



**PJM Interconnection  
Load Analysis Subcommittee  
Minutes of the 292<sup>nd</sup> Meeting  
Conference Call  
July 25, 2011**

**Members Present:**

John Reynolds, Chairman	PJM Interconnection, L.L.C.
Debbie Kanner	Allegheny Power
Randy E. Holliday	American Electric Power
John Goodenough	Baltimore Gas and Electric Company
Dennis Kelter	Commonwealth Edison (Exelon)
Bill Moll	FirstEnergy Solutions Corp.
Susan Mushock	PPL Electric Utilities
Stephen Wreschnig	Public Service Electric & Gas
Ayana Wood	UGI Utilities, Inc.
Molly Mooney, Secretary	PJM Interconnection, L.L.C.

**Others Present:**

Jeff Brown	American Electric Power
Leon Brunson	Baltimore Gas & Electric Company
John McDaniel	Baltimore Gas & Electric Company
Bill Pino	Baltimore Gas & Electric Company
James Jablonski	Borough of Lavallette, New Jersey
Robert Zacher	Commonwealth Edison (Exelon)
Dave Zahakaylo	Commonwealth Edison (Exelon)
Bill Schofield	Customized Energy Solutions
Hertzel Shamash	Dayton Power & Light Company
Jose Merino	Duke Energy Ohio, Inc.
James Habberfield	Duquesne Light Company
Audrey Lyke	Exelon Generation Co., L.L.C.
Stuart McMenemy	Itron
David Hamilton	Old Dominion Electric Cooperative
Ed Tatum	Old Dominion Electric Cooperative
James Wright	Old Dominion Electric Cooperative
David Woodruff	PPL Electric Utilities
Bryan Mills	PSEG Energy Resources and Trade L.L.C
Jeff Burke	Virginia Electric & Power Company
Yashodhan Dongre	Virginia Electric & Power Company
Abhijit Rajan	Virginia Electric & Power Company
James Wilson	Wilson Energy Economics
John J. Slivka	PJM Interconnection, L.L.C.
Jennifer Warner-Freeman	PJM Interconnection, L.L.C.



## 1. ADMINISTRATIVE

PJM took attendance and asked for any additional agenda items.

## 2. MINUTES

Minutes from the February 15, 2011 meeting were reviewed. The minutes were approved and final minutes will be posted to the LAS webpage.

## 3. REVIEW OF UPDATED ITRON RECOMMENDATIONS AND UPDATE ON PRICE VARIABLE

Mr. Reynolds provided some background on why PJM investigated the use of a price variable in the load forecast models. One of the Itron recommendations was to use a price shift variable (a zero/one dummy) in the models. PJM tried this approach last year and the variable did not produce any significant change in the load forecast. The members asked PJM to review using an actual price variable in the model.

PJM asked members for monthly price data by revenue class. Four member companies responded to PJM with price data. One issue with the data was that revenue class data did not fully reflect shopping customers' realized price. PJM shared results of putting a price variable in four zonal NCP and Energy models. Model statistics including t-stats, elasticities, Adjusted R-Square, and MAPEs were presented for monthly or yearly prices. The results were inconsistent and sometimes spurious with positive coefficients and unrealistic magnitudes. Results were also very sensitive to the timeframe used in the estimation since a large price change could completely change results. Another issue with implementing a price variable in the model would be the development of a forecasted price. Given the challenges of collecting comprehensive historical price data and the poor results for the four zonal models studied, PJM does not plan to further pursue the introduction of a price variable into the load model.

Itron presented its "Review of PJM Models: Model Accuracy and Forecast Stability" report. Dr. McMenamin summarized the work done by Itron after they received forecast results from PJM that used historical economic data to run models. Models were run with GMP, Index1 and Index2 economic variables. Dr. McMenamin said that the indexed economic variables appeared to be a little more accurate and stable in the historical period studied but it does not mean that they will be so going forward. In previous forecast vintages the GMP economic variable seemed to be inconsistent with historical growth. More recent GMP forecasts are more in line with history. All methods seem to be forecasting the same at the moment, so it could be a tie as to which economic variable to use going forward. Itron said the current analysis confirmed their feeling that the Index methods would be a little bit better than GMP. They do not have a strong preference of Index1 or Index2.

Members were asked for questions or feedback on the Itron report. A question on which economic vendor was used in the analysis was raised. All analysis is using Moody's. A question on the choice in economic variable and forecast time horizon was raised, specifically in the short to medium range (1 – 4 years) there is not a significant difference vs. a long range forecast (10 years out) the debate is open. Dr. McMenamin said that initially GMP forecast growth rates were too strong related to the forecast but he is not sure this is



true now. The Index approaches would have outperformed GMP in the short term because of the nature of the GMP forecasts at that time. One member mentioned that they used system sales and a load factor instead of a specific economic variable in their models. Dr. McMnamin pointed out that although this may work well for individual utilities it would not work well for PJM since PJM's modeling approach of using daily Zonal models is designed to address the weather diversity across the PJM territory.

#### **4. OPTIONS FOR COINCIDENT PEAK (CP) FORECAST ALLOCATION**

PJM presented some background on the current method of CP allocation which allocates the RTO monthly peaks to zones based on each zone's maximum CP over the season. In their Phase II review Itron recommended using the zones' contributions to the forecasted RTO seasonal peaks. This recommended method would assign a smaller share of the RTO total to those zones that are less coincident with the RTO. PJM believes that it may be necessary to have two CP forecasts – one for planning studies that would use the Itron recommended CP allocation method and a second for RPM purposes. PJM noted that the original CP allocation was developed before RPM and cost allocation was not considered. One possible method for CP allocation in RPM would be a Loss of Load Expectation (LOLE) based allocation using GEMARS, but ultimately the development of a CP allocation for use in RPM should be assigned to a group familiar with RPM philosophy and requirements. Members agreed that an example showing different CP allocation methods and the results they produce would be beneficial.

#### **5. PJM PLAN FOR LOAD FORECAST MODEL REVISIONS**

Mr. Reynolds presented PJM's plan for moving forward with model enhancements. PJM plans to use Moody's as the sole economic forecast and determine the economic driver (GMP, Index1, Index2) with stakeholder input by the end of August. PJM does not plan to include a price variable in the model. PJM plans to adopt the Itron proposal for CP allocation for the planning forecast and work with stakeholders on producing a separate forecast for RPM CP allocation through the Planning Committee (PC) and possibly the Market Implementation Committee (MIC).

Members were asked for comments and questions on PJM's plan for moving forward with model enhancements. One participant agreed with Itron that Index1 or Index2 is slightly better than GMP, but expressed no preference between the indexed variables. PJM asked if any member disagreed with that view and received no opposition. A question was asked if PJM had evaluated if Moody's or Global Insight had been more accurate. PJM responded that Global Insight was not evaluated in Itron's revised report. One participant recommended that PJM still consider Itron's recommendation to use pooled economic forecasts. A member asked if PJM plans to use the same economic driver for each zone. PJM responded that all zones would use the same economic driver. A number of members commented that more explanation and examples were needed to understand the CP allocation issue. PJM agreed to provide more information.

#### **6. PJM LOADS – SUMMER 2011**

Next, Mr. Reynolds reviewed the new all-time RTO peak experienced Thursday July 21<sup>st</sup>. The RTO with ATSI preliminary peak on July 21<sup>st</sup> hour ending 17:00 was 158,450 MW. PJM met the load with no trouble on the system and did not call demand response. It was noted that on August 2, 2006 the RTO peak with ATSI would have been 158,257 MW. On Friday July 22<sup>nd</sup> Chicago was cooler and the East coast was hotter. Load management was called in BGE, DPL, DQE, JCPL, METED and PECO. PJM will not be able to weather normalize until final metered loads and addbacks are received.



## **7. RULES FOR LOAD DROP ESTIMATES (ADDBACKS)**

Mr. Langbein, manager of Retail Demand Response Integration at PJM discussed how the current rules for load drop estimates came to be. Prior to 2007 and the introduction of the eLRS application PJM sent spreadsheets out to each curtailment service provider to collect addbacks for every hour of the year. Now addbacks are collected using eLRS with new rules that are more objective and consistent in the market.

Mr. Brown from AEP presented what AEP feels is an issue with addback data and its implication on the load forecast. Mr. Brown said that PJM's load forecast may be understated due to the lack of available addback data. AEP feels that rules are needed to require the reporting of impacts from all load management programs to PJM. Addbacks for all hours are needed to effectively model the load-weather relationship in the load model. PJM mentioned that the next step with the addback issue would be for a member to produce an issue statement that will be assigned to the appropriate PJM committee.

## **8. NEXT STEPS**

PJM plans to report the LAS discussion with the Planning Committee at their August 4<sup>th</sup> meeting.

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