

AEO Electricity Working Group Meeting Notes – December 8, 2015

The first AEO Electricity Working Group meeting for AEO 2016, hosted by Thad Huetteman of EIA, was held on the morning on December 8, 2015.

The purpose of this first meeting was to present the “going in” assumptions for AEO 2016. The next meeting will present the results from a stable, but not necessarily final, set of runs. Some of the key items discussed were:

Modeling Scope – AEO 2016 will be a full version (like AEO 2014) with many side case alternatives considered. However with the late start the schedule is much compressed, which likely limits how extensively issues can be explored. One key issue in the modeling will be the replacement of retiring coal plants—some of which are announced, and likely more that will be determined by economics in the NEMS modeling.

Clean Power Plan (CPP) – A previous analysis of the proposed CPP was done on AEO 2015 and the general results were a significant decrease in coal generation along with a sizeable increase in renewables; natural gas generation was only slightly affected. The final CPP rule is different in a number of ways from the proposed one, but the outcomes are likely to be similar in a broad sense. The CPP will be included in the AEO 2016 Reference case. However, the details of how that will be represented have not yet been determined. Modeling feasibility is key factor. Trading is an important consideration and may be modeled at a national or interconnect level. It is likely that several side cases will look at alternative implementations. Whether a mass-based approach or a rate-based approach represents the Reference case is still up in the air, though it appears that EIA is not considering approaches where some states go mass and other rate. They are also looking at how carbon capture and storage (CCS) options can be implemented in the modeling. Implementing CPP is the “big deal item” in their development schedule.

Other Environmental Regulations - Some requirements will be updated, including CSAPR and MATS. Other EPA rules such as cooling water intake and coal combustion residuals are being considered for inclusion.

State RPS Targets – Some states have increased their RPS targets (VT, CA & HI) which will be represented in the new AEO. The most difficult one to model will be CA. Don't have storage as a capacity expansion option for this year but considering it for the future. The model includes constraints similar to Alternative Compliance Payments, but typically this represents a manual check on the modeler's part, and usually such constraints are not binding.

Capital Cost Updates – Capital cost assumptions are being updated for selected technologies where recent changes have been seen: ultra-supercritical coal, coal/biomass co-firing, advanced CC, and utility-scale solar. They are relying on a single technical source for consistency. Internal estimates are complete and are now being reviewed. Some element of sequestration is being looked at for coal combustion. Depending on resources they may look at other technologies with nuclear being a possible one. There was some discussion of coal compliance with New Source Performance Standards via co-firing with gas rather than CCS, but this is not an option currently in the model.

Federal Tax Credits – There will be several side cases looking at alternative tax treatments for renewables.

Modeling Changes – The macro economic assumptions are for lower interest rates and lower cost escalation rates which will benefit capital intensive resources such as renewables and nuclear. Natural gas prices for the near term will be lower than in AEO 2015, but are not yet determined for the longer term.

We see the following as current priority issues:

- **CPP implementation:** The implementation of the Clean Power Plan will likely have a major impact on electricity build out. Assumptions such as mass vs. rate based compliance, what types of trading are allowed, and the use of energy efficiency will all play a major role.
- **Storage:** This could have a big effect on the use of renewables and CPP compliance. The structure of the NEMS model may limit how well storage resources can be included.

We plan to follow up on these issues with EIA. Please send us any question, comments or suggestions you have at this stage of the AEO 2016 development process.

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