

## 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. 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.<sup>1</sup> 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.<sup>2</sup>

The Market Monitoring Unit (MMU) analyzed congestion and its influence on PJM markets during the first six months of 2010.

<sup>1</sup> 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.

<sup>2</sup> See the 2009 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.** Total congestion costs increased by \$237.3 million or 58 percent, from \$408.2 million in the first six months of 2009 to \$645.5 million in the first six months of 2010. Day-ahead congestion costs increased by \$212.5 million or 41 percent, from \$521.7 million in the first six months of 2009 to \$734.2 million in the first six months of 2010. Balancing congestion costs increased by \$24.9 million or 22 percent, from -\$113.6 million in the first six months of 2009 to -\$88.7 million in the first six months of 2010. Total congestion costs have ranged from three percent to nine percent of PJM annual total billings since 2003. Congestion costs were four percent of total PJM billings in the first six months of 2010. Total PJM billings in the first six months of 2010 were \$16.314 billion.
- **Monthly Congestion.** Fluctuations in monthly congestion costs continued to be substantial. In the first six months of 2010, 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. Monthly congestion costs in the first six months of 2010 ranged from \$20.4 million in March to \$218.5 million in January.

#### 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 and other 500 kV constraints in the east. The AP South 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.** Congestion frequency continued to be significantly higher in the Day-Ahead Market than in the Real-Time Market in the first six months of 2010.<sup>3</sup> Day-ahead congestion frequency increased from 2009 to 2010 by 7,746 congestion event hours or 21 percent. In the first six months of 2010, there were 43,818 day-ahead, congestion-event hours compared to 36,072 day-ahead, congestion-event hours in the first six months of 2009. Day-ahead, congestion-event hours increased on internal PJM interfaces, lines and transformers while congestion frequency on the reciprocally coordinated flowgates between PJM and the Midwest Independent Transmission System Operator, Inc. (Midwest ISO) decreased. Real-time congestion frequency increased from 2009 to 2010 by 540 congestion event hours. In the first six months of 2010, there were 9,134 real-time, congestion-event hours compared to 8,594 real-time, congestion-event hours in the first six months of 2009. Real-time, congestion-event hours increased on the internal PJM interfaces and lines, while the reciprocally coordinated flowgates between PJM and the Midwest ISO, transmission and transformers saw decreases. The AP South Interface was the largest contributor to congestion costs in the first six months of 2010. With \$234.2 million in total congestion costs, it accounted for 36 percent of the total PJM congestion costs in the first six months of 2010. The top five constraints in terms of congestion costs together contributed \$418.1 million, or 65 percent, of the total PJM congestion in the first six months of 2010. The top five constraints included the AP South interface, the Bedington – Black Oak interface, the AEP-DOM interface, the 5004/5005 interface, and the Doubs transformer.
- Zonal Congestion.** In the first six months of 2010, the Dominion Control Zone experienced the highest congestion costs of the control zones in PJM with \$131.0 million. The AP South interface, the Bedington – Black Oak interface, the Pleasant View transformer, the Doubs transformer, and the Cloverdale – Lexington line contributed \$87.4 million, or 67 percent of the total Dominion Control Zone congestion costs (Table 7-51). The AP Control Zone had the second highest congestion cost in PJM in the first six months of 2010. The \$126.1 million in congestion costs in the AP Control Zone represented a 118 percent increase from the \$57.8

million in congestion costs the zone had experienced in the first six months of 2009. The AP South interface contributed \$57.2 million, or 45 percent of the total AP Control Zone congestion cost.

## Economic Planning Process

- Transmission and Markets.** As a general matter, transmission investments have not been fully incorporated into competitive markets. The construction of new transmission facilities can have significant impacts on energy and capacity markets, but there is no market mechanism in place that would require direct competition between transmission and generation to meet loads in an area. While the RPM construct does provide that qualifying transmission upgrades may be submitted as offers, there have been no such offers. More generally, network transmission is not built based directly on market signals because the owners of network transmission are compensated through a non market mechanism, typically under traditional regulation. PJM has taken a first step towards integrating transmission investments into the market through the use of economic evaluation metrics.<sup>4</sup> Economic evaluation metrics can be used to determine whether there are positive economic benefits associated with an investment in transmission that might warrant the investment even when it is not required for reliability. The goal of transmission planning should ultimately be the incorporation of transmission investment decisions into market driven processes as much as possible.
- Restructuring Responsibility for Grid Development.** FERC's recent decision in the *Primary Power* case and the currently pending *Central Transmission* case raise significant issues about the ownership of transmission, the resultant incentives to build new transmission facilities and the potential for competitive forces to reduce the cost of transmission.<sup>5</sup>

<sup>3</sup> 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.

<sup>4</sup> See 126 FERC ¶61,152 (2009) (final approval for an approach with predefined formulas for determining whether a transmission investment passes the cost-benefit test including explicit accounting for changes in production costs, the costs of complying with environmental regulations, generation availability trends and demand-response trends), *order on reh'g*, 123 FERC ¶61,051 (2008).

<sup>5</sup> 131 FERC ¶61,015 (April 13, 2010); *Central Transmission, LLC v. PJM Interconnection, L.L.C.*, Docket No. EL10-52.

## Conclusion

Congestion reflects the underlying characteristics of the power system, including the nature and capability of transmission facilities, the cost and geographical distribution of generation facilities and the geographical distribution of load. Total congestion costs have ranged from three percent to nine percent of PJM annual total billings since 2003. Congestion costs were four percent of total PJM billings in the first six months of 2010. Total PJM billings in the first six months of 2010 were \$16.314 billion. Total congestion costs increased by \$237.3 million or 58 percent, from \$408.2 million in the first six months of 2009 to \$645.5 million in the first six months of 2010. Day-ahead congestion costs increased by \$212.5 million or 41 percent, from \$521.7 million in the first six months of 2009 to \$734.2 million in the first six months of 2010. Balancing congestion costs increased by \$24.9 million or 22 percent, from -\$113.6 million in the first six months of 2009 to -\$88.7 million in the first six months of 2010. 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. Day-ahead congestion frequency increased from 2009 to 2010 by 7,746 congestion event hours or 21 percent. In the first six months of 2010, there were 43,818 day-ahead, congestion-event hours compared to 36,072 day-ahead, congestion event hours in the first six months of 2009. Real-time congestion frequency increased from 2009 to 2010 by 540 congestion event hours. In the first six months of 2010, there were 9,134 real-time, congestion event hours compared to 8,594 real-time, congestion event hours in the first six months of 2009.

ARRs and FTRs served as an effective, but not total, hedge against congestion. ARR and FTR revenues hedged more than 100 percent of the total congestion costs in the Day-Ahead Energy Market and the balancing energy market within PJM for the 2008 to 2009 planning period. For the 2009 to 2010 planning period, ARR and FTR revenue hedged 96.4 percent of the total congestion costs within PJM.<sup>6</sup> FTRs were paid at 96.9 percent of the target allocation level for the 12-month period of the 2009 to 2010 planning period, and at 97.8 percent of the target allocation level for the first month of the 2010 to 2011 planning period. Revenue adequacy for a planning period is not final until the end of the period.

There are other ways to evaluate the effectiveness of ARRs as a hedge. The value of ARRs and ARRs converted to self scheduled FTRs was 3.9 percent of total energy charges to load for the first six months of 2010.

One constraint accounted for 36 percent of total congestion costs in the first six months of 2010 and the top five constraints accounted for 65 percent of total congestion costs. The AP South Interface was the largest contributor to congestion costs in the first six months of 2010.

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.<sup>7</sup> 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. This is a cost only in the sense that revenues to generators in the area are lower, by the amount of the congestion cost, than they would have been if they had been paid LMP without a congestion component, the system marginal price. 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).

<sup>6</sup> See the 2010 Quarterly State of the Market Report for PJM: January through June, Section 8, "Financial Transmission and Auction Revenue Rights," at Table 8-23, "ARR and FTR congestion hedging: Planning periods 2008 to 2009 and 2009 to 2010."

<sup>7</sup> 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.

As an example, total congestion costs in PJM in the first six months of 2010 were \$645.5 million, which was comprised of load congestion payments of \$170.0 million, negative generation credits of \$500.7 million and negative explicit congestion of \$25.1 million (see Table 7-2).

**Congestion**

**Total Calendar Year Congestion**

*Table 7-1 Total annual PJM congestion (Dollars (Millions)): Calendar years 2003 through June 2010 (See 2009 SOM, Table 7-1)*

	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	\$719	(66%)	\$26,550	3%
2010 (Jan - Jun)	\$646	NA	\$16,314	4%
Total	\$9,591		\$166,901	6%

*Table 7-2 Total annual PJM congestion costs by category (Dollars (Millions)): January through June 2009 and 2010 (See 2009 SOM, Table 7-2)*

Year	Congestion Costs (Millions)			Total
	Load Payments	Generation Credits	Explicit	
2009 (Jan - Jun)	\$142.3	(\$301.8)	(\$35.9)	\$408.2
2010 (Jan - Jun)	\$170.0	(\$500.7)	(\$25.1)	\$645.5

**Monthly Congestion**

*Table 7-3 Monthly PJM congestion charges (Dollars (Millions)): Calendar years 2008 through June 2010 (See 2009 SOM, Table 7-3)*

	2008	2009	2010
Jan	\$231.0	\$149.3	\$218.5
Feb	\$168.1	\$83.0	\$106.4
Mar	\$86.4	\$74.6	\$20.4
Apr	\$126.2	\$25.6	\$42.6
May	\$182.8	\$25.9	\$68.5
Jun	\$436.4	\$49.8	\$189.1
Jul	\$359.8	\$39.4	
Aug	\$127.4	\$72.1	
Sep	\$124.8	\$23.9	
Oct	\$102.2	\$42.7	
Nov	\$93.0	\$36.3	
Dec	\$78.4	\$96.4	
Total	\$2,116.6	\$719.0	\$645.5

**Congestion Component of LMP****Table 7-4 Annual average congestion component of LMP: January through June 2009 and 2010 (See 2009 SOM, Table 7-4)**

Control Zone	2009 (Jan - Jun)		2010 (Jan - Jun)	
	Day Ahead	Real Time	Day Ahead	Real Time
AECO	\$2.61	\$2.60	\$2.14	\$2.24
AEP	(\$2.41)	(\$2.38)	(\$3.52)	(\$3.81)
AP	\$0.75	\$1.79	(\$0.45)	(\$0.37)
BGE	\$3.72	\$3.49	\$4.75	\$4.72
ComEd	(\$6.40)	(\$7.26)	(\$5.95)	(\$6.74)
DAY	(\$3.37)	(\$3.22)	(\$4.25)	(\$4.52)
DLCO	(\$4.56)	(\$4.12)	(\$3.47)	(\$3.88)
Dominion	\$2.93	\$2.90	\$5.20	\$5.35
DPL	\$2.92	\$3.02	\$2.26	\$2.52
JCPL	\$2.51	\$2.72	\$1.56	\$1.79
Met-Ed	\$2.69	\$2.70	\$2.22	\$2.04
PECO	\$2.43	\$2.19	\$1.87	\$1.92
PENELEC	(\$0.01)	\$0.09	(\$1.50)	(\$2.13)
Pepco	\$3.67	\$3.60	\$5.75	\$5.57
PPL	\$2.46	\$2.29	\$1.58	\$1.36
PSEG	\$2.99	\$3.17	\$2.34	\$2.96
RECO	\$2.06	\$2.21	\$1.52	\$1.25

**Congested Facilities****Congestion by Facility Type and Voltage****Table 7-5 Congestion summary (By facility type): January through June 2010 (See 2009 SOM, Table 7-5)**

Type	Congestion Costs (Millions)										
	Day Ahead				Balancing				Event Hours		
	Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total	Grand Total	Day Ahead	Real Time
Flowgate	\$1.9	(\$19.7)	\$5.1	\$26.7	(\$1.6)	\$3.1	(\$16.2)	(\$20.8)	\$5.8	3,471	939
Interface	\$62.8	(\$330.6)	\$3.7	\$397.1	\$10.2	\$6.3	(\$2.3)	\$1.5	\$398.6	5,139	1,546
Line	\$62.4	(\$139.8)	\$23.8	\$226.1	(\$15.0)	\$6.8	(\$38.5)	(\$60.2)	\$165.8	30,816	5,398
Transformer	\$46.9	(\$27.8)	\$3.0	\$77.7	(\$0.4)	\$2.7	(\$6.1)	(\$9.2)	\$68.5	4,392	1,251
Unclassified	\$2.7	(\$1.8)	\$2.3	\$6.7	\$0.0	\$0.0	\$0.0	\$0.0	\$6.7	NA	NA
Total	\$176.7	(\$519.6)	\$37.9	\$734.2	(\$6.7)	\$18.9	(\$63.0)	(\$88.7)	\$645.5	43,818	9,134

**Table 7-6 Congestion summary (By facility type): January through June 2009 (See 2009 SOM, Table 7-6)**

Congestion Costs (Millions)											
Type	Day Ahead				Balancing				Grand Total	Event Hours	
	Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total		Day Ahead	Real Time
Flowgate	\$12.4	(\$28.8)	\$12.4	\$53.6	(\$8.3)	\$3.3	(\$51.8)	(\$63.4)	(\$9.8)	3,601	1,955
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	(\$118.7)	\$29.7	\$206.9	(\$3.6)	\$4.1	(\$23.2)	(\$30.9)	\$176.0	25,915	4,197
Transformer	\$55.2	(\$1.6)	\$18.2	\$75.0	(\$8.0)	(\$7.9)	(\$25.3)	(\$25.4)	\$49.7	3,976	1,605
Unclassified	\$2.2	(\$0.5)	\$0.5	\$3.1	\$0.0	\$0.0	\$0.0	\$0.0	\$3.1	NA	NA
<b>Total</b>	<b>\$159.3</b>	<b>(\$299.4)</b>	<b>\$63.1</b>	<b>\$521.7</b>	<b>(\$17.0)</b>	<b>(\$2.4)</b>	<b>(\$99.0)</b>	<b>(\$113.6)</b>	<b>\$408.2</b>	<b>36,072</b>	<b>8,594</b>

**Table 7-7 Congestion summary (By facility voltage): January through June 2010 (See 2009 SOM, Table 7-7)**

Congestion Costs (Millions)											
Voltage (kV)	Day Ahead				Balancing				Grand Total	Event Hours	
	Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total		Day Ahead	Real Time
765	\$0.5	(\$1.8)	\$0.5	\$2.8	(\$1.1)	(\$0.1)	(\$3.2)	(\$4.2)	(\$1.4)	77	74
500	\$72.7	(\$342.7)	\$6.2	\$421.6	\$7.9	(\$0.7)	(\$10.7)	(\$2.1)	\$419.5	5,999	2,304
345	\$8.0	(\$42.5)	\$8.7	\$59.3	(\$5.4)	\$5.4	(\$28.1)	(\$39.0)	\$20.3	4,800	1,476
230	\$32.8	(\$56.2)	\$11.6	\$100.7	(\$3.4)	\$11.6	(\$13.3)	(\$28.3)	\$72.3	9,294	1,684
138	\$35.3	(\$75.7)	\$8.4	\$119.4	(\$2.9)	\$1.7	(\$7.4)	(\$11.9)	\$107.5	17,752	2,797
115	\$21.4	\$0.7	\$0.2	\$21.0	\$0.4	\$0.6	(\$0.3)	(\$0.5)	\$20.4	2,319	665
69	\$3.0	\$0.3	\$0.0	\$2.8	(\$2.2)	\$0.4	(\$0.1)	(\$2.7)	\$0.1	3,324	134
34	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	37	0
12	\$0.1	\$0.1	(\$0.0)	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	216	0
Unclassified	\$2.7	(\$1.8)	\$2.3	\$6.7	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	\$6.7	NA	NA
<b>Total</b>	<b>\$176.7</b>	<b>(\$519.6)</b>	<b>\$37.9</b>	<b>\$734.2</b>	<b>(\$6.7)</b>	<b>\$18.9</b>	<b>(\$63.0)</b>	<b>(\$88.7)</b>	<b>\$645.5</b>	<b>43,818</b>	<b>9,134</b>

**Table 7-8 Congestion summary (By facility voltage): January through June 2009 (See 2009 SOM, Table 7-8)**

Voltage (kV)	Congestion Costs (Millions)										Real Time	
	Day Ahead				Balancing				Event Hours			
	Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total	Grand Total	Day Ahead		
765	(\$0.0)	(\$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	\$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	\$39.4	4,745	1,299
230	\$15.0	(\$15.1)	\$5.2	\$35.2	\$0.0	\$3.6	(\$3.2)	(\$6.7)	\$28.5	\$28.5	7,590	1,035
138	\$42.9	(\$83.2)	\$16.7	\$142.8	(\$11.2)	\$3.0	(\$46.3)	(\$60.5)	\$82.3	\$82.3	14,093	3,987
115	\$4.2	(\$1.4)	\$0.3	\$5.9	\$0.4	\$0.7	(\$0.2)	(\$0.6)	\$5.3	\$5.3	2,133	345
69	\$3.7	\$0.4	\$0.2	\$3.5	(\$3.3)	\$0.8	(\$0.1)	(\$4.2)	(\$0.8)	(\$0.8)	1,877	224
34	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	0	0
12	\$0.1	\$0.0	\$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	\$3.1	NA	NA
<b>Total</b>	<b>\$159.3</b>	<b>(\$299.4)</b>	<b>\$63.1</b>	<b>\$521.7</b>	<b>(\$17.0)</b>	<b>(\$2.4)</b>	<b>(\$99.0)</b>	<b>(\$113.6)</b>	<b>\$408.2</b>	<b>\$408.2</b>	<b>36,072</b>	<b>8,594</b>

**Constraint Duration**

*Table 7-9 Top 25 constraints with frequent occurrence: January through June 2009 and 2010 (See 2009 SOM, Table 7-9)*

No.	Constraint	Type	Event Hours						Percent of Annual Hours					
			Day Ahead			Real Time			Day Ahead			Real Time		
			2009	2010	Change	2009	2010	Change	2009	2010	Change	2009	2010	Change
1	AP South	Interface	1,650	2,090	440	282	1,010	728	38%	48%	10%	6%	23%	17%
2	Athenia - Saddlebrook	Line	979	2,591	1,612	128	321	193	23%	60%	37%	3%	7%	4%
3	East Frankfort - Crete	Line	1,333	1,650	317	161	600	439	31%	38%	7%	4%	14%	10%
4	Waterman - West Dekalb	Line	911	1,496	585	28	223	195	21%	34%	13%	1%	5%	4%
5	Pleasant Valley - Belvidere	Line	1,534	1,277	(257)	210	220	10	35%	29%	(6%)	5%	5%	0%
6	5004/5005 Interface	Interface	334	1,050	716	198	367	169	8%	24%	16%	5%	8%	4%
7	Tiltonville - Windsor	Line	794	1,127	333	198	270	72	18%	26%	8%	5%	6%	2%
8	Bedington - Black Oak	Interface	74	1,328	1,254	61	43	(18)	2%	31%	29%	1%	1%	(0%)
9	Pleasant Prairie - Zion	Flowgate	30	945	915	45	80	35	1%	22%	21%	1%	2%	1%
10	Danville - East Danville	Line	76	879	803	0	85	85	2%	20%	18%	0%	2%	2%
11	Cloverdale - Lexington	Line	666	578	(88)	239	341	102	15%	13%	(2%)	6%	8%	2%
12	Branchburg - Readington	Line	21	712	691	0	158	158	0%	16%	16%	0%	4%	4%
13	Lindenwold - Stratford	Line	194	840	646	0	0	0	4%	19%	15%	0%	0%	0%
14	Doubs	Transformer	36	536	500	13	283	270	1%	12%	12%	0%	7%	6%
15	Rising	Flowgate	0	776	776	3	36	33	0%	18%	18%	0%	1%	1%
16	Pinehill - Stratford	Line	859	794	(65)	0	0	0	20%	18%	(1%)	0%	0%	0%
17	Burlington - Croydon	Line	1,531	737	(794)	3	13	10	35%	17%	(18%)	0%	0%	0%
18	Crescent	Transformer	0	579	579	6	124	118	0%	13%	13%	0%	3%	3%
19	Marktown - Inland Steel	Flowgate	0	400	400	0	242	242	0%	9%	9%	0%	6%	6%
20	Bellehaven - Tasley	Line	23	616	593	0	0	0	1%	14%	14%	0%	0%	0%
21	Bayonne - PVSC	Line	371	578	207	0	0	0	9%	13%	5%	0%	0%	0%
22	Leonia - New Milford	Line	2,164	568	(1,596)	30	1	(29)	50%	13%	(37%)	1%	0%	(1%)
23	AEP-DOM	Interface	101	471	370	57	84	27	2%	11%	9%	1%	2%	1%
24	Sammis - Wylie Ridge	Line	622	494	(128)	101	44	(57)	14%	11%	(3%)	2%	1%	(1%)
25	Hawthorn - Waldwick	Line	0	454	454	0	38	38	0%	10%	10%	0%	1%	1%

**Table 7-10 Top 25 constraints with largest year-to-year change in occurrence: January through June 2009 and 2010 (See 2009 SOM, Table 7-10)**

No.	Constraint	Type	Event Hours						Percent of Annual Hours					
			Day Ahead			Real Time			Day Ahead			Real Time		
			2009	2010	Change	2009	2010	Change	2009	2010	Change	2009	2010	Change
1	Kammer	Transformer	1,554	0	(1,554)	726	0	(726)	36%	0%	(36%)	17%	0%	(17%)
2	Dunes Acres - Michigan City	Flowgate	1,713	142	(1,571)	671	3	(668)	39%	3%	(36%)	15%	0%	(15%)
3	Athenia - Saddlebrook	Line	979	2,591	1,612	128	321	193	23%	60%	37%	3%	7%	4%
4	Leonia - New Milford	Line	2,164	568	(1,596)	30	1	(29)	50%	13%	(37%)	1%	0%	(1%)
5	Bedington - Black Oak	Interface	74	1,328	1,254	61	43	(18)	2%	31%	29%	1%	1%	(0%)
6	AP South	Interface	1,650	2,090	440	282	1,010	728	38%	48%	10%	6%	23%	17%
7	Kammer - Ormet	Line	552	0	(552)	509	0	(509)	13%	0%	(13%)	12%	0%	(12%)
8	Pleasant Prairie - Zion	Flowgate	30	945	915	45	80	35	1%	22%	21%	1%	2%	1%
9	Danville - East Danville	Line	76	879	803	0	85	85	2%	20%	18%	0%	2%	2%
10	5004/5005 Interface	Interface	334	1,050	716	198	367	169	8%	24%	16%	5%	8%	4%
11	Pana North	Flowgate	581	0	(581)	300	0	(300)	13%	0%	(13%)	7%	0%	(7%)
12	Ruth - Turner	Line	639	22	(617)	270	11	(259)	15%	1%	(14%)	6%	0%	(6%)
13	Branchburg - Readington	Line	21	712	691	0	158	158	0%	16%	16%	0%	4%	4%
14	Rising	Flowgate	0	776	776	3	36	33	0%	18%	18%	0%	1%	1%
15	Burlington - Croydon	Line	1,531	737	(794)	3	13	10	35%	17%	(18%)	0%	0%	0%
16	Waterman - West Dekalb	Line	911	1,496	585	28	223	195	21%	34%	13%	1%	5%	4%
17	Doubs	Transformer	36	536	500	13	283	270	1%	12%	12%	0%	7%	6%
18	East Frankfort - Crete	Line	1,333	1,650	317	161	600	439	31%	38%	7%	4%	14%	10%
19	Crescent	Transformer	0	579	579	6	124	118	0%	13%	13%	0%	3%	3%
20	Lindenwold - Stratford	Line	194	840	646	0	0	0	4%	19%	15%	0%	0%	0%
21	Oak Grove - Galesburg	Flowgate	400	61	(339)	377	72	(305)	9%	1%	(8%)	9%	2%	(7%)
22	Marktown - Inland Steel	Flowgate	0	400	400	0	242	242	0%	9%	9%	0%	6%	6%
23	Wylie Ridge	Transformer	354	27	(327)	335	53	(282)	8%	1%	(8%)	8%	1%	(6%)
24	Bellehaven - Tasley	Line	23	616	593	0	0	0	1%	14%	14%	0%	0%	0%
25	Plainsboro - Trenton	Line	389	0	(389)	164	0	(164)	9%	0%	(9%)	4%	0%	(4%)

**Constraint Costs**

*Table 7-11 Top 25 constraints affecting annual PJM congestion costs (By facility): January through June 2010 (See 2009 SOM, Table 7-11)*

No.	Constraint	Type	Location	Congestion Costs (Millions)								Percent of Total PJM Congestion Costs 2010		
				Load Payments	Day Ahead			Total	Load Payments	Balancing			Grand Total	
					Generation Credits	Explicit	Generation Credits			Explicit	Total			
1	AP South	Interface	500	\$9.8	(\$222.4)	\$2.3	\$234.5	\$6.8	\$5.3	(\$1.8)	(\$0.3)	\$234.2	36%	
2	Bedington - Black Oak	Interface	500	\$10.6	(\$50.1)	\$1.1	\$61.8	\$0.1	(\$0.9)	(\$0.5)	\$0.5	\$62.3	10%	
3	AEP-DOM	Interface	500	\$9.8	(\$37.6)	\$0.9	\$48.3	\$0.1	(\$1.3)	(\$0.1)	\$1.3	\$49.6	8%	
4	5004/5005 Interface	Interface	500	\$28.6	(\$19.5)	(\$0.7)	\$47.4	\$2.8	\$2.5	\$0.0	\$0.3	\$47.7	7%	
5	Doubs	Transformer	AP	\$16.8	(\$10.5)	\$0.7	\$28.0	(\$0.4)	\$1.1	(\$2.1)	(\$3.6)	\$24.4	4%	
6	East Frankfort - Crete	Line	ComEd	\$4.2	(\$20.8)	\$2.9	\$27.9	(\$2.8)	\$0.9	(\$5.5)	(\$9.2)	\$18.7	3%	
7	Cloverdale - Lexington	Line	AEP	\$7.3	(\$5.8)	\$1.3	\$14.4	(\$1.9)	(\$2.0)	(\$3.4)	(\$3.2)	\$11.2	2%	
8	Crescent	Transformer	DLCO	\$6.1	(\$3.4)	\$0.4	\$9.9	\$0.2	(\$0.6)	(\$0.5)	\$0.2	\$10.1	2%	
9	Pleasant Valley - Belvidere	Line	ComEd	(\$5.5)	(\$16.1)	\$1.3	\$11.8	(\$0.1)	\$2.1	(\$2.1)	(\$4.3)	\$7.5	1%	
10	Limerick	Transformer	PECO	\$1.1	(\$2.2)	(\$0.1)	\$3.2	\$0.8	(\$3.4)	(\$0.1)	\$4.1	\$7.3	1%	
11	Tiltonville - Windsor	Line	AP	\$7.7	(\$0.2)	\$0.2	\$8.1	(\$1.3)	\$0.0	\$0.3	(\$1.1)	\$7.1	1%	
12	Graceton - Raphael Road	Line	BGE	(\$2.5)	(\$7.6)	\$0.6	\$5.8	\$0.6	(\$0.7)	(\$0.2)	\$1.1	\$6.8	1%	
13	Unclassified	Unclassified	Unclassified	\$2.7	(\$1.8)	\$2.3	\$6.7	\$0.0	\$0.0	\$0.0	\$0.0	\$6.7	1%	
14	Mount Storm - Pruntytown	Line	AP	\$1.3	(\$2.7)	\$0.1	\$4.1	\$0.7	(\$3.3)	(\$1.5)	\$2.4	\$6.5	1%	
15	Pleasant View	Transformer	Dominion	(\$0.1)	(\$0.4)	\$0.0	\$0.3	(\$2.3)	\$3.6	(\$0.3)	(\$6.3)	(\$6.0)	(1%)	
16	Pleasant Prairie - Zion	Flowgate	Midwest ISO	(\$2.8)	(\$7.0)	\$2.1	\$6.3	(\$0.4)	\$1.1	(\$10.4)	(\$12.0)	(\$5.7)	(1%)	
17	Branchburg - Readington	Line	PSEG	\$2.4	(\$4.6)	\$0.3	\$7.3	(\$0.5)	\$1.4	(\$0.0)	(\$1.9)	\$5.4	1%	
18	Rising	Flowgate	Midwest ISO	\$0.2	(\$4.3)	\$0.6	\$5.1	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$5.1	1%	
19	Reid - Ringgold	Line	AP	(\$0.2)	(\$4.9)	\$0.3	\$4.9	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$5.0	1%	
20	Nipetown - Reid	Line	AP	\$1.2	(\$3.1)	\$0.2	\$4.5	(\$0.0)	(\$0.1)	(\$0.1)	\$0.0	\$4.5	1%	
21	Hunterstown	Transformer	Met-Ed	\$2.1	(\$2.0)	\$0.2	\$4.3	\$0.1	\$0.0	(\$0.0)	\$0.0	\$4.4	1%	
22	Hawthorn - Waldwick	Line	PSEG	\$0.1	(\$0.0)	(\$0.0)	\$0.0	(\$0.6)	\$0.9	(\$2.5)	(\$4.0)	(\$4.0)	(1%)	
23	Ox - Francona	Line	Dominion	\$2.6	(\$1.4)	\$0.0	\$4.0	\$0.0	\$0.0	\$0.0	\$0.0	\$4.0	1%	
24	Danville - East Danville	Line	Dominion	(\$1.2)	(\$5.8)	(\$0.7)	\$3.9	\$0.1	\$0.1	\$0.1	\$0.1	\$4.0	1%	
25	Seward	Transformer	PENELEC	\$10.2	\$6.0	(\$0.1)	\$4.1	(\$0.1)	\$0.0	\$0.0	(\$0.1)	\$4.0	1%	

**Table 7-12 Top 25 constraints affecting annual PJM congestion costs (By facility): January through June 2009 (See 2009 SOM, Table 7-12)**

No.	Constraint	Type	Location	Congestion Costs (Millions)								Percent of Total PJM Congestion Costs	
				Day Ahead				Balancing				Grand Total	2009
				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	5004/5005 Interface	Interface	500	\$5.6	(\$15.7)	\$0.8	\$22.1	\$0.9	\$0.3	\$0.1	\$0.6	\$22.7	6%
4	Kammer	Transformer	500	\$28.2	\$9.4	\$6.4	\$25.1	(\$2.2)	(\$6.1)	(\$6.9)	(\$2.9)	\$22.2	5%
5	Mount Storm - Pruntytown	Line	AP	\$1.8	(\$16.8)	\$0.5	\$19.1	\$1.1	(\$0.8)	(\$0.2)	\$1.7	\$20.8	5%
6	East Frankfort - Crete	Line	ComEd	\$4.5	(\$11.7)	\$7.0	\$23.2	(\$0.6)	\$0.0	(\$3.3)	(\$3.9)	\$19.3	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	Samms - Wylie Ridge	Line	AP	\$3.1	(\$2.7)	\$3.4	\$9.2	(\$0.8)	(\$0.3)	(\$2.6)	(\$3.2)	\$6.0	1%
16	Tiltsville - 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	Graceton - Raphael Road	Line	BGE	\$0.9	(\$2.2)	\$0.4	\$3.4	\$1.0	\$0.3	(\$0.5)	\$0.2	\$3.6	1%
25	Sliver Lake - Cherry Valley	Line	ComEd	(\$0.1)	(\$3.9)	\$0.8	\$4.6	\$0.6	\$0.3	(\$1.4)	(\$1.2)	\$3.4	1%

**Congestion-Event Summary for Midwest ISO Flowgates**
**Table 7-13 Top congestion cost impacts from Midwest ISO flowgates affecting PJM dispatch (By facility): January through June 2010 (See 2009 SOM, Table 7-13)**

No.	Constraint	Congestion Costs (Millions)									Event Hours		
		Load Payments	Day Ahead			Total	Load Payments	Balancing			Grand Total	Day Ahead	Real Time
			Generation Credits	Explicit	Generation Credits			Explicit	Explicit				
1	Pleasant Prairie - Zion	(\$2.8)	(\$7.0)	\$2.1	\$6.3	(\$0.4)	\$1.1	(\$10.4)	(\$12.0)	(\$5.7)	945	80	
2	Rising	\$0.2	(\$4.3)	\$0.6	\$5.1	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$5.1	776	36	
3	Crete - St Johns Tap	\$0.3	(\$3.9)	\$0.1	\$4.4	(\$0.2)	\$0.2	(\$0.8)	(\$1.1)	\$3.2	330	82	
4	Palisades - Vergennes	\$2.8	(\$0.6)	\$0.5	\$3.9	(\$0.1)	\$0.4	(\$1.0)	(\$1.5)	\$2.3	235	91	
5	Dunes Acres - Michigan City	\$0.6	(\$1.1)	\$0.4	\$2.1	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$2.1	142	3	
6	State Line - Wolf Lake	\$0.3	(\$0.6)	\$0.6	\$1.5	\$0.0	\$0.0	\$0.0	\$0.0	\$1.5	363	0	
7	Breed - Wheatland	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.7)	(\$0.7)	(\$0.7)	0	16	
8	Beaver Valley - Sammis	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	\$0.1	(\$0.2)	(\$0.4)	(\$0.4)	0	8	
9	Burr Oak	\$0.1	(\$0.2)	\$0.0	\$0.3	\$0.0	\$0.2	(\$0.4)	(\$0.6)	(\$0.4)	76	97	
10	Marktown - Inland Steel	\$0.6	(\$0.9)	\$0.6	\$2.1	(\$0.6)	\$0.7	(\$1.2)	(\$2.5)	(\$0.4)	400	242	
11	Lanesville	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	(\$0.3)	(\$0.3)	(\$0.3)	0	33	
12	Stillwell - Dumont	\$0.0	(\$0.2)	\$0.1	\$0.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	42	0	
13	Bunsonville - Eugene	(\$0.0)	(\$0.3)	\$0.1	\$0.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	31	0	
14	DC Cook - Palisades	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.2)	(\$0.0)	(\$0.2)	(\$0.3)	(\$0.3)	0	6	
15	Palisades - Roosevelt	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	\$0.1	(\$0.2)	(\$0.3)	(\$0.3)	0	30	

**Table 7-14 Top congestion cost impacts from Midwest ISO flowgates affecting PJM dispatch (By facility): January through June 2009 (See 2009 SOM, Table 7-14)**

No.	Constraint	Congestion Costs (Millions)										
		Day Ahead				Balancing				Event Hours		
		Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total	Grand Total	Day Ahead	Real Time
1	Pana North	\$0.1	(\$1.6)	\$1.2	\$2.9	(\$0.4)	\$1.0	(\$11.5)	(\$13.0)	(\$10.1)	581	300
2	Crete - St Johns Tap	\$2.5	(\$8.3)	\$2.5	\$13.2	(\$0.7)	\$0.4	(\$4.3)	(\$5.4)	\$7.9	539	132
3	Dunes Acres - Michigan City	\$9.5	(\$14.4)	\$6.8	\$30.7	(\$5.4)	(\$1.2)	(\$19.8)	(\$24.0)	\$6.7	1,713	671
4	Schahfer - Burr Oak	\$0.4	(\$1.3)	\$0.6	\$2.3	(\$2.0)	\$0.4	(\$5.4)	(\$7.8)	(\$5.6)	62	81
5	Breed - Wheatland	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.6	(\$2.2)	(\$2.7)	(\$2.7)	0	128
6	Pleasant Prairie - Zion	(\$0.0)	(\$0.2)	\$0.2	\$0.3	\$0.3	\$0.6	(\$2.0)	(\$2.3)	(\$1.9)	30	45
7	Eugene - Bunsonville	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	\$0.1	(\$1.1)	(\$1.3)	(\$1.3)	0	44
8	Oak Grove - Galesburg	(\$0.4)	(\$2.6)	\$0.2	\$2.4	\$0.6	\$1.1	(\$3.1)	(\$3.6)	(\$1.1)	400	377
9	State Line - Roxana	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.2)	\$0.0	(\$0.4)	(\$0.6)	(\$0.6)	0	30
10	Lanesville	\$0.2	(\$0.1)	\$0.1	\$0.4	\$0.0	\$0.1	(\$0.8)	(\$0.9)	(\$0.5)	65	32
11	Pawnee	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.0	(\$0.4)	(\$0.4)	(\$0.4)	0	35
12	Pierce - Foster	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	\$0.3	(\$0.0)	(\$0.4)	(\$0.4)	0	4
13	State Line - Wolf Lake	\$0.1	(\$0.2)	\$0.2	\$0.4	(\$0.0)	(\$0.0)	(\$0.2)	(\$0.2)	\$0.3	109	17
14	Bunsonville - Eugene	\$0.0	(\$0.1)	\$0.1	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	24	0
15	Burr Oak	\$0.1	(\$0.2)	\$0.4	\$0.7	(\$0.2)	\$0.0	(\$0.6)	(\$0.9)	(\$0.2)	24	37

**Congestion-Event Summary for the 500 kV System**

*Table 7-15 Regional constraints summary (By facility): January through June 2010 (See 2009 SOM, Table 7-15)*

Congestion Costs (Millions)															
No.	Constraint	Type	Location	Day Ahead				Balancing				Event Hours			
				Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total	Grand Total	Day Ahead	Real Time	
1	AP South	Interface	500	\$9.8	(\$222.4)	\$2.3	\$234.5	\$6.8	\$5.3	(\$1.8)	(\$0.3)	\$234.2	2,090	1,010	
2	Bedington - Black Oak	Interface	500	\$10.6	(\$50.1)	\$1.1	\$61.8	\$0.1	(\$0.9)	(\$0.5)	\$0.5	\$62.3	1,328	43	
3	AEP-DOM	Interface	500	\$9.8	(\$37.6)	\$0.9	\$48.3	\$0.1	(\$1.3)	(\$0.1)	\$1.3	\$49.6	471	84	
4	5004/5005 Interface	Interface	500	\$28.6	(\$19.5)	(\$0.7)	\$47.4	\$2.8	\$2.5	\$0.0	\$0.3	\$47.7	1,050	367	
5	West	Interface	500	\$2.9	(\$0.2)	\$0.1	\$3.2	\$0.3	\$0.7	\$0.2	(\$0.2)	\$3.0	82	41	
6	East	Interface	500	\$1.0	(\$0.8)	(\$0.0)	\$1.8	\$0.0	\$0.0	\$0.0	\$0.0	\$1.8	75	0	
7	Harrison - Pruntytown	Line	500	\$1.1	(\$0.8)	\$0.3	\$2.2	(\$0.4)	(\$0.5)	(\$0.6)	(\$0.5)	\$1.7	79	92	
8	Central	Interface	500	\$0.2	(\$0.0)	\$0.0	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	43	1	
9	Harrison Tap - North Longview	Line	500	\$0.1	(\$0.0)	\$0.0	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	6	0	
10	Doubs - Mount Storm	Line	500	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.1	\$0.0	\$0.1	\$0.1	0	2	

*Table 7-16 Regional constraints summary (By facility): January through June 2009 (See 2009 SOM, Table 7-16)*

Congestion Costs (Millions)															
No.	Constraint	Type	Location	Day Ahead				Balancing				Event Hours			
				Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total	Grand Total	Day Ahead	Real Time	
1	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	
2	West	Interface	500	\$17.8	(\$21.4)	\$0.6	\$39.7	\$0.3	(\$0.1)	(\$0.1)	\$0.4	\$40.1	391	55	
3	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	
4	Kammer	Transformer	500	\$28.2	\$9.4	\$6.4	\$25.1	(\$2.2)	(\$6.1)	(\$6.9)	(\$2.9)	\$22.2	1,554	726	
5	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	
6	AEP-DOM	Interface	500	\$0.5	(\$2.7)	\$0.3	\$3.5	(\$0.5)	(\$0.0)	(\$0.3)	(\$0.8)	\$2.7	101	57	
7	East	Interface	500	\$0.1	(\$0.0)	(\$0.0)	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	11	0	
8	Central	Interface	500	\$0.0	(\$0.1)	\$0.0	\$0.1	\$0.0	\$0.1	(\$0.0)	(\$0.1)	\$0.1	19	8	
9	Harrison - Pruntytown	Line	500	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	0	4	

## Zonal Congestion

### Summary

Table 7-17 Congestion cost summary (By control zone): January through June 2010 (See 2009 SOM, Table 7-17)

Control Zone	Congestion Costs (Millions)								Grand Total	
	Load Payments	Day Ahead			Total	Load Payments	Balancing			Total
		Generation Credits	Explicit				Generation Credits	Explicit		
AECO	\$12.1	\$4.0	\$0.1	\$8.1	(\$0.9)	\$0.1	(\$0.1)	(\$1.1)	\$7.0	
AEP	(\$55.3)	(\$151.4)	\$5.6	\$101.6	(\$9.0)	\$7.6	(\$8.1)	(\$24.7)	\$76.9	
AP	(\$12.3)	(\$143.9)	\$0.1	\$131.7	\$6.7	\$10.9	(\$1.4)	(\$5.6)	\$126.1	
BGE	\$78.5	\$57.3	\$3.2	\$24.5	\$6.6	(\$4.5)	(\$3.3)	\$7.8	\$32.2	
ComEd	(\$179.3)	(\$299.6)	(\$0.0)	\$120.2	(\$6.5)	\$8.6	(\$5.8)	(\$20.8)	\$99.4	
DAY	(\$7.0)	(\$12.6)	\$1.9	\$7.5	\$0.2	\$1.0	(\$2.7)	(\$3.4)	\$4.1	
DLCO	(\$41.9)	(\$70.2)	(\$0.1)	\$28.2	(\$4.3)	(\$1.0)	(\$0.0)	(\$3.3)	\$24.9	
DPL	\$22.8	\$5.9	\$0.3	\$17.2	\$0.9	\$0.2	(\$0.4)	\$0.2	\$17.5	
Dominion	\$144.6	\$8.9	\$7.5	\$143.1	(\$4.8)	(\$0.8)	(\$8.0)	(\$12.0)	\$131.0	
External	(\$54.3)	(\$64.0)	(\$1.9)	\$7.7	\$8.3	(\$6.2)	(\$14.6)	(\$0.1)	\$7.6	
JCPL	\$18.8	\$4.6	\$0.2	\$14.5	\$1.2	(\$0.4)	(\$0.3)	\$1.3	\$15.8	
Met-Ed	\$19.9	\$12.9	\$0.3	\$7.3	\$0.1	(\$0.2)	(\$0.2)	\$0.0	\$7.4	
PECO	\$21.1	\$29.4	\$0.0	(\$8.2)	\$0.2	(\$2.5)	(\$0.0)	\$2.7	(\$5.6)	
PENELEC	(\$42.3)	(\$91.3)	(\$0.1)	\$48.9	\$11.6	\$3.9	\$0.2	\$7.8	\$56.7	
PPL	\$32.5	\$37.5	\$1.3	(\$3.7)	\$3.4	\$2.1	(\$0.0)	\$1.2	(\$2.5)	
PSEG	\$45.4	\$33.5	\$15.7	\$27.6	(\$7.1)	\$7.8	(\$13.9)	(\$28.9)	(\$1.3)	
Pepco	\$172.3	\$119.1	\$3.9	\$57.1	(\$13.5)	(\$7.7)	(\$4.2)	(\$10.1)	\$47.0	
RECO	\$1.1	\$0.1	(\$0.0)	\$1.0	\$0.2	\$0.0	\$0.0	\$0.2	\$1.1	
Total	\$176.7	(\$519.6)	\$37.9	\$734.2	(\$6.7)	\$18.9	(\$63.0)	(\$88.7)	\$645.5	

Table 7-18 Congestion cost summary (By control zone): January through June 2009 (See 2009 SOM, Table 7-18)

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

## Details of Regional and Zonal Congestion

### Mid-Atlantic Region Congestion-Event Summaries

#### AECO Control Zone

Table 7-19 AECO Control Zone top congestion cost impacts (By facility): January through June 2010 (See 2009 SOM, Table 7-19)

No.	Constraint	Type	Location	Congestion Costs (Millions)										Event Hours	
				Load Payments	Day Ahead			Load Payments	Balancing			Grand Total	Day Ahead	Real Time	
					Generation Credits	Explicit	Total		Generation Credits	Explicit	Total				
1	England - Middletap	Line	AECO	\$3.4	\$0.7	\$0.0	\$2.7	(\$0.4)	(\$0.4)	(\$0.0)	(\$0.0)	\$2.7	293	69	
2	5004/5005 Interface	Interface	500	\$4.1	\$1.9	\$0.0	\$2.2	\$0.3	(\$0.0)	(\$0.0)	\$0.3	\$2.5	1,050	367	
3	Absecon - Lewis	Line	AECO	\$0.2	\$0.0	\$0.0	\$0.2	(\$1.5)	\$0.1	(\$0.1)	(\$1.6)	(\$1.4)	81	18	
4	Graceton - Raphael Road	Line	BGE	(\$1.1)	(\$0.5)	(\$0.0)	(\$0.6)	(\$0.0)	\$0.1	\$0.0	(\$0.1)	(\$0.8)	197	99	
5	AP South	Interface	500	\$1.0	\$0.5	\$0.0	\$0.5	\$0.0	(\$0.0)	(\$0.0)	\$0.1	\$0.6	2,090	1,010	
6	East Frankfort - Crete	Line	ComEd	\$0.6	\$0.2	\$0.0	\$0.4	\$0.1	(\$0.0)	(\$0.0)	\$0.1	\$0.6	1,650	600	
7	Bedington - Black Oak	Interface	500	\$0.9	\$0.4	\$0.0	\$0.5	\$0.0	\$0.0	(\$0.0)	(\$0.0)	\$0.5	1,328	43	
8	Branchburg - Readington	Line	PSEG	(\$0.6)	(\$0.2)	(\$0.0)	(\$0.4)	(\$0.0)	\$0.0	\$0.0	(\$0.0)	(\$0.4)	712	158	
9	Doubs	Transformer	AP	\$0.4	\$0.1	\$0.0	\$0.3	\$0.2	\$0.0	(\$0.0)	\$0.2	\$0.4	536	283	
10	Cloverdale - Lexington	Line	AEP	\$0.3	\$0.1	\$0.0	\$0.2	\$0.1	\$0.0	(\$0.0)	\$0.1	\$0.3	578	341	
11	Athenia - Saddlebrook	Line	PSEG	(\$0.3)	(\$0.1)	(\$0.0)	(\$0.2)	(\$0.1)	\$0.0	\$0.0	(\$0.1)	(\$0.3)	2,591	321	
12	Corson - Court	Line	AECO	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.2)	\$0.1	(\$0.0)	(\$0.3)	(\$0.3)	7	15	
13	Tiltonville - Windsor	Line	AP	\$0.4	\$0.1	\$0.0	\$0.3	\$0.1	\$0.0	(\$0.0)	\$0.1	\$0.3	1,127	270	
14	Limerick	Transformer	PECO	\$0.3	\$0.1	\$0.0	\$0.2	\$0.1	(\$0.0)	\$0.0	\$0.1	\$0.3	53	18	
15	West	Interface	500	\$0.3	\$0.1	\$0.0	\$0.2	\$0.1	\$0.0	\$0.0	\$0.1	\$0.2	82	41	
19	Monroe	Transformer	AECO	\$0.1	\$0.0	(\$0.0)	\$0.1	\$0.1	(\$0.0)	\$0.0	\$0.1	\$0.2	16	9	
38	Lewis - Motts - Cedar	Line	AECO	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	25	0	
54	Sherman	Transformer	AECO	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.0	(\$0.0)	(\$0.0)	(\$0.0)	0	5	
73	Shieldalloy - Vineland	Line	AECO	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.0)	\$0.0	(\$0.0)	(\$0.0)	0	5	
94	Lindenwold - Stratford	Line	AECO	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	840	0	

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

No.	Constraint	Type	Location	Congestion Costs (Millions)											Grand Total	Event Hours	
				Load Payments	Day Ahead			Total	Load Payments	Balancing			Total	Day Ahead		Real Time	
					Generation Credits	Explicit	Generation Credits			Explicit							
1	West	Interface	500	\$4.6	\$2.2	\$0.0	\$2.4	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$2.4	391	55			
2	Kammer	Transformer	500	\$2.1	\$0.8	\$0.0	\$1.3	\$0.1	(\$0.0)	\$0.0	\$0.2	\$1.5	1,554	726			
3	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			
4	Wylie Ridge	Transformer	AP	\$1.8	\$0.9	\$0.0	\$0.9	(\$0.0)	\$0.1	\$0.1	(\$0.0)	\$0.9	354	335			
5	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	671			
6	Absecon - Lewis	Line	AECO	\$1.0	\$0.1	\$0.0	\$1.0	(\$1.2)	\$0.5	(\$0.0)	(\$1.7)	(\$0.8)	22	149			
7	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			
8	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			
9	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			
10	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	161			
11	Tiltonville - Windsor	Line	AP	\$0.4	\$0.1	\$0.0	\$0.3	\$0.0	(\$0.0)	(\$0.0)	\$0.1	\$0.3	794	198			
12	Atlantic - Larrabee	Line	JCPL	(\$0.3)	(\$0.0)	\$0.0	(\$0.3)	(\$0.1)	(\$0.0)	\$0.0	(\$0.0)	(\$0.3)	188	45			
13	Cloverdale - Lexington	Line	AEP	\$0.4	\$0.2	\$0.0	\$0.2	\$0.0	(\$0.0)	\$0.0	\$0.1	\$0.3	666	239			
14	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			
15	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			
16	Monroe	Transformer	AECO	\$0.1	\$0.0	\$0.0	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	134	11			
33	Shieldalloy - Vineland	Line	AECO	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.0	\$0.0	(\$0.0)	(\$0.0)	11	13			
49	Carlls Corner - Sherman Ave	Line	AECO	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	20	0			
53	Clayton - Williams	Line	AECO	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	3	0			
82	Monroe - New Freedom	Line	AECO	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	69	0			

**BGE Control Zone****Table 7-21 BGE Control Zone top congestion cost impacts (By facility): January through June 2010 (See 2009 SOM, Table 7-21)**

No.	Constraint	Type	Location	Congestion Costs (Millions)											Grand Total	Event Hours	
				Load Payments	Day Ahead			Load Payments	Balancing			Day Ahead	Real Time				
					Generation Credits	Explicit	Total		Generation Credits	Explicit	Total						
1	AP South	Interface	500	\$29.4	\$23.5	\$1.3	\$7.2	\$2.7	(\$1.4)	(\$1.2)	\$2.9	\$10.1	2,090	1,010			
2	Bedington - Black Oak	Interface	500	\$13.0	\$10.0	\$0.5	\$3.4	\$0.3	(\$0.2)	(\$0.1)	\$0.5	\$3.9	1,328	43			
3	Doubs	Transformer	AP	\$6.2	\$4.7	\$0.1	\$1.6	\$0.8	(\$1.2)	(\$0.3)	\$1.7	\$3.3	536	283			
4	Brandon Shores - Riverside	Line	BGE	\$2.4	(\$1.1)	\$0.0	\$3.5	(\$0.5)	\$0.2	(\$0.1)	(\$0.7)	\$2.8	73	55			
5	5004/5005 Interface	Interface	500	\$4.7	\$2.5	\$0.3	\$2.5	\$0.3	(\$0.2)	(\$0.2)	\$0.3	\$2.7	1,050	367			
6	Graceton - Raphael Road	Line	BGE	\$4.9	\$3.2	\$0.3	\$2.0	\$0.2	(\$0.5)	(\$0.3)	\$0.4	\$2.4	197	99			
7	Mount Storm - Pruntytown	Line	AP	\$0.6	\$0.5	\$0.0	\$0.2	\$0.5	(\$0.3)	(\$0.2)	\$0.7	\$0.9	87	244			
8	Cloverdale - Lexington	Line	AEP	\$2.0	\$2.0	\$0.1	\$0.1	\$0.6	(\$0.3)	(\$0.2)	\$0.7	\$0.9	578	341			
9	East Frankfort - Crete	Line	ComEd	\$1.8	\$1.4	\$0.1	\$0.4	\$0.2	(\$0.1)	(\$0.0)	\$0.3	\$0.7	1,650	600			
10	Pleasant View	Transformer	Dominion	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.2)	\$0.6	\$0.1	(\$0.7)	(\$0.7)	31	101			
11	AEP-DOM	Interface	500	\$3.1	\$2.8	\$0.1	\$0.3	\$0.2	(\$0.0)	(\$0.0)	\$0.2	\$0.6	471	84			
12	West	Interface	500	\$0.8	\$0.5	\$0.0	\$0.3	\$0.2	(\$0.1)	(\$0.0)	\$0.2	\$0.5	82	41			
13	Fullerton - Windyedge	Line	BGE	\$0.4	(\$0.1)	\$0.0	\$0.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.5	23	0			
14	Branchburg - Readington	Line	PSEG	(\$0.8)	(\$0.5)	(\$0.1)	(\$0.4)	(\$0.1)	\$0.1	\$0.1	(\$0.0)	(\$0.4)	712	158			
15	Tiltonville - Windsor	Line	AP	\$1.0	\$0.8	\$0.0	\$0.3	\$0.1	(\$0.1)	(\$0.1)	\$0.1	\$0.4	1,127	270			
30	Glenarm - Windy Edge	Line	BGE	\$0.2	\$0.1	\$0.0	\$0.1	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	\$0.1	15	13			
37	Green Street - Westport	Line	BGE	\$0.1	(\$0.0)	\$0.0	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	44	0			
42	East Point - Riverside	Line	BGE	\$0.1	(\$0.0)	\$0.0	\$0.1	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$0.1	6	5			
70	Graceton - Safe Harbor	Line	BGE	\$0.2	\$0.1	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.0	15	2			
85	Conastone - Graceton	Line	BGE	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.1)	(\$0.0)	\$0.0	\$0.0	0	3			

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

No.	Constraint	Type	Location	Congestion Costs (Millions)											Grand Total	Day Ahead	Real Time
				Load Payments	Day Ahead			Total	Load Payments	Balancing			Total				
					Generation Credits	Explicit	Event Hours			Generation Credits	Explicit	Event Hours					
1	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			
2	Kammer	Transformer	500	\$6.2	\$5.0	\$0.1	\$1.3	\$0.7	(\$0.5)	(\$0.2)	\$1.0	\$2.4	1,554	726			
3	West	Interface	500	\$8.1	\$6.8	\$0.2	\$1.4	\$0.1	(\$0.1)	(\$0.0)	\$0.2	\$1.6	391	55			
4	Wylie Ridge	Transformer	AP	\$3.6	\$3.4	\$0.1	\$0.3	\$0.6	(\$0.7)	(\$0.2)	\$1.2	\$1.5	354	335			
5	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			
6	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			
7	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			
8	Pumphrey - Westport	Line	Pepco	\$0.5	(\$0.1)	\$0.0	\$0.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.6	573	0			
9	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	671			
10	Cloverdale - Lexington	Line	AEP	\$2.2	\$2.0	\$0.0	\$0.2	\$0.2	(\$0.1)	(\$0.0)	\$0.3	\$0.5	666	239			
11	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			
12	Tiltsville - Windsor	Line	AP	\$0.8	\$0.6	\$0.0	\$0.2	\$0.1	(\$0.0)	(\$0.0)	\$0.1	\$0.3	794	198			
13	East Frankfort - Crete	Line	ComEd	\$1.2	\$1.0	\$0.0	\$0.2	\$0.1	(\$0.0)	(\$0.0)	\$0.1	\$0.3	1,333	161			
14	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			
15	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			
16	Waugh Chapel	Transformer	BGE	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.2)	\$0.0	\$0.2	\$0.2	0	8			
17	Conastone	Transformer	BGE	\$0.3	\$0.2	\$0.0	\$0.2	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.2	17	1			
56	Glenarm - Windy Edge	Line	BGE	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	8	0			
76	Green Street - Westport	Line	BGE	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	151	0			
78	Concord - Green Street	Line	BGE	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	8	0			

**DPL Control Zone****Table 7-23 DPL Control Zone top congestion cost impacts (By facility): January through June 2010 (See 2009 SOM, Table 7-23)**

No.	Constraint	Type	Location	Congestion Costs (Millions)											Day Ahead	Real Time
				Day Ahead				Balancing				Grand Total				
				Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total					
1	5004/5005 Interface	Interface	500	\$7.8	\$2.4	\$0.0	\$5.4	\$0.3	\$0.2	(\$0.0)	\$0.1	\$5.5	1,050	367		
2	AP South	Interface	500	\$3.1	\$1.2	\$0.0	\$1.9	\$0.1	\$0.0	(\$0.0)	\$0.1	\$2.0	2,090	1,010		
3	Bedington - Black Oak	Interface	500	\$1.9	\$0.8	\$0.0	\$1.2	\$0.0	\$0.0	(\$0.0)	(\$0.0)	\$1.2	1,328	43		
4	East Frankfort - Crete	Line	ComEd	\$1.2	\$0.2	\$0.0	\$1.0	\$0.0	\$0.0	(\$0.0)	\$0.0	\$1.0	1,650	600		
5	Graceton - Raphael Road	Line	BGE	(\$2.0)	(\$1.0)	(\$0.0)	(\$1.0)	(\$0.0)	(\$0.1)	\$0.0	\$0.0	(\$1.0)	197	99		
6	Oak Hall	Transformer	DPL	\$1.0	\$0.2	\$0.0	\$0.9	\$0.0	\$0.0	\$0.0	\$0.0	\$0.9	220	0		
7	Indian River At20	Transformer	DPL	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	(\$0.6)	(\$0.0)	\$0.9	\$0.9	0	8		
8	Doubs	Transformer	AP	\$0.8	\$0.2	\$0.0	\$0.6	\$0.1	(\$0.0)	(\$0.1)	\$0.0	\$0.7	536	283		
9	Cloverdale - Lexington	Line	AEP	\$0.6	\$0.1	\$0.0	\$0.5	\$0.1	\$0.0	(\$0.1)	\$0.0	\$0.5	578	341		
10	Branchburg - Readington	Line	PSEG	(\$0.9)	(\$0.4)	(\$0.0)	(\$0.5)	(\$0.0)	(\$0.0)	\$0.0	\$0.0	(\$0.5)	712	158		
11	Longwood - Wye Mills	Line	DPL	\$0.5	\$0.1	\$0.0	\$0.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.5	92	0		
12	Tiltonville - Windsor	Line	AP	\$0.7	\$0.2	\$0.0	\$0.5	\$0.0	\$0.0	(\$0.0)	(\$0.0)	\$0.5	1,127	270		
13	Sammis - Wylie Ridge	Line	AP	\$0.5	\$0.1	\$0.0	\$0.4	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.4	494	44		
14	Athenia - Saddlebrook	Line	PSEG	(\$0.6)	(\$0.1)	(\$0.0)	(\$0.5)	(\$0.0)	(\$0.0)	\$0.1	\$0.1	(\$0.4)	2,591	321		
15	West	Interface	500	\$0.6	\$0.2	\$0.0	\$0.3	\$0.1	\$0.1	(\$0.0)	\$0.0	\$0.4	82	41		
16	Middletown - Mt Pleasant	Line	DPL	\$0.4	\$0.1	\$0.0	\$0.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	43	0		
17	New Church - Piney Grove	Line	DPL	\$0.4	\$0.1	\$0.0	\$0.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	116	0		
18	Cecil - Colora	Line	DPL	\$0.7	\$0.1	\$0.1	\$0.6	(\$0.1)	\$0.1	(\$0.1)	(\$0.3)	\$0.3	82	18		
20	Cecil - Glasgow	Line	DPL	\$0.3	\$0.1	\$0.1	\$0.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	34	0		
24	Bellehaven - Tasley	Line	DPL	\$0.2	(\$0.0)	\$0.0	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	616	0		

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

No.	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	Generation Credits			Explicit	Total					
1	West	Interface	500	\$8.6	\$3.6	\$0.0	\$5.1	(\$0.0)	\$0.0	(\$0.0)	(\$0.1)	\$5.0	391	55		
2	Kammer	Transformer	500	\$4.1	\$1.0	\$0.0	\$3.2	(\$0.1)	\$0.1	(\$0.0)	(\$0.3)	\$2.9	1,554	726		
3	Short - Laurel	Line	DPL	\$0.0	\$0.0	\$0.0	\$0.0	(\$2.1)	\$0.2	(\$0.1)	(\$2.4)	(\$2.4)	0	27		
4	Wylie Ridge	Transformer	AP	\$3.4	\$1.3	\$0.0	\$2.1	\$0.2	\$0.2	(\$0.0)	(\$0.0)	\$2.1	354	335		
5	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		
6	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		
7	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	671		
8	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		
9	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	161		
10	Cloverdale - Lexington	Line	AEP	\$0.9	\$0.2	\$0.0	\$0.7	(\$0.0)	\$0.0	(\$0.0)	(\$0.0)	\$0.6	666	239		
11	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		
12	Tiltonville - Windsor	Line	AP	\$0.7	\$0.1	\$0.0	\$0.6	(\$0.0)	\$0.0	(\$0.0)	(\$0.1)	\$0.5	794	198		
13	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		
14	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		
15	Edgemoor - Harmony	Line	DPL	\$0.8	\$0.3	\$0.0	\$0.5	(\$0.1)	(\$0.0)	(\$0.0)	(\$0.1)	\$0.4	28	7		
16	Red Lion At20	Transformer	DPL	\$0.4	\$0.1	\$0.0	\$0.4	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.4	45	6		
17	North Seaford - Pine Street	Line	DPL	\$0.5	\$0.1	\$0.0	\$0.4	\$0.0	\$0.0	\$0.0	\$0.0	\$0.4	111	0		
18	Edgemoor At20	Transformer	DPL	\$0.9	\$0.4	\$0.0	\$0.5	(\$0.4)	\$0.4	(\$0.1)	(\$0.9)	(\$0.4)	36	43		
21	Darley Road - Naamans	Line	DPL	\$0.4	\$0.2	\$0.0	\$0.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	23	0		
27	Longwood - Wye Mills	Line	DPL	\$0.2	\$0.0	\$0.0	\$0.2	(\$0.0)	\$0.0	\$0.0	(\$0.0)	\$0.2	52	3		

**JCPL Control Zone****Table 7-25 JCPL Control Zone top congestion cost impacts (By facility): January through June 2010 (See 2009 SOM, Table 7-25)**

No.	Constraint	Type	Location	Congestion Costs (Millions)											Grand Total	Event Hours	
				Load Payments	Day Ahead			Total	Load Payments	Balancing			Total	Day Ahead		Real Time	
					Generation Credits	Explicit	Generation Credits			Explicit							
1	5004/5005 Interface	Interface	500	\$9.8	\$3.7	\$0.0	\$6.1	\$0.3	(\$0.3)	(\$0.1)	\$0.6	\$6.6	1,050	367			
2	Branchburg - Readington	Line	PSEG	\$2.7	(\$0.4)	\$0.1	\$3.1	(\$0.4)	\$0.0	\$0.1	(\$0.3)	\$2.8	712	158			
3	Athenia - Saddlebrook	Line	PSEG	(\$3.1)	(\$1.0)	(\$0.0)	(\$2.1)	(\$0.2)	\$0.1	\$0.0	(\$0.2)	(\$2.3)	2,591	321			
4	Redoak - Sayreville	Line	JCPL	(\$0.8)	(\$2.3)	\$0.0	\$1.5	\$0.0	\$0.0	\$0.0	\$0.0	\$1.5	443	13			
5	Graceton - Raphael Road	Line	BGE	(\$2.3)	(\$1.2)	(\$0.0)	(\$1.1)	\$0.2	\$0.1	\$0.0	\$0.1	(\$0.9)	197	99			
6	East Frankfort - Crete	Line	ComEd	\$1.5	\$0.6	(\$0.0)	\$0.9	\$0.0	(\$0.0)	\$0.0	\$0.1	\$0.9	1,650	600			
7	Bedington - Black Oak	Interface	500	\$1.0	\$0.5	\$0.0	\$0.5	(\$0.0)	(\$0.0)	\$0.0	(\$0.0)	\$0.5	1,328	43			
8	West	Interface	500	\$0.7	\$0.3	\$0.0	\$0.4	\$0.0	(\$0.1)	(\$0.0)	\$0.1	\$0.5	82	41			
9	Doubs	Transformer	AP	\$0.9	\$0.6	\$0.0	\$0.3	\$0.0	(\$0.1)	(\$0.0)	\$0.2	\$0.5	536	283			
10	Cloverdale - Lexington	Line	AEP	\$0.6	\$0.2	\$0.0	\$0.4	\$0.0	(\$0.0)	(\$0.0)	\$0.1	\$0.5	578	341			
11	Tiltonsville - Windsor	Line	AP	\$0.9	\$0.5	\$0.0	\$0.4	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.5	1,127	270			
12	Atlantic - Larrabee	Line	JCPL	\$0.3	(\$0.1)	\$0.0	\$0.4	\$0.0	(\$0.1)	(\$0.0)	\$0.1	\$0.4	96	12			
13	Sammis - Wylie Ridge	Line	AP	\$0.6	\$0.2	\$0.0	\$0.4	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.4	494	44			
14	Brandon Shores - Riverside	Line	BGE	\$0.5	\$0.3	\$0.0	\$0.3	\$0.1	(\$0.0)	(\$0.0)	\$0.0	\$0.3	73	55			
15	East	Interface	500	\$0.6	\$0.3	\$0.0	\$0.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	75	0			
16	Sayreville - Werner	Line	JCPL	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	(\$0.1)	\$0.0	\$0.3	\$0.3	0	4			
17	Franklin - West Wharton	Line	JCPL	\$0.4	\$0.2	\$0.0	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	37	0			
20	Kilmer - Sayreville	Line	JCPL	\$0.5	\$0.3	\$0.0	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	117	0			
159	Greystone - West Wharton	Line	JCPL	(\$0.0)	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	4	0			

**Table 7-26 JCPL Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2009 SOM, Table 7-26)**

No.	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				
1	West	Interface	500	\$9.7	\$3.9	\$0.0	\$5.7	\$0.0	(\$0.1)	(\$0.0)	\$0.1	\$5.8	391	55	
2	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	
3	Kammer	Transformer	500	\$4.5	\$1.7	\$0.0	\$2.8	(\$0.0)	(\$0.4)	(\$0.0)	\$0.3	\$3.2	1,554	726	
4	Wylie Ridge	Transformer	AP	\$3.9	\$1.4	\$0.0	\$2.5	\$0.1	(\$0.6)	(\$0.0)	\$0.7	\$3.2	354	335	
5	Atlantic - Larrabee	Line	JCPL	\$1.8	\$0.4	\$0.0	\$1.5	(\$0.6)	(\$0.5)	(\$0.0)	(\$0.1)	\$1.3	188	45	
6	Athenia - Saddlebrook	Line	PSEG	(\$1.3)	(\$0.3)	(\$0.0)	(\$1.0)	(\$0.0)	\$0.1	\$0.0	(\$0.1)	(\$1.1)	979	128	
7	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	671	
8	Samms - Wylie Ridge	Line	AP	\$1.4	\$0.5	\$0.0	\$0.9	\$0.0	\$0.0	(\$0.0)	\$0.0	\$0.9	622	101	
9	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	161	
10	Cloverdale - Lexington	Line	AEP	\$0.8	\$0.3	\$0.0	\$0.5	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.6	666	239	
11	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	
12	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	
13	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	
14	Tiltonville - Windsor	Line	AP	\$0.9	\$0.5	\$0.0	\$0.4	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.4	794	198	
15	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	
38	Redoak - Sayreville	Line	JCPL	(\$0.0)	(\$0.1)	\$0.0	\$0.1	(\$0.0)	\$0.0	\$0.0	(\$0.0)	\$0.0	30	5	
46	Deep Run - Englishtown	Line	JCPL	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.0	0	2	
48	Kilmer - Sayreville	Line	JCPL	\$0.4	\$0.2	\$0.0	\$0.2	(\$0.0)	\$0.2	\$0.0	(\$0.2)	\$0.0	0	11	
49	Franklin - West Wharton	Line	JCPL	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	29	0	
61	Atlantic - New Prospect Road	Line	JCPL	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	6	0	

**Met-Ed Control Zone****Table 7-27 Met-Ed Control Zone top congestion cost impacts (By facility): January through June 2010 (See 2009 SOM, Table 7-27)**

No.	Constraint	Type	Location	Congestion Costs (Millions)											Grand Total	Event Hours	
				Load Payments	Day Ahead			Total	Load Payments	Balancing			Total	Day Ahead		Real Time	
					Generation Credits	Explicit	Generation Credits			Explicit							
1	Hunterstown	Transformer	Met-Ed	\$2.1	(\$0.2)	\$0.1	\$2.4	\$0.0	\$0.0	(\$0.0)	(\$0.0)	\$2.4	117	26			
2	5004/5005 Interface	Interface	500	\$6.6	\$5.6	(\$0.0)	\$1.0	(\$0.1)	(\$0.5)	(\$0.0)	\$0.3	\$1.3	1,050	367			
3	AP South	Interface	500	\$3.0	\$2.1	\$0.0	\$0.9	(\$0.0)	(\$0.1)	(\$0.1)	(\$0.1)	\$0.8	2,090	1,010			
4	Graceton - Raphael Road	Line	BGE	(\$1.6)	(\$2.2)	(\$0.0)	\$0.6	\$0.1	\$0.2	\$0.1	(\$0.0)	\$0.6	197	99			
5	Middletown Jct	Transformer	Met-Ed	\$0.6	(\$0.1)	\$0.0	\$0.7	(\$0.1)	\$0.0	\$0.0	(\$0.1)	\$0.6	11	4			
6	Collins - Middletown Jct	Line	Met-Ed	\$0.2	(\$0.2)	\$0.0	\$0.4	\$0.0	\$0.0	(\$0.0)	(\$0.0)	\$0.4	119	20			
7	Branchburg - Readington	Line	PSEG	(\$0.3)	(\$0.6)	(\$0.0)	\$0.2	\$0.0	\$0.0	\$0.1	\$0.1	\$0.3	712	158			
8	Juniata	Transformer	PENELEC	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	(\$0.2)	\$0.0	\$0.3	\$0.3	0	27			
9	West	Interface	500	\$0.5	\$0.3	\$0.0	\$0.2	(\$0.0)	(\$0.1)	(\$0.0)	\$0.1	\$0.3	82	41			
10	Bedington - Black Oak	Interface	500	\$1.9	\$1.8	\$0.1	\$0.2	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.2	1,328	43			
11	Athenia - Saddlebrook	Line	PSEG	(\$0.9)	(\$0.8)	(\$0.0)	(\$0.1)	\$0.0	\$0.1	\$0.0	(\$0.1)	(\$0.2)	2,591	321			
12	Tiltonville - Windsor	Line	AP	\$0.6	\$0.8	\$0.0	(\$0.2)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	(\$0.2)	1,127	270			
13	Doubs - Pleasant View	Line	AP	(\$0.1)	(\$0.1)	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.1	\$0.1	\$0.1	24	20			
14	Fort Martin - Ronco	Line	AP	\$0.1	\$0.2	\$0.0	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.1)	(\$0.1)	(\$0.1)	31	42			
15	Cloverdale - Lexington	Line	AEP	\$0.6	\$0.7	\$0.0	(\$0.1)	\$0.0	\$0.0	(\$0.0)	(\$0.1)	(\$0.1)	578	341			
22	Cly - Collins	Line	Met-Ed	\$0.0	(\$0.0)	\$0.0	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	18	0			
37	Middletown Jct - Yorkhaven	Line	Met-Ed	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	14	0			
39	Yorkana A	Transformer	Met-Ed	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.0	\$0.0	0	5			
46	Germantown - Straban	Line	Met-Ed	\$0.1	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	11	0			
67	Cly - Newberry	Line	Met-Ed	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	1	0			

**Table 7-28 Met-Ed Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2009 SOM, Table 7-28)**

No.	Constraint	Type	Location	Congestion Costs (Millions)											Grand Total	Event Hours	
				Load Payments	Day Ahead			Total	Load Payments	Balancing			Total	Day Ahead		Real Time	
					Generation Credits	Explicit	Generation Credits			Explicit							
1	Brunner Island - Yorkana	Line	Met-Ed	\$0.1	(\$0.3)	\$0.0	\$0.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.5	\$0.5	33	16		
2	Graceton - Raphael Road	Line	BGE	(\$1.0)	(\$1.5)	(\$0.0)	\$0.5	\$0.1	\$0.2	\$0.0	(\$0.1)	\$0.4	\$0.4	174	90		
3	AP South	Interface	500	\$1.6	\$1.3	\$0.0	\$0.4	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.4	\$0.4	1,650	282		
4	5004/5005 Interface	Interface	500	\$3.1	\$3.5	\$0.0	(\$0.4)	(\$0.1)	(\$0.3)	(\$0.0)	\$0.1	(\$0.3)	(\$0.3)	334	198		
5	Kammer	Transformer	500	\$3.4	\$3.9	\$0.0	(\$0.4)	(\$0.0)	(\$0.2)	(\$0.1)	\$0.1	(\$0.3)	(\$0.3)	1,554	726		
6	Wylie Ridge	Transformer	AP	\$3.1	\$2.8	\$0.0	\$0.3	(\$0.1)	(\$0.2)	(\$0.0)	\$0.0	\$0.3	\$0.3	354	335		
7	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)	(\$0.3)	1,713	671		
8	Tiltonville - Windsor	Line	AP	\$0.6	\$0.9	\$0.0	(\$0.3)	\$0.0	(\$0.1)	(\$0.0)	\$0.0	(\$0.2)	(\$0.2)	794	198		
9	East Frankfort - Crete	Line	ComEd	\$0.8	\$0.9	\$0.0	(\$0.2)	\$0.0	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.2)	(\$0.2)	1,333	161		
10	Middletown Jct	Transformer	Met-Ed	\$0.2	(\$0.0)	\$0.0	\$0.3	(\$0.1)	\$0.0	(\$0.0)	(\$0.1)	\$0.2	\$0.2	59	12		
11	West	Interface	500	\$6.9	\$6.8	\$0.0	\$0.1	(\$0.0)	(\$0.1)	(\$0.0)	\$0.0	\$0.2	\$0.2	391	55		
12	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)	(\$0.1)	539	132		
13	Sammis - Wylie Ridge	Line	AP	\$1.0	\$1.2	\$0.0	(\$0.2)	\$0.0	(\$0.0)	(\$0.0)	\$0.0	(\$0.1)	(\$0.1)	622	101		
14	Cloverdale - Lexington	Line	AEP	\$0.7	\$0.8	\$0.0	(\$0.1)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	(\$0.1)	(\$0.1)	666	239		
15	Bedington	Transformer	AP	\$0.1	(\$0.0)	\$0.0	\$0.2	(\$0.0)	\$0.0	(\$0.0)	(\$0.0)	\$0.1	\$0.1	247	103		
24	Collins - Middletown Jct	Line	Met-Ed	\$0.1	(\$0.1)	\$0.0	\$0.1	(\$0.0)	\$0.0	\$0.0	(\$0.1)	\$0.0	\$0.0	86	16		
26	Ironwood - South Lebanon	Line	Met-Ed	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	18	0		
30	Cly - Newberry	Line	Met-Ed	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	13	0		
100	Germantown	Transformer	Met-Ed	(\$0.0)	(\$0.0)	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.0)	10	0		
116	Gardners - Texas East	Line	Met-Ed	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.0	\$0.0	(\$0.0)	(\$0.0)	(\$0.0)	0	1		

**PECO Control Zone****Table 7-29 PECO Control Zone top congestion cost impacts (By facility): January through June 2010 (See 2009 SOM, Table 7-29)**

No.	Constraint	Type	Location	Congestion Costs (Millions)											Grand Total	Event Hours	
				Load Payments	Day Ahead			Total	Load Payments	Balancing			Total	Day Ahead		Real Time	
					Generation Credits	Explicit	Generation Credits			Explicit							
1	Limerick	Transformer	PECO	\$3.1	\$0.7	\$0.0	\$2.4	\$0.1	(\$3.8)	(\$0.0)	\$3.8	\$6.3	53	18			
2	5004/5005 Interface	Interface	500	\$7.5	\$12.7	\$0.0	(\$5.2)	(\$0.0)	\$0.2	(\$0.0)	(\$0.2)	(\$5.5)	1,050	367			
3	AP South	Interface	500	\$1.7	\$5.0	\$0.0	(\$3.3)	(\$0.1)	\$0.1	(\$0.0)	(\$0.2)	(\$3.5)	2,090	1,010			
4	Bedington - Black Oak	Interface	500	\$1.7	\$3.2	\$0.0	(\$1.5)	\$0.0	\$0.0	(\$0.0)	(\$0.0)	(\$1.6)	1,328	43			
5	Graceton - Raphael Road	Line	BGE	(\$1.5)	(\$2.9)	(\$0.0)	\$1.4	\$0.2	\$0.4	\$0.0	(\$0.2)	\$1.2	197	99			
6	Eddystone - Island Road	Line	PECO	\$0.4	(\$0.6)	\$0.0	\$1.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1.0	31	0			
7	Doubs	Transformer	AP	\$1.0	\$2.0	\$0.0	(\$1.0)	(\$0.2)	(\$0.2)	(\$0.0)	(\$0.0)	(\$1.0)	536	283			
8	Plymouth Meeting - Whitpain	Line	PECO	\$1.1	\$0.2	\$0.0	\$0.9	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$0.9	36	1			
9	East Frankfort - Crete	Line	ComEd	\$1.4	\$2.2	(\$0.0)	(\$0.8)	(\$0.0)	(\$0.1)	(\$0.0)	\$0.0	(\$0.8)	1,650	600			
10	East	Interface	500	\$0.9	\$0.3	(\$0.0)	\$0.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.6	75	0			
11	West	Interface	500	\$0.5	\$1.2	\$0.0	(\$0.6)	(\$0.0)	(\$0.1)	\$0.0	\$0.1	(\$0.5)	82	41			
12	Reid - Ringgold	Line	AP	\$0.2	\$0.7	\$0.0	(\$0.5)	(\$0.0)	\$0.0	(\$0.0)	(\$0.0)	(\$0.5)	270	15			
13	Tiltonville - Windsor	Line	AP	\$0.6	\$1.1	\$0.0	(\$0.6)	(\$0.0)	(\$0.1)	(\$0.0)	\$0.1	(\$0.4)	1,127	270			
14	Samms - Wylie Ridge	Line	AP	\$0.6	\$0.9	\$0.0	(\$0.4)	(\$0.0)	(\$0.0)	\$0.0	(\$0.0)	(\$0.4)	494	44			
15	Athenia - Saddlebrook	Line	PSEG	(\$0.6)	(\$1.2)	(\$0.0)	\$0.6	\$0.0	\$0.3	\$0.0	(\$0.3)	\$0.3	2,591	321			
24	Burlington - Croydon	Line	PECO	(\$0.1)	(\$0.3)	(\$0.0)	\$0.2	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.2	737	13			
58	Cromby	Transformer	PECO	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.0	34	22			
71	Peachbottom	Transformer	PECO	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.0	(\$0.0)	(\$0.0)	(\$0.0)	0	3			
78	Whitpain	Transformer	PECO	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	2	0			
91	Cromby - Perkiomen	Line	PECO	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.0	0	1			

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

No.	Constraint	Type	Location	Congestion Costs (Millions)											Grand Total	Day Ahead	Real Time
				Day Ahead				Balancing				Event Hours					
				Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total	Grand Total	Day Ahead	Real Time			
1	Kammer	Transformer	500	\$1.4	\$4.9	\$0.0	(\$3.6)	(\$0.2)	\$0.1	\$0.0	(\$0.2)	(\$3.8)	1,554	726			
2	West	Interface	500	\$3.0	\$6.2	\$0.0	(\$3.1)	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	(\$3.1)	391	55			
3	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			
4	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	671			
5	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			
6	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			
7	Wylie Ridge	Transformer	AP	\$1.3	\$2.3	\$0.0	(\$0.9)	(\$0.1)	\$0.0	(\$0.1)	(\$0.1)	(\$1.1)	354	335			
8	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	161			
9	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			
10	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			
11	Tiltonsville - Windsor	Line	AP	\$0.3	\$1.0	\$0.0	(\$0.7)	(\$0.0)	(\$0.0)	\$0.0	\$0.0	(\$0.7)	794	198			
12	Cloverdale - Lexington	Line	AEP	\$0.3	\$1.0	\$0.0	(\$0.6)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	(\$0.6)	666	239			
13	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			
14	Conastone	Transformer	BGE	(\$0.0)	(\$0.3)	\$0.0	\$0.3	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.3	17	1			
15	Krendale - Seneca	Line	AP	\$0.2	\$0.5	\$0.0	(\$0.3)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.3)	225	0			
16	Holmesburg - Richmond	Line	PECO	(\$0.1)	(\$0.2)	(\$0.0)	\$0.1	(\$0.0)	(\$0.1)	\$0.0	\$0.1	\$0.2	193	6			
19	Eddystone - Scott Paper	Line	PECO	\$0.2	(\$0.0)	\$0.0	\$0.2	(\$0.0)	\$0.0	\$0.0	(\$0.0)	\$0.2	30	2			
24	Burlington - Croydon	Line	PECO	(\$0.1)	(\$0.3)	(\$0.0)	\$0.1	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$0.1	1,531	3			
27	Buckingham - Pleasant Valley	Line	PECO	(\$0.4)	(\$0.4)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.1	\$0.0	(\$0.1)	(\$0.1)	131	59			
34	Limerick	Transformer	PECO	\$0.1	(\$0.0)	\$0.0	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	21	0			

**PENELEC Control Zone****Table 7-31 PENELEC Control Zone top congestion cost impacts (By facility): January through June 2010 (See 2009 SOM, Table 7-31)**

No.	Constraint	Type	Location	Congestion Costs (Millions)											Grand Total	Event Hours	
				Load Payments	Day Ahead			Explicit	Total	Load Payments	Balancing		Explicit	Total		Day Ahead	Real Time
					Generation Credits	Generation Credits	Generation Credits				Generation Credits	Generation Credits					
1	AP South	Interface	500	(\$31.6)	(\$47.7)	(\$0.0)	\$16.1	\$5.9	\$1.6	\$0.0	\$4.4	\$20.5	2,090	1,010			
2	5004/5005 Interface	Interface	500	(\$7.1)	(\$22.7)	(\$0.1)	\$15.5	\$1.4	\$0.6	\$0.1	\$0.9	\$16.4	1,050	367			
3	Bedington - Black Oak	Interface	500	(\$11.7)	(\$17.8)	(\$0.0)	\$6.1	\$0.4	\$0.0	\$0.0	\$0.4	\$6.4	1,328	43			
4	Seward	Transformer	PENELEC	\$10.2	\$6.2	\$0.0	\$4.0	(\$0.1)	\$0.0	(\$0.0)	(\$0.1)	\$3.9	344	43			
5	AEP-DOM	Interface	500	(\$4.4)	(\$6.3)	(\$0.0)	\$1.8	\$0.2	(\$0.1)	\$0.0	\$0.3	\$2.1	471	84			
6	East Frankfort - Crete	Line	ComEd	\$3.3	\$4.2	\$0.0	(\$0.9)	(\$0.6)	\$0.1	(\$0.0)	(\$0.6)	(\$1.5)	1,650	600			
7	Mount Storm - Pruntytown	Line	AP	(\$0.6)	(\$1.0)	(\$0.0)	\$0.4	\$1.7	\$0.6	\$0.0	\$1.0	\$1.4	87	244			
8	Sammis - Wylie Ridge	Line	AP	\$0.5	\$1.8	\$0.0	(\$1.3)	(\$0.1)	(\$0.1)	(\$0.0)	(\$0.0)	(\$1.3)	494	44			
9	Tiltonville - Windsor	Line	AP	\$1.9	\$2.5	\$0.0	(\$0.6)	(\$0.4)	\$0.1	(\$0.0)	(\$0.5)	(\$1.1)	1,127	270			
10	Homer City - Seward	Line	PENELEC	\$3.3	\$2.3	\$0.0	\$1.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1.0	59	0			
11	Pleasant View	Transformer	Dominion	(\$0.0)	(\$0.1)	(\$0.0)	\$0.0	\$0.6	(\$0.3)	\$0.0	\$0.9	\$0.9	31	101			
12	Hunterstown	Transformer	Met-Ed	(\$0.6)	(\$1.5)	(\$0.0)	\$0.9	\$0.0	\$0.0	\$0.0	\$0.0	\$0.9	117	26			
13	Graceton - Raphael Road	Line	BGE	(\$1.5)	(\$2.2)	\$0.0	\$0.7	\$0.2	\$0.1	(\$0.0)	\$0.2	\$0.8	197	99			
14	West	Interface	500	(\$0.3)	(\$1.1)	\$0.0	\$0.8	\$0.2	\$0.2	\$0.0	\$0.0	\$0.8	82	41			
15	Doubs	Transformer	AP	(\$1.7)	(\$2.3)	\$0.0	\$0.6	\$0.2	(\$0.0)	(\$0.0)	\$0.2	\$0.8	536	283			
21	Altoona - Bear Rock	Line	PENELEC	(\$0.5)	(\$0.9)	(\$0.0)	\$0.4	\$0.0	\$0.0	\$0.0	\$0.0	\$0.4	16	0			
24	Homer City	Transformer	PENELEC	\$0.7	\$0.4	(\$0.0)	\$0.3	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$0.3	81	1			
25	Homer City - Johnstown	Line	PENELEC	\$0.9	\$0.6	(\$0.0)	\$0.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	32	0			
28	Juniata	Transformer	PENELEC	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	\$0.5	\$0.0	(\$0.3)	(\$0.3)	0	27			
42	Garrett	Transformer	PENELEC	\$1.0	\$0.8	\$0.0	\$0.2	\$0.0	\$0.1	\$0.0	(\$0.0)	\$0.2	102	3			

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

No.	Constraint	Type	Location	Congestion Costs (Millions)											
				Day Ahead				Balancing				Event Hours			
				Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total	Grand Total	Day Ahead	Real Time	
1	West	Interface	500	(\$2.2)	(\$15.2)	(\$0.0)	\$13.0	\$0.1	\$0.1	\$0.0	(\$0.1)	\$13.0	391	55	
2	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	
3	Wylie Ridge	Transformer	AP	\$1.5	\$10.3	\$0.1	(\$8.8)	(\$0.6)	(\$0.7)	(\$0.0)	\$0.1	(\$8.7)	354	335	
4	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	
5	Kammer	Transformer	500	\$2.8	\$9.0	\$0.2	(\$6.0)	(\$0.2)	(\$0.7)	(\$0.1)	\$0.4	(\$5.6)	1,554	726	
6	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	
7	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	
8	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	671	
9	Seward	Transformer	PENELEC	\$3.2	\$1.8	(\$0.0)	\$1.4	\$0.0	\$0.0	\$0.0	\$0.0	\$1.4	57	0	
10	Tiltonsville - Windsor	Line	AP	\$0.7	\$2.1	\$0.0	(\$1.4)	\$0.1	\$0.0	(\$0.0)	\$0.0	(\$1.4)	794	198	
11	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	
12	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	161	
13	Krendale - Seneca	Line	AP	\$0.5	\$1.4	\$0.0	(\$0.9)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.9)	225	0	
14	Homer City	Transformer	PENELEC	\$0.9	\$0.1	(\$0.0)	\$0.8	(\$0.0)	\$0.0	\$0.0	(\$0.0)	\$0.8	145	2	
15	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	
18	Altoona - Bear Rock	Line	PENELEC	(\$0.6)	(\$1.1)	(\$0.0)	\$0.5	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.5	37	4	
24	Altoona - Raystown	Line	PENELEC	(\$0.8)	(\$1.1)	(\$0.0)	\$0.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	50	0	
25	Keystone - Shelocta	Line	PENELEC	(\$0.5)	(\$0.8)	(\$0.0)	\$0.3	(\$0.0)	\$0.0	\$0.0	(\$0.0)	\$0.3	78	8	
27	Clarks Summit - Eclipse	Line	PENELEC	\$0.1	(\$0.1)	(\$0.0)	\$0.2	(\$0.0)	\$0.0	\$0.0	(\$0.0)	\$0.2	16	2	
29	Blairsville East	Transformer	PENELEC	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.1	\$0.0	(\$0.1)	(\$0.1)	0	25	

**Pepco Control Zone****Table 7-33 Pepco Control Zone top congestion cost impacts (By facility): January through June 2010 (See 2009 SOM, Table 7-33)**

No.	Constraint	Type	Location	Congestion Costs (Millions)											Grand Total	Event Hours	
				Day Ahead				Balancing				Day Ahead	Real Time				
				Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total						
1	AP South	Interface	500	\$69.5	\$51.5	\$1.4	\$19.3	(\$4.2)	(\$3.1)	(\$1.4)	(\$2.5)	\$16.8	2,090	1,010			
2	Bedington - Black Oak	Interface	500	\$28.5	\$19.9	\$0.6	\$9.3	(\$0.5)	(\$0.6)	(\$0.3)	(\$0.1)	\$9.2	1,328	43			
3	Reid - Ringgold	Line	AP	\$4.6	\$2.8	\$0.1	\$2.0	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$2.0	270	15			
4	Doubs	Transformer	AP	\$18.7	\$12.1	\$0.5	\$7.1	(\$3.1)	\$0.6	(\$1.5)	(\$5.2)	\$1.9	536	283			
5	Graceton - Raphael Road	Line	BGE	\$5.3	\$3.6	\$0.2	\$1.9	(\$0.6)	(\$0.4)	(\$0.2)	(\$0.3)	\$1.6	197	99			
6	AEP-DOM	Interface	500	\$8.0	\$6.6	\$0.1	\$1.5	(\$0.1)	(\$0.2)	(\$0.1)	(\$0.0)	\$1.5	471	84			
7	5004/5005 Interface	Interface	500	\$4.7	\$3.2	\$0.2	\$1.7	(\$0.2)	(\$0.1)	(\$0.1)	(\$0.2)	\$1.5	1,050	367			
8	Bowie	Line	Pepco	\$2.3	\$1.1	\$0.1	\$1.3	\$0.0	\$0.0	\$0.0	\$0.0	\$1.3	44	0			
9	East Frankfort - Crete	Line	ComEd	\$3.6	\$2.2	\$0.0	\$1.5	(\$0.3)	(\$0.1)	(\$0.0)	(\$0.2)	\$1.2	1,650	600			
10	Bowie - Lanham	Line	Pepco	\$2.2	\$0.9	\$0.1	\$1.4	(\$0.3)	(\$0.2)	(\$0.1)	(\$0.2)	\$1.1	36	13			
11	Cloverdale - Lexington	Line	AEP	\$4.8	\$3.3	\$0.1	\$1.5	(\$1.0)	(\$0.8)	(\$0.2)	(\$0.4)	\$1.1	578	341			
12	Pleasant View	Transformer	Dominion	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.6	\$0.2	\$0.4	\$0.8	\$0.8	31	101			
13	Danville - East Danville	Line	Dominion	\$3.1	\$2.1	(\$0.1)	\$0.9	(\$0.2)	(\$0.1)	\$0.1	(\$0.1)	\$0.8	879	85			
14	Nipetown - Reid	Line	AP	\$2.1	\$1.4	\$0.1	\$0.8	(\$0.1)	(\$0.1)	(\$0.0)	(\$0.0)	\$0.8	211	49			
15	Tiltonville - Windsor	Line	AP	\$2.2	\$1.3	\$0.0	\$0.9	(\$0.2)	(\$0.1)	(\$0.1)	(\$0.2)	\$0.7	1,127	270			
16	Benning - Ritchie	Line	Pepco	\$0.8	\$0.2	\$0.1	\$0.7	\$0.0	\$0.0	\$0.0	\$0.0	\$0.7	78	0			
19	Buzzard - Ritchie	Line	Pepco	\$0.5	\$0.0	\$0.0	\$0.5	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.5	58	1			
22	Bowie	Transformer	Pepco	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	\$0.4	(\$0.1)	(\$0.3)	(\$0.3)	0	9			
29	Burtonville - Metzert Rd.	Line	Pepco	\$0.3	\$0.1	\$0.0	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	17	0			
89	Pumphrey	Transformer	Pepco	(\$0.1)	(\$0.1)	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	11	0			

**Table 7-34** Pepco Control Z one top congestion cost impacts (By facility): January through June 2009 (See 2009 SOM, Table 7-34)

No.	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				
1	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	
2	Kammer	Transformer	500	\$11.8	\$8.5	\$0.2	\$3.5	(\$0.6)	(\$1.4)	(\$0.2)	\$0.6	\$4.1	1,554	726	
3	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	
4	West	Interface	500	\$8.1	\$6.0	\$0.0	\$2.1	(\$0.0)	(\$0.1)	(\$0.0)	\$0.0	\$2.2	391	55	
5	Wylie Ridge	Transformer	AP	\$6.2	\$4.9	\$0.0	\$1.3	(\$0.3)	(\$0.7)	(\$0.0)	\$0.3	\$1.7	354	335	
6	Cloverdale - Lexington	Line	AEP	\$5.0	\$3.7	\$0.1	\$1.4	(\$0.1)	(\$0.3)	(\$0.1)	\$0.1	\$1.5	666	239	
7	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	671	
8	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	
9	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	
10	East Frankfort - Crete	Line	ComEd	\$2.2	\$1.5	\$0.0	\$0.7	\$0.0	(\$0.1)	(\$0.0)	\$0.1	\$0.7	1,333	161	
11	Mount Storm	Transformer	AP	\$1.7	\$1.3	\$0.0	\$0.5	(\$0.0)	(\$0.3)	(\$0.0)	\$0.2	\$0.7	123	46	
12	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	
13	Buzzard - Ritchie	Line	Pepco	\$0.2	\$0.0	\$0.0	\$0.2	(\$0.2)	\$0.0	(\$0.1)	(\$0.4)	(\$0.2)	27	16	
14	Tiltonsville - Windsor	Line	AP	\$1.4	\$0.9	\$0.1	\$0.5	(\$0.0)	(\$0.1)	(\$0.1)	(\$0.0)	\$0.5	794	198	
15	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	
17	Brighton	Transformer	Pepco	\$0.7	\$0.4	\$0.0	\$0.3	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.3	43	1	
18	Dickerson - Pleasant View	Line	Pepco	\$0.7	\$0.5	\$0.0	\$0.3	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	\$0.3	38	13	
32	Pumphrey - Westport	Line	Pepco	(\$0.3)	(\$0.2)	(\$0.0)	(\$0.1)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	573	0	
66	Brighton - Mt. Zion	Line	Pepco	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	2	0	
188	Burches Hill	Transformer	Pepco	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.0)	(\$0.0)	0	1	

**PPL Control Zone****Table 7-35 PPL Control Zone top congestion cost impacts (By facility): January through June 2010 (See 2009 SOM, Table 7-35)**

No.	Constraint	Type	Location	Congestion Costs (Millions)											Grand Total	Event Hours	
				Day Ahead				Balancing				Day Ahead	Real Time				
				Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total						
1	5004/5005 Interface	Interface	500	\$21.2	\$26.9	\$0.6	(\$5.1)	\$0.6	\$0.4	(\$0.2)	(\$0.1)	(\$5.2)	1,050	367			
2	AP South	Interface	500	\$1.6	\$1.1	\$0.3	\$0.8	\$0.2	(\$0.1)	(\$0.0)	\$0.2	\$1.1	2,090	1,010			
3	Graceton - Raphael Road	Line	BGE	(\$3.4)	(\$4.5)	(\$0.1)	\$1.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$1.0	197	99			
4	Juniata	Transformer	PENELEC	\$0.0	\$0.0	\$0.0	\$0.0	\$0.7	\$0.2	\$0.4	\$0.9	\$0.9	0	27			
5	East Frankfort - Crete	Line	ComEd	\$2.6	\$3.5	\$0.0	(\$0.9)	\$0.2	(\$0.0)	\$0.0	\$0.2	(\$0.7)	1,650	600			
6	Susquehanna	Transformer	PPL	\$1.0	\$0.3	\$0.0	\$0.7	\$0.0	\$0.0	\$0.0	\$0.0	\$0.7	36	0			
7	Harwood - Susquehanna	Line	PPL	\$0.2	(\$0.7)	\$0.0	\$0.9	\$0.3	\$0.5	(\$0.1)	(\$0.3)	\$0.6	25	22			
8	Sammis - Wylie Ridge	Line	AP	\$1.2	\$1.6	\$0.0	(\$0.4)	(\$0.0)	\$0.0	(\$0.0)	(\$0.0)	(\$0.4)	494	44			
9	Bedington - Black Oak	Interface	500	\$1.6	\$1.4	\$0.1	\$0.3	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.4	1,328	43			
10	Tiltonville - Windsor	Line	AP	\$1.4	\$1.8	\$0.0	(\$0.4)	\$0.1	\$0.0	\$0.0	\$0.1	(\$0.3)	1,127	270			
11	West	Interface	500	\$1.3	\$1.5	\$0.0	(\$0.2)	\$0.0	\$0.1	(\$0.0)	(\$0.1)	(\$0.3)	82	41			
12	Martins Creek - Siegfried	Line	PPL	(\$0.0)	(\$0.1)	\$0.0	\$0.0	(\$0.0)	\$0.2	(\$0.1)	(\$0.3)	(\$0.3)	7	17			
13	Cloverdale - Lexington	Line	AEP	\$1.1	\$1.6	\$0.1	(\$0.5)	\$0.2	\$0.0	\$0.0	\$0.2	(\$0.2)	578	341			
14	Pleasant View	Transformer	Dominion	(\$0.0)	(\$0.1)	(\$0.0)	\$0.0	(\$0.1)	\$0.1	\$0.0	(\$0.2)	(\$0.2)	31	101			
15	Limerick	Transformer	PECO	(\$0.2)	(\$0.4)	\$0.0	\$0.2	(\$0.0)	\$0.0	\$0.0	(\$0.0)	\$0.2	53	18			
19	Alburtis - Hosensack	Line	PPL	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.2	(\$0.0)	(\$0.1)	(\$0.1)	0	25			
38	Otter Creek - Safe Harbor	Line	PPL	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.2	\$0.0	(\$0.0)	(\$0.0)	0	5			
50	Harwood	Transformer	PPL	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	13	0			
61	Facerock	Transformer	PPL	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.1)	\$0.0	\$0.0	\$0.0	0	6			
71	East Palmerton - Siegfried	Line	PPL	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	5	0			

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

No.	Constraint	Type	Location	Congestion Costs (Millions)											Event Hours	
				Load Payments	Day Ahead			Grand Total	Balancing				Day Ahead	Real Time		
					Generation Credits	Explicit	Total		Load Payments	Generation Credits	Explicit	Total				
1	Kammer	Transformer	500	\$0.8	\$2.3	\$0.4	(\$1.1)	(\$0.1)	(\$0.2)	(\$0.1)	(\$0.1)	(\$1.1)	1,554	726		
2	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	671		
3	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		
4	West	Interface	500	\$2.8	\$4.1	\$0.5	(\$0.8)	(\$0.0)	(\$0.1)	(\$0.0)	\$0.1	(\$0.7)	391	55		
5	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		
6	Harwood - Susquehanna	Line	PPL	\$0.1	(\$0.4)	\$0.0	\$0.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.5	13	0		
7	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		
8	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		
9	Wylie Ridge	Transformer	AP	\$1.1	\$1.8	\$0.3	(\$0.4)	\$0.2	\$0.1	\$0.0	\$0.1	(\$0.3)	354	335		
10	PL North	Interface	PPL	\$0.0	\$0.0	\$0.0	\$0.0	\$0.4	\$0.6	(\$0.0)	(\$0.3)	(\$0.3)	0	176		
11	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		
12	Atlantic - Larrabee	Line	JCPL	\$0.0	\$0.1	\$0.0	(\$0.1)	(\$0.1)	\$0.1	\$0.0	(\$0.2)	(\$0.3)	188	45		
13	East Frankfort - Crete	Line	ComEd	\$0.2	\$0.5	\$0.0	(\$0.3)	(\$0.0)	(\$0.0)	\$0.0	\$0.0	(\$0.2)	1,333	161		
14	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		
15	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		
28	Dauphin - Juniata	Line	PPL	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	6	0		
132	Berwick - Koonsville	Line	PPL	(\$0.0)	(\$0.0)	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	57	0		
180	Frackville - Siegfried	Line	PPL	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	0	4		
318	Peach Tap	Transformer	PPL	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	2	0		

**PSEG Control Zone****Table 7-37 PSEG Control Zone top congestion cost impacts (By facility): January through June 2010 (See 2009 SOM, Table 7-37)**

No.	Constraint	Type	Location	Congestion Costs (Millions)										Grand Total	Event Hours	
				Load Payments	Day Ahead			Load Payments	Balancing			Day Ahead	Real Time			
					Generation Credits	Explicit	Total		Generation Credits	Explicit	Total					
1	Branchburg - Readington	Line	PSEG	\$5.1	\$0.8	\$0.4	\$4.7	(\$0.1)	\$0.6	(\$0.5)	(\$1.2)	\$3.5	712	158		
2	Hawthorn - Waldwick	Line	PSEG	\$0.1	(\$0.0)	(\$0.0)	\$0.0	(\$0.7)	\$1.1	(\$1.7)	(\$3.4)	(\$3.4)	454	38		
3	Athenia - Saddlebrook	Line	PSEG	\$12.2	\$2.4	\$7.2	\$17.1	(\$6.9)	\$2.6	(\$4.9)	(\$14.3)	\$2.7	2,591	321		
4	AP South	Interface	500	\$0.4	\$3.5	\$1.7	(\$1.5)	\$0.2	(\$0.3)	(\$1.2)	(\$0.8)	(\$2.3)	2,090	1,010		
5	Hawthorn - Hinchmans Ave	Line	PSEG	(\$0.0)	(\$0.0)	(\$0.2)	(\$0.2)	(\$0.1)	\$0.4	(\$0.9)	(\$1.4)	(\$1.6)	209	35		
6	Bedington - Black Oak	Interface	500	\$1.2	\$2.6	\$0.7	(\$0.7)	(\$0.0)	(\$0.0)	(\$0.1)	(\$0.1)	(\$0.8)	1,328	43		
7	Graceton - Raphael Road	Line	BGE	(\$3.2)	(\$3.4)	(\$0.2)	(\$0.0)	\$0.3	(\$0.2)	\$0.3	\$0.8	\$0.8	197	99		
8	Doubs	Transformer	AP	\$1.3	\$1.1	\$0.2	\$0.4	(\$0.3)	\$0.3	(\$0.5)	(\$1.1)	(\$0.7)	536	283		
9	5004/5005 Interface	Interface	500	\$13.5	\$13.9	\$1.4	\$1.0	(\$0.0)	\$0.9	(\$0.7)	(\$1.7)	(\$0.7)	1,050	367		
10	Pleasant View	Transformer	Dominion	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.3	(\$0.1)	\$0.2	\$0.7	\$0.7	31	101		
11	Bayway - Federal Square	Line	PSEG	\$0.4	(\$0.2)	\$0.0	\$0.6	\$0.0	\$0.0	(\$0.0)	(\$0.0)	\$0.6	344	1		
12	Redoak - Sayreville	Line	JCPL	\$0.4	(\$0.1)	\$0.0	\$0.6	(\$0.0)	\$0.0	(\$0.0)	(\$0.0)	\$0.6	443	13		
13	Bayonne - PVSC	Line	PSEG	\$0.0	(\$0.5)	\$0.1	\$0.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.6	578	0		
14	Cloverdale - Lexington	Line	AEP	\$0.9	\$1.2	\$0.1	(\$0.2)	\$0.1	\$0.2	(\$0.2)	(\$0.4)	(\$0.5)	578	341		
15	Hudson - Marion	Line	PSEG	\$0.3	\$0.1	\$0.2	\$0.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.5	170	0		
16	Leonia - New Milford	Line	PSEG	\$0.2	\$0.1	\$0.4	\$0.5	(\$0.0)	\$0.0	\$0.0	(\$0.0)	\$0.5	568	1		
20	North Ave - Pvsc	Line	PSEG	\$0.1	(\$0.3)	\$0.0	\$0.4	\$0.0	\$0.0	\$0.0	\$0.0	\$0.4	285	0		
22	Fairlawn - Saddlebrook	Line	PSEG	\$0.4	\$0.3	\$0.7	\$0.8	(\$0.0)	\$0.1	(\$0.4)	(\$0.5)	\$0.3	470	17		
24	Cedar Grove - Clifton	Line	PSEG	\$0.2	\$0.0	\$0.1	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	63	0		
29	Linden - North Ave	Line	PSEG	\$0.1	(\$0.1)	\$0.0	\$0.2	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	\$0.2	134	1		

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

No.	Constraint	Type	Location	Congestion Costs (Millions)											Grand Total	Event Hours	
				Load Payments	Day Ahead			Total	Load Payments	Balancing			Total	Day Ahead		Real Time	
					Generation Credits	Explicit	Generation Credits			Explicit							
1	Plainsboro - Trenton	Line	PSEG	\$3.5	(\$0.1)	\$0.1	\$3.8	(\$0.3)	\$0.4	(\$0.1)	(\$0.7)	\$3.1	389	164			
2	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			
3	Athenia - Saddlebrook	Line	PSEG	\$3.2	\$0.5	\$1.3	\$3.9	(\$0.3)	\$0.1	(\$0.5)	(\$0.9)	\$3.0	979	128			
4	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			
5	Fairlawn - Saddlebrook	Line	PSEG	\$1.0	\$0.1	\$0.5	\$1.4	\$0.0	\$0.0	\$0.0	\$0.0	\$1.4	673	0			
6	Wylie Ridge	Transformer	AP	\$4.3	\$5.4	\$0.5	(\$0.6)	\$0.0	\$0.1	(\$0.6)	(\$0.7)	(\$1.3)	354	335			
7	West	Interface	500	\$10.9	\$12.7	\$0.8	(\$1.0)	(\$0.0)	\$0.0	(\$0.1)	(\$0.2)	(\$1.2)	391	55			
8	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			
9	Hillsdale - Waldwick	Line	PSEG	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.3	(\$0.4)	(\$0.7)	(\$0.7)	0	42			
10	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			
11	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			
12	Atlantic - Larrabee	Line	JCPL	\$0.3	(\$0.5)	\$0.0	\$0.8	\$0.0	\$0.1	(\$0.1)	(\$0.2)	\$0.6	188	45			
13	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			
14	Brunswick - Edison	Line	PSEG	\$1.0	(\$0.0)	\$0.0	\$1.1	(\$0.1)	\$0.2	(\$0.2)	(\$0.5)	\$0.6	138	76			
15	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			
16	Branchburg - Flagtown	Line	PSEG	\$0.6	(\$0.0)	\$0.1	\$0.7	(\$0.0)	\$0.1	(\$0.1)	(\$0.2)	\$0.4	161	16			
18	Bayonne - PVSC	Line	PSEG	\$0.0	(\$0.3)	\$0.0	\$0.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	371	0			
20	Athenia - Fairlawn	Line	PSEG	\$0.3	\$0.0	\$0.0	\$0.3	\$0.0	\$0.0	(\$0.0)	(\$0.0)	\$0.3	106	6			
23	Branchburg - Readington	Line	PSEG	\$0.2	(\$0.0)	\$0.0	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	21	0			
24	Sewaren	Transformer	PSEG	\$0.2	(\$0.0)	\$0.0	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	50	0			

**RECO Control Zone****Table 7-39 RECO Control Zone top congestion cost impacts (By facility): January through June 2010 (See 2009 SOM, Table 7-39)**

No.	Constraint	Type	Location	Congestion Costs (Millions)										Grand Total	Event Hours	
				Day Ahead				Balancing				Day Ahead	Real Time			
				Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total					
1	5004/5005 Interface	Interface	500	\$0.5	\$0.1	\$0.0	\$0.4	\$0.0	(\$0.0)	\$0.0	\$0.1	\$0.5	1,050	367		
2	Branchburg - Readington	Line	PSEG	\$0.3	\$0.0	\$0.0	\$0.3	\$0.1	(\$0.0)	(\$0.0)	\$0.1	\$0.4	712	158		
3	Athenia - Saddlebrook	Line	PSEG	\$0.2	\$0.0	(\$0.0)	\$0.1	\$0.0	(\$0.1)	\$0.0	\$0.1	\$0.2	2,591	321		
4	AP South	Interface	500	(\$0.1)	(\$0.0)	\$0.0	(\$0.1)	(\$0.0)	\$0.0	(\$0.0)	(\$0.0)	(\$0.2)	2,090	1,010		
5	Graceton - Raphael Road	Line	BGE	(\$0.1)	(\$0.0)	(\$0.0)	(\$0.1)	(\$0.0)	\$0.0	\$0.0	(\$0.0)	(\$0.1)	197	99		
6	Hawthorn - Hinchmans Ave	Line	PSEG	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.1	\$0.0	(\$0.1)	(\$0.1)	209	35		
7	Hawthorn - Waldwick	Line	PSEG	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.1	\$0.0	(\$0.1)	(\$0.1)	454	38		
8	East Frankfort - Crete	Line	ComEd	\$0.1	\$0.0	(\$0.0)	\$0.1	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.1	1,650	600		
9	Doubs	Transformer	AP	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.1	536	283		
10	Tiltonsville - Windsor	Line	AP	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.1	1,127	270		
11	West	Interface	500	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.1	82	41		
12	Brandon Shores - Riverside	Line	BGE	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.0	73	55		
13	Fairlawn - Saddlebrook	Line	PSEG	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	\$0.0	(\$0.0)	(\$0.0)	470	17		
14	Cloverdale - Lexington	Line	AEP	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.0	578	341		
15	Palisades - Vergennes	Flowgate	Midwest ISO	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$0.0	235	91		

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

No.	Constraint	Type	Location	Congestion Costs (Millions)											
				Load Payments	Day Ahead			Total	Load Payments	Balancing			Grand Total	Event Hours	
					Generation Credits	Explicit	Generation Credits			Explicit	Total	Day Ahead		Real Time	
1	West	Interface	500	\$0.5	\$0.0	\$0.0	\$0.5	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.5	391	55	
2	Kammer	Transformer	500	\$0.2	\$0.0	\$0.0	\$0.2	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.2	1,554	726	
3	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	
4	Wylie Ridge	Transformer	AP	\$0.2	\$0.0	\$0.0	\$0.2	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.2	354	335	
5	Athenia - Saddlebrook	Line	PSEG	\$0.1	\$0.0	\$0.0	\$0.1	(\$0.0)	(\$0.0)	\$0.0	(\$0.0)	\$0.1	979	128	
6	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	671	
7	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	
8	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	161	
9	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	
10	Samms - Wylie Ridge	Line	AP	\$0.1	\$0.0	\$0.0	\$0.1	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.1	622	101	
11	Fairlawn - Saddlebrook	Line	PSEG	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.1)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	673	0	
12	Tiltonville - Windsor	Line	AP	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	794	198	
13	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	
14	Krendale - Seneca	Line	AP	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	225	0	
15	Cloverdale - Lexington	Line	AEP	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	666	239	

**Western Region Congestion-Event Summaries****AEP Control Zone****Table 7-41 AEP Control Zone top congestion cost impacts (By facility): January through June 2010 (See 2009 SOM, Table 7-41)**

No.	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					
1	AP South	Interface	500	(\$20.3)	(\$53.0)	\$0.4	\$33.1	(\$3.4)	\$1.6	\$0.6	(\$4.4)	\$28.7	2,090	1,010		
2	AEP-DOM	Interface	500	\$7.5	(\$20.1)	\$1.0	\$28.6	(\$0.2)	(\$0.3)	(\$0.3)	(\$0.1)	\$28.4	471	84		
3	Bedington - Black Oak	Interface	500	(\$8.8)	(\$18.7)	\$0.1	\$10.0	(\$0.1)	(\$0.0)	\$0.0	(\$0.0)	\$10.0	1,328	43		
4	Baker - Broadford	Line	AEP	\$0.1	(\$0.2)	\$0.0	\$0.3	(\$1.5)	\$1.0	(\$3.5)	(\$5.9)	(\$5.6)	10	74		
5	5004/5005 Interface	Interface	500	(\$10.3)	(\$15.7)	(\$0.2)	\$5.2	(\$0.8)	\$1.2	\$0.3	(\$1.7)	\$3.5	1,050	367		
6	Kanawha River	Transformer	AEP	\$2.1	(\$0.2)	\$0.4	\$2.7	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$2.7	162	11		
7	Kanawha - Kincaid	Line	AEP	\$1.4	(\$0.7)	\$0.2	\$2.3	\$0.0	\$0.0	\$0.0	\$0.0	\$2.3	220	0		
8	Culloden - Wyoming	Line	AEP	\$0.6	(\$0.8)	\$0.5	\$1.9	\$0.0	\$0.0	\$0.0	\$0.0	\$1.9	46	0		
9	Sullivan	Transformer	AEP	(\$0.0)	(\$1.4)	(\$0.0)	\$1.3	\$0.0	\$0.0	\$0.0	(\$0.0)	\$1.3	185	47		
10	Belmont	Transformer	AP	\$0.9	(\$0.1)	\$0.1	\$1.0	\$0.2	(\$0.0)	(\$0.0)	\$0.3	\$1.3	344	9		
11	Mahans Lane - Tidd	Line	AEP	(\$0.4)	(\$1.6)	(\$0.1)	\$1.2	\$0.1	\$0.0	\$0.0	\$0.1	\$1.3	268	120		
12	Cloverdale - Lexington	Line	AEP	(\$4.9)	(\$4.7)	(\$0.3)	(\$0.5)	(\$0.4)	\$0.7	\$0.4	(\$0.7)	(\$1.2)	578	341		
13	East Frankfort - Crete	Line	ComEd	\$4.7	\$4.1	\$1.3	\$1.8	\$0.2	(\$0.1)	(\$1.0)	(\$0.7)	\$1.1	1,650	600		
14	Pleasant Prairie - Zion	Flowgate	Midwest ISO	\$0.0	\$0.0	\$0.7	\$0.7	\$0.0	(\$0.0)	(\$1.8)	(\$1.8)	(\$1.0)	945	80		
15	Danville - East Danville	Line	Dominion	(\$5.5)	(\$5.5)	(\$1.0)	(\$1.1)	\$0.2	\$0.3	\$0.3	\$0.1	(\$1.0)	879	85		
17	Kammer - Natrium	Line	AEP	\$0.3	(\$0.4)	\$0.0	\$0.7	\$0.0	(\$0.0)	(\$0.0)	\$0.1	\$0.8	178	19		
22	Conesville Prep - Conesville	Line	AEP	(\$0.0)	(\$0.4)	\$0.0	\$0.4	\$0.0	\$0.0	\$0.0	\$0.0	\$0.4	118	0		
26	Breed - Wheatland	Line	AEP	\$0.0	(\$0.3)	(\$0.0)	\$0.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	26	0		
27	Kanawha River - Kincaid	Line	AEP	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.4)	(\$0.1)	(\$0.0)	(\$0.3)	(\$0.3)	0	48		
29	Ruth - Turner	Line	AEP	\$0.1	(\$0.2)	\$0.0	\$0.3	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$0.3	22	11		

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

No.	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					
1	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		
2	Ruth - Turner	Line	AEP	\$4.6	(\$1.6)	\$0.5	\$6.7	(\$1.2)	(\$0.4)	(\$0.1)	(\$0.9)	\$5.8	639	270		
3	Kammer	Transformer	500	(\$11.6)	(\$18.5)	(\$0.3)	\$6.7	(\$0.5)	\$1.4	\$0.6	(\$1.4)	\$5.3	1,554	726		
4	Kanawha - Kincaid	Line	AEP	\$2.8	(\$2.1)	\$0.2	\$5.1	\$0.0	\$0.0	\$0.0	\$0.0	\$5.1	291	0		
5	Kammer - Ormet	Line	AEP	\$7.8	\$1.1	\$0.3	\$6.9	(\$1.6)	\$0.5	(\$0.1)	(\$2.2)	\$4.7	552	509		
6	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	671		
7	Kanawha River	Transformer	AEP	\$3.2	(\$0.3)	\$0.5	\$4.0	\$0.1	(\$0.3)	(\$0.1)	\$0.4	\$4.3	159	37		
8	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		
9	Breed - Wheatland	Line	AEP	\$0.1	(\$3.1)	(\$0.3)	\$2.9	\$0.0	\$0.0	\$0.0	\$0.0	\$2.9	408	0		
10	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		
11	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		
12	East Frankfort - Crete	Line	ComEd	\$3.2	\$1.9	\$1.3	\$2.7	(\$0.0)	\$0.1	(\$0.7)	(\$0.8)	\$1.9	1,333	161		
13	Cloverdale - Lexington	Line	AEP	(\$5.9)	(\$4.1)	(\$0.4)	(\$2.1)	\$0.4	\$0.2	\$0.1	\$0.3	(\$1.8)	666	239		
14	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		
15	AEP-DOM	Interface	500	\$0.4	(\$1.2)	\$0.1	\$1.7	(\$0.2)	\$0.4	(\$0.0)	(\$0.6)	\$1.1	101	57		
23	Axton	Transformer	AEP	\$0.1	(\$0.4)	\$0.1	\$0.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.6	40	0		
25	Kanawha River - Kincaid	Line	AEP	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	(\$0.1)	\$0.1	\$0.5	\$0.5	0	99		
28	Kammer	Transformer	AEP	\$0.3	(\$0.1)	\$0.0	\$0.4	\$0.0	\$0.1	(\$0.0)	(\$0.1)	\$0.3	59	13		
29	Marquis - Waverly	Line	AEP	\$0.4	\$0.0	\$0.1	\$0.4	(\$0.0)	\$0.0	(\$0.0)	(\$0.1)	\$0.3	41	9		
31	Poston - Postel Tap	Line	AEP	\$0.2	(\$0.3)	\$0.1	\$0.5	\$0.2	\$0.3	(\$0.1)	(\$0.2)	\$0.3	52	54		

**AP Control Zone****Table 7-43 AP Control Zone top congestion cost impacts (By facility): January through June 2010 (See 2009 SOM, Table 7-43)**

No.	Constraint	Type	Location	Congestion Costs (Millions)											Grand Total	Event Hours	
				Load Payments	Day Ahead			Explicit	Total	Load Payments	Balancing			Total		Day Ahead	Real Time
					Generation Credits	Generation Credits	Explicit				Generation Credits	Explicit	Explicit				
1	AP South	Interface	500	(\$20.3)	(\$77.3)	(\$5.6)	\$51.4	\$3.0	\$3.3	\$6.0	\$5.7	\$57.2	2,090	1,010			
2	Bedington - Black Oak	Interface	500	(\$7.4)	(\$26.6)	(\$1.0)	\$18.3	\$0.3	\$0.4	\$0.1	(\$0.1)	\$18.2	1,328	43			
3	Doubs	Transformer	AP	\$4.1	(\$5.8)	(\$0.3)	\$9.6	\$1.6	\$1.1	\$0.4	\$0.9	\$10.5	536	283			
4	AEP-DOM	Interface	500	(\$2.1)	(\$7.8)	\$0.4	\$6.0	\$0.3	(\$0.2)	(\$0.1)	\$0.4	\$6.4	471	84			
5	5004/5005 Interface	Interface	500	(\$10.0)	(\$14.9)	(\$0.7)	\$4.3	\$0.6	\$1.1	\$0.5	\$0.0	\$4.3	1,050	367			
6	Tiltonsville - Windsor	Line	AP	\$5.8	\$1.4	\$0.5	\$4.9	(\$0.9)	(\$0.2)	(\$0.7)	(\$1.4)	\$3.5	1,127	270			
7	Mount Storm - Pruntytown	Line	AP	(\$0.3)	(\$1.6)	(\$0.0)	\$1.3	\$1.1	(\$0.4)	\$0.5	\$2.0	\$3.2	87	244			
8	Belmont	Transformer	AP	\$2.1	(\$0.5)	\$0.1	\$2.8	\$0.0	\$0.0	\$0.0	\$0.0	\$2.8	344	9			
9	Fort Martin - Ronco	Line	AP	\$0.2	\$0.2	\$0.1	\$0.2	(\$0.2)	\$0.9	(\$1.4)	(\$2.5)	(\$2.3)	31	42			
10	Nipetown - Reid	Line	AP	(\$0.1)	(\$1.7)	\$0.0	\$1.6	\$0.1	\$0.2	(\$0.0)	(\$0.1)	\$1.6	211	49			
11	Halfway - Marlowe	Line	AP	\$0.6	(\$0.7)	(\$0.0)	\$1.3	\$0.1	(\$0.1)	\$0.0	\$0.2	\$1.5	60	18			
12	Endless Caverns	Transformer	Dominion	\$1.3	\$0.0	\$0.2	\$1.6	\$0.0	\$0.0	(\$0.0)	(\$0.0)	\$1.5	283	3			
13	Middlebourne - Willow	Line	AP	\$1.3	(\$0.2)	\$0.2	\$1.7	(\$0.2)	(\$0.0)	(\$0.2)	(\$0.4)	\$1.4	220	73			
14	Yukon	Transformer	AP	\$1.2	\$0.1	\$0.1	\$1.2	\$0.0	\$0.1	\$0.1	(\$0.0)	\$1.2	80	13			
15	Albright - Snowy Creek	Line	AP	\$0.9	(\$0.3)	\$0.0	\$1.2	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$1.2	249	2			
17	Bedington - Shepherdstown	Line	AP	\$0.2	(\$0.4)	\$0.2	\$0.8	\$0.0	\$0.0	\$0.0	\$0.0	\$0.9	217	10			
19	Smith - Wylie Ridge	Line	AP	\$0.8	\$0.1	\$0.1	\$0.8	\$0.0	\$0.0	(\$0.0)	(\$0.0)	\$0.8	103	2			
20	Hamilton - Weirton	Line	AP	\$1.4	\$0.5	\$0.1	\$1.1	(\$0.1)	\$0.1	(\$0.1)	(\$0.3)	\$0.8	176	17			
21	Messic Road - Morgan	Line	AP	(\$0.8)	(\$1.6)	\$0.0	\$0.8	\$0.0	\$0.0	\$0.0	\$0.0	\$0.8	338	0			
23	Kingwood - Pruntytown	Line	AP	\$0.7	(\$0.0)	\$0.1	\$0.8	\$0.0	\$0.0	(\$0.0)	(\$0.0)	\$0.8	147	9			

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

No.	Constraint	Type	Location	Congestion Costs (Millions)											Grand Total	Event Hours	
				Load Payments	Day Ahead			Total	Load Payments	Balancing			Total	Day Ahead		Real Time	
					Generation Credits	Explicit	Generation Credits			Explicit	Generation Credits	Explicit					
1	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			
2	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			
3	Kammer	Transformer	500	\$10.4	\$15.3	\$4.8	(\$0.2)	(\$1.3)	(\$1.7)	(\$5.4)	(\$5.0)	(\$5.2)	1,554	726			
4	Wylie Ridge	Transformer	AP	\$6.1	\$7.4	\$5.4	\$4.1	(\$1.1)	(\$0.5)	(\$7.2)	(\$7.7)	(\$3.6)	354	335			
5	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			
6	Tiltonville - Windsor	Line	AP	\$5.1	\$1.7	\$0.3	\$3.8	(\$0.5)	(\$0.2)	(\$0.8)	(\$1.0)	\$2.8	794	198			
7	Bedington - Harmony	Line	AP	\$1.8	(\$0.1)	\$0.4	\$2.3	\$0.0	\$0.0	\$0.0	\$0.0	\$2.3	199	0			
8	Cloverdale - Lexington	Line	AEP	\$1.1	(\$1.3)	\$0.8	\$3.2	(\$0.1)	\$0.0	(\$0.8)	(\$1.0)	\$2.2	666	239			
9	Carroll - Catoctin	Line	AP	\$0.4	\$0.0	(\$0.0)	\$0.3	\$0.7	(\$0.8)	\$0.2	\$1.6	\$2.0	99	22			
10	Yukon	Transformer	AP	\$2.1	\$0.4	\$0.0	\$1.7	\$0.0	\$0.2	\$0.1	(\$0.1)	\$1.6	123	36			
11	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			
12	Doubs	Transformer	AP	\$1.5	(\$0.0)	\$0.0	\$1.5	\$0.0	\$0.0	(\$0.1)	(\$0.1)	\$1.4	36	13			
13	Bedington	Transformer	AP	\$4.2	(\$0.3)	\$0.1	\$4.5	(\$3.8)	(\$0.2)	(\$2.3)	(\$5.8)	(\$1.3)	247	103			
14	West	Interface	500	(\$12.5)	(\$15.3)	(\$2.0)	\$0.8	\$0.2	\$0.1	\$0.2	\$0.3	\$1.1	391	55			
15	Sammis - Wylie Ridge	Line	AP	\$3.0	\$2.3	\$1.5	\$2.2	(\$0.2)	(\$0.2)	(\$1.0)	(\$1.1)	\$1.1	622	101			
16	Kingwood - Pruntytown	Line	AP	\$1.0	(\$0.1)	(\$0.0)	\$1.1	(\$0.0)	\$0.0	\$0.0	\$0.0	\$1.1	140	1			
17	Mount Storm	Transformer	AP	(\$0.4)	(\$1.8)	(\$0.2)	\$1.1	\$0.1	\$0.3	\$0.1	(\$0.1)	\$1.0	123	46			
19	Krendale - Seneca	Line	AP	\$0.8	\$0.0	\$0.2	\$0.9	\$0.0	\$0.0	\$0.0	\$0.0	\$0.9	225	0			
23	Hamilton - Weirton	Line	AP	\$0.6	\$0.1	\$0.1	\$0.6	(\$0.0)	(\$0.1)	(\$0.2)	(\$0.0)	\$0.5	138	15			
25	Belmont	Transformer	AP	\$0.3	(\$0.1)	\$0.0	\$0.5	(\$0.0)	(\$0.1)	(\$0.1)	(\$0.0)	\$0.5	79	17			

**ComEd Control Zone****Table 7-45 ComEd Control Zone top congestion cost impacts (By facility): January through June 2010 (See 2009 SOM, Table 7-45)**

No.	Constraint	Type	Location	Congestion Costs (Millions)											Grand Total	Event Hours	
				Load Payments	Day Ahead			Explicit	Total	Load Payments	Balancing			Total		Day Ahead	Real Time
					Generation Credits	Generation Credits	Explicit				Generation Credits	Explicit	Explicit				
1	AP South	Interface	500	(\$45.5)	(\$64.6)	(\$0.3)	\$18.9	(\$1.2)	\$0.5	(\$0.1)	(\$1.7)	\$17.1	2,090	1,010			
2	East Frankfort - Crete	Line	ComEd	(\$23.6)	(\$45.0)	(\$2.0)	\$19.4	(\$2.1)	\$0.7	\$0.1	(\$2.6)	\$16.8	1,650	600			
3	Pleasant Valley - Belvidere	Line	ComEd	(\$2.7)	(\$12.9)	\$0.8	\$11.0	(\$0.1)	\$2.0	(\$1.1)	(\$3.1)	\$7.9	1,277	220			
4	5004/5005 Interface	Interface	500	(\$13.6)	(\$21.0)	(\$0.0)	\$7.4	(\$0.5)	(\$0.2)	(\$0.0)	(\$0.3)	\$7.1	1,050	367			
5	Bedington - Black Oak	Interface	500	(\$18.7)	(\$25.3)	(\$0.0)	\$6.5	(\$0.2)	\$0.1	(\$0.0)	(\$0.3)	\$6.2	1,328	43			
6	AEP-DOM	Interface	500	(\$10.4)	(\$16.4)	(\$0.4)	\$5.6	(\$0.1)	(\$0.1)	\$0.0	\$0.1	\$5.7	471	84			
7	Electric Jct - Nelson	Line	ComEd	\$0.4	(\$5.1)	\$1.3	\$6.8	\$0.2	\$0.5	(\$1.6)	(\$1.9)	\$5.0	393	75			
8	Rising	Flowgate	Midwest ISO	(\$2.4)	(\$7.1)	(\$0.0)	\$4.7	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$4.7	776	36			
9	Waterman - West Dekalb	Line	ComEd	(\$0.9)	(\$4.7)	\$0.4	\$4.1	\$0.4	\$0.3	(\$0.1)	(\$0.1)	\$4.1	1,496	223			
10	Crete - St Johns Tap	Flowgate	Midwest ISO	(\$5.5)	(\$9.0)	(\$0.1)	\$3.4	(\$0.1)	(\$0.1)	(\$0.2)	(\$0.3)	\$3.2	330	82			
11	Cloverdale - Lexington	Line	AEP	(\$4.8)	(\$7.7)	(\$0.1)	\$2.8	(\$0.6)	\$0.3	\$0.2	(\$0.7)	\$2.1	578	341			
12	Tiltonville - Windsor	Line	AP	(\$3.7)	(\$5.5)	(\$0.0)	\$1.7	\$0.0	\$0.1	\$0.0	(\$0.0)	\$1.7	1,127	270			
13	Doubs	Transformer	AP	(\$6.8)	(\$8.9)	(\$0.0)	\$2.1	(\$0.3)	\$0.4	\$0.0	(\$0.6)	\$1.5	536	283			
14	Dunes Acres - Michigan City	Flowgate	Midwest ISO	(\$2.4)	(\$3.6)	(\$0.1)	\$1.1	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$1.1	142	3			
15	Samms - Wylie Ridge	Line	AP	(\$1.7)	(\$2.8)	\$0.0	\$1.2	(\$0.0)	\$0.0	\$0.0	(\$0.1)	\$1.1	494	44			
17	Glidden - West Dekalb	Line	ComEd	\$0.0	(\$0.9)	\$0.1	\$1.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1.0	185	0			
20	Cherry Valley	Transformer	ComEd	\$0.3	(\$0.4)	\$0.1	\$0.7	(\$0.0)	\$0.0	(\$0.0)	(\$0.0)	\$0.7	25	3			
21	Burnham - Munster	Line	ComEd	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.6	(\$0.0)	(\$0.7)	(\$0.7)	0	82			
23	Davis	Transformer	ComEd	\$0.1	(\$0.4)	\$0.0	\$0.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.5	55	0			
26	Belvidere - Woodstock	Line	ComEd	\$0.2	(\$0.2)	\$0.0	\$0.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.5	49	0			

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

No.	Constraint	Type	Location	Congestion Costs (Millions)											Day Ahead	Real Time
				Day Ahead				Balancing				Grand Total				
				Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total					
1	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	210		
2	East Frankfort - Crete	Line	ComEd	(\$13.5)	(\$27.4)	(\$0.1)	\$13.9	(\$0.5)	(\$0.5)	(\$0.1)	(\$0.1)	\$13.8	1,333	161		
3	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	671		
4	Kammer	Transformer	500	(\$15.0)	(\$25.2)	(\$0.0)	\$10.2	(\$0.4)	(\$0.6)	(\$0.1)	\$0.2	\$10.4	1,554	726		
5	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		
6	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		
7	Sliver 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		
8	Wylie Ridge	Transformer	AP	(\$7.9)	(\$10.9)	(\$0.0)	\$3.0	(\$0.8)	(\$1.5)	\$0.0	\$0.8	\$3.8	354	335		
9	Glidden - West Dekalb	Line	ComEd	(\$0.2)	(\$3.8)	\$0.0	\$3.7	\$0.0	\$0.0	\$0.0	\$0.0	\$3.7	668	0		
10	West	Interface	500	(\$11.4)	(\$14.9)	(\$0.0)	\$3.5	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	\$3.5	391	55		
11	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		
12	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		
13	Cloverdale - Lexington	Line	AEP	(\$4.2)	(\$7.3)	(\$0.0)	\$3.1	(\$0.5)	(\$0.3)	(\$0.0)	(\$0.3)	\$2.8	666	239		
14	Electric Jct - Nelson	Line	ComEd	\$0.0	(\$2.2)	\$0.1	\$2.3	\$1.6	\$1.0	(\$0.1)	\$0.4	\$2.8	279	118		
15	Sammis - Wylie Ridge	Line	AP	(\$3.1)	(\$5.5)	(\$0.0)	\$2.4	(\$0.2)	(\$0.1)	(\$0.0)	(\$0.1)	\$2.3	622	101		
16	Cherry Valley	Transformer	ComEd	\$0.2	(\$2.0)	\$0.0	\$2.2	\$0.0	\$0.0	\$0.0	(\$0.0)	\$2.2	14	2		
20	Quad Cities - Cordova	Line	ComEd	\$0.2	(\$1.0)	\$0.0	\$1.3	(\$0.0)	\$0.1	\$0.0	(\$0.1)	\$1.2	104	15		
21	Burnham - Munster	Line	ComEd	(\$2.1)	(\$3.4)	(\$0.0)	\$1.3	(\$0.0)	\$0.0	(\$0.0)	(\$0.1)	\$1.2	140	15		
22	Kincaid - Pana North	Line	ComEd	(\$0.4)	(\$1.5)	(\$0.0)	\$1.1	\$0.0	\$0.0	\$0.0	\$0.0	\$1.1	281	0		
24	East Frankfort - Braidwood	Line	ComEd	(\$0.1)	(\$1.1)	\$0.0	\$1.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1.0	8	0		

**DAY Control Zone****Table 7-47 DAY Control Zone top congestion cost impacts (By facility): January through June 2010 (See 2009 SOM, Table 7-47)**

No.	Constraint	Type	Location	Congestion Costs (Millions)											Grand Total	Day Ahead	Real Time
				Day Ahead				Balancing				Event Hours					
				Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total	Day Ahead	Real Time				
1	AP South	Interface	500	(\$2.6)	(\$4.1)	(\$0.4)	\$1.1	(\$0.0)	\$0.4	\$0.4	(\$0.0)	\$1.1	2,090	1,010			
2	5004/5005 Interface	Interface	500	(\$0.7)	(\$1.6)	(\$0.0)	\$0.8	\$0.0	\$0.1	\$0.1	\$0.0	\$0.9	1,050	367			
3	AEP-DOM	Interface	500	(\$0.7)	(\$1.4)	(\$0.0)	\$0.7	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$0.7	471	84			
4	Pleasant Prairie - Zion	Flowgate	Midwest ISO	\$0.0	(\$0.0)	\$0.3	\$0.4	(\$0.0)	\$0.0	(\$0.8)	(\$0.8)	(\$0.5)	945	80			
5	Cloverdale - Lexington	Line	AEP	(\$0.2)	(\$0.6)	(\$0.1)	\$0.4	\$0.0	\$0.0	\$0.1	\$0.1	\$0.5	578	341			
6	Bedington - Black Oak	Interface	500	(\$0.9)	(\$1.6)	(\$0.2)	\$0.4	(\$0.0)	\$0.0	\$0.0	(\$0.0)	\$0.4	1,328	43			
7	Electric Jct - Nelson	Line	ComEd	\$0.0	\$0.0	\$1.1	\$1.1	(\$0.0)	\$0.0	(\$1.5)	(\$1.5)	(\$0.4)	393	75			
8	Doubs	Transformer	AP	(\$0.3)	(\$0.6)	(\$0.0)	\$0.2	\$0.0	\$0.1	\$0.0	\$0.0	\$0.3	536	283			
9	Dumont - Stillwell	Line	AEP	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.0	(\$0.2)	(\$0.2)	(\$0.2)	16	34			
10	Fort Martin - Ronco	Line	AP	(\$0.0)	(\$0.1)	(\$0.0)	\$0.0	(\$0.0)	\$0.0	\$0.2	\$0.2	\$0.2	31	42			
11	Mount Storm - Pruntytown	Line	AP	(\$0.0)	(\$0.1)	(\$0.0)	\$0.0	\$0.0	\$0.1	\$0.2	\$0.2	\$0.2	87	244			
12	Waterman - West Dekalb	Line	ComEd	\$0.0	\$0.0	\$0.3	\$0.3	\$0.0	\$0.0	(\$0.1)	(\$0.1)	\$0.2	1,496	223			
13	Branchburg - Flagtown	Line	PSEG	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.2)	(\$0.2)	(\$0.2)	0	0			
14	Tiltonville - Windsor	Line	AP	(\$0.2)	(\$0.4)	(\$0.0)	\$0.1	\$0.0	(\$0.0)	\$0.0	\$0.1	\$0.2	1,127	270			
15	Pleasant Valley - Belvidere	Line	ComEd	\$0.0	\$0.0	\$0.4	\$0.4	(\$0.0)	\$0.0	(\$0.6)	(\$0.6)	(\$0.1)	1,277	220			

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

No.	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				
1	Kammer	Transformer	500	(\$1.0)	(\$2.4)	(\$0.0)	\$1.4	\$0.2	\$0.1	\$0.0	\$0.1	\$1.5	1,554	726	
2	West	Interface	500	(\$0.8)	(\$1.4)	\$0.0	\$0.7	\$0.0	\$0.0	(\$0.0)	\$0.0	\$0.7	391	55	
3	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	
4	Wylie Ridge	Transformer	AP	(\$0.6)	(\$1.1)	(\$0.0)	\$0.5	\$0.2	\$0.2	\$0.0	(\$0.0)	\$0.4	354	335	
5	Cloverdale - Lexington	Line	AEP	(\$0.3)	(\$0.7)	(\$0.0)	\$0.5	\$0.0	\$0.1	\$0.0	(\$0.1)	\$0.4	666	239	
6	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	671	
7	Tiltonville - Windsor	Line	AP	(\$0.2)	(\$0.5)	(\$0.0)	\$0.3	\$0.0	\$0.1	\$0.0	(\$0.1)	\$0.2	794	198	
8	Marquis - Waverly	Line	AEP	(\$0.0)	(\$0.2)	(\$0.0)	\$0.2	(\$0.0)	\$0.0	\$0.0	(\$0.0)	\$0.2	41	9	
9	Samms - Wylie Ridge	Line	AP	(\$0.2)	(\$0.4)	(\$0.0)	\$0.2	\$0.0	\$0.1	(\$0.0)	(\$0.0)	\$0.2	622	101	
10	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	
11	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	
12	Kammer - Ormet	Line	AEP	(\$0.1)	(\$0.2)	(\$0.0)	\$0.1	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.1	552	509	
13	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	161	
14	Kanawha River	Transformer	AEP	(\$0.1)	(\$0.2)	\$0.0	\$0.1	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.1	159	37	
15	Breed - Wheatland	Line	AEP	\$0.0	\$0.1	\$0.0	(\$0.1)	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	408	0	

**DLCO Control Zone****Table 7-49 DLCO Control Zone top congestion cost impacts (By facility): January through June 2010 (See 2009 SOM, Table 7-49)**

No.	Constraint	Type	Location	Congestion Costs (Millions)											Grand Total	Event Hours	
				Day Ahead				Balancing				Day Ahead	Real Time				
				Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total						
1	Crescent	Transformer	DLCO	\$10.2	\$0.0	\$0.2	\$10.4	\$0.1	(\$0.5)	(\$0.3)	\$0.3	\$10.7	579	124			
2	AP South	Interface	500	(\$26.3)	(\$32.0)	(\$0.1)	\$5.5	(\$1.4)	(\$0.3)	\$0.2	(\$1.0)	\$4.5	2,090	1,010			
3	Collier - Elwyn	Line	DLCO	\$3.7	\$0.4	\$0.1	\$3.4	(\$0.0)	(\$0.1)	(\$0.0)	\$0.1	\$3.4	343	94			
4	Bedington - Black Oak	Interface	500	(\$8.4)	(\$9.9)	(\$0.1)	\$1.5	(\$0.2)	(\$0.1)	\$0.0	(\$0.1)	\$1.4	1,328	43			
5	5004/5005 Interface	Interface	500	(\$6.9)	(\$8.6)	(\$0.1)	\$1.6	(\$0.3)	(\$0.1)	\$0.0	(\$0.2)	\$1.4	1,050	367			
6	AEP-DOM	Interface	500	(\$4.3)	(\$5.7)	(\$0.0)	\$1.4	(\$0.2)	(\$0.1)	\$0.0	(\$0.1)	\$1.3	471	84			
7	Sammiss - Wylie Ridge	Line	AP	(\$1.7)	(\$3.1)	(\$0.0)	\$1.4	(\$0.1)	\$0.1	\$0.0	(\$0.2)	\$1.2	494	44			
8	Carson - Oakland	Line	DLCO	\$0.7	\$0.0	\$0.0	\$0.7	\$0.0	\$0.0	\$0.0	\$0.0	\$0.7	40	0			
9	East Frankfort - Crete	Line	ComEd	\$0.9	\$1.5	(\$0.0)	(\$0.7)	\$0.1	(\$0.0)	(\$0.0)	\$0.1	(\$0.6)	1,650	600			
10	Collier	Transformer	DLCO	\$0.3	\$0.0	\$0.0	\$0.3	\$0.0	(\$0.1)	(\$0.0)	\$0.1	\$0.4	8	8			
11	Cloverdale - Lexington	Line	AEP	(\$0.7)	(\$1.0)	\$0.0	\$0.4	(\$0.2)	(\$0.0)	(\$0.0)	(\$0.2)	\$0.2	578	341			
12	Beaver Valley - Sammiss	Flowgate	Midwest ISO	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	\$0.1	\$0.0	(\$0.2)	(\$0.2)	0	8			
13	Reid - Ringgold	Line	AP	(\$0.5)	(\$0.6)	(\$0.0)	\$0.2	(\$0.0)	\$0.0	\$0.0	(\$0.0)	\$0.2	270	15			
14	Crescent - Sewickly	Line	DLCO	\$0.2	\$0.0	\$0.0	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	12	0			
15	Beaver	Transformer	DLCO	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	\$0.1	(\$0.0)	(\$0.1)	(\$0.1)	0	7			
20	Beaver - Sammiss	Line	DLCO	(\$0.2)	(\$0.4)	(\$0.0)	\$0.2	(\$0.1)	\$0.3	\$0.0	(\$0.3)	(\$0.1)	165	36			
32	Beaver - Mansfield	Line	DLCO	(\$0.0)	(\$0.1)	(\$0.0)	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	46	0			
33	Brunot Island - Collier	Line	DLCO	\$0.1	\$0.0	\$0.0	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	2	0			
45	Arsenal	Transformer	DLCO	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	2	0			
47	Cheswick - Logans Ferry	Line	DLCO	\$0.0	(\$0.0)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	6	0			

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

Congestion Costs (Millions)															
No.	Constraint	Type	Location	Day Ahead				Balancing				Event Hours			
				Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total	Grand Total	Day Ahead	Real Time	
1	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	
2	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	
3	West	Interface	500	(\$3.8)	(\$5.5)	(\$0.0)	\$1.6	(\$0.1)	\$0.0	\$0.0	(\$0.1)	\$1.5	391	55	
4	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	
5	Wylie Ridge	Transformer	AP	(\$8.5)	(\$12.9)	(\$0.0)	\$4.4	(\$1.2)	\$2.2	\$0.0	(\$3.3)	\$1.1	354	335	
6	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	
7	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	671	
8	Kammer	Transformer	500	(\$1.8)	(\$2.5)	\$0.0	\$0.7	(\$0.3)	(\$0.0)	(\$0.0)	(\$0.3)	\$0.3	1,554	726	
9	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	161	
10	Krendale - Seneca	Line	AP	(\$0.6)	(\$0.9)	(\$0.0)	\$0.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	225	0	
11	Cloverdale - Lexington	Line	AEP	(\$0.7)	(\$1.1)	\$0.0	\$0.4	(\$0.1)	\$0.0	(\$0.0)	(\$0.1)	\$0.3	666	239	
12	Beaver - Clinton	Line	DLCO	\$0.1	(\$0.2)	\$0.0	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	20	0	
13	Tiltonville - Windsor	Line	AP	(\$0.7)	(\$1.0)	(\$0.0)	\$0.3	(\$0.1)	\$0.0	\$0.0	(\$0.1)	\$0.2	794	198	
14	Yukon	Transformer	AP	\$0.1	\$0.1	\$0.0	\$0.0	\$0.0	(\$0.1)	(\$0.0)	\$0.2	\$0.2	123	36	
15	Ruth - Turner	Line	AEP	(\$0.4)	(\$0.6)	\$0.0	\$0.2	(\$0.1)	\$0.0	(\$0.0)	(\$0.1)	\$0.2	639	270	
16	Collier	Transformer	DLCO	\$0.2	\$0.0	\$0.0	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	33	0	
17	Cheswick - Logans Ferry	Line	DLCO	\$0.0	(\$0.1)	\$0.0	\$0.1	(\$0.0)	(\$0.0)	(\$0.0)	\$0.0	\$0.1	49	3	
20	Cheswick - Wilmerding	Line	DLCO	\$0.0	(\$0.1)	\$0.0	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	35	0	
43	Crescent - Montour	Line	DLCO	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	\$0.0	\$0.0	(\$0.0)	(\$0.0)	0	3	
44	Arsenal - Highland	Line	DLCO	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	2	0	

**Southern Region Congestion-Event Summaries****Dominion Control Zone****Table 7-51 Dominion Control Zone top congestion cost impacts (By facility): January through June 2010 (See 2009 SOM, Table 7-51)**

No.	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					
1	AP South	Interface	500	\$60.3	(\$18.4)	\$1.3	\$80.0	\$1.9	\$5.3	(\$1.1)	(\$4.6)	\$75.5	2,090	1,010		
2	Bedington - Black Oak	Interface	500	\$21.2	\$15.3	\$1.9	\$7.7	(\$0.2)	(\$0.2)	(\$0.3)	(\$0.3)	\$7.5	1,328	43		
3	Pleasant View	Transformer	Dominion	\$0.3	\$0.0	\$0.0	\$0.3	(\$4.2)	\$1.4	(\$0.6)	(\$6.3)	(\$6.0)	31	101		
4	Doubs	Transformer	AP	(\$1.3)	(\$5.7)	(\$0.0)	\$4.4	\$1.1	\$0.3	\$0.3	\$1.1	\$5.4	536	283		
5	Cloverdale - Lexington	Line	AEP	\$7.7	\$2.2	\$0.8	\$6.3	(\$1.2)	(\$1.5)	(\$1.6)	(\$1.3)	\$5.0	578	341		
6	Ox - Francona	Line	Dominion	\$3.3	(\$0.6)	\$0.0	\$3.9	\$0.0	\$0.0	\$0.0	\$0.0	\$3.9	66	0		
7	AEP-DOM	Interface	500	\$15.3	\$12.5	\$0.6	\$3.4	(\$0.1)	(\$0.3)	(\$0.1)	\$0.1	\$3.5	471	84		
8	Ox - Glebe	Line	Dominion	\$2.5	(\$0.7)	\$0.0	\$3.2	\$0.0	\$0.0	\$0.0	\$0.0	\$3.2	30	0		
9	Pleasant View	Line	Dominion	\$1.8	\$0.1	\$0.1	\$1.8	\$0.0	\$0.0	\$0.0	\$0.0	\$1.8	32	0		
10	Greenwich - Elizabeth River	Line	Dominion	\$1.6	(\$0.2)	\$0.0	\$1.8	\$0.0	\$0.0	(\$0.0)	(\$0.0)	\$1.8	32	13		
11	Yadkin	Transformer	Dominion	\$1.5	\$0.1	\$0.0	\$1.5	\$0.4	\$0.0	(\$0.1)	\$0.3	\$1.7	26	21		
12	5004/5005 Interface	Interface	500	(\$2.0)	(\$3.2)	\$0.1	\$1.3	\$0.3	\$0.3	\$0.1	\$0.1	\$1.4	1,050	367		
13	East Frankfort - Crete	Line	ComEd	\$3.0	\$1.8	\$0.2	\$1.4	(\$0.2)	(\$0.3)	(\$0.2)	(\$0.0)	\$1.4	1,650	600		
14	Reid - Ringgold	Line	AP	\$1.6	\$0.5	\$0.2	\$1.3	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$1.3	270	15		
15	Danville - East Danville	Line	Dominion	\$6.2	\$4.9	(\$0.1)	\$1.2	(\$0.2)	(\$0.3)	(\$0.1)	\$0.1	\$1.2	879	85		
16	Endless Caverns	Transformer	Dominion	\$0.3	(\$0.7)	\$0.0	\$1.1	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$1.1	283	3		
17	Glebe - Jefferson	Line	Dominion	\$0.8	(\$0.3)	\$0.0	\$1.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1.0	34	0		
18	Chuckatuck - Benns Church	Line	Dominion	\$0.9	(\$0.1)	(\$0.0)	\$1.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1.0	29	0		
19	Beechwood - Kerr Dam	Line	Dominion	\$0.8	(\$0.5)	(\$0.1)	\$1.2	(\$0.2)	\$0.1	\$0.0	(\$0.3)	\$1.0	303	148		
20	Pleasantville - Ashburn	Line	Dominion	\$0.9	\$0.0	\$0.0	\$0.9	\$0.0	\$0.0	\$0.0	\$0.0	\$0.9	22	0		

**Table 7-52 Dominion Control Zone top congestion cost impacts (By facility): January through June 2009 (See 2009 SOM, Table 7-52)**

No.	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					
1	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		
2	Cloverdale - Lexington	Line	AEP	\$5.2	\$2.3	\$0.8	\$3.7	(\$0.0)	(\$1.6)	(\$0.8)	\$0.8	\$4.5	666	239		
3	Kammer	Transformer	500	\$5.5	\$4.2	\$1.0	\$2.3	\$0.1	(\$0.5)	(\$1.1)	(\$0.5)	\$1.8	1,554	726		
4	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	671		
5	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		
6	Wylie Ridge	Transformer	AP	\$2.5	\$1.7	\$0.4	\$1.2	(\$0.1)	(\$0.2)	(\$0.4)	(\$0.2)	\$1.0	354	335		
7	West	Interface	500	(\$2.4)	(\$3.3)	\$0.0	\$1.0	\$0.0	\$0.1	\$0.0	(\$0.1)	\$0.9	391	55		
8	Crozet - Doods	Line	Dominion	\$0.6	(\$0.3)	\$0.0	\$0.9	(\$0.3)	(\$0.2)	(\$0.0)	(\$0.1)	\$0.8	48	26		
9	Clover - Farmville	Line	Dominion	(\$0.0)	(\$0.7)	\$0.0	\$0.7	\$0.0	\$0.0	\$0.0	\$0.0	\$0.7	41	0		
10	Mount Storm	Transformer	AP	\$1.3	\$0.2	\$0.1	\$1.2	(\$0.2)	\$0.0	(\$0.3)	(\$0.5)	\$0.7	123	46		
11	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		
12	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		
13	East Frankfort - Crete	Line	ComEd	\$1.2	\$0.7	\$0.1	\$0.6	(\$0.0)	(\$0.1)	(\$0.1)	\$0.0	\$0.6	1,333	161		
14	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		
15	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		
17	Beaumeade - Ashburn	Line	Dominion	\$0.4	\$0.0	\$0.0	\$0.4	\$0.0	\$0.0	\$0.0	\$0.0	\$0.4	15	0		
21	Pleasantville	Transformer	Dominion	\$0.2	(\$0.1)	\$0.0	\$0.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	10	0		
23	Ox	Transformer	Dominion	\$0.2	(\$0.1)	\$0.0	\$0.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3	3	0		
24	Doods	Transformer	Dominion	\$0.2	(\$0.0)	(\$0.0)	\$0.2	(\$0.0)	(\$0.0)	\$0.0	\$0.0	\$0.2	8	3		
25	Danville - East Danville	Line	Dominion	\$0.5	\$0.3	\$0.0	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	76	0		