

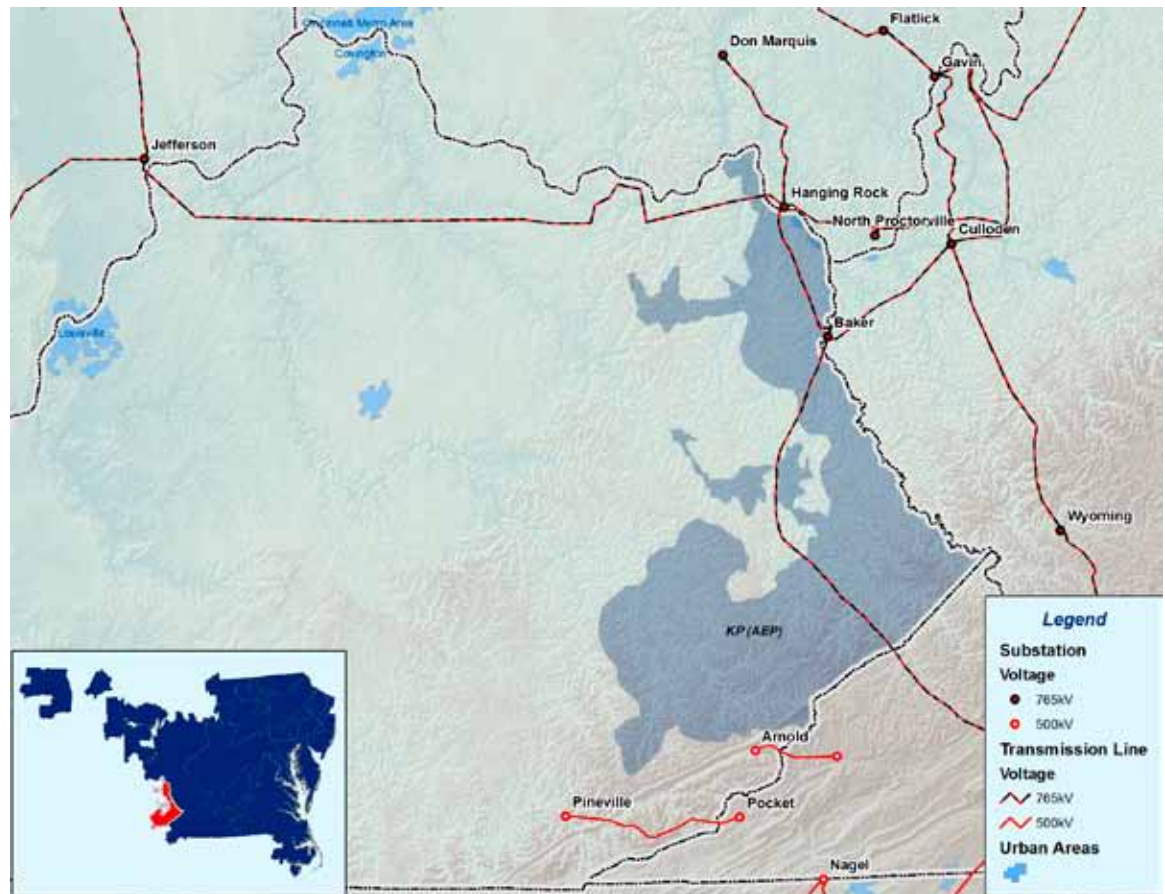


### 12.4: Eastern Kentucky RTEP Overview

PJM operates the BES transmission facilities (and others monitored at lower voltages), within the eastern Kentucky footprint shown on Map 12.20, including those of American Electric Power (AEP).

Customers are served by native generation resources and power transfers across tie-line facilities with adjoining systems.

Map 12.20: PJM Service Area in Eastern Kentucky



**Critical RTEP Issues and Upgrades**

PJM’s annual RTEP process assesses transmission in Eastern Kentucky for compliance with NERC reliability criteria violations. This can include identification of the need for new baseline enhancements and for network upgrades to accommodate the interconnection of new generating resources within the AEP TO zone. These and other key critical RTEP issues are summarized in Table 12.17 which also identifies the other sections of this report where additional discussion may be found.

**12.4.1 – Load Growth and Existing Generations**

**Internal Load Growth**

Load growth for summer and winter periods is shown in **Section 12.0.2**. The peak summer load growth rate for the AEP Transmission Owner zone within PJM is expected to be 1.2 percent on average over ten years through 2019. The peak winter load growth rate for AEP is expected to be 0.7 percent on average over ten years through 2018/19.

Forecasted loads are modeled in power flow studies used to develop PJM’s RTEP through December 2009. PJM’s RTEP includes baseline transmission upgrades to meet expected 2014 peak load conditions. PJM’s ongoing RTEP process continues to study anticipated needs for additional transmission expansion plans to meet load growth requirements beyond 2014 as well.

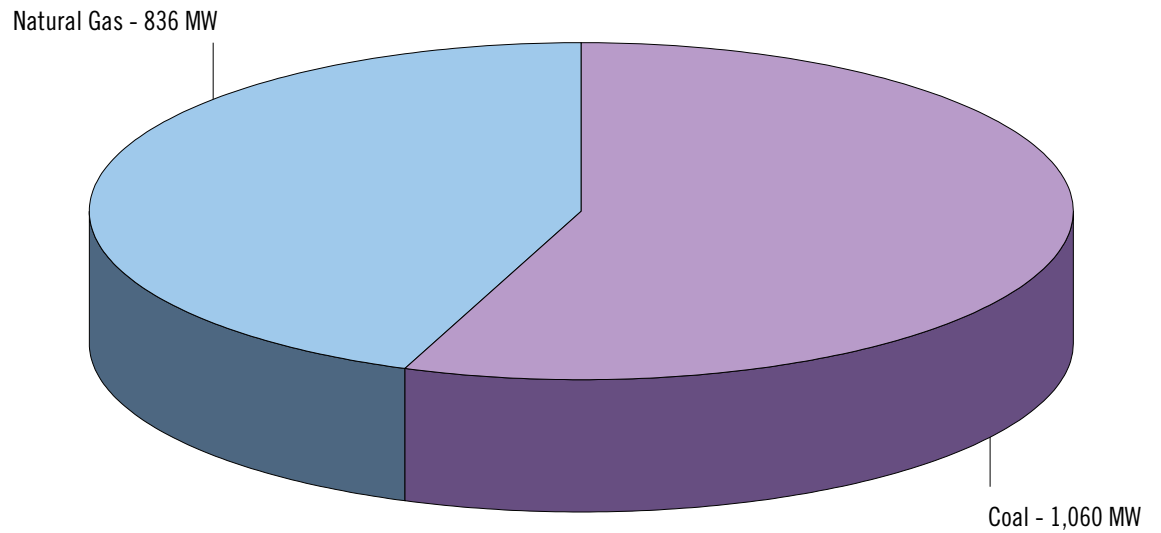
**Table 12.17: Critical Issues in Eastern Kentucky**

RTEP Topic	Report Section	Importance
Load Growth Trends	<a href="#">2.1</a>	10-year forecasted peak power demand for individual TO zones
Load Management Trends	<a href="#">2.2</a>	Impacts of Load Management as a capacity resource
Generator Interconnection Plans	<a href="#">2.3</a>	New sources of electric power to meet customer demand
Wind and other renewable fuel sources	<a href="#">2.3.3, 2.3.4</a>	Potential for wind and other renewable fuel generating resources to meet RPS requirements
Generator Deactivations	<a href="#">2.4</a>	Impact on transmission requirements from generation removed from operation
Merchant Transmission Interconnection Plans	<a href="#">2.5</a>	Impact of merchant transmission interconnection requests
2014 BES Upgrades Below Backbone 500 kV Level	<a href="#">8.4</a>	Resolving zone-specific NERC-based reliability criteria violations
Market Efficiency Studies	<a href="#">10.2</a>	Assessing RTEP upgrades for potential market efficiency benefits
Operational Performance	<a href="#">2.6, 8.5</a>	Addressing transmission performance observed in actual operations
Long-term PJM Challenges	<a href="#">13.1, 13.2, 13.3, 13.4, 13.5, 13.6</a>	Impacts of ATSI, new LDAs, PRD, smart grid, FERC policy, state policy, RPS
2010 RTEP Sensitivity Studies	<a href="#">13.7</a>	Sensitivity tests related to load, generation and loop flow parameters

**Existing Generating Capability**

Figure 12.10 provides a snapshot of the existing installed capacity by fuel type in eastern Kentucky.

**Figure 12.10:** Existing Installed Capacity in Eastern Kentucky



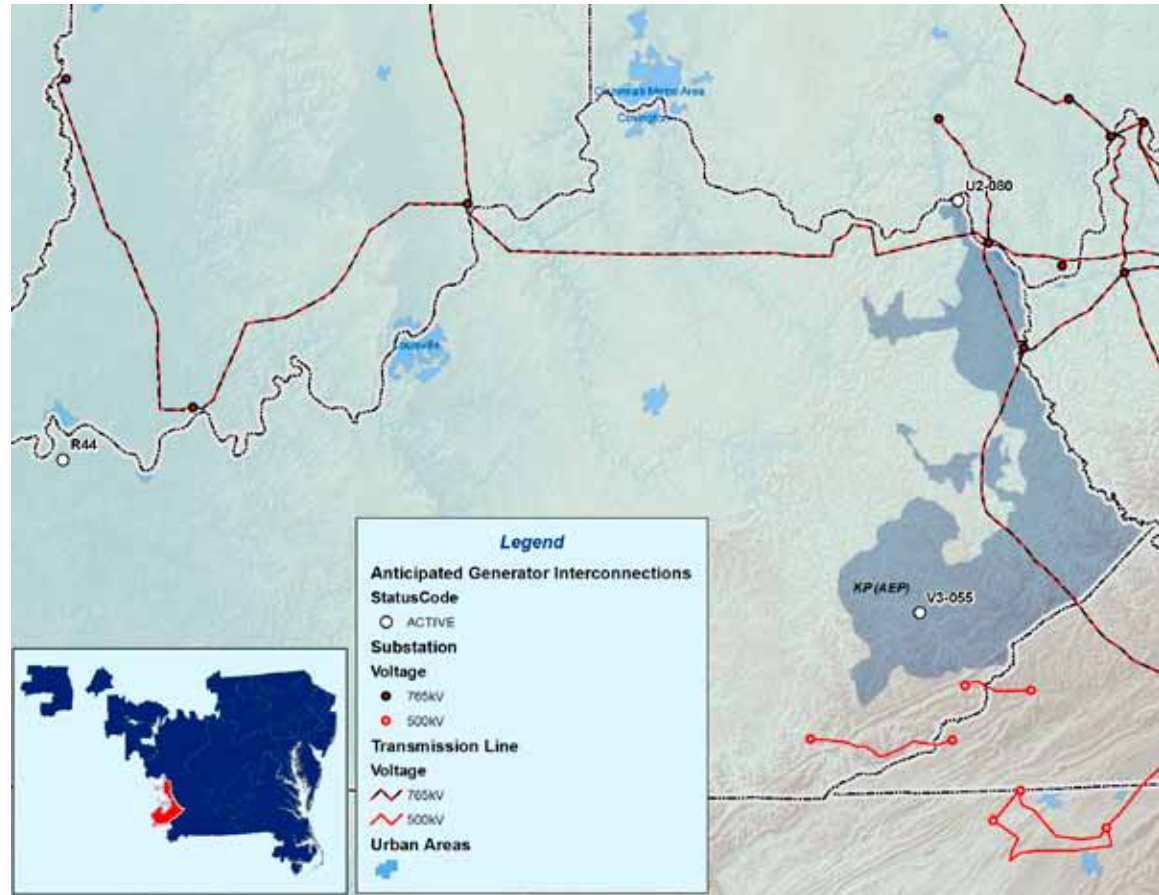
**\* NOTE**

Values presented in this figure comprise installed capacity as of December 31, 2009 that is located within the PJM RTO and eligible to participate in RPM auctions. Specifically regarding wind, this figure does not include any additional wind powered generation that received capacity injection rights during the second half of 2009 but which would be expected to participate in future RPM auctions. Nominal ratings of wind-powered facilities are typically many times larger than installed capacity values, as discussed and presented in **Section 2.3.4**.

**Table 12.18:** Queued Generation Interconnection Requests in Eastern Kentucky

Queue	Project Name	MW	MWC	Status	Schedule	TO	Fuel Type
R44	Rockport 765 kV	485	485	ACTIVE	3/31/2011	AEP	Coal
U2-080	South Portsmouth 138 kV	134	134	ACTIVE	7/1/2011	AEP	Coal
V3-055	Engle 69 kV	50	50	ACTIVE	1/1/2013	AEP	Biomass

**Map 12.21:** Queued Generation Interconnection Requests in Eastern Kentucky



**12.4.2 – Generator Interconnection Requests**

PJM has received three interconnection requests – through the close of Queue V4 on January 31, 2010– listed in Table 12.18 and shown on Map 12.21.

**12.4.3 – Generation Deactivations**

Through December 31, 2009, PJM had not received notice of any anticipated generator deactivations in eastern Kentucky.

**12.4.4 – Merchant Transmission Interconnection Requests**

Through January 31, 2010, PJM’s interconnection queues did not contain any requests for merchant transmission interconnection in eastern Kentucky.

**12.4.5 – Transmission Expansion Plans**

New RTEP planned transmission upgrades in Eastern Kentucky greater than \$5 million as approved by the PJM Board during 2009 included a set of baseline upgrades on 138 kV and 69 kV transmission in the Hazard area to resolve Category C violations per Table 12.19. Map 12.22 shows the location of this upgrade.

A complete listing of all PJM Board-approved BES reinforcements – baseline enhancements as well as network upgrades to accommodate interconnection requests – can be found on PJM’s Web site via the following URL: <http://www.pjm.com/planning/rtep-upgrades-status.aspx>.

**12.4.6 – Interconnection Requests for Generation Powered by Renewable Fuel Sources**

As of the close of Queue V4 on January 31, 2010, PJM’s queue contained one interconnection request for a 50 MW plant fueled by biomass in eastern Kentucky as listed in Table 12.18 and shown on Map 12.21.

**Table 12.19:** Major 2009 RTEP Plans in Eastern Kentucky

		System Upgrade Drivers								Date	Cost (M)	TO Zone(s)	2009 TEAC Review	
		Baseline Upgrades					Network Upgrades		Supplemental Upgrade					
Upgrade		Baseline Load Growth / Deliverability & Reliability	Congestion Relief - Economic	Operational Performance	Generator Deactivation	TO Criteria Violation	Generation Interconnection	Merchant Transmission Interconnection	Long-term Firm Transmission Service	Criteria Compliance other than for Baseline				
1	Enhancements to Hazard Area 138 kV and 69 kV transmission facilities	▲									June 2013	20	AEP	9/16/2009

Map 12.22: Major 2009 RTEP Plans in Eastern Kentucky

