

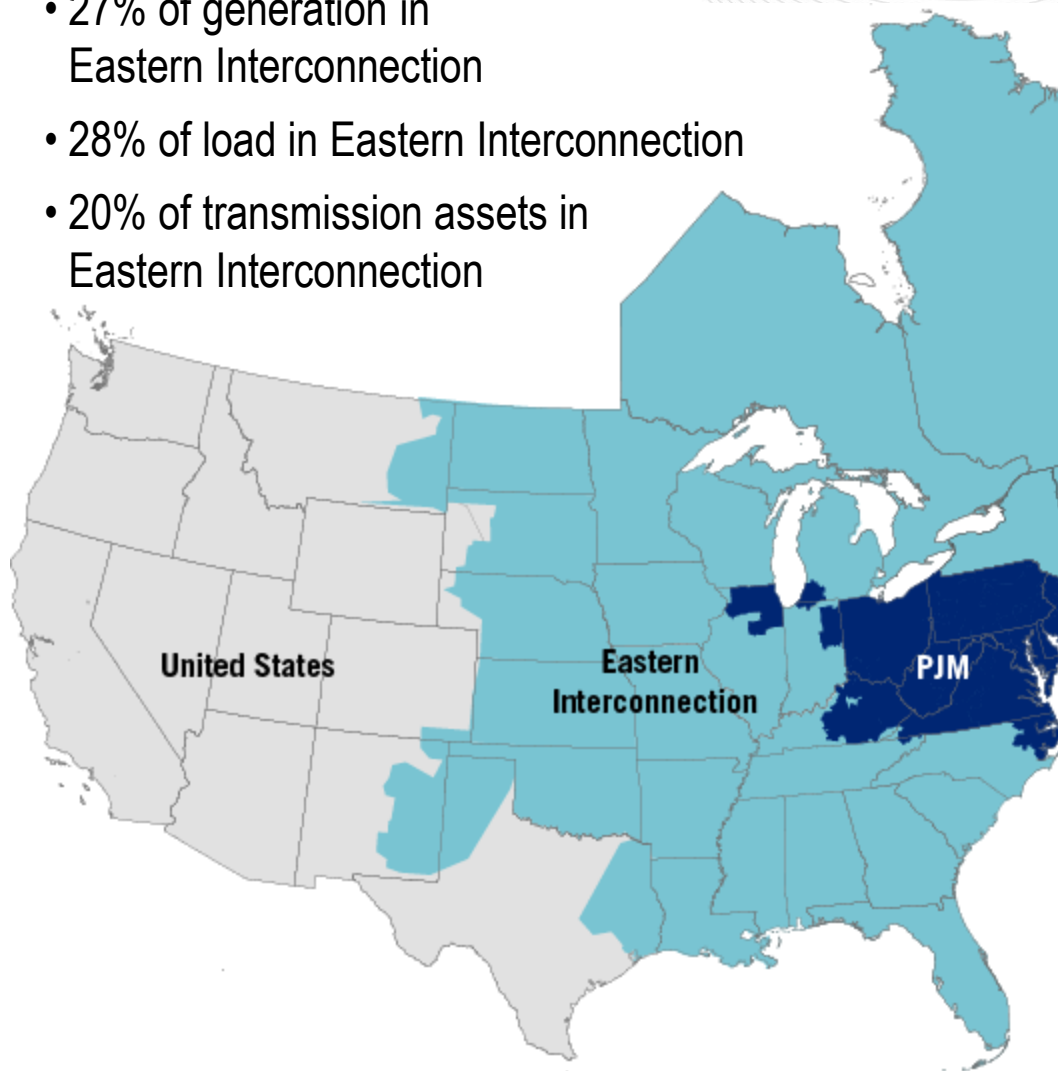


Pennsylvania House Environmental Resources and Energy Committee

September 16, 2014

F. Stuart Bresler, III
Vice President, Market Operations
PJM Interconnection

- 27% of generation in Eastern Interconnection
- 28% of load in Eastern Interconnection
- 20% of transmission assets in Eastern Interconnection



KEY STATISTICS

PJM member companies	900+
millions of people served	61
peak load in megawatts	165,492
MW of generating capacity	183,604
miles of transmission lines	62,556
2013 GWh of annual energy generation sources	791,089
square miles of territory area served	243,417
externally facing tie lines	13 states + DC
	191

**21% of U.S. GDP
produced in PJM**

As of 4/1/2014

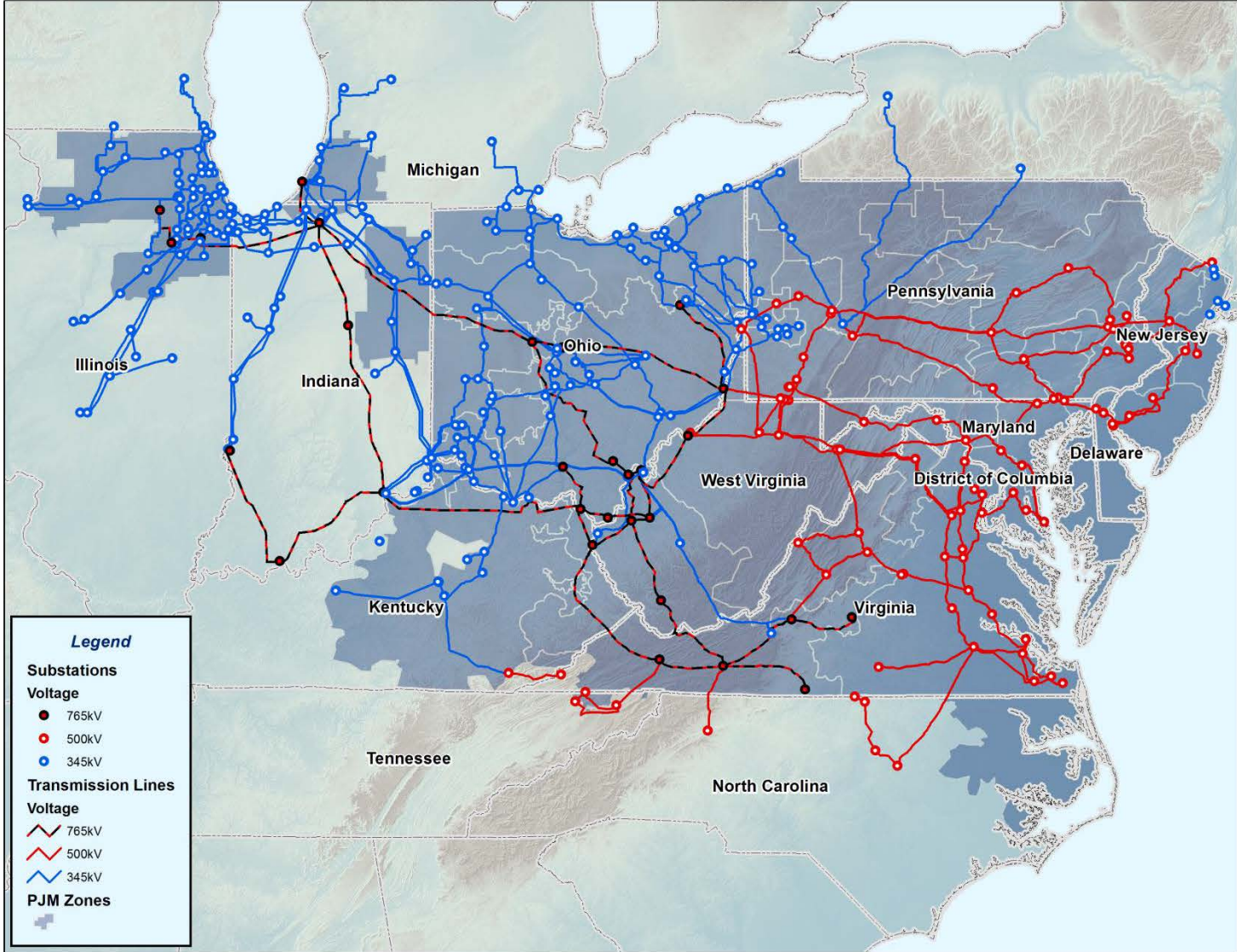


Stock Market for Electricity



LMP (Zone)	LMP (Hub)
AE \$54.09	AEP GEN HUB \$32.74
AEP \$34.22	AEP-DAYTON HUB \$34.08
APS \$39.91	CHICAGO GEN HUB \$32.65
BC \$72.49	CHICAGO HUB \$23.19
COMED \$39.21	DOMINION HUB \$46.14
DAYTON \$35.38	EASTERN HUB \$7.67
DOM \$53.88	ILLINOIS HUB \$32.94
DPL \$32.38	NEW JERSEY HUB \$64.66
DLQ \$35.01	OHIO HUB \$34.45
JC \$67.92	WEST INT HUB \$39.64
ME \$67.69	WESTERN HUB \$53.95
PE \$70.23	
PCP \$70.20	
PJM \$45.93	
PL \$54.60	
PN \$42.61	
\$66.31	
\$63.40	

Energy Market Pricing



**Testimony of F. Stuart Bresler, III
on Behalf of PJM Interconnection**

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Good morning, Chairman Miller, Chairman Vitali, members of the Pennsylvania House Environmental Resources and Energy Committee. My name is Stu Bresler, and I am PJM's Vice President of Market Operations. I appreciate the opportunity to appear before you today to discuss PJM and the EPA's Clean Power Plan (CPP). PJM is responsible for maintaining the reliability of the bulk electric system, commonly known as 'the grid', in conjunction with running the world's largest wholesale electricity market. PJM is the federally-regulated Regional Transmission Organization (RTO) operating in all of Pennsylvania and all or parts of twelve other states and the District of Columbia. Its day-to-day system operations, market structure, and transmission system planning provide a foundation at the wholesale level for reliable and competitively priced retail electricity for 61 million people in a 243,000 square mile market area. PJM's markets do not encompass Pennsylvania retail transactions or the Pennsylvania retail market, which is under the jurisdiction of the Pennsylvania Public Utility Commission (PA PUC).

PJM is responsible for ensuring safe and reliable regional grid operations – "keeping the lights on." PJM does so through wholesale power grid operation; through administration of competitive wholesale electricity, capacity and ancillary service markets; and through coordinated long-term, regional transmission planning.

As an RTO, PJM operates without profit; PJM does not own transmission or generation facilities, nor do we generate electricity; we do not buy energy for resale; we do not have retail customers. As a "system operator," PJM coordinates the operation of transmission and generation facilities so that all market participants have equal access to the benefits of the regional grid operation. PJM ensures that energy deliveries are scheduled reliably and are coordinated. Since electricity cannot be stored in significant quantities, electricity supply and demand must be balanced on a minute-by-minute basis. PJM performs this region-wide, real-time balancing of load and generation while ensuring that all regional transmission reliability constraints are respected and overall costs of reliable grid operation are minimized.

EPA's Proposed Rule – Clean Air Act, Section 111 (d)

On June 2, 2014, nearly a year after President Obama released his Climate Action Plan, the US EPA proposed its [Clean Power Plan](#) to reduce GHG emissions, primarily carbon dioxide (CO₂) from the electric power sector. Historically the electricity sector accounts for about 30-33 percent of total CO₂ emissions in the US. This proposal is part of the Obama Administration's Climate Action Plan, building upon the US EPA's proposed GHG New Source Performance Standards (NSPS) proposed last September, and is the response to the President's [memo](#) directing the US EPA to, among other things, issue a proposal to provide "standards, regulations, or guidelines as appropriate" to reduce carbon pollution from existing plants by June 1, 2014. The Clean Power Plan seeks to reduce electricity CO₂ emissions through a state-by-state, systems-based approach.

Clean Power Plan Administrative Approach

Under these proposed rules, the states will be the implementing authorities through State Implementation Plans (SIPs). The SIP in Pennsylvania will be developed by the Pennsylvania Department of Environmental Protection (PA DEP). SIPs will detail how each state plans to meet the standards set by the EPA for that specific state.

Compliance with the emissions rate standards is to be phased in over time. The interim emissions rate standards are an average, over a ten year period beginning in 2020 and ending 2029. The final emissions rate target for each state must be achieved in 2030, and maintained over a 3-year rolling average thereafter. The proposed 2030 targets imply the following application of the four building blocks nationwide: steam generator heat rate improvements, coal to combined cycle gas re-dispatch, retention of 'at risk' nuclear units along with increased use of renewable generation, and the deployment of energy efficiency.

With the promulgation of the final rule slated for June 2015, the Clean Power Plan sets the following timelines for submission of SIPs:

June 1, 2016 for an initial SIP requesting a 1 year extension or final SIP for a state-only plan;

June 1, 2016 for an initial SIP requesting a 2 year extension for a multi-state regional plan;

June 1, 2017 for a final SIP for a state-only plan;

June 1, 2018 for a final SIP within multi-state or regional plan.

Multi-state regional plans can utilize a centralized and coordinated dispatch in an attempt to minimize the cost of compliance to the states that participate.

PJM analysis of the potential impacts of CPP

PJM has recently committed to perform analysis focusing primarily on the costs of compliance to the CPP for PJM's states, including Pennsylvania, as a response to a request made on September 2, 2014 to PJM's CEO Terry Boston by the Organization of PJM States, Inc. (OPSI). The OPSI Board is made up of one commissioner from each of the fourteen state utility commissions contained within PJM's footprint. OPSI and its Board serve as the principal liaison between PJM, its staff, and Board of Managers and the 14 utility commissions located within PJM. The specific analysis requested by OPSI focuses on states' costs to comply with the CPP (at their EPA-targeted emission reduction standard) either as a single state entity, or as part of a regional compliance entity, comprised of multiple states. PJM's analysis will largely utilize EPA's assumptions for: improvement to coal generators' efficiency; new renewable resources and retained nuclear units; magnitude of coal-to-gas generation re-dispatch; and quantity of new energy efficiency resources. Some sensitivity analysis will be run around the assumptions made by the EPA, to hopefully provide some insight to PJM's states as to the interplay between the four building blocks of the CPP. PJM anticipates having our analysis accomplished in response to the OPSI's request during the second week of October, ahead of the mid-October due date for comments to the EPA.

Summary

PJM does not take a position regarding the wisdom, stringency, or legality of the policies contained within, or constituted by, the EPA's proposed Clean Power Plan. PJM will work with our thirteen states and District of Columbia, as requested, to support our states' development of SIPs to comply with the EPA's proposed Clean Power Plan. PJM will submit comments to the EPA on this proposed rule by the end of the 120 day comment period, which is October 18, 2014. PJM will continue to advocate to the EPA for an explicit reliability safety valve component within the Clean Power Plan, to provide assurance of the reliability of the grid.

PJM is offering to be a resource to Pennsylvania, and our other states, in their evaluation of potential CPP compliance methodologies. PJM has offered to perform analysis and modeling of various grid impacts, including changes in regional generation dispatch resulting from compliance approaches that our states may consider. PJM hopes that the analysis that we perform for our states will help them identify and evaluate the optionality and flexibility available to them with the CPP. To be clear, PJM is not attempting to insert itself into Pennsylvania's SIP development, but rather we stand ready to serve as an independent resource to the Governor's office, PA DEP or PA PUC, as requested.

I would be happy to answer any questions you may have.