

Section 4: 2010 Retool



4.0: Key Results

In recognition of the dynamic nature of study assumptions, PJM's 2009 RTEP analysis included a Baseline Retool assessment of the 2010 system. This retool analysis provides PJM with the opportunity to address uncertainties associated with prior upgrade decisions and identify whether they are still required when originally identified.

4.0.1 – Modeling Assumptions

PJM incorporated a number of changes into the 2009 RTEP retool analysis to reflect system since 2005. The 2005 RTEP Report summarizes original 2010 RTEP results and is available at: <http://www.pjm.com/documents/reports/rtep-report/2005-rtep.aspx>.

Generation

PJM's queue-based, 3-study interconnection process offers developers the flexibility to consider and explore their respective generation interconnection business opportunities. While a developer can withdraw at any point, the process is structured such that each step imposes its own increasing financial obligations on the developer. The process also establishes milestone responsibilities for the developer, PJM and each Transmission Owner (TO) impacted by the request.

With respect to the 2009 RTEP Retool of the 2010 system, all generation expected to be in service by June 1, 2010 was modeled, based on the criteria for inclusion in the RTEP analysis as described in **Section 2.3**. This sections also provides information regarding generation interconnection queue activity for projects which entered PJM's queues since 1999.

2009 Load Forecast vs 2005 Forecast for 2010

Load forecasting is a fundamental driver of resource adequacy requirements and transmission expansion plans. PJM issued a new load forecast report in January 2009 for 2009 through 2024. PJM RTO load for 2010 was forecasted to be 136,038 MW, 9,705 MW (6.7 percent) less than the 2005 forecast for 2010 and 7,590 MW (5.2 percent) less than the 2006 forecast for 2010.

Likewise, the 2009 PJM forecasts for the Mid-Atlantic region of PJM were 4.6 percent and 4.0 percent less than the 2005 and 2006 load forecasts, respectively.

Section 2.1.3 provides detailed forecast comparisons and load growth projections including RTO and Mid-Atlantic load forecast trends.

Experience has shown that increases or decreases in load growth in the Mid-Atlantic region of PJM can lead to corresponding increases or decreases in west-to-east flows on PJM BES transmission lines.

Load Management

PJM’s RTEP process analyses model the impact of load management. This includes the impact of Demand Resources (DR) and Energy Efficiency (EE) that have cleared PJM’s Reliability Pricing Model (RPM) three-year-forward capacity market. Additional discussion of load management concepts can be found in **Section 2.2** and **Section 3.4.3**.

The 2010 retool in PJM’s 2009 RTEP cycle of analyses modeled the impact of the 1,996 MW of load management that was forecasted for 2010/2011 based on DR and ILR commitments for the Mid-Atlantic region through the RPM process, consistent with the 2009 Load Forecast Report. The 1,996 MW included Interruptible Load for Reliability (ILR). The 2005 RTEP included 793 MW of Active Load Management (ALM) while the 2006 RTEP included 890 MW of ALM for the Mid-Atlantic region, per the respective business rules in place for the respective Load Forecasts for those RTEP cycles.

As a result of recent rule changes, importantly, ILR was treated as a stand-alone resource in RPM auctions for 2011 and all relevant years preceding that point. Subsequent to 2011, ILR is eliminated. A description of recent rule changes can be found in **Section 2.2**. Additional information is also included in PJM Load forecast reports, available on-line via the following URL link: <http://www.pjm.com/planning/resource-adequacy-planning/load-forecast-dev-process.aspx>

Network Topology

In the four years since the 2005 RTEP was approved, many additional transmission upgrades have been approved by the PJM Board. Those upgrades, along with merchant transmission projects that are expected to be in service by June 1, 2010, were incorporated into the 2009 Retool analysis for the 2010 system. Interchange values used in the 2009 Retool analysis of the 2010 system were consistent with approved long term firm transmission service requests in PJM’s OASIS system.

4.0.2 – Retool Results

The installation of a new 500 kV substation at Jack’s Mountain (formerly referred to as Airydale) was originally identified in the 2006 RTEP as a solution to address widespread voltage issues for Eastern Mid-Atlantic Load Deliverability. The approved solution is to build a 500 kV substation by tapping the Keystone - Juniata and Conemaugh - Juniata 500 kV lines and adding 1,000 MVARs of shunt capacitors at Jack’s Mountain. Retool results indicate that this upgrade can be deferred until 2012.