

PJM Response To Issues Identified at the July 2009 Load Forecast Review Session

July 31, 2009

As a result of the July load forecast review session and the subsequent Planning Committee meeting, five issues were identified for further attention:

1. Produce an “average growth” scenario and related sensitivity analyses
2. Investigate scaling the Economy.com GMP estimates to the Blue Chip consensus GDP growth rates
3. Develop a plan for addressing price-responsive demand
4. Research elasticity of electric demand to economic output in other ISO/RTO regions
5. Consider proposed additions to the Load Forecast Report

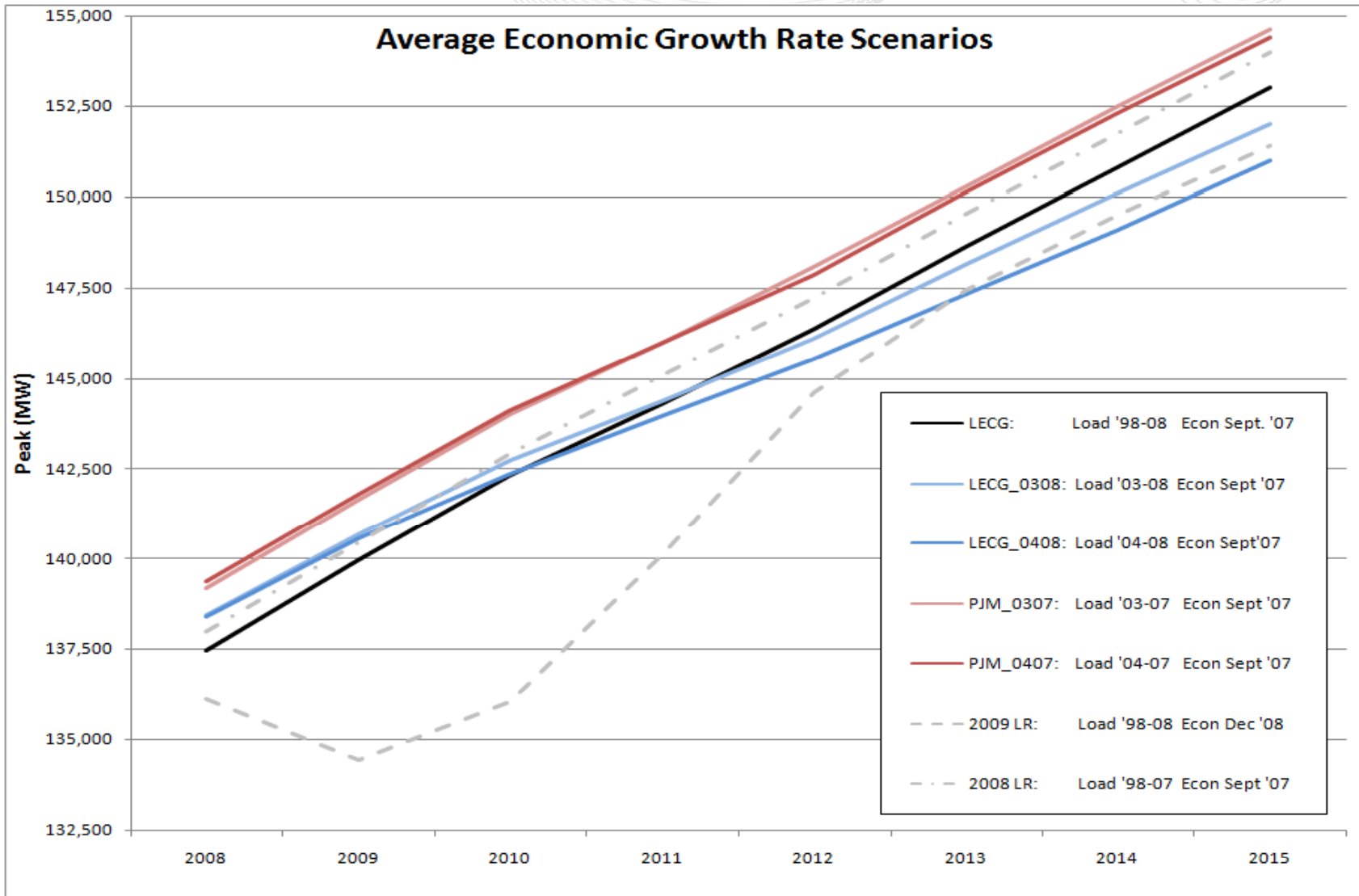


#1: Produce an "average growth" scenario and related sensitivity analyses

- B.** In addition to the trend of slowing peak load growth, the PJM 2009 Load Forecast also reflects the impact of the forecasted economic downturn. The extent to which the PJM 2009 Load Forecast captures the trend of slowing peak load growth can more accurately be judged by removing the impact of the forecasted economic downturn. This can be done by inserting an economic forecast that reflects historical average growth rather than recession. Run a sensitivity case under which the average economic growth over a recent fairly stable period (say, the 2002-2007 average) is inserted in place of the recent actual growth and forecast that reflect recession (Q3 2008 and beyond), to eliminate nearly all of the impact of the recession from the forecast. Call this the "No-Recession Scenario."
- C.** Run the sensitivity analyses showing the impact of shorter historical periods (2003-2008, 2004-2008), as in Load Forecast Training slide 81, based on the No- Recession Scenario.



#1: Produce an "average growth" scenario and related sensitivity analyses





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Scenario	2008	2009	2010	2011	2012	2013	2014	2015
LECG: Load '98-08 Econ Sept. '07	137,455	139,957	142,327	144,316	146,369	148,631	150,817	153,021
LECG_0308: Load '03-08 Econ Sept '07	138,428	140,685	142,735	144,359	146,109	148,135	150,087	152,001
LECG_0408: Load '04-08 Econ Sept'07	138,400	140,551	142,352	143,942	145,544	147,316	149,066	150,973
PJM_0307: Load '03-07 Econ Sept '07	139,190	141,637	144,000	145,988	148,081	150,263	152,471	154,596
PJM_0407: Load '04-07 Econ Sept '07	139,359	141,772	144,092	145,952	147,843	150,117	152,262	154,371
2008 LR: Load '98-07 Econ Sept '07	137,988	140,447	142,924	145,101	147,223	149,535	151,716	153,973
2009 LR: Load '98-08 Econ Dec '08	136,104	134,429	136,037	140,134	144,613	147,444	149,497	151,412

Note: Data in the table is color-coded to match previous graph



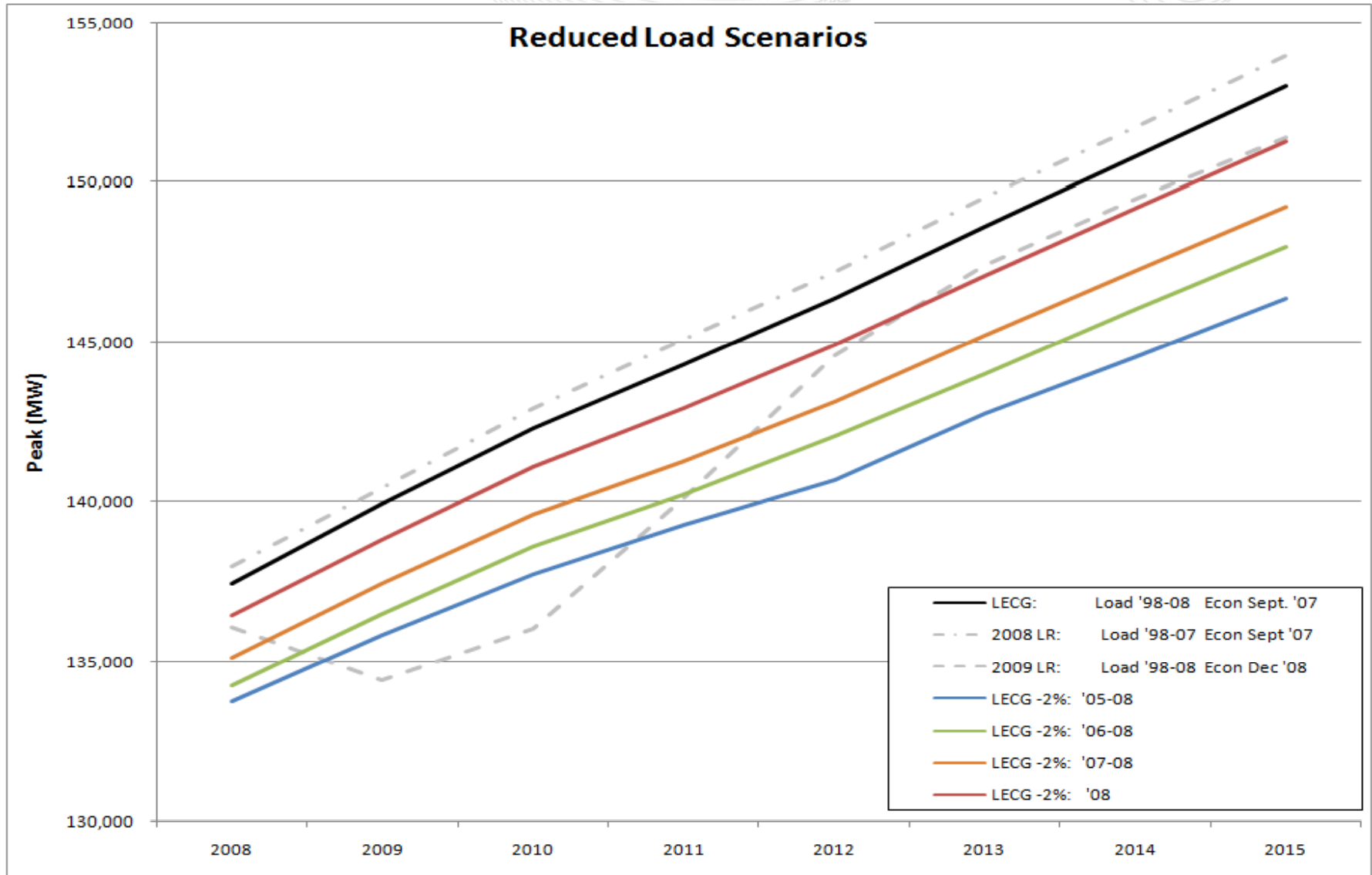
#1: Produce an "average growth" scenario and related sensitivity analyses

- D.** Again based on the No-Recession Scenario, run further sensitivity analyses with the following perturbations, in each case reporting the incremental percent reductions in the forecast peak load values by year (these analyses will show the extent to which a recent trend toward lower peak load values will affect the forecast, after the trend has persisted for one, two, three or four years):
- i. Reduce all 2008 normalized peak load values used in the forecast by a small amount, say 0.2%.
 - ii. Reduce all 2008 and 2007 normalized peak load values by 0.2%.
 - iii. Reduce all 2008, 2007 and 2006 normalized peak load values by 0.2%.
 - iv. Reduce all 2008, 2007, 2006 and 2005 normalized peak load values by 0.2%.

Note: The following results applied 2.0% load reductions



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Scenario	2008	2009	2010	2011	2012	2013	2014	2015
LECG: Load '98-08 Econ Sept. '07	137,455	139,957	142,327	144,316	146,369	148,631	150,817	153,021
LECG -2%: '05-08	133,759	135,828	137,741	139,281	140,680	142,740	144,535	146,360
LECG -2%: '06-08	134,233	136,495	138,605	140,229	142,053	144,022	146,035	147,993
LECG -2%: '07-08	135,137	137,444	139,616	141,295	143,144	145,213	147,256	149,258
LECG -2%: '08	136,465	138,830	141,122	142,934	144,909	147,083	149,171	151,264
2008 LR: Load '98-07 Econ Sept '07	137,988	140,447	142,924	145,101	147,223	149,535	151,716	153,973
2009 LR: Load '98-08 Econ Dec '08	136,104	134,429	136,037	140,134	144,613	147,444	149,497	151,412

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Investigate scaling the Moody's Economy.com (MEDC) GMP estimates to the Blue Chip consensus GDP growth rates

- PJM has discussed this issue with MEDC. They offer a service whereby a consensus forecast can be used to derive revised MEDC GMP forecasts. Estimated cost is \$15K for each simulation. Details of the exact process and costs are still being determined.

Develop a plan for addressing price-responsive demand

- The PJM Planning Division will be involved with the upcoming price-responsive demand investigation being conducted by the PJM Markets Division. Results of that study will be incorporated into the load forecast as appropriate.

Research elasticity of electric demand to economic output in other ISO/RTO load models

- ISO-NE: Uses Real Personal Income as driver in the energy model, but no economic driver in the peak model. They estimate an income elasticity with respect to energy of 0.45% (long-run). They believe that using GDP instead of Income would give higher elasticities.
- IESO: Said their peak model does not lend itself to deriving this type of elasticity.
- The other 3 ISOs/RTOs did not respond to this request.

Consider proposed additions to the Load Forecast Report

- Include additional years of history for weather normalized zonal loads.
- Include the monthly forecast peak values out additional years, to include the years needed for the RRS and RPM.
- Include the zonal standard deviation values used in the CETO analyses.