

**Notice of Revisions to Proposed Cost Allocation Principles**  
**August 29, 2012**

On June 13, 2012, PJM Interconnection, L.L.C. (“PJM”), at the request of the Attachment H Transmission Owners (“TOs”),<sup>1</sup> posted to the PJM website the TOs’ proposed Cost Allocation Principles (“Proposed Principles”). The Proposed Principles will form the basis of the TOs’ proposed section 205 filing for compliance with the requirements of Order No. 1000 for the allocation of the costs of new PJM Board-approved Regional Transmission Expansion Plan (“RTEP”) projects. The posting included a notice of a meeting on July 18, 2012 (“July 18 Meeting”), at which the TOs presented the Proposed Principles to the PJM stakeholder community and invited the submission of written comments via email by August 1, 2012. In addition, the notice advised that the TOs would host a conference call on September 5, 2012 (“September 5 Call”) to discuss any revisions to the Proposed Principles as a result of the comments received during the July 18 Meeting and via timely submitted written comments. On August 16, 2012, PJM, on behalf of the TOs, distributed a further notice of the September 5 Call.

The written comments received by the TOs have been posted to the PJM website along with the TOs’ written response. In addition, the TOs intend to revise the Proposed Principles as described below. Written comments on these revisions may be submitted for the TOs’ consideration by email to: [TO\\_Cost\\_Allocation@pjm.com](mailto:TO_Cost_Allocation@pjm.com). Written comments on the revisions should be submitted on or before September 19, 2012.

This notice along with the June 13, 2012 posting, the July 18 Meeting, the September 5 Call, the opportunity to submit written comments and the TOs responses thereto satisfy the requirements of Section 7.3.2 of the Consolidated Transmission Owners Agreement<sup>2</sup> with regard to the TOs’ proposed section 205 filing for compliance with the requirements of Order No. 1000 for the allocation of the costs of new PJM Board-approved RTEP projects.

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<sup>1</sup> PJM Transmission Owners with revenue requirements provided in Attachment H of the PJM Open Access Transmission Tariff.

<sup>2</sup> <http://pjm.com/documents/~media/documents/agreements/toa.ashx>

**PJM Attachment H Transmission Owners  
Proposed Regional Cost Allocation Principles for Order No. 1000  
Conference Call and Webinar  
September 5, 2012**

**Dial in: 1-866-398-2885; passcode: 750466  
WebEx Link: <https://pjm.webex.com>  
WebEx Password: pca0905pjm**

**Agenda**

1. Opening Remarks
2. Revisions to Proposed Principles
  - a. Calculation and Recalculation of Solution-Based DFAX
  - b. Cost Allocation for DC Lines
3. Questions and Comments
4. Closing remarks

## Revisions to Proposed Principles

### **Calculation and Recalculation of Solution-Based DFAX**

The TOs propose that allocation to a particular zone based on solution-based DFAX would be determined by first running a power flow analysis to ascertain that zone's use of the studied facility at peak load conditions. This includes the calculation of a direction and magnitude of flow. Subsequent to the power flow analysis, a production cost analysis will be performed to determine the total energy use (MWh) of the studied facility that is made by all of the zones in each direction over the course of a year. A mathematical combination of these results for a particular zone will yield a reasonable measure of that zone's relative benefit, over time, from the studied facility. Attached are revised illustrative cost allocations based upon this approach.

Cost allocations premised on solution-based DFAX shall be recalculated annually.

### **Cost Allocation for DC Lines**

- A. Direct current ("DC") facilities (lines, converter stations) that are integrated into the system, i.e., do not interconnect generation or are not radial, will be allocated according to the following rules:
1. Classification: For new DC facilities that PJM approves in the RTEP to meet reliability, operational performance or market efficiency needs, the DC facility shall be classified as a Regional Extra High Capacity ("EHC") Project if it meets the conditions set forth in subparts 1.a. and 1.b. below. If a DC facility does not meet these conditions, it shall be classified as a Lower Capacity Project:
    - a. The DC facility is connected at least on one end to an alternating current ("AC") substation operated at 500 kV or above or an AC substation operated at 345 kV or above which has at least one double-circuit 345 kV line, as that term is defined in the Cost Allocation Principles, terminating in the substation.
    - b. Any transformer between such bus and the DC converter has a low side phase-to-phase voltage rating of at least 345 kV with such voltage having been determined under the RTEP process to reasonably optimize the contribution of the DC facility to satisfying the objectives of the RTEP.
    - c. For the purposes of cost allocation, any transformer, whether or not required as part of the DC facility, with a low side phase-to-phase voltage rating below 345 kV shall be classified as a Lower Capacity Project.
    - d. If a DC facility connects directly to another DC facility, i.e., DC to DC with no AC conversion between, the new DC facility shall be classified as an EHC facility

2. Reliability and Operational Performance Facilities: For reliability or operational performance DC facilities that are:

- a. Classified as EHC projects, costs shall be allocated 50% postage stamp and 50% DC Distribution Factor (“DCDF”).
- b. Classified as Lower Capacity projects, costs shall be allocated 100% DCDF.
- c. Except as stated in subparts 2.d, 2.e. and 2.f. below, for all reliability and operational performance DC facilities integrated into the PJM transmission system, the DCDF shall be calculated as follows:

For overhead/underground DC facilities, the DC facility for which the DCDF is to be determined will be removed from the model and replaced with a proxy overhead/underground AC facility. The impedance of the proxy AC facility will be calculated based on the length of the DC facility that was removed from the model multiplied by an approximate per unit / mile impedance value for the proxy AC facility.

- d. For a new RTEP DC facility that is part of and integral to a new AC line (such as, but not limited to, where PJM approves a part of the AC line as DC due to the need for that part of the line to be installed underground and/or underwater), the DCDF shall be calculated as described in subpart 2.c above provided that the DC facility for which the proxy AC facility will be used will be the DC segment only.
- e. For a new RTEP DC facility that is approved by PJM to provide controlled flow (such as, but not limited to back-to-back AC-DC-AC facilities), the DCDF shall be calculated in the same manner as a controllable AC facility such as Phase Angle Regulators except that the DC portion of the project shall be modeled with a zero impedance and no control shall be applied.
- f. If, in PJM’s judgment, the results from the DCDF analysis are objectively unreasonable from an engineering point of view, PJM may use another appropriate proxy. In such a case, PJM shall document in a written report (1) the reasons why it determined the results were objectively unreasonable; (2) why the substitute proxy produced objectively reasonable results; and (3) provide a recommendation as to what changes, if any, should be considered for the DCDF process.

3. Market Efficiency Facilities: For market efficiency, DC facilities that are:

- a. Classified as EHC projects, costs shall be allocated 50% postage stamp and 50% according to decreased load payments.
  - b. Classified as Lower Capacity projects, costs shall be allocated 100% according to decreased load payments
  - c. In order to determine the decreased load payments for the purposes of cost allocation, the flow on the new DC facilities shall be as determined by the PJM production cost software used to justify the DC facilities as a market efficiency project.
4. Shunt Connected Facilities: A DC reactive device or other DC shunt device shall be allocated in the same manner as an AC reactive or shunt device.
- B. DC facilities that are installed to interconnect generation or other merchant facilities (via the interconnection queue) to the existing AC system or to an existing DC facility that is connected to the existing AC system shall be allocated in a similar manner as AC Attachment Facilities, Local Upgrades, and Network Upgrades.
- C. DC facilities that are operated in a manner that requires specific users to subscribe for the DC transmission service shall not be allocated under Schedule 12.

# Illustrative Examples

## Cost Allocation - Existing

	AEC	AEP	APS	ATSI	BGE	ComEd	ConEd	Dayton	DEOK	DL	DPL	Dominion	JCPL	ME	NEPTUNE	HTP	PECO	PENELEC	PEPCO	PPL	ECP	PSEG	RE
<b>1. MAPP</b>																							
a. Possum Point - Burches Hill 500 kV	1.76%	14.58%	5.34%	8.34%	4.30%	14.12%	0.54%	2.14%	3.35%	1.79%	2.52%	11.94%	3.93%	1.86%	0.39%	0.19%	5.34%	1.86%	4.17%	4.60%	0.18%	6.50%	0.26%
b. Burches Hill - Chalk Point 500 kV	1.76%	14.58%	5.34%	8.34%	4.30%	14.12%	0.54%	2.14%	3.35%	1.79%	2.52%	11.94%	3.93%	1.86%	0.39%	0.19%	5.34%	1.86%	4.17%	4.60%	0.18%	6.50%	0.26%
c. Chalk Point - Hallowing 500 kV	1.76%	14.58%	5.34%	8.34%	4.30%	14.12%	0.54%	2.14%	3.35%	1.79%	2.52%	11.94%	3.93%	1.86%	0.39%	0.19%	5.34%	1.86%	4.17%	4.60%	0.18%	6.50%	0.26%
d. Hallowing - Mission 500 kV	1.76%	14.58%	5.34%	8.34%	4.30%	14.12%	0.54%	2.14%	3.35%	1.79%	2.52%	11.94%	3.93%	1.86%	0.39%	0.19%	5.34%	1.86%	4.17%	4.60%	0.18%	6.50%	0.26%
e. Hallowing - Gateway 500 kV	1.76%	14.58%	5.34%	8.34%	4.30%	14.12%	0.54%	2.14%	3.35%	1.79%	2.52%	11.94%	3.93%	1.86%	0.39%	0.19%	5.34%	1.86%	4.17%	4.60%	0.18%	6.50%	0.26%
<b>2. PATH</b>																							
a. Amos - Welton Spring 765 kV	1.76%	14.58%	5.34%	8.34%	4.30%	14.12%	0.54%	2.14%	3.35%	1.79%	2.52%	11.94%	3.93%	1.86%	0.39%	0.19%	5.34%	1.86%	4.17%	4.60%	0.18%	6.50%	0.26%
b. Welton Spring 765/500 kV substation + 1 765/500 kV transformer	1.76%	14.58%	5.34%	8.34%	4.30%	14.12%	0.54%	2.14%	3.35%	1.79%	2.52%	11.94%	3.93%	1.86%	0.39%	0.19%	5.34%	1.86%	4.17%	4.60%	0.18%	6.50%	0.26%
c. Welton Spring - Kemptown 765 kV + Kemptown 765 kV substation + 2 Kemptown 765/500 kV transformers	1.76%	14.58%	5.34%	8.34%	4.30%	14.12%	0.54%	2.14%	3.35%	1.79%	2.52%	11.94%	3.93%	1.86%	0.39%	0.19%	5.34%	1.86%	4.17%	4.60%	0.18%	6.50%	0.26%
<b>3. TRAIL</b>																							
a. 502 Junction - Mt. Storm 500 kV	1.76%	14.58%	5.34%	8.34%	4.30%	14.12%	0.54%	2.14%	3.35%	1.79%	2.52%	11.94%	3.93%	1.86%	0.39%	0.19%	5.34%	1.86%	4.17%	4.60%	0.18%	6.50%	0.26%
b. Mt. Storm - Meadowbrook 500 kV	1.76%	14.58%	5.34%	8.34%	4.30%	14.12%	0.54%	2.14%	3.35%	1.79%	2.52%	11.94%	3.93%	1.86%	0.39%	0.19%	5.34%	1.86%	4.17%	4.60%	0.18%	6.50%	0.26%
c. Meadowbrook - Loudoun 500 kV	1.76%	14.58%	5.34%	8.34%	4.30%	14.12%	0.54%	2.14%	3.35%	1.79%	2.52%	11.94%	3.93%	1.86%	0.39%	0.19%	5.34%	1.86%	4.17%	4.60%	0.18%	6.50%	0.26%
<b>4. Susquehanna - Roseland 500 kV</b>																							
a. Susquehanna - Lackawanna 500 kV	1.76%	14.58%	5.34%	8.34%	4.30%	14.12%	0.54%	2.14%	3.35%	1.79%	2.52%	11.94%	3.93%	1.86%	0.39%	0.19%	5.34%	1.86%	4.17%	4.60%	0.18%	6.50%	0.26%
b. Lackawanna - Hopatcong 500 kV	1.76%	14.58%	5.34%	8.34%	4.30%	14.12%	0.54%	2.14%	3.35%	1.79%	2.52%	11.94%	3.93%	1.86%	0.39%	0.19%	5.34%	1.86%	4.17%	4.60%	0.18%	6.50%	0.26%
c. Hopatcong - Roseland 500 kV	1.76%	14.58%	5.34%	8.34%	4.30%	14.12%	0.54%	2.14%	3.35%	1.79%	2.52%	11.94%	3.93%	1.86%	0.39%	0.19%	5.34%	1.86%	4.17%	4.60%	0.18%	6.50%	0.26%

## Cost Allocation - Proposed

	AEC	AEP	APS	ATSI	BGE	ComEd	ConEd	Dayton	DEOK	DL	DPL	Dominion	JCPL	ME	NEPTUNE	HTP	PECO	PENELEC	PEPCO	PPL	ECP	PSEG	RE
<b>1. MAPP</b>																							
a. Possum Point - Burches Hill 500 kV	0.88%	7.29%	2.67%	4.17%	2.15%	7.06%	0.27%	1.07%	2.64%	0.90%	17.54%	5.97%	3.08%	1.58%	0.31%	0.17%	2.67%	2.90%	27.09%	3.94%	0.16%	5.29%	0.21%
b. Burches Hill - Chalk Point 500 kV	0.88%	7.29%	2.67%	4.17%	2.15%	7.06%	0.27%	1.07%	5.31%	0.90%	6.56%	5.97%	1.97%	3.42%	0.20%	0.30%	2.67%	8.19%	27.54%	7.95%	0.09%	3.25%	0.13%
c. Chalk Point - Hallowing 500 kV	0.88%	7.29%	2.67%	4.17%	11.35%	7.06%	0.27%	1.07%	1.68%	0.90%	4.45%	5.97%	1.97%	0.93%	0.20%	0.26%	2.67%	4.76%	35.71%	2.30%	0.09%	3.25%	0.13%
d. Hallowing - Mission 500 kV	0.88%	7.29%	2.67%	4.17%	2.15%	7.06%	0.27%	1.07%	1.68%	0.90%	51.26%	5.97%	1.97%	0.93%	0.20%	0.10%	2.67%	0.93%	2.09%	2.30%	0.09%	3.25%	0.13%
e. Hallowing - Gateway 500 kV	0.88%	7.29%	2.67%	4.17%	2.15%	7.06%	0.27%	1.07%	1.68%	0.90%	51.26%	5.97%	1.97%	0.93%	0.20%	0.10%	2.67%	0.93%	2.09%	2.30%	0.09%	3.25%	0.13%
<b>2. PATH</b>																							
a. Amos - Welton Spring 765 kV	0.88%	7.29%	18.27%	4.17%	16.83%	7.06%	0.27%	1.07%	1.68%	0.90%	5.61%	5.97%	1.97%	0.93%	0.20%	0.10%	2.67%	0.93%	17.45%	2.30%	0.09%	3.25%	0.13%
b. Welton Spring 765/500 kV substation + 1 765/500 kV transformer	0.88%	19.71%	20.82%	13.04%	2.15%	7.06%	0.27%	1.07%	2.53%	4.96%	1.26%	9.75%	1.97%	0.93%	0.20%	0.10%	2.67%	2.79%	2.09%	2.30%	0.09%	3.25%	0.13%
c. Welton Spring - Kemptown 765 kV + Kemptown 765 kV substation + 2 Kemptown 765/500 kV transformers	0.88%	7.29%	13.72%	4.17%	12.62%	7.06%	0.27%	1.07%	1.68%	0.90%	3.65%	25.08%	1.97%	0.93%	0.20%	0.10%	2.67%	0.93%	9.07%	2.30%	0.09%	3.25%	0.13%
<b>3. TRAIL</b>																							
a. 502 Junction - Mt. Storm 500 kV	0.88%	7.29%	25.37%	4.17%	10.11%	7.06%	0.27%	1.07%	1.68%	0.90%	1.26%	5.97%	1.97%	0.93%	0.20%	0.10%	2.67%	0.93%	21.42%	2.30%	0.09%	3.25%	0.13%
b. Mt. Storm - Meadowbrook 500 kV	0.88%	7.29%	21.32%	4.17%	2.15%	7.06%	0.27%	1.07%	1.68%	0.90%	1.26%	26.74%	1.97%	0.93%	0.20%	0.10%	2.67%	0.93%	12.66%	2.30%	0.09%	3.25%	0.13%
c. Meadowbrook - Loudoun 500 kV	0.88%	7.29%	2.67%	4.17%	6.02%	7.06%	0.27%	1.07%	1.68%	0.90%	1.26%	44.25%	1.97%	0.93%	0.20%	0.10%	2.67%	0.93%	9.93%	2.30%	0.09%	3.25%	0.13%
<b>4. Susquehanna - Roseland 500 kV</b>																							
a. Susquehanna - Lackawanna 500 kV	0.88%	7.29%	2.67%	4.17%	2.15%	7.06%	0.27%	1.07%	1.68%	0.90%	1.26%	5.97%	16.18%	0.93%	1.76%	1.36%	2.67%	4.95%	2.09%	2.30%	1.17%	30.03%	1.20%
b. Lackawanna - Hopatcong 500 kV	0.88%	7.29%	2.67%	4.17%	2.15%	7.06%	1.00%	1.07%	1.68%	0.90%	1.26%	5.97%	14.77%	0.93%	2.09%	1.40%	2.67%	0.93%	2.09%	2.30%	1.26%	34.12%	1.36%
c. Hopatcong - Roseland 500 kV	0.88%	7.29%	2.67%	4.17%	2.15%	7.06%	0.27%	1.07%	1.68%	0.90%	1.26%	5.97%	18.87%	0.93%	1.55%	1.78%	2.67%	0.93%	2.09%	2.30%	1.41%	30.90%	1.23%