9	2%
14	Central	Interface	500	\$11.5	(\$9.1)	\$1.3	\$21.9	(\$0.0)	\$0.0	\$0.1	(\$0.0)	\$21.9	2%
15	Aqueduct - Doubs	Line	AP	\$15.4	(\$1.7)	\$0.3	\$17.4	\$0.0	(\$0.1)	(\$0.0)	\$0.1	\$17.4	1%
16	Axton	Transformer	AEP	\$6.9	(\$8.8)	\$0.9	\$16.6	\$0.0	\$0.0	\$0.0	\$0.0	\$16.6	1%
17	Buckingham - Pleasant Valley	Line	PECO	\$13.0	\$1.0	\$1.1	\$13.0	(\$0.7)	\$1.0	\$0.2	(\$1.5)	\$11.6	1%
18	East	Interface	500	\$5.8	(\$4.6)	\$0.3	\$10.8	(\$0.1)	(\$0.0)	\$0.0	(\$0.0)	\$10.7	1%
19	Black Oak	Transformer	AP	\$5.9	(\$4.3)	\$0.3	\$10.5	(\$0.0)	(\$0.1)	(\$0.0)	\$0.1	\$10.5	1%
20	Seward	Transformer	PENELEC	\$22.7	\$13.0	(\$0.1)	\$9.6	\$0.0	\$0.0	\$0.0	\$0.0	\$9.6	1%
21	Dickerson - Plesant View	Line	Pepco	\$21.0	\$12.2	\$1.3	\$10.1	(\$0.2)	(\$0.1)	(\$0.6)	(\$0.7)	\$9.4	1%
22	Cedar Grove - Clifton	Line	PSEG	\$0.3	(\$0.2)	\$0.3	\$0.7	(\$1.9)	\$6.8	(\$0.5)	(\$9.3)	(\$8.5)	(1%)
23	Branchburg - Flagtown	Line	PSEG	\$6.4	(\$2.2)	\$0.1	\$8.7	\$0.1	\$0.2	(\$0.7)	(\$0.7)	\$8.0	1%
24	Unclassified	Unclassified	Unclassified	\$2.4	(\$4.6)	\$0.9	\$7.8	\$0.0	\$0.0	\$0.0	\$0.0	\$7.8	1%
25	Amos	Transformer	AEP	\$4.7	(\$3.3)	\$0.0	\$8.0	\$0.2	\$0.4	(\$0.4)	(\$0.6)	\$7.4	1%

Congestion-Event Summary for Midwest ISO Flowgates

Table 7-12 Top congestion cost impacts from Midwest ISO flowgates affecting PJM dispatch (By facility): January through June 2009 (See 2008 SOM Table 7-11)

Constraint	Congestion Costs (Millions)										Event Hours	
	Day Ahead				Balancing				Grand Total	Day Ahead	Real Time	
	Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total				
Pana North	\$0.1	(\$1.6)	\$1.2	\$2.9	(\$0.4)	\$1.0	(\$11.5)	(\$13.0)	(\$10.1)	581	300	
Crete - St Johns Tap	\$2.5	(\$8.3)	\$2.5	\$13.2	(\$0.7)	\$0.4	(\$4.3)	(\$5.4)	\$7.9	539	132	
Dunes Acres - Michigan City	\$9.5	(\$14.4)	\$6.8	\$30.7	(\$5.4)	(\$1.2)	(\$19.8)	(\$24.0)	\$6.7	1,713	672	
Schahfer - Burr Oak	\$0.4	(\$1.3)	\$0.6	\$2.3	(\$2.0)	\$0.4	(\$5.4)	(\$7.8)	(\$5.6)	62	81	
Breed - Wheatland	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.6	(\$2.2)	(\$2.7)	(\$2.7)	0	128	
Pleasant Prairie - Zion	(\$0.0)	(\$0.1)	\$0.1	\$0.2	\$0.3	\$0.5	(\$1.9)	(\$2.2)	(\$2.0)	30	45	
Eugene - Bunsonville	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	\$0.1	(\$1.1)	(\$1.3)	(\$1.3)	0	44	
Oak Grove - Galesburg	(\$0.4)	(\$2.6)	\$0.2	\$2.4	\$0.6	\$1.1	(\$3.1)	(\$3.6)	(\$1.1)	400	383	
State Line - Roxana	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.2)	\$0.0	(\$0.4)	(\$0.6)	(\$0.6)	0	30	
Lanesville	\$0.2	(\$0.1)	\$0.1	\$0.4	\$0.0	\$0.1	(\$0.8)	(\$0.9)	(\$0.5)	65	32	
Pawnee	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.0	(\$0.4)	(\$0.4)	(\$0.4)	0	35	
Pierce - Foster	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	\$0.3	(\$0.0)	(\$0.4)	(\$0.4)	0	4	
State Line - Wolf Lake	\$0.1	(\$0.2)	\$0.2	\$0.4	(\$0.0)	(\$0.0)	(\$0.2)	(\$0.2)	\$0.3	109	18	
Bunsonville - Eugene	\$0.0	(\$0.1)	\$0.1	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	24	0	
Burr Oak	\$0.1	(\$0.2)	\$0.4	\$0.7	(\$0.2)	\$0.0	(\$0.6)	(\$0.9)	(\$0.2)	24	37	

Table 7-13 Top congestion cost impacts from Midwest ISO flowgates affecting PJM dispatch (By facility): January through June 2008 (See 2008 SOM Table 7-12)

Constraint	Congestion Costs (Millions)										Event Hours	
	Day Ahead				Balancing				Grand Total	Day Ahead	Real Time	
	Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total				
State Line - Wolf Lake	\$1.5	(\$2.9)	\$3.3	\$7.7	\$0.0	\$0.4	(\$1.5)	(\$1.8)	\$5.8	834	133	
Dunes Acres - Michigan City	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.3)	\$0.8	(\$4.3)	(\$5.4)	(\$5.4)	0	159	
Lanesville	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.2)	\$0.4	(\$3.5)	(\$4.1)	(\$4.1)	0	81	
Pana North	\$0.7	(\$1.8)	\$0.6	\$3.1	(\$0.1)	\$0.8	(\$4.3)	(\$5.2)	(\$2.1)	190	182	
Breed - Wheatland	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.2	(\$0.3)	(\$0.4)	(\$0.4)	0	9	
State Line - Roxana	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	(\$0.3)	(\$0.3)	(\$0.3)	0	28	
Krendale - Seneca	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	\$0.0	(\$0.0)	(\$0.2)	(\$0.2)	0	23	
Ontario Hydro - NYISO	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	\$0.2	\$0.2	(\$0.1)	(\$0.1)	0	3	
Pleasant Prairie - Zion	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.0	(\$0.1)	(\$0.1)	(\$0.1)	0	7	
Eau Claire - Arpin	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	0	8	
Greenfield - Lakeview	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.0	0	7	
State Line	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	0	0	
Rising	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.0)	(\$0.0)	0	1	

Congestion-Event Summary for the 500 kV System

Table 7-14 Regional constraints summary (By facility): January through June 2009 (See 2008 SOM Table 7-13)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Day Ahead				Balancing				Grand Total	Day Ahead	Real Time	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total				
AP South	Interface	500	\$6.4	(\$106.1)	\$0.5	\$113.0	\$2.3	(\$2.7)	\$1.9	\$6.9	\$119.9	1,650	282	
West	Interface	500	\$17.8	(\$21.4)	\$0.6	\$39.7	\$0.3	(\$0.1)	(\$0.1)	\$0.4	\$40.1	391	55	
5004/5005 Interface	Interface	500	\$5.6	(\$15.7)	\$0.8	\$22.1	\$0.9	\$0.3	\$0.1	\$0.6	\$22.7	334	198	
Kammer	Transformer	500	\$28.2	\$9.4	\$6.4	\$25.1	(\$2.2)	(\$6.1)	(\$6.9)	(\$2.9)	\$22.2	1,554	726	
Bedington - Black Oak	Interface	500	\$0.7	(\$3.7)	\$0.1	\$4.5	(\$0.4)	(\$0.0)	\$0.2	(\$0.3)	\$4.2	74	61	
AEP-DOM	Interface	500	\$0.5	(\$2.7)	\$0.3	\$3.5	(\$0.5)	(\$0.0)	(\$0.3)	(\$0.8)	\$2.7	101	57	
East	Interface	500	\$0.1	(\$0.0)	(\$0.0)	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	11	0	
Central	Interface	500	\$0.0	(\$0.1)	\$0.0	\$0.1	\$0.0	\$0.1	(\$0.0)	(\$0.1)	\$0.1	19	8	
Harrison - Pruntytown	Line	500	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	0	4	

Table 7-15 Regional constraints summary (By facility): January through June 2008 (See 2008 SOM Table 7-14)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Day Ahead				Balancing				Grand Total	Day Ahead	Real Time	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total				
AP South	Interface	500	\$131.8	(\$191.6)	\$11.2	\$334.5	(\$14.2)	\$3.9	(\$2.2)	(\$20.4)	\$314.2	1,291	605	
Bedington - Black Oak	Interface	500	\$43.7	(\$90.1)	\$5.9	\$139.7	(\$0.7)	(\$0.2)	\$1.0	\$0.5	\$140.2	1,170	186	
West	Interface	500	\$34.7	(\$24.5)	\$2.8	\$62.0	(\$3.2)	\$5.6	\$0.9	(\$8.0)	\$54.0	700	285	
Kammer	Transformer	500	\$57.8	\$11.5	\$5.2	\$51.5	(\$11.1)	(\$1.1)	\$3.0	(\$7.0)	\$44.5	1,386	767	
5004/5005 Interface	Interface	500	\$9.0	(\$18.3)	\$1.4	\$28.7	(\$1.7)	\$2.2	\$0.9	(\$3.0)	\$25.6	301	143	
Central	Interface	500	\$11.5	(\$9.1)	\$1.3	\$21.9	(\$0.0)	\$0.0	\$0.1	(\$0.0)	\$21.9	582	22	
East	Interface	500	\$5.8	(\$4.6)	\$0.3	\$10.8	(\$0.1)	(\$0.0)	\$0.0	(\$0.0)	\$10.7	182	9	
Fort Martin - Harrison	Line	500	\$2.0	(\$0.3)	\$0.4	\$2.7	\$0.0	\$0.0	\$0.0	\$0.0	\$2.7	45	0	
Juniata - Keystone	Line	500	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.8)	\$0.4	\$0.2	(\$1.0)	(\$1.0)	0	20	
Conemaugh - Keystone	Line	500	\$0.0	(\$0.0)	\$0.0	\$0.0	(\$0.4)	\$1.0	\$0.3	(\$1.0)	(\$1.0)	2	22	
Cabot - Wylie Ridge	Line	500	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.7	(\$0.1)	(\$0.8)	(\$0.8)	0	6	

Zonal Congestion

Summary

Table 7-16 Congestion cost summary (By control zone): January through June 2009 (See 2008 SOM Table 7-16)

Control Zone	Congestion Costs (Millions)								Grand Total
	Day Ahead				Balancing				
	Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total	
AECO	\$14.5	\$5.8	\$0.2	\$8.9	(\$0.6)	\$0.7	\$0.4	(\$0.9)	\$8.0
AEP	(\$32.1)	(\$91.3)	\$7.9	\$67.1	(\$3.9)	\$4.0	(\$9.7)	(\$17.6)	\$49.5
AP	\$20.5	(\$48.7)	\$10.5	\$79.7	(\$4.0)	(\$0.6)	(\$18.5)	(\$21.9)	\$57.8
BGE	\$52.5	\$44.5	\$0.7	\$8.7	\$4.6	(\$3.3)	(\$0.7)	\$7.2	\$15.9
ComEd	(\$147.7)	(\$280.3)	(\$2.1)	\$130.5	(\$5.3)	\$1.1	(\$1.0)	(\$7.4)	\$123.1
DAY	(\$6.0)	(\$11.0)	\$0.1	\$5.0	\$0.6	\$1.4	(\$0.2)	(\$0.9)	\$4.1
DLCO	(\$33.2)	(\$52.4)	(\$0.0)	\$19.2	(\$2.9)	\$3.8	(\$0.1)	(\$6.7)	\$12.5
DPL	\$31.2	\$10.0	\$0.3	\$21.5	(\$2.2)	\$1.1	(\$0.3)	(\$3.6)	\$17.8
Dominion	\$52.8	(\$2.3)	\$4.9	\$59.9	\$0.6	(\$3.5)	(\$4.8)	(\$0.8)	\$59.2
External	(\$13.7)	(\$36.7)	\$28.1	\$51.2	(\$1.4)	(\$2.6)	(\$57.6)	(\$56.4)	(\$5.3)
JCPL	\$32.1	\$12.4	\$0.0	\$19.8	(\$0.1)	(\$2.1)	(\$0.1)	\$1.9	\$21.6
Met-Ed	\$23.9	\$23.5	\$0.2	\$0.6	(\$0.2)	(\$0.4)	(\$0.3)	(\$0.1)	\$0.5
PECO	\$9.4	\$23.4	\$0.1	(\$13.9)	(\$0.1)	\$0.8	(\$0.1)	(\$1.0)	(\$14.9)
PENELEC	(\$1.9)	(\$20.6)	\$0.3	\$19.0	\$1.8	\$1.6	(\$0.2)	\$0.1	\$19.1
PPL	\$8.1	\$12.2	\$1.9	(\$2.1)	\$0.1	(\$0.8)	\$0.2	\$1.1	(\$1.0)
PSEG	\$50.6	\$40.7	\$8.4	\$18.3	(\$0.7)	\$3.9	(\$4.4)	(\$9.0)	\$9.3
Pepco	\$96.7	\$71.4	\$1.5	\$26.8	(\$3.2)	(\$7.5)	(\$1.4)	\$2.8	\$29.6
RECO	\$1.6	\$0.0	\$0.1	\$1.6	(\$0.1)	(\$0.0)	(\$0.1)	(\$0.2)	\$1.4
Total	\$159.3	(\$299.4)	\$63.1	\$521.7	(\$17.0)	(\$2.4)	(\$99.0)	(\$113.6)	\$408.2

Table 7-17 Congestion cost summary (By control zone): January through June 2008 (See 2008 SOM Table 7-17)

Control Zone	Congestion Costs (Millions)								Grand Total
	Day Ahead				Balancing				
	Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total	
AECO	\$43.9	\$12.7	\$0.3	\$31.5	(\$0.4)	\$4.4	(\$0.5)	(\$5.4)	\$26.1
AEP	(\$198.7)	(\$374.9)	\$6.8	\$182.9	(\$51.4)	\$10.2	(\$0.8)	(\$62.4)	\$120.6
AP	\$88.5	(\$190.5)	\$21.5	\$300.5	(\$2.2)	\$10.1	(\$8.5)	(\$20.8)	\$279.7
BGE	\$150.1	\$119.5	\$1.7	\$32.3	\$8.1	(\$8.1)	(\$2.1)	\$14.0	\$46.3
ComEd	(\$229.4)	(\$374.1)	(\$0.3)	\$144.4	(\$6.5)	(\$0.4)	(\$0.8)	(\$6.9)	\$137.4
DAY	(\$21.6)	(\$34.8)	\$0.2	\$13.3	\$0.4	\$3.2	(\$0.0)	(\$2.9)	\$10.4
DLCO	(\$80.9)	(\$116.7)	(\$0.0)	\$35.8	(\$26.2)	\$8.2	\$0.0	(\$34.4)	\$1.4
DPL	\$68.4	\$26.2	\$0.1	\$42.4	\$5.9	\$4.3	(\$0.7)	\$0.8	\$43.2
Dominion	\$155.6	(\$19.9)	\$13.3	\$188.8	\$7.4	\$1.8	(\$9.6)	(\$3.9)	\$184.9
External	(\$36.8)	(\$15.1)	\$6.4	(\$15.3)	(\$28.8)	(\$9.6)	(\$29.6)	(\$48.8)	(\$64.1)
JCPL	\$188.8	\$45.9	\$8.8	\$151.8	(\$3.3)	\$0.0	(\$9.0)	(\$12.4)	\$139.4
Met-Ed	\$54.7	\$51.0	\$1.7	\$5.4	\$1.7	\$0.6	\$12.3	\$13.4	\$18.8
PECO	\$27.6	\$58.3	\$0.2	(\$30.5)	\$1.3	\$8.5	(\$0.2)	(\$7.5)	(\$38.0)
PENELEC	\$1.6	(\$108.9)	\$2.2	\$112.6	(\$9.1)	\$10.6	\$1.1	(\$18.5)	\$94.1
PPL	\$17.9	\$17.8	\$5.9	\$6.0	(\$0.0)	\$5.5	(\$2.0)	(\$7.5)	(\$1.5)
PSEG	\$168.4	\$99.1	\$12.9	\$82.2	\$1.2	\$22.4	(\$11.0)	(\$32.2)	\$50.0
Pepco	\$323.4	\$214.8	\$5.0	\$113.6	(\$0.8)	(\$3.6)	(\$5.5)	(\$2.7)	\$110.9
RECO	\$6.0	\$0.1	\$0.1	\$6.0	\$0.4	(\$0.1)	(\$0.1)	\$0.4	\$6.4
Total	\$727.6	(\$589.4)	\$86.7	\$1,403.8	(\$102.4)	\$68.2	(\$67.1)	(\$237.7)	\$1,166.1

Details of Regional and Zonal Congestion

Mid-Atlantic Region Congestion-Event Summaries

AECO Control Zone

Table 7-18 AECO Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2008 SOM Table 7-18)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Day Ahead				Balancing				Grand Total	Day Ahead	Real Time	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total				
West	Interface	500	\$4.6	\$2.2	\$0.0	\$2.4	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$2.4	391	55	
Kammer	Transformer	500	\$2.1	\$0.8	\$0.0	\$1.3	\$0.1	(\$0.0)	\$0.0	\$0.2	\$1.5	1,554	726	
5004/5005 Interface	Interface	500	\$1.9	\$0.9	\$0.0	\$1.1	\$0.0	\$0.0	\$0.0	\$0.0	\$1.1	334	198	
Wylie Ridge	Transformer	AP	\$1.8	\$0.9	\$0.0	\$0.9	(\$0.0)	\$0.1	\$0.1	(\$0.0)	\$0.9	354	336	
Dunes Acres - Michigan City	Flowgate	Midwest ISO	\$0.8	\$0.2	\$0.0	\$0.7	\$0.1	(\$0.0)	\$0.0	\$0.2	\$0.8	1,713	672	
Absecon - Lewis	Line	AECO	\$1.0	\$0.1	\$0.0	\$1.0	(\$1.2)	\$0.5	(\$0.0)	(\$1.7)	(\$0.8)	22	149	
Graceton - Raphael Road	Line	BGE	(\$0.7)	(\$0.2)	(\$0.0)	(\$0.5)	\$0.1	\$0.1	\$0.0	\$0.0	(\$0.5)	174	90	
AP South	Interface	500	\$0.7	\$0.4	\$0.0	\$0.4	\$0.0	\$0.0	\$0.1	\$0.1	\$0.5	1,650	282	
Sammis - Wylie Ridge	Line	AP	\$0.6	\$0.2	\$0.0	\$0.3	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.4	622	101	
East Frankfort - Crete	Line	ComEd	\$0.5	\$0.1	\$0.0	\$0.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	1,333	0	
Tiltonville - Windsor	Line	AP	\$0.4	\$0.1	\$0.0	\$0.3	\$0.0	(\$0.0)	(\$0.0)	\$0.1	\$0.3	794	198	
Atlantic - Larrabee	Line	JCPL	(\$0.3)	(\$0.0)	\$0.0	(\$0.3)	(\$0.1)	(\$0.0)	\$0.0	(\$0.0)	(\$0.3)	188	45	
Cloverdale - Lexington	Line	AEP	\$0.4	\$0.2	\$0.0	\$0.2	\$0.0	(\$0.0)	\$0.0	\$0.1	\$0.3	666	239	
Crete - St Johns Tap	Flowgate	Midwest ISO	\$0.3	\$0.0	\$0.0	\$0.2	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.3	539	132	
Lewis - Motts - Cedar	Line	AECO	\$0.2	\$0.0	\$0.0	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	108	0	

Table 7-19 AECO Control Zone top congestion cost impacts (By facility): January through June 2008 (See 2008 SOM Table 7-19)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Day Ahead				Balancing				Grand Total	Day Ahead	Real Time	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total				
AP South	Interface	500	\$7.9	\$3.5	\$0.1	\$4.5	\$0.1	\$0.1	(\$0.0)	\$0.0	\$4.5	1,291	605	
Atlantic - Larrabee	Line	JCPL	(\$6.4)	(\$2.8)	(\$0.0)	(\$3.6)	(\$0.3)	\$0.4	\$0.0	(\$0.7)	(\$4.2)	1,466	341	
West	Interface	500	\$6.3	\$2.7	\$0.0	\$3.7	\$0.3	(\$0.2)	(\$0.0)	\$0.4	\$4.1	700	285	
Churchtown	Transformer	AECO	(\$0.3)	(\$3.0)	\$0.0	\$2.7	\$0.4	\$0.3	\$0.0	\$0.1	\$2.8	179	90	
Cloverdale - Lexington	Line	AEP	\$4.4	\$2.2	\$0.0	\$2.3	\$0.3	(\$0.1)	(\$0.0)	\$0.4	\$2.6	1,975	890	
Quinton - Roadstown	Line	AECO	\$6.2	\$1.0	\$0.0	\$5.2	(\$1.3)	\$1.4	(\$0.1)	(\$2.8)	\$2.5	279	124	
Kammer	Transformer	500	\$3.9	\$1.9	\$0.0	\$2.0	\$0.2	(\$0.0)	(\$0.0)	\$0.2	\$2.3	1,386	767	
Central	Interface	500	\$3.6	\$1.9	\$0.0	\$1.7	\$0.0	\$0.0	(\$0.0)	(\$0.0)	\$1.7	582	22	
Monroe	Transformer	AECO	\$5.0	\$0.9	\$0.0	\$4.1	(\$0.5)	\$1.9	(\$0.1)	(\$2.5)	\$1.6	258	113	
5004/5005 Interface	Interface	500	\$2.1	\$0.8	\$0.0	\$1.2	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	\$1.3	301	143	
Bedington - Black Oak	Interface	500	\$2.1	\$1.0	\$0.0	\$1.1	\$0.0	\$0.0	(\$0.0)	\$0.0	\$1.1	1,170	186	
Sickler	Transformer	AECO	\$0.9	\$0.1	\$0.0	\$0.8	\$0.0	\$0.0	\$0.0	\$0.0	\$0.8	31	0	
Sickler	Transformer	AECO	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.2)	\$0.4	(\$0.2)	(\$0.8)	(\$0.8)	0	55	
East	Interface	500	\$1.5	\$0.7	\$0.0	\$0.8	(\$0.0)	\$0.0	\$0.0	(\$0.0)	\$0.8	182	9	
Laurel - Roadstown	Line	AECO	\$0.7	\$0.1	\$0.0	\$0.7	\$0.0	\$0.0	\$0.0	\$0.0	\$0.7	147	0	

BGE Control Zone

Table 7-20 BGE Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2008 SOM Table 7-20)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Load Payments	Day Ahead			Total	Load Payments	Balancing		Total	Grand Total	Day Ahead	Real Time
				Generation Credits	Explicit	Explicit			Generation Credits	Explicit				
AP South	Interface	500	\$14.1	\$13.5	\$0.1	\$0.7	\$1.2	(\$0.9)	(\$0.1)	\$2.0	\$2.7	1,650	282	
Kammer	Transformer	500	\$6.2	\$5.0	\$0.1	\$1.3	\$0.7	(\$0.5)	(\$0.2)	\$1.0	\$2.4	1,554	726	
West	Interface	500	\$8.1	\$6.8	\$0.2	\$1.4	\$0.1	(\$0.1)	(\$0.0)	\$0.2	\$1.6	391	55	
Wylie Ridge	Transformer	AP	\$3.6	\$3.4	\$0.1	\$0.3	\$0.6	(\$0.7)	(\$0.2)	\$1.2	\$1.5	354	336	
5004/5005 Interface	Interface	500	\$1.4	\$0.8	\$0.1	\$0.6	\$0.2	(\$0.2)	(\$0.1)	\$0.4	\$1.0	334	198	
Graceton - Raphael Road	Line	BGE	\$2.9	\$2.0	\$0.0	\$1.0	\$0.1	\$0.1	(\$0.1)	(\$0.1)	\$0.9	174	90	
Mount Storm - Pruntytown	Line	AP	\$3.2	\$2.9	\$0.0	\$0.2	\$0.4	(\$0.2)	(\$0.0)	\$0.6	\$0.8	523	25	
Pumphrey - Westport	Line	Pepco	\$0.5	(\$0.1)	\$0.0	\$0.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.6	573	0	
Dunes Acres - Michigan City	Flowgate	Midwest ISO	\$2.1	\$1.8	\$0.0	\$0.3	\$0.3	(\$0.0)	(\$0.0)	\$0.3	\$0.6	1,713	672	
Cloverdale - Lexington	Line	AEP	\$2.2	\$2.0	\$0.0	\$0.2	\$0.2	(\$0.1)	(\$0.0)	\$0.3	\$0.5	666	239	
Sammis - Wylie Ridge	Line	AP	\$1.4	\$1.1	\$0.0	\$0.3	\$0.1	(\$0.1)	(\$0.0)	\$0.1	\$0.4	622	101	
Tiltonville - Windsor	Line	AP	\$0.8	\$0.6	\$0.0	\$0.2	\$0.1	(\$0.0)	(\$0.0)	\$0.1	\$0.3	794	198	
Five Forks - Rock Ridge	Line	BGE	\$0.4	\$0.1	\$0.0	\$0.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	55	0	
East Frankfort - Crete	Line	ComEd	\$1.2	\$1.0	\$0.0	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	1,333	0	
Bedington - Black Oak	Interface	500	\$0.8	\$0.7	\$0.0	\$0.1	\$0.1	(\$0.0)	(\$0.0)	\$0.1	\$0.2	74	61	

Table 7-21 BGE Control Zone top congestion cost impacts (By facility): January through June 2008 (See 2008 SOM Table 7-21)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Load Payments	Day Ahead			Total	Load Payments	Balancing		Total	Grand Total	Day Ahead	Real Time
				Generation Credits	Explicit	Explicit			Generation Credits	Explicit				
AP South	Interface	500	\$50.7	\$40.9	\$0.4	\$10.1	\$4.0	(\$3.1)	(\$0.6)	\$6.5	\$16.6	1,291	605	
West	Interface	500	\$10.2	\$7.4	\$0.1	\$2.9	\$0.8	(\$0.7)	(\$0.4)	\$1.1	\$4.1	700	285	
Kammer	Transformer	500	\$9.9	\$8.0	\$0.2	\$2.2	\$0.8	(\$0.8)	(\$0.2)	\$1.4	\$3.6	1,386	767	
Aqueduct - Doubs	Line	AP	\$7.8	\$4.6	\$0.0	\$3.2	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	\$3.2	145	7	
Pumphrey - Westport	Line	Pepco	\$2.7	(\$0.3)	\$0.0	\$3.0	\$0.0	\$0.0	\$0.0	\$0.0	\$3.0	297	0	
Bedington - Black Oak	Interface	500	\$20.3	\$18.9	\$0.2	\$1.7	\$0.8	(\$0.5)	(\$0.1)	\$1.2	\$3.0	1,170	186	
Mount Storm - Pruntytown	Line	AP	\$8.9	\$7.4	\$0.0	\$1.5	\$0.4	(\$1.0)	(\$0.0)	\$1.4	\$2.9	333	223	
Dickerson - Pleasant View	Line	Pepco	\$5.4	\$3.4	\$0.2	\$2.2	\$0.3	(\$0.1)	(\$0.1)	\$0.3	\$2.6	418	118	
Brandon Shores - Riverside	Line	BGE	\$1.1	(\$0.6)	\$0.0	\$1.7	(\$0.4)	\$0.2	(\$0.0)	(\$0.6)	\$1.1	94	30	
Branchburg - Readington	Line	PSEG	(\$2.5)	(\$2.0)	(\$0.1)	(\$0.6)	(\$0.2)	\$0.3	\$0.0	(\$0.5)	(\$1.1)	1,103	271	
Cloverdale - Lexington	Line	AEP	\$21.0	\$22.4	\$0.3	(\$1.0)	\$1.4	(\$0.9)	(\$0.3)	\$2.0	\$1.0	1,975	890	
5004/5005 Interface	Interface	500	\$1.8	\$1.0	\$0.1	\$0.9	\$0.1	(\$0.1)	(\$0.0)	\$0.2	\$1.0	301	143	
Green Street - Westport	Line	BGE	\$0.9	\$0.0	\$0.0	\$0.9	\$0.0	\$0.0	\$0.0	\$0.0	\$0.9	94	0	
Sammis - Wylie Ridge	Line	AP	\$0.6	\$0.5	\$0.0	\$0.1	\$0.5	(\$0.5)	(\$0.2)	\$0.7	\$0.9	249	405	
Atlantic - Larrabee	Line	JCPL	(\$1.9)	(\$1.4)	(\$0.1)	(\$0.5)	(\$0.2)	\$0.2	\$0.1	(\$0.3)	(\$0.8)	1,466	341	

DPL Control Zone

Table 7-22 DPL Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2008 SOM Table 7-22)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Load Payments	Day Ahead			Total	Load Payments	Balancing			Grand Total	Day Ahead	Real Time
				Generation Credits	Explicit	Explicit			Generation Credits	Explicit	Explicit			
West	Interface	500	\$8.6	\$3.6	\$0.0	\$5.1	(\$0.0)	\$0.0	(\$0.0)	(\$0.1)	\$5.0	391	55	
Kammer	Transformer	500	\$4.1	\$1.0	\$0.0	\$3.2	(\$0.1)	\$0.1	(\$0.0)	(\$0.3)	\$2.9	1,554	726	
Short - Laurel	Line	DPL	\$0.0	\$0.0	\$0.0	\$0.0	(\$2.1)	\$0.2	(\$0.1)	(\$2.4)	(\$2.4)	0	0	
Wylie Ridge	Transformer	AP	\$3.4	\$1.3	\$0.0	\$2.1	\$0.2	\$0.2	(\$0.0)	(\$0.0)	\$2.1	354	336	
5004/5005 Interface	Interface	500	\$3.7	\$1.5	\$0.0	\$2.2	\$0.0	\$0.2	(\$0.1)	(\$0.3)	\$2.0	334	198	
AP South	Interface	500	\$2.0	\$0.6	\$0.0	\$1.4	\$0.0	\$0.1	(\$0.0)	(\$0.1)	\$1.4	1,650	282	
Dunes Acres - Michigan City	Flowgate	Midwest ISO	\$1.5	\$0.2	(\$0.0)	\$1.3	(\$0.1)	\$0.0	\$0.0	(\$0.1)	\$1.3	1,713	672	
Sammis - Wylie Ridge	Line	AP	\$1.2	\$0.2	\$0.0	\$1.0	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.9	622	101	
East Frankfort - Crete	Line	ComEd	\$0.9	\$0.2	(\$0.0)	\$0.8	\$0.0	\$0.0	\$0.0	\$0.0	\$0.8	1,333	0	
Cloverdale - Lexington	Line	AEP	\$0.9	\$0.2	\$0.0	\$0.7	(\$0.0)	\$0.0	(\$0.0)	(\$0.0)	\$0.6	666	239	
Church - I.B. Corners	Line	DPL	\$0.7	\$0.1	\$0.0	\$0.6	(\$0.0)	\$0.0	(\$0.0)	(\$0.0)	\$0.6	45	5	
Tiltonville - Windsor	Line	AP	\$0.7	\$0.1	\$0.0	\$0.6	(\$0.0)	\$0.0	(\$0.0)	(\$0.1)	\$0.5	794	198	
Graceton - Raphael Road	Line	BGE	(\$1.3)	(\$0.3)	(\$0.0)	(\$1.0)	\$0.3	(\$0.3)	\$0.0	\$0.5	(\$0.5)	174	90	
Crete - St Johns Tap	Flowgate	Midwest ISO	\$0.5	\$0.0	(\$0.0)	\$0.5	(\$0.0)	\$0.0	\$0.0	(\$0.0)	\$0.5	539	132	
Edgemoor - Harmony	Line	DPL	\$0.8	\$0.3	\$0.0	\$0.5	(\$0.1)	(\$0.0)	(\$0.0)	(\$0.1)	\$0.4	28	7	

Table 7-23 DPL Control Zone top congestion cost impacts (By facility): January through June 2008 (See 2008 SOM Table 7-23)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Load Payments	Day Ahead			Total	Load Payments	Balancing			Grand Total	Day Ahead	Real Time
				Generation Credits	Explicit	Explicit			Generation Credits	Explicit	Explicit			
AP South	Interface	500	\$14.6	\$6.7	\$0.1	\$8.0	\$1.3	\$1.0	(\$0.0)	\$0.3	\$8.2	1,291	605	
West	Interface	500	\$9.8	\$3.5	\$0.0	\$6.3	\$0.8	\$0.5	(\$0.0)	\$0.2	\$6.5	700	285	
Cloverdale - Lexington	Line	AEP	\$8.0	\$2.9	\$0.1	\$5.2	\$0.8	\$0.0	(\$0.1)	\$0.7	\$5.9	1,975	890	
Kammer	Transformer	500	\$6.6	\$2.7	\$0.0	\$3.9	\$0.7	\$0.3	(\$0.0)	\$0.4	\$4.3	1,386	767	
Central	Interface	500	\$6.1	\$2.9	\$0.0	\$3.3	\$0.0	(\$0.0)	\$0.0	\$0.1	\$3.3	582	22	
North Seafood - Pine Street	Line	DPL	\$4.3	\$1.0	\$0.0	\$3.3	\$0.1	\$0.1	\$0.0	\$0.0	\$3.3	114	39	
Atlantic - Larrabee	Line	JCPL	(\$4.3)	(\$1.9)	(\$0.0)	(\$2.5)	(\$0.4)	(\$0.0)	\$0.0	(\$0.4)	(\$2.9)	1,466	341	
Bedington - Black Oak	Interface	500	\$4.3	\$1.6	\$0.0	\$2.6	\$0.2	\$0.0	(\$0.0)	\$0.1	\$2.7	1,170	186	
Red Lion At5n	Transformer	DPL	\$3.8	\$1.4	\$0.1	\$2.5	\$0.0	(\$0.1)	\$0.0	\$0.1	\$2.5	53	3	
5004/5005 Interface	Interface	500	\$3.3	\$1.2	\$0.0	\$2.1	\$0.3	\$0.1	(\$0.0)	\$0.2	\$2.4	301	143	
Branchburg - Readington	Line	PSEG	(\$3.3)	(\$1.4)	(\$0.1)	(\$1.9)	(\$0.2)	\$0.3	\$0.1	(\$0.4)	(\$2.3)	1,103	271	
East	Interface	500	\$2.4	\$0.9	\$0.0	\$1.6	\$0.0	(\$0.0)	\$0.0	\$0.0	\$1.6	182	9	
Dickerson - Pleasant View	Line	Pepco	\$2.2	\$1.0	\$0.0	\$1.2	\$0.1	(\$0.1)	(\$0.0)	\$0.2	\$1.4	418	118	
Buckingham - Pleasant Valley	Line	PECO	(\$1.7)	(\$0.6)	(\$0.1)	(\$1.2)	(\$0.1)	\$0.0	\$0.0	(\$0.0)	(\$1.2)	556	60	
Mount Storm - Pruntytown	Line	AP	\$1.2	\$0.5	(\$0.0)	\$0.7	\$0.2	\$0.1	\$0.0	\$0.0	\$0.8	333	223	

JCPL Control Zone

Table 7-24 JCPL Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2008 SOM Table 7-24)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Day Ahead				Balancing				Grand Total	Day Ahead	Real Time	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total				
West	Interface	500	\$9.7	\$3.9	\$0.0	\$5.7	\$0.0	(\$0.1)	(\$0.0)	\$0.1	\$5.8	391	55	
5004/5005 Interface	Interface	500	\$4.8	\$1.9	\$0.0	\$2.9	\$0.1	(\$0.9)	(\$0.0)	\$0.9	\$3.8	334	198	
Kammer	Transformer	500	\$4.5	\$1.7	\$0.0	\$2.8	(\$0.0)	(\$0.4)	(\$0.0)	\$0.3	\$3.2	1,554	726	
Wylie Ridge	Transformer	AP	\$3.9	\$1.4	\$0.0	\$2.5	\$0.1	(\$0.6)	(\$0.0)	\$0.7	\$3.2	354	336	
Atlantic - Larrabee	Line	JCPL	\$1.8	\$0.4	\$0.0	\$1.5	(\$0.6)	(\$0.5)	(\$0.0)	(\$0.1)	\$1.3	188	45	
Athenia - Saddlebrook	Line	PSEG	(\$1.3)	(\$0.3)	(\$0.0)	(\$1.0)	(\$0.0)	\$0.1	\$0.0	(\$0.1)	(\$1.1)	979	130	
Dunes Acres - Michigan City	Flowgate	Midwest ISO	\$1.9	\$0.8	(\$0.1)	\$1.0	(\$0.0)	(\$0.1)	\$0.0	\$0.1	\$1.1	1,713	672	
Sammis - Wylie Ridge	Line	AP	\$1.4	\$0.5	\$0.0	\$0.9	\$0.0	\$0.0	(\$0.0)	\$0.0	\$0.9	622	101	
East Frankfort - Crete	Line	ComEd	\$1.2	\$0.5	(\$0.0)	\$0.7	\$0.0	\$0.0	\$0.0	\$0.0	\$0.7	1,333	0	
Cloverdale - Lexington	Line	AEP	\$0.8	\$0.3	\$0.0	\$0.5	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.6	666	239	
Graceton - Raphael Road	Line	BGE	(\$1.3)	(\$0.7)	(\$0.0)	(\$0.6)	\$0.2	\$0.2	\$0.0	\$0.1	(\$0.5)	174	90	
Buckingham - Pleasant Valley	Line	PECO	\$0.7	\$0.2	\$0.0	\$0.4	(\$0.1)	(\$0.1)	(\$0.0)	\$0.0	\$0.5	131	59	
Crete - St Johns Tap	Flowgate	Midwest ISO	\$0.7	\$0.3	\$0.0	\$0.4	\$0.0	\$0.0	(\$0.0)	\$0.0	\$0.4	539	132	
Tiltonville - Windsor	Line	AP	\$0.9	\$0.5	\$0.0	\$0.4	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.4	794	198	
Leonia - New Milford	Line	PSEG	(\$0.5)	(\$0.1)	(\$0.0)	(\$0.3)	(\$0.0)	\$0.0	\$0.0	(\$0.0)	(\$0.4)	2,164	30	

Table 7-25 JCPL Control Zone top congestion cost impacts (By facility): January through June 2008 (See 2008 SOM Table 7-25)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Day Ahead				Balancing				Grand Total	Day Ahead	Real Time	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total				
Atlantic - Larrabee	Line	JCPL	\$46.9	\$2.3	\$2.2	\$46.8	(\$2.6)	\$2.7	(\$2.4)	(\$7.6)	\$39.1	1,466	341	
Branchburg - Readington	Line	PSEG	\$27.7	\$4.5	\$2.2	\$25.3	(\$2.2)	(\$0.8)	(\$1.8)	(\$3.3)	\$22.1	1,103	271	
West	Interface	500	\$16.0	\$5.9	\$0.2	\$10.3	(\$0.0)	(\$0.4)	(\$0.6)	(\$0.2)	\$10.1	700	285	
AP South	Interface	500	\$15.5	\$6.1	\$0.7	\$10.1	\$0.1	(\$0.3)	(\$1.0)	(\$0.6)	\$9.5	1,291	605	
Cloverdale - Lexington	Line	AEP	\$11.1	\$3.1	\$0.7	\$8.7	\$0.2	(\$0.1)	(\$0.5)	(\$0.2)	\$8.5	1,975	890	
Central	Interface	500	\$10.0	\$2.9	\$0.5	\$7.5	\$0.0	(\$0.0)	(\$0.0)	(\$0.0)	\$7.5	582	22	
Kammer	Transformer	500	\$10.8	\$3.5	\$0.4	\$7.7	(\$0.1)	(\$0.1)	(\$0.3)	(\$0.3)	\$7.4	1,386	767	
Buckingham - Pleasant Valley	Line	PECO	\$9.9	\$3.5	\$0.2	\$6.7	(\$0.1)	(\$0.1)	(\$0.1)	(\$0.1)	\$6.5	556	60	
Branchburg - Flagtown	Line	PSEG	\$6.2	\$1.7	\$0.0	\$4.5	\$0.8	\$0.3	(\$0.1)	\$0.4	\$4.9	105	27	
5004/5005 Interface	Interface	500	\$6.4	\$2.0	\$0.3	\$4.6	\$0.0	\$0.0	(\$0.2)	(\$0.2)	\$4.5	301	143	
Cedar Grove - Roseland	Line	PSEG	(\$4.5)	(\$0.8)	(\$0.1)	(\$3.7)	(\$0.1)	(\$0.2)	\$0.1	\$0.1	(\$3.6)	398	71	
Harwood - Susquehanna	Line	PPL	\$4.5	\$1.3	\$0.0	\$3.2	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$3.2	110	95	
East	Interface	500	\$3.3	\$1.0	\$0.0	\$2.3	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$2.3	182	9	
Bedington - Black Oak	Interface	500	\$3.2	\$1.3	\$0.5	\$2.3	(\$0.0)	(\$0.0)	(\$0.2)	(\$0.2)	\$2.2	1,170	186	
Dickerson - Pleasant View	Line	Pepco	\$3.1	\$1.2	\$0.2	\$2.2	\$0.0	(\$0.1)	(\$0.1)	(\$0.1)	\$2.1	418	118	

Met-Ed Control Zone

Table 7-26 Met-Ed Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2008 SOM Table 7-26)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Load Payments	Day Ahead			Total	Load Payments	Balancing			Grand Total	Day Ahead	Real Time
				Generation Credits	Explicit	Implicit			Generation Credits	Explicit	Implicit			
Brunner Island - Yorkana	Line	Met-Ed	\$0.1	(\$0.3)	\$0.0	\$0.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.5	33	16	
Graceton - Raphael Road	Line	BGE	(\$1.0)	(\$1.5)	(\$0.0)	\$0.5	\$0.1	\$0.2	\$0.0	(\$0.1)	\$0.4	174	90	
AP South	Interface	500	\$1.6	\$1.3	\$0.0	\$0.4	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.4	1,650	282	
5004/5005 Interface	Interface	500	\$3.1	\$3.5	\$0.0	(\$0.4)	(\$0.1)	(\$0.3)	(\$0.0)	\$0.1	(\$0.3)	334	198	
Kammer	Transformer	500	\$3.4	\$3.9	\$0.0	(\$0.4)	(\$0.0)	(\$0.2)	(\$0.1)	\$0.1	(\$0.3)	1,554	726	
Wylie Ridge	Transformer	AP	\$3.1	\$2.8	\$0.0	\$0.3	(\$0.1)	(\$0.2)	(\$0.0)	\$0.0	\$0.3	354	336	
Dunes Acres - Michigan City	Flowgate	Midwest ISO	\$1.3	\$1.5	\$0.0	(\$0.3)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	(\$0.3)	1,713	672	
Tiltonsville - Windsor	Line	AP	\$0.6	\$0.9	\$0.0	(\$0.3)	\$0.0	(\$0.1)	(\$0.0)	\$0.0	(\$0.2)	794	198	
East Frankfort - Crete	Line	ComEd	\$0.8	\$0.9	\$0.0	(\$0.2)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.2)	1,333	0	
Middletown Jct	Transformer	Met-Ed	\$0.2	(\$0.0)	\$0.0	\$0.3	(\$0.1)	\$0.0	(\$0.0)	(\$0.1)	\$0.2	59	12	
West	Interface	500	\$6.9	\$6.8	\$0.0	\$0.1	(\$0.0)	(\$0.1)	(\$0.0)	\$0.0	\$0.2	391	55	
Crete - St Johns Tap	Flowgate	Midwest ISO	\$0.4	\$0.6	\$0.0	(\$0.1)	\$0.0	\$0.0	(\$0.0)	(\$0.0)	(\$0.1)	539	132	
Sammis - Wylie Ridge	Line	AP	\$1.0	\$1.2	\$0.0	(\$0.2)	\$0.0	(\$0.0)	(\$0.0)	\$0.0	(\$0.1)	622	101	
Cloverdale - Lexington	Line	AEP	\$0.7	\$0.8	\$0.0	(\$0.1)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	(\$0.1)	666	239	
Bedington	Transformer	AP	\$0.1	(\$0.0)	\$0.0	\$0.2	(\$0.0)	\$0.0	(\$0.0)	(\$0.0)	\$0.1	247	103	

Table 7-27 Met-Ed Control Zone top congestion cost impacts (By facility): January through June 2008 (See 2008 SOM Table 7-27)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Load Payments	Day Ahead			Total	Load Payments	Balancing			Grand Total	Day Ahead	Real Time
				Generation Credits	Explicit	Implicit			Generation Credits	Explicit	Implicit			
AP South	Interface	500	\$11.3	\$11.7	\$0.4	\$0.0	\$0.4	(\$0.1)	\$3.6	\$4.1	\$4.1	1,291	605	
Kammer	Transformer	500	\$5.7	\$5.6	\$0.4	\$0.6	\$0.0	(\$0.1)	\$1.5	\$1.6	\$2.2	1,386	767	
Cloverdale - Lexington	Line	AEP	\$7.0	\$6.5	\$0.5	\$1.1	\$0.1	\$0.0	\$0.8	\$0.8	\$1.9	1,975	890	
Bedington - Black Oak	Interface	500	\$3.6	\$2.8	\$0.1	\$0.8	\$0.0	\$0.0	\$0.7	\$0.7	\$1.5	1,170	186	
Bedington	Transformer	AP	\$1.1	\$0.2	\$0.0	\$0.9	\$0.0	\$0.0	\$0.2	\$0.2	\$1.1	593	149	
West	Interface	500	\$7.2	\$8.1	\$0.3	(\$0.7)	\$0.2	(\$0.0)	\$1.4	\$1.6	\$0.9	700	285	
Collins - Middletown Jct	Line	Met-Ed	\$1.0	(\$0.0)	\$0.0	\$1.0	(\$0.0)	\$0.2	\$0.1	(\$0.1)	\$0.9	265	31	
Sammis - Wylie Ridge	Line	AP	\$0.5	\$0.4	\$0.0	\$0.1	\$0.2	(\$0.0)	\$0.5	\$0.7	\$0.7	249	405	
East Towanda	Transformer	PENELEC	\$0.3	\$0.4	\$0.0	\$0.0	\$0.1	(\$0.1)	\$0.4	\$0.6	\$0.6	803	306	
Harwood - Susquehanna	Line	PPL	\$1.2	\$0.4	\$0.0	\$0.8	\$0.0	\$0.2	(\$0.0)	(\$0.2)	\$0.6	110	95	
Mount Storm - Pruntytown	Line	AP	\$1.0	\$0.7	(\$0.0)	\$0.2	(\$0.0)	\$0.0	\$0.3	\$0.3	\$0.6	333	223	
Altoona - Raystown	Line	PENELEC	\$0.3	\$0.3	\$0.0	\$0.0	\$0.0	(\$0.1)	\$0.4	\$0.5	\$0.5	77	48	
Meadow Brook	Transformer	AP	\$0.4	\$0.3	\$0.1	\$0.1	\$0.0	\$0.0	\$0.3	\$0.3	\$0.4	757	171	
5004/5005 Interface	Interface	500	\$2.8	\$2.8	(\$0.2)	(\$0.2)	\$0.1	(\$0.0)	\$0.5	\$0.6	\$0.4	301	143	
Aqueduct - Doubs	Line	AP	(\$0.5)	(\$0.1)	\$0.0	(\$0.4)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.3)	145	7	

PECO Control Zone

Table 7-28 PECO Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2008 SOM Table 7-28)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Day Ahead				Balancing				Grand Total	Day Ahead	Real Time	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total				
Kammer	Transformer	500	\$1.4	\$4.9	\$0.0	(\$3.6)	(\$0.2)	\$0.1	\$0.0	(\$0.2)	(\$3.8)	1,554	726	
West	Interface	500	\$3.0	\$6.2	\$0.0	(\$3.1)	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	(\$3.1)	391	55	
AP South	Interface	500	\$0.4	\$2.4	\$0.0	(\$2.0)	(\$0.0)	\$0.0	\$0.0	(\$0.0)	(\$2.1)	1,650	282	
Dunes Acres - Michigan City	Flowgate	Midwest ISO	\$0.8	\$2.2	(\$0.0)	(\$1.4)	(\$0.0)	\$0.0	(\$0.0)	(\$0.1)	(\$1.5)	1,713	672	
Graceton - Raphael Road	Line	BGE	(\$0.6)	(\$2.0)	(\$0.0)	\$1.4	\$0.3	\$0.4	(\$0.0)	(\$0.1)	\$1.2	174	90	
5004/5005 Interface	Interface	500	\$2.0	\$3.1	\$0.0	(\$1.2)	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$1.2)	334	198	
Wylie Ridge	Transformer	AP	\$1.3	\$2.3	\$0.0	(\$0.9)	(\$0.1)	\$0.0	(\$0.1)	(\$0.1)	(\$1.1)	354	336	
East Frankfort - Crete	Line	ComEd	\$0.4	\$1.2	(\$0.0)	(\$0.8)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.8)	1,333	0	
Crete - St Johns Tap	Flowgate	Midwest ISO	\$0.2	\$0.9	(\$0.0)	(\$0.7)	(\$0.0)	\$0.0	(\$0.0)	(\$0.1)	(\$0.8)	539	132	
Sammis - Wylie Ridge	Line	AP	\$0.5	\$1.1	\$0.0	(\$0.7)	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.7)	622	101	
Tiltonville - Windsor	Line	AP	\$0.3	\$1.0	\$0.0	(\$0.7)	(\$0.0)	(\$0.0)	\$0.0	\$0.0	(\$0.7)	794	198	
Cloverdale - Lexington	Line	AEP	\$0.3	\$1.0	\$0.0	(\$0.6)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	(\$0.6)	666	239	
Mount Storm - Pruntytown	Line	AP	\$0.1	\$0.5	\$0.0	(\$0.5)	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.5)	523	25	
Conastone	Transformer	BGE	(\$0.0)	(\$0.3)	\$0.0	\$0.3	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.3	17	1	
Krendale - Seneca	Line	AP	\$0.2	\$0.5	\$0.0	(\$0.3)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.3)	225	0	

Table 7-29 PECO Control Zone top congestion cost impacts (By facility): January through June 2008 (See 2008 SOM Table 7-29)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Day Ahead				Balancing				Grand Total	Day Ahead	Real Time	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total				
AP South	Interface	500	\$5.0	\$17.9	\$0.0	(\$12.9)	\$0.1	\$1.2	\$0.0	(\$1.0)	(\$14.0)	1,291	605	
West	Interface	500	\$3.6	\$11.4	\$0.1	(\$7.7)	\$0.2	\$1.4	\$0.0	(\$1.2)	(\$8.9)	700	285	
Cloverdale - Lexington	Line	AEP	\$3.8	\$8.4	\$0.0	(\$4.6)	\$0.3	\$0.9	\$0.1	(\$0.5)	(\$5.1)	1,975	890	
Kammer	Transformer	500	\$3.2	\$7.5	\$0.0	(\$4.3)	\$0.3	\$0.6	\$0.0	(\$0.3)	(\$4.6)	1,386	767	
Bedington - Black Oak	Interface	500	\$1.2	\$5.3	\$0.0	(\$4.0)	\$0.0	\$0.2	\$0.0	(\$0.1)	(\$4.2)	1,170	186	
East	Interface	500	\$2.5	(\$0.1)	\$0.0	\$2.6	(\$0.0)	(\$0.1)	\$0.0	\$0.1	\$2.6	182	9	
Whitpain	Transformer	PECO	\$2.5	(\$0.8)	\$0.1	\$3.4	(\$0.3)	\$0.5	(\$0.1)	(\$1.0)	\$2.4	60	48	
Branchburg - Readington	Line	PSEG	(\$1.8)	(\$4.5)	(\$0.0)	\$2.6	(\$0.0)	\$0.2	(\$0.0)	(\$0.3)	\$2.3	1,103	271	
5004/5005 Interface	Interface	500	\$1.4	\$3.4	\$0.0	(\$2.0)	\$0.1	\$0.3	\$0.0	(\$0.1)	(\$2.1)	301	143	
Dickerson - Plesant View	Line	Pepco	\$1.2	\$3.3	\$0.0	(\$2.0)	(\$0.0)	(\$0.0)	\$0.0	\$0.0	(\$2.0)	418	118	
Bradford - Planebrook	Line	PECO	\$0.7	(\$1.1)	(\$0.0)	\$1.8	\$0.0	\$0.1	\$0.0	(\$0.1)	\$1.7	124	23	
Mount Storm - Pruntytown	Line	AP	\$0.3	\$1.5	(\$0.0)	(\$1.2)	\$0.0	\$0.2	\$0.0	(\$0.1)	(\$1.3)	333	223	
Buckingham - Pleasant Valley	Line	PECO	(\$3.9)	(\$2.6)	(\$0.0)	(\$1.3)	\$0.1	\$0.1	\$0.0	(\$0.0)	(\$1.3)	556	60	
Atlantic - Larrabee	Line	JCPL	(\$5.4)	(\$4.1)	(\$0.0)	(\$1.4)	(\$0.1)	(\$0.3)	(\$0.1)	\$0.1	(\$1.3)	1,466	341	
Central	Interface	500	\$4.8	\$6.1	\$0.0	(\$1.3)	\$0.0	\$0.0	\$0.0	\$0.0	(\$1.3)	582	22	

PENELEC Control Zone

Table 7-30 PENELEC Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2008 SOM Table 7-30)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Load Payments	Day Ahead			Total	Load Payments	Balancing		Total	Grand Total	Day Ahead	Real Time
				Generation Credits	Explicit	Implicit			Generation Credits	Explicit				
West	Interface	500	(\$2.2)	(\$15.2)	(\$0.0)	\$13.0	\$0.1	\$0.1	\$0.0	(\$0.1)	\$13.0	391	55	
AP South	Interface	500	(\$9.9)	(\$20.7)	(\$0.0)	\$10.8	\$0.8	\$0.3	\$0.1	\$0.5	\$11.3	1,650	282	
Wylie Ridge	Transformer	AP	\$1.5	\$10.3	\$0.1	(\$8.8)	(\$0.6)	(\$0.7)	(\$0.0)	\$0.1	(\$8.7)	354	336	
5004/5005 Interface	Interface	500	(\$1.6)	(\$9.2)	(\$0.0)	\$7.6	\$0.4	\$1.5	\$0.0	(\$1.1)	\$6.5	334	198	
Kammer	Transformer	500	\$2.8	\$9.0	\$0.2	(\$6.0)	(\$0.2)	(\$0.7)	(\$0.1)	\$0.4	(\$5.6)	1,554	726	
Sammis - Wylie Ridge	Line	AP	\$1.0	\$3.7	\$0.1	(\$2.7)	(\$0.1)	(\$0.1)	\$0.0	(\$0.0)	(\$2.7)	622	101	
Mount Storm - Pruntytown	Line	AP	(\$2.4)	(\$4.6)	(\$0.0)	\$2.2	\$0.3	\$0.1	\$0.0	\$0.3	\$2.5	523	25	
Dunes Acres - Michigan City	Flowgate	Midwest ISO	\$2.6	\$5.1	(\$0.0)	(\$2.5)	\$0.2	(\$0.5)	(\$0.0)	\$0.6	(\$1.8)	1,713	672	
Seward	Transformer	PENELEC	\$3.2	\$1.8	(\$0.0)	\$1.4	\$0.0	\$0.0	\$0.0	\$0.0	\$1.4	57	0	
Tiltonville - Windsor	Line	AP	\$0.7	\$2.1	\$0.0	(\$1.4)	\$0.1	\$0.0	(\$0.0)	\$0.0	(\$1.4)	794	198	
Homer City - Seward	Line	PENELEC	\$2.8	\$1.5	(\$0.0)	\$1.3	\$0.0	\$0.0	\$0.0	\$0.0	\$1.3	58	0	
East Frankfort - Crete	Line	ComEd	\$1.5	\$2.7	\$0.0	(\$1.2)	\$0.0	\$0.0	\$0.0	\$0.0	(\$1.2)	1,333	0	
Krendale - Seneca	Line	AP	\$0.5	\$1.4	\$0.0	(\$0.9)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.9)	225	0	
Homer City	Transformer	PENELEC	\$0.9	\$0.1	(\$0.0)	\$0.8	(\$0.0)	\$0.0	\$0.0	(\$0.0)	\$0.8	145	2	
Homer City - Shelocta	Line	PENELEC	(\$1.7)	(\$2.5)	(\$0.0)	\$0.8	(\$0.1)	\$0.1	\$0.0	(\$0.1)	\$0.7	200	55	

Table 7-31 PENELEC Control Zone top congestion cost impacts (By facility): January through June 2008 (See 2008 SOM Table 7-31)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Load Payments	Day Ahead			Total	Load Payments	Balancing		Total	Grand Total	Day Ahead	Real Time
				Generation Credits	Explicit	Implicit			Generation Credits	Explicit				
West	Interface	500	(\$3.2)	(\$25.9)	(\$0.3)	\$22.5	\$0.2	\$1.2	\$0.2	(\$0.8)	\$21.6	700	285	
AP South	Interface	500	(\$18.8)	(\$37.2)	\$0.2	\$18.6	\$1.9	\$0.4	\$0.7	\$2.2	\$20.8	1,291	605	
Bedington - Black Oak	Interface	500	(\$14.6)	(\$32.0)	\$0.1	\$17.5	\$0.6	\$0.3	\$0.1	\$0.4	\$18.0	1,170	186	
Kammer	Transformer	500	\$6.0	\$19.2	\$0.3	(\$12.9)	(\$1.0)	(\$0.9)	\$0.5	\$0.4	(\$12.5)	1,386	767	
5004/5005 Interface	Interface	500	(\$2.0)	(\$12.2)	(\$0.0)	\$10.2	(\$0.4)	\$0.5	\$0.0	(\$0.8)	\$9.4	301	143	
Seward	Transformer	PENELEC	\$22.2	\$13.1	\$0.0	\$9.2	\$0.0	\$0.0	\$0.0	\$0.0	\$9.2	200	0	
Mount Storm - Pruntytown	Line	AP	(\$7.0)	(\$14.4)	(\$0.0)	\$7.3	\$0.4	\$0.1	\$0.0	\$0.4	\$7.7	333	223	
Central	Interface	500	(\$0.4)	(\$7.0)	(\$0.0)	\$6.6	\$0.0	\$0.0	\$0.0	\$0.0	\$6.6	582	22	
East Towanda	Transformer	PENELEC	\$14.1	(\$8.8)	\$1.0	\$23.8	(\$9.2)	\$8.4	(\$0.5)	(\$18.1)	\$5.7	803	306	
Krendale - Seneca	Line	AP	\$1.6	\$4.4	\$0.1	(\$2.7)	\$0.0	(\$0.0)	(\$0.0)	\$0.0	(\$2.7)	407	16	
Bedington	Transformer	AP	(\$0.5)	(\$3.0)	\$0.0	\$2.5	\$0.1	\$0.0	\$0.0	\$0.2	\$2.7	593	149	
Branchburg - Readington	Line	PSEG	\$0.7	(\$1.8)	(\$0.0)	\$2.5	(\$0.0)	(\$0.1)	\$0.0	\$0.1	\$2.6	1,103	271	
Sammis - Wylie Ridge	Line	AP	\$0.5	\$2.1	\$0.1	(\$1.5)	(\$0.7)	(\$0.1)	(\$0.1)	(\$0.7)	(\$2.2)	249	405	
Elrama - Mitchell	Line	AP	\$1.0	\$3.1	\$0.1	(\$2.1)	(\$0.1)	(\$0.1)	\$0.0	(\$0.0)	(\$2.1)	563	116	
Krendale - Shanorma	Line	AP	\$1.0	\$2.7	\$0.0	(\$1.6)	\$0.0	\$0.0	\$0.0	\$0.0	(\$1.6)	326	0	

Pepco Control Zone

Table 7-32 Pepco Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2008 SOM Table 7-32)

Congestion Costs (Millions)													
Constraint	Type	Location	Day Ahead				Balancing				Grand Total	Event Hours	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total		Day Ahead	Real Time
AP South	Interface	500	\$32.9	\$25.1	\$0.5	\$8.3	(\$0.9)	(\$2.2)	(\$0.5)	\$0.9	\$9.1	1,650	282
Kammer	Transformer	500	\$11.8	\$8.5	\$0.2	\$3.5	(\$0.6)	(\$1.4)	(\$0.2)	\$0.6	\$4.1	1,554	726
Mount Storm - Pruntytown	Line	AP	\$7.5	\$5.8	\$0.1	\$1.9	(\$0.0)	(\$0.5)	(\$0.0)	\$0.5	\$2.3	523	25
West	Interface	500	\$8.1	\$6.0	\$0.0	\$2.1	(\$0.0)	(\$0.1)	(\$0.0)	\$0.0	\$2.2	391	55
Wylie Ridge	Transformer	AP	\$6.2	\$4.9	\$0.0	\$1.3	(\$0.3)	(\$0.7)	(\$0.0)	\$0.3	\$1.7	354	336
Cloverdale - Lexington	Line	AEP	\$5.0	\$3.7	\$0.1	\$1.4	(\$0.1)	(\$0.3)	(\$0.1)	\$0.1	\$1.5	666	239
Dunes Acres - Michigan City	Flowgate	Midwest ISO	\$3.9	\$2.7	(\$0.0)	\$1.2	(\$0.1)	(\$0.4)	(\$0.0)	\$0.3	\$1.5	1,713	672
Graceton - Raphael Road	Line	BGE	\$3.1	\$2.1	\$0.1	\$1.0	(\$0.4)	(\$0.5)	(\$0.1)	(\$0.0)	\$1.0	174	90
Sammis - Wylie Ridge	Line	AP	\$2.4	\$1.7	\$0.0	\$0.8	(\$0.1)	(\$0.1)	(\$0.0)	(\$0.0)	\$0.8	622	101
Mount Storm	Transformer	AP	\$1.7	\$1.3	\$0.0	\$0.5	(\$0.0)	(\$0.3)	(\$0.0)	\$0.2	\$0.7	123	46
East Frankfort - Crete	Line	ComEd	\$2.2	\$1.5	\$0.0	\$0.7	\$0.0	\$0.0	\$0.0	\$0.0	\$0.7	1,333	0
Bedington - Black Oak	Interface	500	\$1.8	\$1.3	\$0.0	\$0.5	(\$0.0)	(\$0.1)	(\$0.0)	\$0.1	\$0.6	74	61
Tiltonville - Windsor	Line	AP	\$1.4	\$0.9	\$0.1	\$0.5	(\$0.0)	(\$0.1)	(\$0.1)	(\$0.0)	\$0.5	794	198
Crete - St Johns Tap	Flowgate	Midwest ISO	\$1.3	\$1.0	\$0.0	\$0.3	\$0.0	(\$0.2)	\$0.0	\$0.2	\$0.5	539	132
5004/5005 Interface	Interface	500	\$1.2	\$0.8	\$0.0	\$0.4	(\$0.0)	(\$0.1)	(\$0.0)	\$0.1	\$0.4	334	198

Table 7-33 Pepco Control Zone top congestion cost impacts (By facility): January through June 2008 (See 2008 SOM Table 7-33)

Congestion Costs (Millions)													
Constraint	Type	Location	Day Ahead				Balancing				Grand Total	Event Hours	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total		Day Ahead	Real Time
AP South	Interface	500	\$110.2	\$76.5	\$1.2	\$34.9	(\$2.0)	(\$0.9)	(\$1.3)	(\$2.4)	\$32.5	1,291	605
Cloverdale - Lexington	Line	AEP	\$51.8	\$34.5	\$1.6	\$18.9	\$1.5	(\$1.8)	(\$1.4)	\$1.9	\$20.8	1,975	890
Bedington - Black Oak	Interface	500	\$50.1	\$33.5	\$0.5	\$17.1	(\$0.3)	(\$0.3)	(\$0.2)	(\$0.2)	\$16.9	1,170	186
Aqueduct - Doubs	Line	AP	\$24.1	\$14.8	\$0.1	\$9.3	\$0.1	(\$0.0)	(\$0.0)	\$0.1	\$9.4	145	7
Kammer	Transformer	500	\$21.0	\$13.3	\$0.5	\$8.2	(\$1.0)	(\$0.8)	(\$0.4)	(\$0.6)	\$7.6	1,386	767
Mount Storm - Pruntytown	Line	AP	\$21.4	\$15.2	\$0.1	\$6.3	\$0.1	(\$1.1)	(\$0.1)	\$1.1	\$7.4	333	223
Dickerson - Pleasant View	Line	Pepco	\$16.6	\$11.2	\$0.5	\$5.9	(\$0.2)	(\$0.3)	(\$0.5)	(\$0.4)	\$5.5	418	118
West	Interface	500	\$11.0	\$6.3	\$0.3	\$5.1	(\$0.6)	(\$0.4)	(\$0.5)	(\$0.6)	\$4.5	700	285
Central	Interface	500	(\$6.7)	(\$4.9)	(\$0.1)	(\$1.9)	\$0.0	\$0.0	(\$0.0)	\$0.0	(\$1.9)	582	22
Black Oak	Transformer	AP	\$5.6	\$3.8	\$0.0	\$1.8	(\$0.0)	(\$0.1)	(\$0.0)	\$0.0	\$1.8	337	11
Branchburg - Readington	Line	PSEG	(\$5.3)	(\$3.5)	(\$0.2)	(\$2.0)	\$0.3	\$0.2	\$0.2	\$0.2	(\$1.8)	1,103	271
Brighton	Transformer	Pepco	\$5.0	\$3.3	\$0.0	\$1.7	(\$0.1)	\$0.2	(\$0.1)	(\$0.4)	\$1.4	20	24
Atlantic - Larrabee	Line	JCPL	(\$3.9)	(\$2.7)	(\$0.1)	(\$1.3)	\$0.2	\$0.2	\$0.1	\$0.1	(\$1.2)	1,466	341
Buckingham - Pleasant Valley	Line	PECO	(\$2.2)	(\$1.3)	(\$0.1)	(\$1.0)	\$0.0	\$0.0	\$0.0	\$0.0	(\$1.0)	556	60
Burnham - Munster	Line	ComEd	\$2.4	\$1.9	\$0.0	\$0.6	\$0.6	\$0.2	(\$0.0)	\$0.4	\$1.0	416	140

PPL Control Zone

Table 7-34 PPL Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2008 SOM Table 7-34)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Day Ahead				Balancing				Grand Total	Day Ahead	Real Time	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total				
Kammer	Transformer	500	\$0.8	\$2.3	\$0.4	(\$1.1)	(\$0.1)	(\$0.2)	(\$0.1)	(\$0.1)	(\$1.1)	1,554	726	
Dunes Acres - Michigan City	Flowgate	Midwest ISO	\$0.3	\$1.4	(\$0.1)	(\$1.1)	(\$0.2)	(\$0.1)	\$0.0	\$0.0	(\$1.1)	1,713	672	
AP South	Interface	500	\$0.4	(\$0.2)	\$0.2	\$0.7	\$0.0	(\$0.0)	\$0.1	\$0.1	\$0.9	1,650	282	
West	Interface	500	\$2.8	\$4.1	\$0.5	(\$0.8)	(\$0.0)	(\$0.1)	(\$0.0)	\$0.1	(\$0.7)	391	55	
Graceton - Raphael Road	Line	BGE	(\$0.3)	(\$0.9)	(\$0.0)	\$0.6	\$0.1	\$0.0	\$0.0	\$0.1	\$0.6	174	90	
Harwood - Susquehanna	Line	PPL	\$0.1	(\$0.4)	\$0.0	\$0.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.5	13	0	
Sammis - Wylie Ridge	Line	AP	\$0.1	\$0.7	\$0.1	(\$0.5)	\$0.0	(\$0.0)	\$0.0	\$0.1	(\$0.4)	622	101	
Brunner Island - Yorkana	Line	Met-Ed	(\$0.0)	(\$0.4)	(\$0.0)	\$0.4	\$0.0	\$0.0	(\$0.0)	(\$0.0)	\$0.4	33	16	
Wylie Ridge	Transformer	AP	\$1.1	\$1.8	\$0.3	(\$0.4)	\$0.2	\$0.1	\$0.0	\$0.1	(\$0.3)	354	336	
PL North	Interface	PPL	\$0.0	\$0.0	\$0.0	\$0.0	\$0.4	\$0.6	(\$0.0)	(\$0.3)	(\$0.3)	0	176	
Mount Storm - Pruntytown	Line	AP	\$0.1	(\$0.1)	\$0.0	\$0.3	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.3	523	25	
East Frankfort - Crete	Line	ComEd	\$0.2	\$0.5	\$0.0	(\$0.3)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.3)	1,333	0	
Atlantic - Larrabee	Line	JCPL	\$0.0	\$0.1	\$0.0	(\$0.1)	(\$0.1)	\$0.1	\$0.0	(\$0.2)	(\$0.3)	188	45	
5004/5005 Interface	Interface	500	\$1.4	\$2.4	\$0.3	(\$0.6)	\$0.1	(\$0.8)	(\$0.1)	\$0.8	\$0.2	334	198	
Crete - St Johns Tap	Flowgate	Midwest ISO	\$0.2	\$0.4	(\$0.0)	(\$0.2)	(\$0.1)	(\$0.1)	\$0.0	(\$0.0)	(\$0.2)	539	132	

Table 7-35 PPL Control Zone top congestion cost impacts (By facility): January through June 2008 (See 2008 SOM Table 7-35)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Day Ahead				Balancing				Grand Total	Day Ahead	Real Time	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total				
Harwood - Susquehanna	Line	PPL	\$2.6	(\$14.3)	(\$0.1)	\$16.7	(\$1.2)	\$1.8	\$0.2	(\$2.8)	\$13.9	110	95	
West	Interface	500	\$1.5	\$6.8	\$0.6	(\$4.7)	\$0.1	\$0.9	\$0.0	(\$0.7)	(\$5.5)	700	285	
East Towanda	Transformer	PENELEC	\$0.4	\$1.8	\$0.0	(\$1.4)	\$0.1	\$1.1	(\$2.9)	(\$3.8)	(\$5.2)	803	306	
Cloverdale - Lexington	Line	AEP	\$0.9	\$4.8	\$0.9	(\$3.0)	(\$0.1)	\$0.3	\$0.2	(\$0.2)	(\$3.2)	1,975	890	
Kammer	Transformer	500	\$1.0	\$4.2	\$0.7	(\$2.5)	\$0.2	\$0.7	(\$0.0)	(\$0.6)	(\$3.0)	1,386	767	
Central	Interface	500	\$0.8	\$3.8	\$0.3	(\$2.7)	\$0.0	(\$0.1)	(\$0.0)	\$0.1	(\$2.7)	582	22	
5004/5005 Interface	Interface	500	\$0.7	\$2.7	\$0.4	(\$1.6)	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.1)	(\$1.7)	301	143	
Branchburg - Readington	Line	PSEG	\$0.7	(\$0.7)	(\$0.1)	\$1.4	\$0.0	(\$0.1)	\$0.1	\$0.2	\$1.6	1,103	271	
Bedington - Black Oak	Interface	500	\$1.3	\$0.5	\$0.4	\$1.2	\$0.0	\$0.1	\$0.1	\$0.1	\$1.3	1,170	186	
East	Interface	500	\$0.0	(\$1.2)	(\$0.0)	\$1.3	\$0.0	(\$0.0)	\$0.0	\$0.0	\$1.3	182	9	
Mount Storm - Pruntytown	Line	AP	\$0.4	(\$0.3)	\$0.2	\$0.8	\$0.0	\$0.1	\$0.2	\$0.1	\$1.0	333	223	
AP South	Interface	500	\$2.9	\$5.1	\$1.2	(\$1.1)	\$0.3	\$0.3	\$0.2	\$0.2	(\$0.9)	1,291	605	
Lackawana - Stanton	Line	PPL	\$0.0	(\$0.5)	\$0.4	\$0.8	\$0.0	\$0.0	\$0.0	\$0.0	\$0.8	83	0	
Burnham - Munster	Line	ComEd	\$0.2	\$1.0	(\$0.0)	(\$0.8)	\$0.0	(\$0.1)	\$0.0	\$0.2	(\$0.6)	416	140	
Krendale - Seneca	Line	AP	\$0.2	\$0.8	\$0.1	(\$0.5)	(\$0.0)	\$0.0	(\$0.0)	(\$0.0)	(\$0.5)	407	16	

PSEG Control Zone

Table 7-36 PSEG Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2008 SOM Table 7-36)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Load Payments	Day Ahead Generation Credits	Explicit	Total	Load Payments	Balancing Generation Credits	Explicit	Total	Grand Total	Day Ahead	Real Time	
Plainsboro - Trenton	Line	PSEG	\$3.5	(\$0.1)	\$0.1	\$3.8	(\$0.3)	\$0.4	(\$0.1)	(\$0.7)	\$3.1	389	164	
Leonia - New Milford	Line	PSEG	\$1.5	\$0.5	\$2.3	\$3.3	(\$0.0)	\$0.0	(\$0.3)	(\$0.3)	\$3.0	2,164	30	
Athenia - Saddlebrook	Line	PSEG	\$3.2	\$0.5	\$1.3	\$3.9	(\$0.3)	\$0.1	(\$0.5)	(\$0.9)	\$3.0	979	130	
AP South	Interface	500	\$0.5	\$2.5	\$0.7	(\$1.3)	\$0.0	(\$0.1)	(\$0.3)	(\$0.2)	(\$1.5)	1,650	282	
Fairlawn - Saddlebrook	Line	PSEG	\$1.0	\$0.1	\$0.5	\$1.4	\$0.0	\$0.0	\$0.0	\$0.0	\$1.4	673	0	
Wylie Ridge	Transformer	AP	\$4.3	\$5.4	\$0.5	(\$0.6)	\$0.0	\$0.1	(\$0.6)	(\$0.7)	(\$1.3)	NA	NA	
West	Interface	500	\$10.9	\$12.7	\$0.8	(\$1.0)	(\$0.0)	\$0.0	(\$0.1)	(\$0.2)	(\$1.2)	391	55	
Cedar Grove - Clifton	Line	PSEG	\$1.0	\$0.2	\$0.4	\$1.2	(\$0.0)	\$0.0	(\$0.0)	(\$0.1)	\$1.1	413	18	
Hillsdale - Waldwick	Line	PSEG	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.3	(\$0.4)	(\$0.7)	(\$0.7)	0	42	
Buckingham - Pleasant Valley	Line	PECO	\$0.9	(\$0.1)	\$0.0	\$1.0	(\$0.0)	\$0.2	(\$0.0)	(\$0.3)	\$0.7	131	59	
5004/5005 Interface	Interface	500	\$5.6	\$5.4	\$0.3	\$0.5	\$0.0	\$0.8	(\$0.4)	(\$1.2)	(\$0.7)	334	198	
Atlantic - Larrabee	Line	JCPL	\$0.3	(\$0.5)	\$0.0	\$0.8	\$0.0	\$0.1	(\$0.1)	(\$0.2)	\$0.6	188	45	
Bayway - Federal Square	Line	PSEG	\$0.4	(\$0.2)	\$0.0	\$0.6	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	\$0.6	144	9	
Brunswick - Edison	Line	PSEG	\$1.0	(\$0.0)	\$0.0	\$1.1	(\$0.1)	\$0.2	(\$0.2)	(\$0.5)	\$0.6	138	76	
Cedar Grove - Roseland	Line	PSEG	\$0.4	\$0.0	\$0.0	\$0.4	(\$0.2)	\$0.5	(\$0.2)	(\$0.9)	(\$0.5)	52	70	

Table 7-37 PSEG Control Zone top congestion cost impacts (By facility): January through June 2008 (See 2008 SOM Table 7-37)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Load Payments	Day Ahead Generation Credits	Explicit	Total	Load Payments	Balancing Generation Credits	Explicit	Total	Grand Total	Day Ahead	Real Time	
Atlantic - Larrabee	Line	JCPL	\$13.1	(\$5.8)	\$0.3	\$19.3	\$0.5	\$2.3	(\$0.7)	(\$2.5)	\$16.8	1,466	341	
Branchburg - Readington	Line	PSEG	\$16.3	\$0.8	\$0.6	\$16.1	\$0.2	\$2.9	(\$0.7)	(\$3.3)	\$12.7	1,103	271	
Buckingham - Pleasant Valley	Line	PECO	\$10.3	\$2.3	\$0.5	\$8.4	(\$0.1)	\$0.4	(\$0.1)	(\$0.6)	\$7.9	556	60	
Cedar Grove - Clifton	Line	PSEG	\$0.6	\$0.1	\$0.3	\$0.8	(\$0.6)	\$4.4	(\$1.6)	(\$6.7)	(\$5.8)	81	187	
AP South	Interface	500	\$17.3	\$20.9	\$1.9	(\$1.7)	(\$0.2)	\$1.0	(\$1.3)	(\$2.6)	(\$4.2)	1,291	605	
Branchburg - Flagtown	Line	PSEG	\$3.7	\$0.0	\$0.1	\$3.7	\$0.3	\$0.1	(\$0.2)	\$0.1	\$3.8	105	27	
Cedar Grove - Roseland	Line	PSEG	\$6.2	\$0.9	\$0.1	\$5.4	(\$0.1)	\$1.1	(\$0.3)	(\$1.6)	\$3.8	398	71	
Unclassified	Unclassified	Unclassified	\$1.7	(\$0.8)	\$0.1	\$2.5	\$0.0	\$0.0	\$0.0	\$0.0	\$2.5	NA	NA	
Bedington - Black Oak	Interface	500	\$3.2	\$6.1	\$0.8	(\$2.0)	\$0.0	(\$0.0)	(\$0.2)	(\$0.2)	(\$2.2)	1,170	186	
Brunswick - Edison	Line	PSEG	\$2.2	\$0.1	\$0.1	\$2.2	\$0.0	\$0.5	(\$0.1)	(\$0.5)	\$1.6	192	103	
West	Interface	500	\$18.6	\$17.0	\$1.1	\$2.8	\$0.7	\$1.4	(\$0.6)	(\$1.3)	\$1.4	700	285	
North Ave - Pvsc	Line	PSEG	\$0.5	(\$0.9)	\$0.0	\$1.4	\$0.0	\$0.0	\$0.0	\$0.0	\$1.4	399	0	
Cloverdale - Lexington	Line	AEP	\$12.7	\$13.5	\$1.3	\$0.4	\$0.0	\$1.0	(\$0.8)	(\$1.7)	(\$1.3)	1,975	890	
Harwood - Susquehanna	Line	PPL	\$3.6	\$1.3	\$0.2	\$2.5	(\$0.4)	\$0.6	(\$0.3)	(\$1.3)	\$1.3	110	95	
Mount Storm - Pruntytown	Line	AP	\$0.1	\$1.3	\$0.3	(\$0.9)	\$0.0	(\$0.1)	(\$0.4)	(\$0.2)	(\$1.2)	333	223	

RECO Control Zone

Table 7-38 RECO Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2008 SOM Table 7-38)

Constraint	Type	Location	Congestion Costs (Millions)											Event Hours	
			Day Ahead				Balancing				Grand Total	Day Ahead	Real Time		
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total					
West	Interface	500	\$0.5	\$0.0	\$0.0	\$0.5	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.5	391	55		
Kammer	Transformer	500	\$0.2	\$0.0	\$0.0	\$0.2	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.2	1,554	726		
5004/5005 Interface	Interface	500	\$0.2	\$0.0	\$0.0	\$0.2	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.1)	\$0.2	334	198		
Wylie Ridge	Transformer	AP	\$0.2	\$0.0	\$0.0	\$0.2	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.2	354	336		
Athenia - Saddlebrook	Line	PSEG	\$0.1	\$0.0	\$0.0	\$0.1	(\$0.0)	(\$0.0)	\$0.0	(\$0.0)	\$0.1	979	130		
Dunes Acres - Michigan City	Flowgate	Midwest ISO	\$0.1	\$0.0	(\$0.0)	\$0.1	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.1	1,713	672		
Graceton - Raphael Road	Line	BGE	(\$0.1)	(\$0.0)	(\$0.0)	(\$0.1)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	174	90		
East Frankfort - Crete	Line	ComEd	\$0.1	\$0.0	\$0.0	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	1,333	0		
AP South	Interface	500	(\$0.1)	(\$0.0)	(\$0.0)	(\$0.1)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	1,650	282		
Sammis - Wylie Ridge	Line	AP	\$0.1	\$0.0	\$0.0	\$0.1	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.1	622	101		
Fairlawn - Saddlebrook	Line	PSEG	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.1)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	673	0		
Tiltonville - Windsor	Line	AP	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	794	198		
Crete - St Johns Tap	Flowgate	Midwest ISO	\$0.0	\$0.0	(\$0.0)	\$0.0	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.0	539	132		
Krendale - Seneca	Line	AP	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	225	0		
Cloverdale - Lexington	Line	AEP	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	666	239		

Table 7-39 RECO Control Zone top congestion cost impacts (By facility): January through June 2008 (See 2008 SOM Table 7-39)

Constraint	Type	Location	Congestion Costs (Millions)											Event Hours	
			Day Ahead				Balancing				Grand Total	Day Ahead	Real Time		
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total					
Branchburg - Readington	Line	PSEG	\$0.9	\$0.0	\$0.0	\$0.9	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$1.0	1,103	271		
West	Interface	500	\$0.7	\$0.0	\$0.0	\$0.7	\$0.1	(\$0.0)	(\$0.0)	\$0.1	\$0.7	700	285		
Atlantic - Larrabee	Line	JCPL	\$0.6	\$0.0	\$0.0	\$0.6	\$0.0	(\$0.0)	(\$0.0)	(\$0.0)	\$0.6	1,466	341		
AP South	Interface	500	\$0.5	\$0.0	\$0.0	\$0.5	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.5	1,291	605		
Kammer	Transformer	500	\$0.4	\$0.0	\$0.0	\$0.4	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.5	1,386	767		
Cedar Grove - Roseland	Line	PSEG	\$0.4	\$0.0	\$0.0	\$0.4	\$0.1	(\$0.0)	\$0.0	\$0.1	\$0.4	398	71		
Buckingham - Pleasant Valley	Line	PECO	\$0.4	\$0.0	\$0.0	\$0.4	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.4	556	60		
Central	Interface	500	\$0.4	\$0.0	\$0.0	\$0.4	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.4	582	22		
Cloverdale - Lexington	Line	AEP	\$0.4	\$0.0	\$0.0	\$0.4	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.4	1,975	890		
5004/5005 Interface	Interface	500	\$0.2	\$0.0	\$0.0	\$0.2	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.3	301	143		
Harwood - Susquehanna	Line	PPL	\$0.2	\$0.0	\$0.0	\$0.2	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.2	110	95		
East	Interface	500	\$0.1	\$0.0	\$0.0	\$0.1	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.1	182	9		
Dickerson - Pleasant View	Line	Pepco	\$0.1	\$0.0	\$0.0	\$0.1	\$0.0	(\$0.0)	(\$0.0)	(\$0.0)	\$0.1	418	118		
Burnham - Munster	Line	ComEd	\$0.1	\$0.0	\$0.0	\$0.1	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.1	416	140		
Branchburg - Flagtown	Line	PSEG	\$0.1	\$0.0	\$0.0	\$0.1	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.1	105	27		

Western Region Congestion-Event Summaries

AEP Control Zone

Table 7-40 AEP Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2008 SOM Table 7-40)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Load Payments	Day Ahead			Total	Load Payments	Balancing			Grand Total	Day Ahead	Real Time
				Generation Credits	Explicit	Explicit			Generation Credits	Explicit	Total			
AP South	Interface	500	(\$13.6)	(\$22.9)	\$0.9	\$10.1	(\$0.6)	\$0.1	\$0.2	(\$0.6)	\$9.6	1,650	282	
Ruth - Turner	Line	AEP	\$4.6	(\$1.6)	\$0.5	\$6.7	(\$1.2)	(\$0.4)	(\$0.1)	(\$0.9)	\$5.8	639	275	
Kammer	Transformer	500	(\$11.6)	(\$18.5)	(\$0.3)	\$6.7	(\$0.5)	\$1.4	\$0.6	(\$1.4)	\$5.3	1,554	726	
Kanawha - Kincaid	Line	AEP	\$2.8	(\$2.1)	\$0.2	\$5.1	\$0.0	\$0.0	\$0.0	\$0.0	\$5.1	291	0	
Kammer - Ormet	Line	AEP	\$7.8	\$1.1	\$0.3	\$6.9	(\$1.6)	\$0.5	(\$0.1)	(\$2.2)	\$4.7	552	509	
Dunes Acres - Michigan City	Flowgate	Midwest ISO	\$12.6	\$5.8	\$1.0	\$7.8	(\$2.2)	(\$0.9)	(\$2.1)	(\$3.4)	\$4.4	1,713	672	
Kanawha River	Transformer	AEP	\$3.2	(\$0.3)	\$0.5	\$4.0	\$0.1	(\$0.3)	(\$0.1)	\$0.4	\$4.3	159	37	
Kanawha River - Bradley	Line	AEP	\$1.3	(\$2.2)	\$0.2	\$3.8	(\$0.0)	\$0.1	\$0.0	(\$0.1)	\$3.7	24	15	
Breed - Wheatland	Line	AEP	\$0.1	(\$3.1)	(\$0.3)	\$2.9	\$0.0	\$0.0	\$0.0	\$0.0	\$2.9	408	0	
East Frankfort - Crete	Line	ComEd	\$3.2	\$1.9	\$1.3	\$2.7	\$0.0	\$0.0	\$0.0	\$0.0	\$2.7	1,333	0	
Sammis - Wylie Ridge	Line	AP	(\$4.3)	(\$2.3)	(\$0.1)	(\$2.1)	(\$0.2)	\$0.1	(\$0.0)	(\$0.4)	(\$2.5)	622	101	
Mount Storm - Pruntytown	Line	AP	(\$3.1)	(\$5.2)	\$0.2	\$2.3	\$0.2	\$0.0	\$0.0	\$0.2	\$2.5	523	25	
Cloverdale - Lexington	Line	AEP	(\$5.9)	(\$4.1)	(\$0.4)	(\$2.1)	\$0.4	\$0.2	\$0.1	\$0.3	(\$1.8)	666	239	
Schahfer - Burr Oak	Flowgate	Midwest ISO	\$0.6	\$0.2	\$0.2	\$0.5	(\$0.1)	\$0.0	(\$1.8)	(\$1.9)	(\$1.4)	62	81	
AEP-DOM	Interface	500	\$0.4	(\$1.2)	\$0.1	\$1.7	(\$0.2)	\$0.4	(\$0.0)	(\$0.6)	\$1.1	101	57	

Table 7-41 AEP Control Zone top congestion cost impacts (By facility): January through June 2008 (See 2008 SOM Table 7-41)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Load Payments	Day Ahead			Total	Load Payments	Balancing			Grand Total	Day Ahead	Real Time
				Generation Credits	Explicit	Explicit			Generation Credits	Explicit	Total			
AP South	Interface	500	(\$55.8)	(\$90.6)	\$1.1	\$35.9	(\$13.2)	\$0.4	\$0.2	(\$13.4)	\$22.4	1,291	605	
Kammer	Transformer	500	(\$16.2)	(\$48.5)	(\$0.6)	\$31.7	(\$7.1)	\$2.5	\$0.1	(\$9.4)	\$22.2	1,386	767	
Bedington - Black Oak	Interface	500	(\$18.3)	(\$40.6)	\$1.5	\$23.7	(\$2.0)	\$0.9	(\$0.0)	(\$2.8)	\$20.9	1,170	186	
Axton	Transformer	AEP	\$1.5	(\$9.1)	\$1.4	\$12.0	\$0.0	\$0.0	\$0.0	\$0.0	\$12.0	204	0	
Mount Storm - Pruntytown	Line	AP	(\$6.9)	(\$19.7)	\$1.1	\$13.9	(\$4.0)	\$1.0	(\$0.1)	(\$5.1)	\$8.8	333	223	
Amos	Transformer	AEP	\$5.9	(\$1.6)	\$0.2	\$7.7	\$0.4	\$0.6	\$0.1	(\$0.2)	\$7.5	31	19	
West	Interface	500	(\$12.1)	(\$22.8)	\$0.2	\$10.8	(\$3.4)	\$0.6	\$0.0	(\$4.0)	\$6.9	700	285	
Axton - Jacksons Ferry	Line	AEP	\$0.5	(\$2.3)	\$0.3	\$3.1	\$0.0	\$0.0	\$0.0	\$0.0	\$3.1	83	0	
Mahans Lane - Tidd	Line	AEP	(\$1.1)	(\$2.8)	\$1.6	\$3.4	(\$0.2)	\$0.2	(\$0.0)	(\$0.4)	\$2.9	498	121	
Cloverdale - Lexington	Line	AEP	(\$51.9)	(\$61.3)	(\$4.2)	\$5.2	(\$7.4)	\$1.0	\$0.3	(\$8.0)	(\$2.8)	1,975	890	
Central	Interface	500	(\$5.2)	(\$8.1)	\$0.0	\$2.9	(\$0.1)	\$0.0	(\$0.0)	(\$0.1)	\$2.8	582	22	
Bedington	Transformer	AP	(\$3.1)	(\$5.6)	\$0.2	\$2.8	(\$0.4)	(\$0.1)	\$0.0	(\$0.3)	\$2.5	593	149	
Sammis - Wylie Ridge	Line	AP	(\$1.8)	(\$1.5)	\$0.4	\$0.1	(\$2.2)	(\$0.1)	(\$0.3)	(\$2.4)	(\$2.3)	249	405	
5004/5005 Interface	Interface	500	(\$4.5)	(\$8.5)	\$0.2	\$4.1	(\$1.3)	\$0.6	\$0.0	(\$1.9)	\$2.2	301	143	
Aqueduct - Doubs	Line	AP	(\$3.8)	(\$5.7)	\$0.1	\$2.0	(\$0.1)	(\$0.0)	\$0.0	(\$0.1)	\$1.9	145	7	

AP Control Zone
Table 7-42 AP Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2008 SOM Table 7-42)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Day Ahead				Balancing				Grand Total	Day Ahead	Real Time	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total				
AP South	Interface	500	(\$9.8)	(\$41.2)	(\$3.2)	\$28.1	\$1.5	\$1.2	\$2.5	\$2.8	\$31.0	1,650	282	
Mount Storm - Pruntytown	Line	AP	(\$2.0)	(\$10.1)	(\$0.6)	\$7.4	\$0.4	\$0.2	\$0.4	\$0.7	\$8.1	523	25	
Kammer	Transformer	500	\$10.4	\$15.3	\$4.8	(\$0.2)	(\$1.3)	(\$1.7)	(\$5.4)	(\$5.0)	(\$5.2)	1,554	726	
Wylie Ridge	Transformer	AP	\$6.1	\$7.4	\$5.4	\$4.1	(\$1.1)	(\$0.5)	(\$7.2)	(\$7.7)	(\$3.6)	354	336	
5004/5005 Interface	Interface	500	(\$4.9)	(\$7.1)	(\$0.6)	\$1.7	\$0.8	\$0.7	\$1.6	\$1.7	\$3.4	334	198	
Tiltonsville - Windsor	Line	AP	\$5.1	\$1.7	\$0.3	\$3.8	(\$0.5)	(\$0.2)	(\$0.8)	(\$1.0)	\$2.8	794	198	
Bedington - Harmony	Line	AP	\$1.8	(\$0.1)	\$0.4	\$2.3	\$0.0	\$0.0	\$0.0	\$0.0	\$2.3	199	0	
Cloverdale - Lexington	Line	AEP	\$1.1	(\$1.3)	\$0.8	\$3.2	(\$0.1)	\$0.0	(\$0.8)	(\$1.0)	\$2.2	666	239	
Carroll - Catocin	Line	AP	\$0.4	\$0.0	(\$0.0)	\$0.3	\$0.7	(\$0.8)	\$0.2	\$1.6	\$2.0	99	22	
Yukon	Transformer	AP	\$2.1	\$0.4	\$0.0	\$1.7	\$0.0	\$0.2	\$0.1	(\$0.1)	\$1.6	123	36	
Bedington - Black Oak	Interface	500	(\$0.4)	(\$2.1)	(\$0.1)	\$1.7	(\$0.3)	\$0.2	\$0.4	(\$0.2)	\$1.5	74	61	
Doubs	Transformer	AP	\$1.5	(\$0.0)	\$0.0	\$1.5	\$0.0	\$0.0	(\$0.1)	(\$0.1)	\$1.4	36	13	
Unclassified	Unclassified	Unclassified	\$1.1	\$0.0	\$0.2	\$1.3	\$0.0	\$0.0	\$0.0	\$0.0	\$1.3	NA	NA	
Bedington	Transformer	AP	\$4.2	(\$0.3)	\$0.1	\$4.5	(\$3.8)	(\$0.2)	(\$2.3)	(\$5.8)	(\$1.3)	247	103	
West	Interface	500	(\$12.5)	(\$15.3)	(\$2.0)	\$0.8	\$0.2	\$0.1	\$0.2	\$0.3	\$1.1	391	55	

Table 7-43 AP Control Zone top congestion cost impacts (By facility): January through June 2008 (See 2008 SOM Table 7-43)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Day Ahead				Balancing				Grand Total	Day Ahead	Real Time	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total				
AP South	Interface	500	\$13.3	(\$75.8)	\$1.0	\$90.1	(\$0.1)	\$6.1	\$0.3	(\$5.9)	\$84.2	1,291	605	
Bedington - Black Oak	Interface	500	(\$2.8)	(\$48.9)	(\$0.9)	\$45.2	\$0.5	\$0.1	\$0.6	\$1.0	\$46.2	1,170	186	
Cloverdale - Lexington	Line	AEP	\$12.1	(\$14.6)	\$3.2	\$29.9	(\$0.7)	\$0.1	(\$1.7)	(\$2.5)	\$27.4	1,975	890	
Meadow Brook	Transformer	AP	\$28.1	(\$1.5)	\$0.6	\$30.2	(\$3.1)	(\$0.1)	(\$0.1)	(\$3.1)	\$27.1	757	171	
Bedington	Transformer	AP	\$19.8	(\$6.1)	\$0.3	\$26.3	(\$0.1)	(\$0.1)	\$0.1	\$0.1	\$26.4	593	149	
Mount Storm - Pruntytown	Line	AP	(\$2.0)	(\$24.3)	(\$1.0)	\$21.3	\$2.6	\$1.7	\$0.9	\$1.8	\$23.1	333	223	
Aqueduct - Doubs	Line	AP	(\$10.2)	(\$3.4)	(\$0.1)	(\$7.0)	\$0.1	\$0.1	\$0.0	\$0.0	(\$6.9)	145	7	
Sammis - Wylie Ridge	Line	AP	\$1.1	\$0.7	\$1.1	\$1.6	(\$2.2)	(\$0.0)	(\$5.5)	(\$7.7)	(\$6.1)	249	405	
Kammer	Transformer	500	\$14.9	\$21.1	\$3.3	(\$2.9)	(\$1.7)	(\$2.1)	(\$2.7)	(\$2.4)	(\$5.3)	1,386	767	
West	Interface	500	(\$6.0)	(\$9.8)	\$0.3	\$4.1	\$1.2	\$0.6	\$0.5	\$1.0	\$5.1	700	285	
Branchburg - Readington	Line	PSEG	\$1.7	(\$0.2)	\$2.7	\$4.6	\$0.3	\$0.1	\$0.2	\$0.3	\$4.9	1,103	271	
Eureka - Willow Island	Line	AP	(\$0.3)	(\$4.4)	(\$0.1)	\$4.1	(\$0.2)	\$0.0	\$0.0	(\$0.2)	\$3.9	257	37	
Kingwood - Pruntytown	Line	AP	\$3.8	\$0.0	\$0.0	\$3.8	(\$0.0)	\$0.0	\$0.0	(\$0.0)	\$3.8	198	1	
Atlantic - Larrabee	Line	JCPL	\$1.0	\$0.9	\$3.2	\$3.3	\$0.2	\$0.1	\$0.1	\$0.2	\$3.5	1,466	341	
Krendale - Seneca	Line	AP	\$2.2	(\$0.4)	\$0.9	\$3.5	(\$0.0)	\$0.1	(\$0.0)	(\$0.1)	\$3.4	407	16	

ComEd Control Zone

Table 7-44 ComEd Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2008 SOM Table 7-44)

Congestion Costs (Millions)													
Constraint	Type	Location	Day Ahead				Balancing				Grand Total	Event Hours	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total		Day Ahead	Real Time
Pleasant Valley - Belvidere	Line	ComEd	(\$1.9)	(\$19.9)	\$0.1	\$18.1	\$0.9	\$1.4	\$0.0	(\$0.5)	\$17.6	1,534	213
East Frankfort - Crete	Line	ComEd	(\$13.5)	(\$27.4)	(\$0.1)	\$13.9	\$0.0	\$0.0	\$0.0	\$0.0	\$13.9	1,333	0
Dunes Acres - Michigan City	Flowgate	Midwest ISO	(\$29.5)	(\$44.6)	(\$2.2)	\$12.9	(\$2.4)	(\$0.5)	\$0.6	(\$1.3)	\$11.6	1,713	672
Kammer	Transformer	500	(\$15.0)	(\$25.2)	(\$0.0)	\$10.2	(\$0.4)	(\$0.6)	(\$0.1)	\$0.2	\$10.4	1,554	726
AP South	Interface	500	(\$18.7)	(\$29.2)	(\$0.0)	\$10.4	(\$0.9)	(\$0.3)	(\$0.1)	(\$0.7)	\$9.7	1,650	282
Crete - St Johns Tap	Flowgate	Midwest ISO	(\$8.5)	(\$17.9)	(\$0.2)	\$9.2	(\$0.4)	(\$0.1)	(\$0.0)	(\$0.4)	\$8.9	539	132
Silver Lake - Cherry Valley	Line	ComEd	\$0.1	(\$3.7)	\$0.1	\$3.9	\$0.8	\$0.2	(\$0.1)	\$0.5	\$4.3	340	41
Wylie Ridge	Transformer	AP	(\$7.9)	(\$10.9)	(\$0.0)	\$3.0	(\$0.8)	(\$1.5)	\$0.0	\$0.8	\$3.8	354	336
Glidden - West Dekalb	Line	ComEd	(\$0.2)	(\$3.8)	\$0.0	\$3.7	\$0.0	\$0.0	\$0.0	\$0.0	\$3.7	668	1
West	Interface	500	(\$11.4)	(\$14.9)	(\$0.0)	\$3.5	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$3.5	391	55
Mount Storm - Pruntytown	Line	AP	(\$4.1)	(\$6.8)	(\$0.0)	\$2.7	(\$0.1)	(\$0.3)	(\$0.0)	\$0.3	\$3.0	523	25
5004/5005 Interface	Interface	500	(\$5.1)	(\$7.7)	(\$0.0)	\$2.6	(\$0.6)	(\$0.9)	(\$0.0)	\$0.3	\$2.9	334	198
Cloverdale - Lexington	Line	AEP	(\$4.2)	(\$7.3)	(\$0.0)	\$3.1	(\$0.5)	(\$0.3)	(\$0.0)	(\$0.3)	\$2.8	666	239
Electric Jct - Nelson	Line	ComEd	\$0.0	(\$2.2)	\$0.1	\$2.3	\$1.6	\$1.0	(\$0.1)	\$0.4	\$2.8	279	119
Samms - Wylie Ridge	Line	AP	(\$3.1)	(\$5.5)	(\$0.0)	\$2.4	(\$0.2)	(\$0.1)	(\$0.0)	(\$0.1)	\$2.3	622	101

Table 7-45 ComEd Control Zone top congestion cost impacts (By facility): January through June 2008 (See 2008 SOM Table 7-45)

Congestion Costs (Millions)													
Constraint	Type	Location	Day Ahead				Balancing				Grand Total	Event Hours	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total		Day Ahead	Real Time
Cloverdale - Lexington	Line	AEP	(\$36.4)	(\$66.2)	(\$0.1)	\$29.8	\$0.6	(\$1.3)	(\$0.0)	\$1.9	\$31.7	1,975	890
AP South	Interface	500	(\$52.9)	(\$81.5)	(\$0.1)	\$28.6	(\$2.3)	\$0.1	(\$0.0)	(\$2.5)	\$26.1	1,291	605
Bedington - Black Oak	Interface	500	(\$20.9)	(\$34.3)	(\$0.1)	\$13.3	\$0.1	(\$0.0)	\$0.0	\$0.2	\$13.4	1,170	186
Kammer	Transformer	500	(\$21.9)	(\$35.9)	(\$0.0)	\$14.0	(\$0.2)	\$1.1	(\$0.0)	(\$1.4)	\$12.6	1,386	767
Burnham - Munster	Line	ComEd	(\$14.5)	(\$23.7)	(\$0.0)	\$9.2	(\$2.6)	(\$2.6)	(\$0.5)	(\$0.5)	\$8.7	416	140
West	Interface	500	(\$12.5)	(\$18.9)	(\$0.0)	\$6.4	\$0.6	(\$1.0)	(\$0.0)	\$1.6	\$8.0	700	285
Central	Interface	500	(\$4.5)	(\$7.9)	(\$0.0)	\$3.4	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$3.4	582	22
State Line - Wolf Lake	Flowgate	Midwest ISO	(\$5.7)	(\$9.2)	(\$0.0)	\$3.5	(\$0.0)	\$0.2	(\$0.0)	(\$0.3)	\$3.1	834	133
5004/5005 Interface	Interface	500	(\$4.8)	(\$7.4)	(\$0.0)	\$2.6	\$0.1	(\$0.2)	\$0.0	\$0.3	\$2.8	301	143
Mount Storm - Pruntytown	Line	AP	(\$10.1)	(\$15.6)	(\$0.0)	\$5.6	(\$2.0)	\$0.6	(\$0.1)	(\$2.7)	\$2.8	333	223
Axton	Transformer	AEP	(\$4.9)	(\$7.5)	(\$0.0)	\$2.7	\$0.0	\$0.0	\$0.0	\$0.0	\$2.7	204	0
Dickerson - Pleasant View	Line	Pepco	(\$2.6)	(\$4.2)	\$0.0	\$1.6	\$0.2	(\$0.1)	(\$0.0)	\$0.3	\$1.9	418	118
Pana North	Flowgate	Midwest ISO	(\$1.2)	(\$4.0)	(\$0.0)	\$2.9	(\$0.2)	\$0.9	(\$0.0)	(\$1.1)	\$1.7	190	182
Krendale - Seneca	Line	AP	(\$1.8)	(\$3.4)	(\$0.0)	\$1.6	\$0.0	(\$0.0)	\$0.0	\$0.0	\$1.6	407	16
Aqueduct - Doubs	Line	AP	(\$3.4)	(\$4.7)	(\$0.0)	\$1.4	(\$0.0)	\$0.0	(\$0.0)	(\$0.0)	\$1.3	145	7

DAY Control Zone
Table 7-46 DAY Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2008 SOM Table 7-46)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Day Ahead				Balancing				Grand Total	Day Ahead	Real Time	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total				
Kammer	Transformer	500	(\$1.0)	(\$2.4)	(\$0.0)	\$1.4	\$0.2	\$0.1	\$0.0	\$0.1	\$1.5	1,554	726	
West	Interface	500	(\$0.8)	(\$1.4)	\$0.0	\$0.7	\$0.0	\$0.0	(\$0.0)	\$0.0	\$0.7	391	55	
AP South	Interface	500	(\$1.6)	(\$2.3)	\$0.0	\$0.7	\$0.0	\$0.2	(\$0.0)	(\$0.1)	\$0.5	1,650	282	
Wylie Ridge	Transformer	AP	(\$0.6)	(\$1.1)	(\$0.0)	\$0.5	\$0.2	\$0.2	\$0.0	(\$0.0)	\$0.4	354	336	
Cloverdale - Lexington	Line	AEP	(\$0.3)	(\$0.7)	(\$0.0)	\$0.5	\$0.0	\$0.1	\$0.0	(\$0.1)	\$0.4	666	239	
Dunes Acres - Michigan City	Flowgate	Midwest ISO	\$0.3	\$0.6	\$0.0	(\$0.3)	(\$0.0)	(\$0.0)	(\$0.1)	(\$0.1)	(\$0.3)	1,713	672	
Tiltonville - Windsor	Line	AP	(\$0.2)	(\$0.5)	(\$0.0)	\$0.3	\$0.0	\$0.1	\$0.0	(\$0.1)	\$0.2	794	198	
Marquis - Waverly	Line	AEP	(\$0.0)	(\$0.2)	(\$0.0)	\$0.2	(\$0.0)	\$0.0	\$0.0	(\$0.0)	\$0.2	41	9	
Sammis - Wylie Ridge	Line	AP	(\$0.2)	(\$0.4)	(\$0.0)	\$0.2	\$0.0	\$0.1	(\$0.0)	(\$0.0)	\$0.2	622	101	
Pierce - Foster	Flowgate	Midwest ISO	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.1	\$0.0	(\$0.2)	(\$0.2)	0	4	
5004/5005 Interface	Interface	500	(\$0.4)	(\$0.6)	\$0.0	\$0.2	\$0.1	\$0.1	(\$0.0)	(\$0.0)	\$0.1	334	198	
Kammer - Ormet	Line	AEP	(\$0.1)	(\$0.2)	(\$0.0)	\$0.1	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.1	552	509	
East Frankfort - Crete	Line	ComEd	\$0.2	\$0.3	\$0.0	(\$0.1)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	1,333	0	
Kanawha River	Transformer	AEP	(\$0.1)	(\$0.2)	\$0.0	\$0.1	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.1	159	37	
Breed - Wheatland	Line	AEP	\$0.0	\$0.1	\$0.0	(\$0.1)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	408	0	

Table 7-47 DAY Control Zone top congestion cost impacts (By facility): January through June 2008 (See 2008 SOM Table 7-47)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
			Day Ahead				Balancing				Grand Total	Day Ahead	Real Time	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total				
Cloverdale - Lexington	Line	AEP	(\$3.9)	(\$7.0)	\$0.1	\$3.1	\$0.0	\$0.1	\$0.0	(\$0.1)	\$3.0	1,975	890	
AP South	Interface	500	(\$5.3)	(\$7.9)	\$0.0	\$2.6	\$0.3	\$0.3	(\$0.0)	(\$0.1)	\$2.5	1,291	605	
Kammer	Transformer	500	(\$2.5)	(\$4.2)	\$0.0	\$1.7	\$0.1	\$0.4	\$0.0	(\$0.3)	\$1.4	1,386	767	
Bedington - Black Oak	Interface	500	(\$2.3)	(\$3.7)	(\$0.0)	\$1.4	\$0.1	\$0.3	\$0.0	(\$0.2)	\$1.1	1,170	186	
West	Interface	500	(\$1.1)	(\$2.3)	\$0.0	\$1.2	\$0.1	\$0.6	\$0.0	(\$0.5)	\$0.7	700	285	
Central	Interface	500	(\$0.5)	(\$0.9)	\$0.0	\$0.4	(\$0.0)	\$0.0	(\$0.0)	(\$0.0)	\$0.4	582	22	
Mount Storm - Pruntytown	Line	AP	(\$1.3)	(\$1.4)	(\$0.0)	\$0.1	(\$0.1)	\$0.5	(\$0.0)	(\$0.5)	(\$0.4)	333	223	
5004/5005 Interface	Interface	500	(\$0.5)	(\$0.9)	\$0.0	\$0.5	(\$0.0)	\$0.1	\$0.0	(\$0.1)	\$0.4	301	143	
Axton	Transformer	AEP	(\$0.5)	(\$0.8)	(\$0.0)	\$0.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	204	0	
Axton - Jacksons Ferry	Line	AEP	(\$0.1)	(\$0.3)	(\$0.0)	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	83	0	
Sammis - Wylie Ridge	Line	AP	(\$0.1)	(\$0.2)	(\$0.0)	\$0.0	\$0.1	\$0.0	(\$0.0)	\$0.1	\$0.1	249	405	
Black Oak	Transformer	AP	(\$0.2)	(\$0.3)	\$0.0	\$0.1	(\$0.0)	(\$0.0)	\$0.0	(\$0.0)	\$0.1	337	11	
Wakefield - Sargents	Line	AEP	\$0.0	(\$0.1)	\$0.0	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	15	0	
Danville - East Danville	Line	Dominion	(\$0.2)	(\$0.3)	(\$0.0)	\$0.1	(\$0.0)	\$0.0	\$0.0	(\$0.0)	\$0.1	276	86	
Juniata - Keystone	Line	500	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.0	(\$0.0)	(\$0.1)	(\$0.1)	0	20	

DLCO Control Zone

Table 7-48 DLCO Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2008 SOM Table 7-48)

Congestion Costs (Millions)													
Constraint	Type	Location	Day Ahead				Balancing				Grand Total	Event Hours	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total		Day Ahead	Real Time
Sammis - Wylie Ridge	Line	AP	(\$4.0)	(\$8.0)	(\$0.0)	\$4.0	(\$0.1)	\$0.5	\$0.0	(\$0.6)	\$3.4	622	101
AP South	Interface	500	(\$8.4)	(\$11.9)	(\$0.0)	\$3.5	(\$0.5)	\$0.3	\$0.0	(\$0.8)	\$2.7	1,650	282
West	Interface	500	(\$3.8)	(\$5.5)	(\$0.0)	\$1.6	(\$0.1)	\$0.0	\$0.0	(\$0.1)	\$1.5	391	55
Logans Ferry - Universal	Line	DLCO	\$0.2	(\$1.2)	\$0.0	\$1.4	\$0.0	\$0.1	(\$0.0)	(\$0.1)	\$1.4	388	156
Wylie Ridge	Transformer	AP	(\$8.5)	(\$12.9)	(\$0.0)	\$4.4	(\$1.2)	\$2.2	\$0.0	(\$3.3)	\$1.1	354	336
Mount Storm - Pruntytown	Line	AP	(\$1.9)	(\$2.8)	(\$0.0)	\$0.9	(\$0.1)	\$0.1	\$0.0	(\$0.1)	\$0.8	523	25
Dunes Acres - Michigan City	Flowgate	Midwest ISO	\$1.1	\$1.6	(\$0.0)	(\$0.5)	\$0.1	\$0.1	(\$0.0)	\$0.1	(\$0.4)	1,713	672
Kammer	Transformer	500	(\$1.8)	(\$2.5)	\$0.0	\$0.7	(\$0.3)	(\$0.0)	(\$0.0)	(\$0.3)	\$0.3	1,554	726
East Frankfort - Crete	Line	ComEd	\$0.7	\$1.0	\$0.0	(\$0.3)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.3)	1,333	0
Krendale - Seneca	Line	AP	(\$0.6)	(\$0.9)	(\$0.0)	\$0.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	225	0
Cloverdale - Lexington	Line	AEP	(\$0.7)	(\$1.1)	\$0.0	\$0.4	(\$0.1)	\$0.0	(\$0.0)	(\$0.1)	\$0.3	666	239
Beaver - Clinton	Line	DLCO	\$0.1	(\$0.2)	\$0.0	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	20	0
Tiltonville - Windsor	Line	AP	(\$0.7)	(\$1.0)	(\$0.0)	\$0.3	(\$0.1)	\$0.0	\$0.0	(\$0.1)	\$0.2	794	198
Yukon	Transformer	AP	\$0.1	\$0.1	\$0.0	\$0.0	\$0.0	(\$0.1)	(\$0.0)	\$0.2	\$0.2	123	36
Ruth - Turner	Line	AEP	(\$0.4)	(\$0.6)	\$0.0	\$0.2	(\$0.1)	\$0.0	(\$0.0)	(\$0.1)	\$0.2	639	275

Table 7-49 DLCO Control Zone top congestion cost impacts (By facility): January through June 2008 (See 2008 SOM Table 7-49)

Congestion Costs (Millions)													
Constraint	Type	Location	Day Ahead				Balancing				Grand Total	Event Hours	
			Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total		Day Ahead	Real Time
Sammis - Wylie Ridge	Line	AP	(\$1.8)	(\$3.9)	(\$0.0)	\$2.1	(\$8.8)	\$1.9	\$0.0	(\$10.7)	(\$8.6)	249	405
Bedington - Black Oak	Interface	500	(\$11.4)	(\$16.0)	(\$0.0)	\$4.5	(\$0.9)	\$0.6	\$0.0	(\$1.5)	\$3.1	1,170	186
Cheswick - Universal	Line	DLCO	(\$1.3)	(\$3.7)	\$0.0	\$2.4	\$0.1	\$0.3	(\$0.0)	(\$0.2)	\$2.3	411	158
AP South	Interface	500	(\$21.6)	(\$30.4)	(\$0.0)	\$8.9	(\$5.6)	\$1.1	\$0.0	(\$6.7)	\$2.2	1,291	605
West	Interface	500	(\$5.4)	(\$6.2)	(\$0.0)	\$0.8	(\$1.4)	\$0.9	\$0.0	(\$2.3)	(\$1.5)	700	285
Krendale - Seneca	Line	AP	(\$1.6)	(\$2.9)	(\$0.0)	\$1.3	(\$0.1)	\$0.0	\$0.0	(\$0.1)	\$1.2	407	16
Central	Interface	500	(\$1.7)	(\$2.8)	(\$0.0)	\$1.1	(\$0.1)	\$0.0	\$0.0	(\$0.1)	\$1.0	582	22
Mount Storm - Pruntytown	Line	AP	(\$5.6)	(\$8.5)	(\$0.0)	\$2.8	(\$2.2)	\$1.5	\$0.0	(\$3.8)	(\$0.9)	333	223
Cloverdale - Lexington	Line	AEP	(\$6.4)	(\$9.1)	(\$0.0)	\$2.8	(\$1.7)	\$0.3	(\$0.0)	(\$1.9)	\$0.9	1,975	890
Krendale - Shanorma	Line	AP	(\$0.9)	(\$1.7)	(\$0.0)	\$0.8	\$0.0	\$0.0	\$0.0	\$0.0	\$0.8	326	0
Black Oak	Transformer	AP	(\$1.0)	(\$1.5)	(\$0.0)	\$0.5	(\$0.0)	\$0.0	\$0.0	(\$0.0)	\$0.4	337	11
Beaver - Clinton	Line	DLCO	\$0.1	(\$0.3)	\$0.0	\$0.4	\$0.0	\$0.0	\$0.0	\$0.0	\$0.4	54	0
East Towanda	Transformer	PENELEC	\$0.0	(\$0.0)	\$0.0	\$0.0	(\$0.3)	\$0.1	\$0.0	(\$0.4)	(\$0.4)	803	306
Kammer	Transformer	500	(\$2.4)	(\$3.5)	\$0.0	\$1.1	(\$0.7)	\$0.1	(\$0.0)	(\$0.7)	\$0.4	1,386	767
Branchburg - Flagtown	Line	PSEG	(\$0.1)	(\$0.2)	\$0.0	\$0.0	(\$0.3)	\$0.1	\$0.0	(\$0.4)	(\$0.4)	105	27

Southern Region Congestion-Event Summaries

Dominion Control Zone

Table 7-50 Dominion Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2008 SOM Table 7-50)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours		
			Load Payments	Day Ahead			Total	Load Payments	Balancing			Total	Grand Total	Day Ahead	Real Time
				Generation Credits	Explicit	Implicit			Generation Credits	Explicit	Implicit				
AP South	Interface	500	\$20.4	(\$16.4)	\$0.3	\$37.1	\$1.1	(\$0.2)	\$0.1	\$1.4	\$38.5	1,650	282		
Cloverdale - Lexington	Line	AEP	\$5.2	\$2.3	\$0.8	\$3.7	(\$0.0)	(\$1.6)	(\$0.8)	\$0.8	\$4.5	666	239		
Kammer	Transformer	500	\$5.5	\$4.2	\$1.0	\$2.3	\$0.1	(\$0.5)	(\$1.1)	(\$0.5)	\$1.8	1,554	726		
Dunes Acres - Michigan City	Flowgate	Midwest ISO	\$2.8	\$1.2	\$0.1	\$1.6	(\$0.2)	(\$0.5)	(\$0.1)	\$0.2	\$1.8	1,713	672		
Beechwood - Kerr Dam	Line	Dominion	\$0.9	(\$0.5)	(\$0.0)	\$1.4	(\$0.1)	\$0.1	\$0.0	(\$0.1)	\$1.3	390	155		
Wylie Ridge	Transformer	AP	\$2.5	\$1.7	\$0.4	\$1.2	(\$0.1)	(\$0.2)	(\$0.4)	(\$0.2)	\$1.0	354	336		
West	Interface	500	(\$2.4)	(\$3.3)	\$0.0	\$1.0	\$0.0	\$0.1	\$0.0	(\$0.1)	\$0.9	391	55		
Crozet - Doods	Line	Dominion	\$0.6	(\$0.3)	\$0.0	\$0.9	(\$0.3)	(\$0.2)	(\$0.0)	(\$0.1)	\$0.8	48	26		
Clover - Farmville	Line	Dominion	(\$0.0)	(\$0.7)	\$0.0	\$0.7	\$0.0	\$0.0	\$0.0	\$0.0	\$0.7	41	0		
Mount Storm	Transformer	AP	\$1.3	\$0.2	\$0.1	\$1.2	(\$0.2)	\$0.0	(\$0.3)	(\$0.5)	\$0.7	123	46		
Sammis - Wylie Ridge	Line	AP	\$1.1	\$0.7	\$0.2	\$0.6	\$0.0	(\$0.1)	(\$0.1)	\$0.1	\$0.7	622	101		
Crete - St Johns Tap	Flowgate	Midwest ISO	\$1.0	\$0.5	\$0.1	\$0.6	(\$0.0)	(\$0.2)	(\$0.1)	\$0.0	\$0.6	539	132		
East Frankfort - Crete	Line	ComEd	\$1.2	\$0.7	\$0.1	\$0.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.6	1,333	0		
Crozet - Barracks Rd	Line	Dominion	\$0.8	\$0.4	(\$0.0)	\$0.4	\$0.1	(\$0.1)	\$0.0	\$0.2	\$0.6	35	11		
Mount Storm - Pruntytown	Line	AP	\$4.9	\$4.7	\$0.6	\$0.8	(\$0.0)	(\$0.0)	(\$0.4)	(\$0.4)	\$0.5	523	25		

Table 7-51 Dominion Control Zone top congestion cost impacts (By facility): January through June 2008 (See 2008 SOM Table 7-51)

Constraint	Type	Location	Congestion Costs (Millions)										Event Hours		
			Load Payments	Day Ahead			Total	Load Payments	Balancing			Total	Grand Total	Day Ahead	Real Time
				Generation Credits	Explicit	Implicit			Generation Credits	Explicit	Implicit				
AP South	Interface	500	\$47.9	(\$53.6)	\$2.6	\$104.1	\$2.8	\$5.1	(\$1.5)	(\$3.8)	\$100.3	1,291	605		
Cloverdale - Lexington	Line	AEP	\$56.6	\$24.6	\$5.8	\$37.8	\$6.2	(\$0.5)	(\$2.7)	\$3.9	\$41.7	1,975	890		
Bedington - Black Oak	Interface	500	\$28.5	\$15.7	\$1.7	\$14.5	\$0.4	(\$0.7)	(\$0.4)	\$0.7	\$15.2	1,170	186		
Aqueduct - Doubs	Line	AP	\$5.9	(\$1.8)	\$0.1	\$7.9	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$7.9	145	7		
Meadow Brook	Transformer	AP	(\$0.7)	(\$6.8)	(\$0.0)	\$6.1	(\$0.0)	\$0.3	\$0.1	(\$0.2)	\$5.8	757	171		
Dickerson - Plesant View	Line	Pepco	(\$6.1)	(\$2.7)	(\$0.1)	(\$3.5)	(\$0.1)	\$0.6	\$0.1	(\$0.7)	(\$4.2)	418	118		
Pleasantville - Ashburn	Line	Dominion	\$3.2	\$0.2	\$0.0	\$3.1	\$0.0	\$0.0	\$0.0	\$0.0	\$3.1	10	0		
Kammer	Transformer	500	\$8.4	\$7.3	\$0.9	\$2.0	\$0.1	(\$1.2)	(\$0.6)	\$0.7	\$2.7	1,386	767		
Central	Interface	500	(\$4.3)	(\$2.5)	(\$0.0)	(\$1.9)	(\$0.0)	\$0.0	\$0.0	(\$0.0)	(\$1.9)	582	22		
Danville - East Danville	Line	Dominion	\$2.6	\$1.0	\$0.1	\$1.6	(\$0.1)	(\$0.2)	\$0.2	\$0.2	\$1.9	276	86		
Black Oak	Transformer	AP	\$1.9	(\$0.1)	(\$0.1)	\$1.9	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$1.9	337	11		
Harrisonburg - Endless Caverns	Line	Dominion	\$1.2	(\$0.5)	(\$0.0)	\$1.7	\$0.0	\$0.0	\$0.0	\$0.0	\$1.7	72	0		
West	Interface	500	(\$7.9)	(\$6.4)	\$0.1	(\$1.4)	\$0.2	\$0.4	\$0.1	(\$0.1)	(\$1.6)	700	285		
Branchburg - Readington	Line	PSEG	(\$2.1)	(\$1.3)	(\$0.1)	(\$1.0)	(\$0.2)	\$0.4	\$0.1	(\$0.5)	(\$1.5)	1,103	271		
Burnham - Munster	Line	ComEd	\$2.3	\$1.2	\$0.0	\$1.1	\$0.1	(\$0.1)	(\$0.0)	\$0.2	\$1.3	416	140		