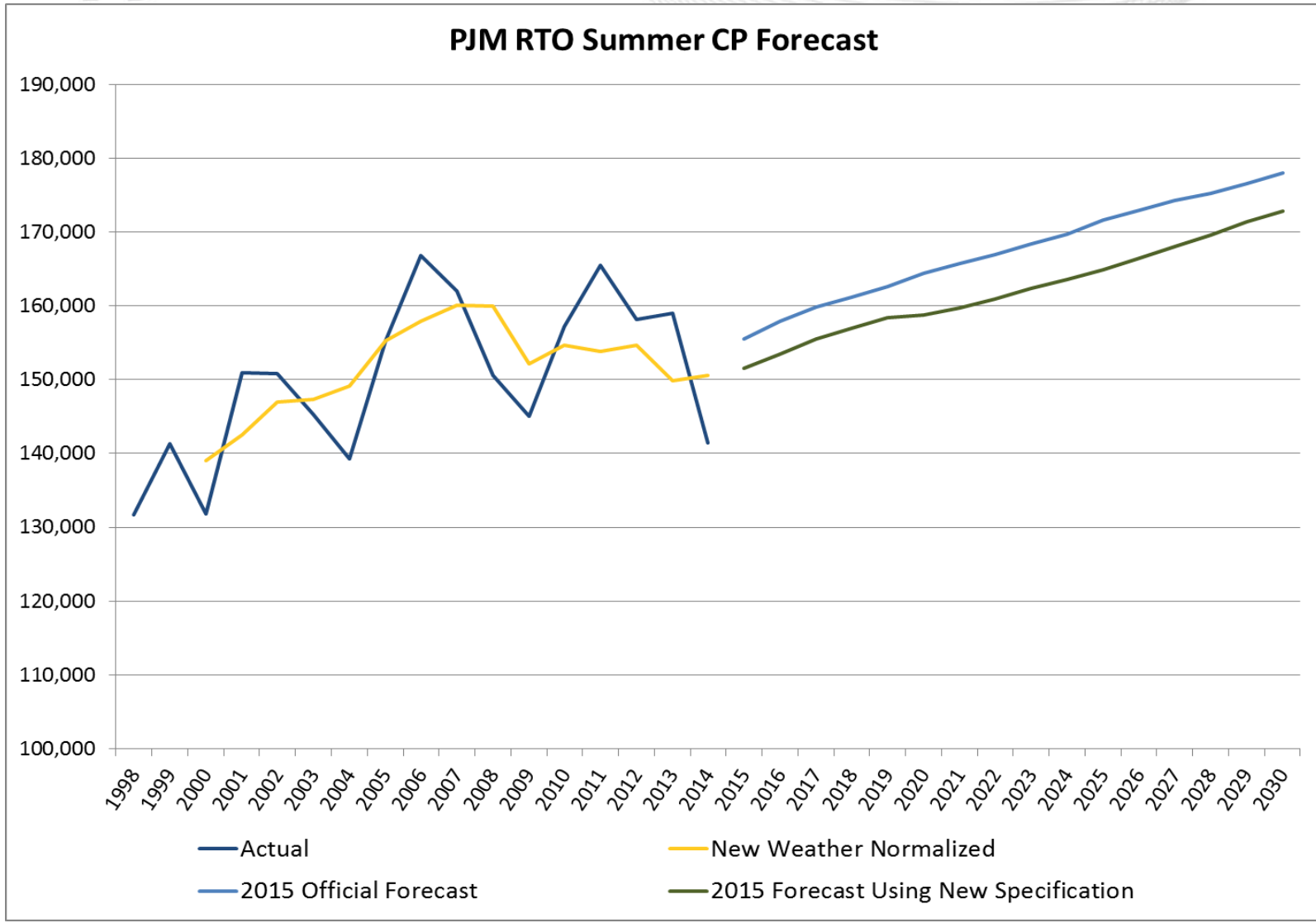




Updates to Load Forecast Methodology

Tom Falin
Manager – Resource Planning
Markets and Reliability Committee
October 1, 2015

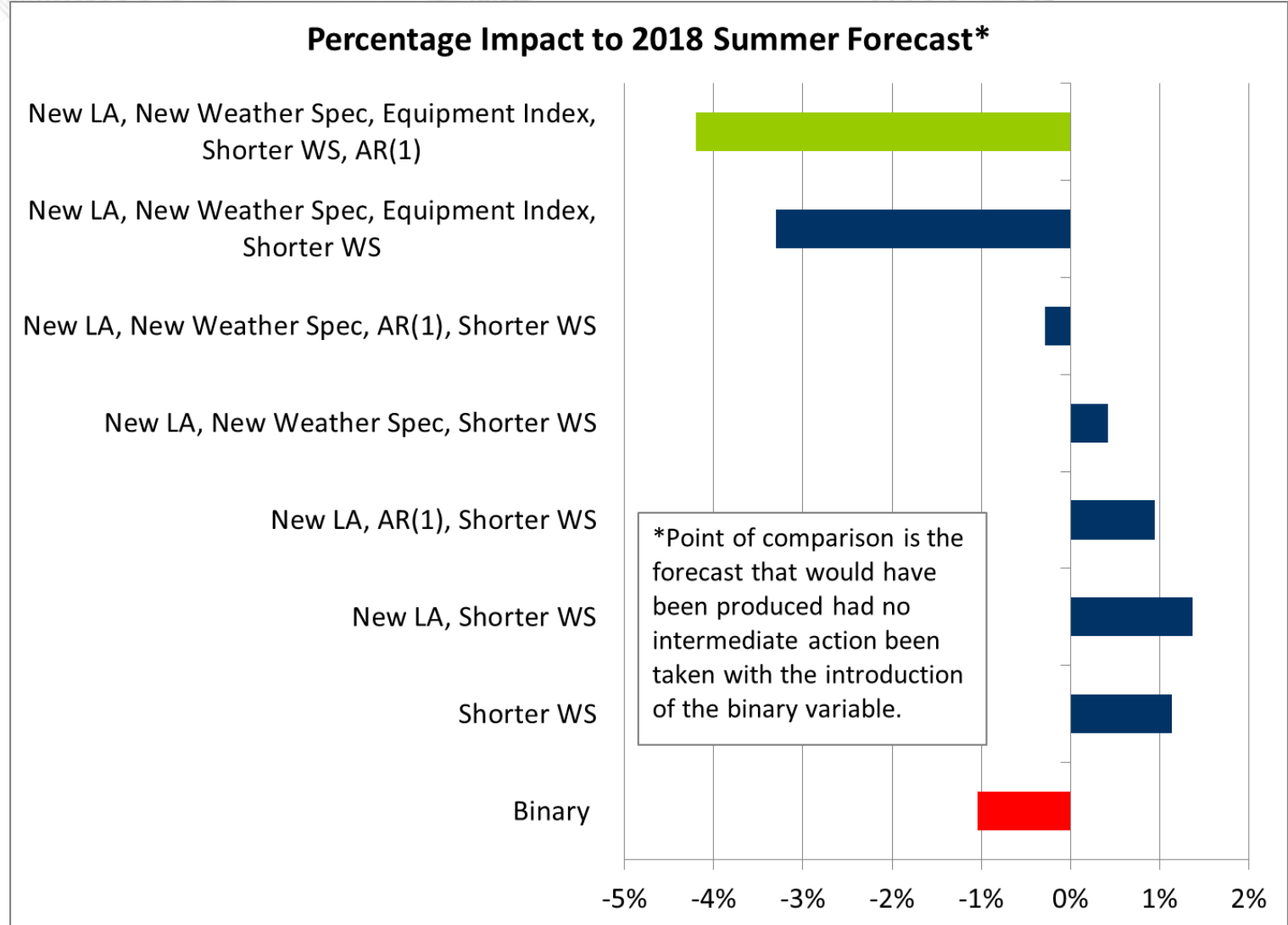
- Addition of an Energy Efficiency and Saturation Variable
- Shortened weather simulation
- Addition of weather splines
- Updated Weather Stations and Metro Areas
- Use of Cooling Saturation figures from Dominion
- New Load Adjustments for gain or loss of a major customer



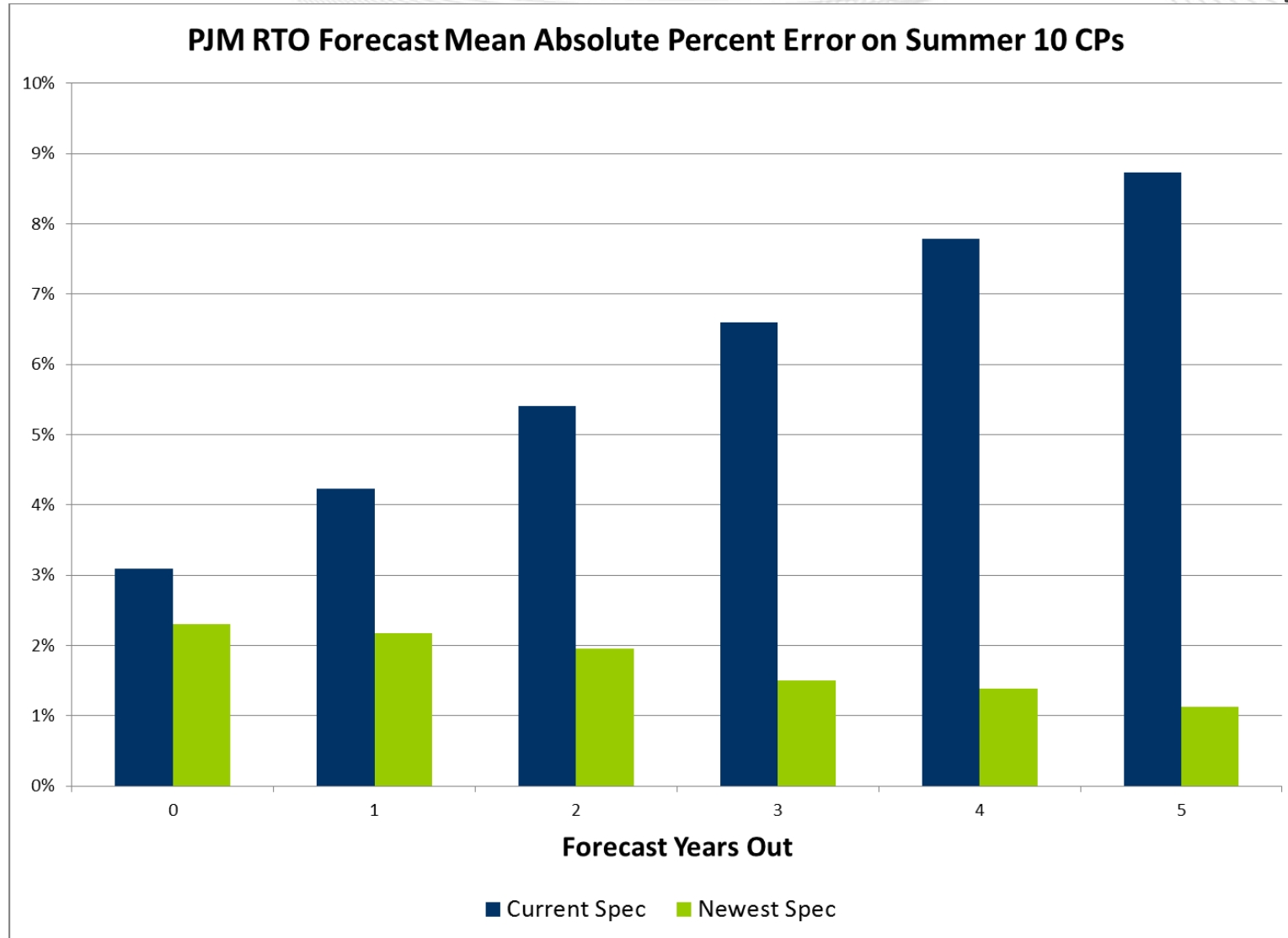
Newest results are 2.6% lower than the official 2015 forecast for 2018

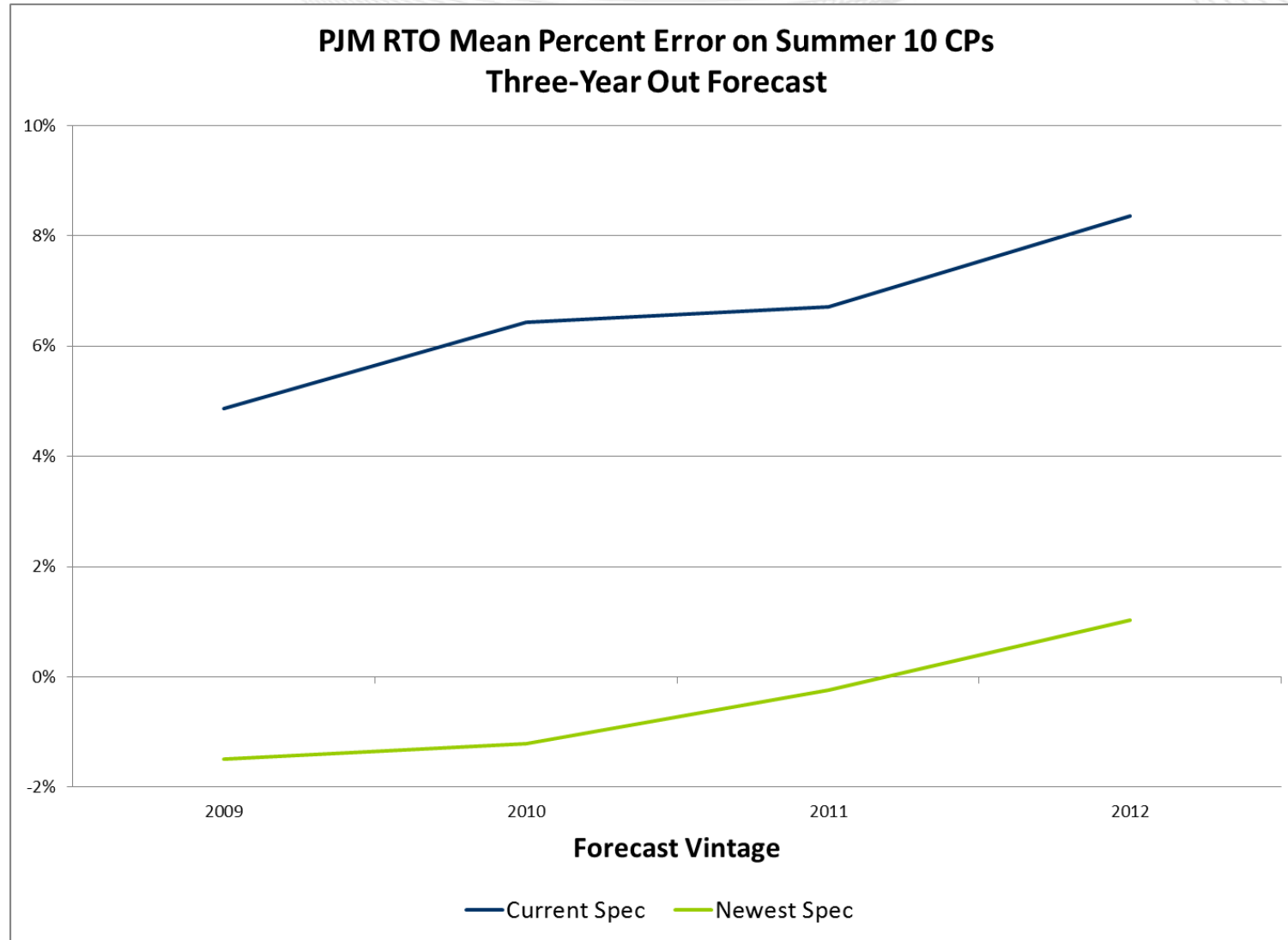
Decomposition of Forecast Changes - Summer

LA = Load Adjustment
 WS = Weather Simulation
 AR(1) = Auto-regressive Error Term



- PJM conducted accuracy analysis on the top 10 load days (10 CPs) from each year using forecasts constructed with July 2015 vintage economics and Equipment Saturation/Efficiency data as of 2014.
- Forecasts were produced with estimation periods ending August 2008 through ending in August 2014
- Analysis was conducted for years 2009 through 2015
 - 2015 analysis conducted using posted metered data and only uses data through July 31, 2015





- Developing Equipment Index trends have only recently started to become a valuable tool in the PJM forecasting model. Prior to 2011 or 2012, the model may not have had enough information on equipment trends to make proper forecasting judgments.
- The New Specification has shown a tendency to get better as it gets more information, whereas the Current Specification is getting worse.
- On a three-year out basis the mean absolute percent error of the New Specification is 1.5% versus 6.6% for the Current Specification (an improvement of roughly 75%).
 - This improvement is even more stark in 2015 (85%).

- Additional information can be found on the Load Analysis Subcommittee website: <http://www.pjm.com/committees-and-groups/subcommittees/las.aspx>
 - More detailed findings
 - Description of Weather Normalization approach
 - Zonal forecasts

- What is presented is **NOT** the 2016 Official Forecast
 - Economics will be updated again
 - Equipment index trends will be updated with 2015 data
 - And any additional zonal saturation data if supplied and appropriate
 - Roll in 2015 summer data
 - Any additional model changes
- Inclusion of annual BTM Solar Generation additions
- First read of proposed Manual language changes will be on October 22 MRC agenda
- Need to develop an approach to make an EE adjustment to the load forecast for use in RPM auctions