

Annual Energy Outlook 2013 Renewable Electricity Working Group

Summary, Aug. 2, 2012

On Thursday, August 2 EIA held the first of two Renewable Electricity Working Groups to discuss issues related to the development of the Annual Energy Outlook 2013. The meeting was well attended by stakeholders from EIA, other DOE staff, industry associations, and interested consultants. Attendance included those there in person and through conference call/web interface. The meeting agenda can be found on Page 2 of the attached meeting presentation.

The focus of this meeting was to discuss EIA's plans for model updates for the AEO 2013, and to identify any areas that needed to be covered. Chris Namovicz, Senior Renewable Energy Analyst with the Office of Electricity, Coal, Nuclear, and Renewable Analysis (ECNRA), led the meeting.

Mr. Namovicz noted that completion of the AEO 2012 had been significantly delayed, leading to a significantly compressed model development schedule compared to previous years. Because of this compressed schedule, exacerbated in some instances by the late awarding of model development contracts, EIA was not planning a lot of major new model development efforts, but would focus on updating and maintaining current model data.

The first data update effort discussed was a new task to update the capital costs used for the electric power sector, including renewable generators. The contract task has been awarded to SAIC Energy, Environment & Infrastructure LLC (formerly R.W. Beck Inc.), who conducted a similar analysis for EIA in 2010. This task will continue EIA's effort to maintain current and consistent evaluation of power-sector capital costs across technologies. EIA is expecting to receive results from this study in time for inclusion in the AEO 2013. The 2010 study included significant stakeholder involvement, and while EIA expects to obtain stakeholder feedback on results of the current study, opportunity for an extensive stakeholder process as occurred in 2010 will likely be limited by the significant time constraints in the current AEO development cycle. An industry stakeholder expressed concern that cost estimates for wind technology in the previous R.W. Beck study did not appear to match statistically derived averages published by the DOE/LBNL. Mr. Namovicz noted that the approach used by Beck was not intended to replicate statistical data, which is not available for most technologies modeled and includes data of uncertain composition and quality, but rather to provide a consistent accounting across technologies to include the same types of costs for each technology and ensure that all costs are accounted for (including costs such as owners costs that may not typically be found in "press release" or tax filing reports of cost). Fred Mayes (ECNRA) noted that EIA is considering adding questions to its 2014 electric power sector surveys on plant cost.

EIA is also in the process of developing a task to update costs for new hydro electric generators, apart from the R.W. Beck/SAIC EEI study. Because of the site specific nature of the hydro electric supply curve, EIA cannot apply the results of the R.W. Beck/SAIC EEI to this resource, and will be relying on the Idaho National Laboratory to update the cost numbers they had originally developed for EIA. This task has not been finalized yet, and will not be completed for AEO 2013.

Several other updates of technical data and parameters were discussed, including updates of wind capacity factors and the split between biogenic and non-biogenic municipal solid waste generation. An industry stakeholder expressed concern that basing wind capacity factors using historical observations may not appropriately account for regional curtailment of wind generation resulting from transmission constraints. EIA noted that the current approach groups wind plants by observed performance to establish capacity factors based on assumed resource characteristics. While curtailments may result in some plants being mischaracterized into a lower-performing group, this should not generally affect EIA's assessment of the performance potential of higher-quality resources that are not curtailed.

Mr. Namovicz also discussed the role of state and Federal policy in the development of EIA's Reference case projections. In particular, he noted that the scheduled December 2012 expiration and potential extension or modification of the Federal Production Tax Credit (PTC) for wind may not be well synchronized with the AEO development schedule. Depending on when a potential extension or modification is passed into law, it may not be reflected in the AEO or may affect the AEO release schedule. Mr. Namovicz also noted that EIA will continue to monitor state-level policy, and update the AEO assumptions as necessary to reflect key changes to state Renewable Portfolio Standards or other laws affecting renewable electricity markets.

To ensure adequate representation of near-term capacity developments, EIA collects data on capacity additions that are currently planned by utilities and independent power providers. While EIA only includes plants known to be under construction for conventional generation sources, for some renewable generators, EIA also includes plants that have received regulatory approvals but have not started construction. This adjustment is necessary to account for both the relatively short construction period for some renewable power plants, as well as the market pressures created by the near-term expiration of Federal tax credits. EIA requested stakeholders assistance in identifying any new projects that might qualify for inclusion in the AEO on this basis.

Erin Boedecker of the Office of Energy Consumption and Efficiency Analysis presented a brief overview of renewables-related development for renewable generators in the end-use sector. Ms. Boedecker noted that they will also be updating cost information for renewable installations, and will be using data collected by the Department of Energy and its National Laboratories. Based on concerns raised by an industry stakeholder, EIA clarified that utility-sector costs are, and will be, based on the results of the R.W. Beck/SAIC EEI study, whereas end-use sector costs may be updated on other sources, as the availability of data may vary between the two sectors. Another industry stakeholder noted concerns over the interpretation of some National Laboratory data for solar installations completed under a leasing agreement, and a National Laboratory stakeholder indicated that EIA should be looking at moving end-use modeling from purchase-based financing to lease-based financing to reflect changes in the residential market for PV. Ms. Boedecker agreed that this was a useful thing to look at, but that time constraints would likely limit EIA's ability to reflect any changes in AEO 2013.

Mr. Namovicz noted that EIA is planning on extending the published forecast horizon to 2040 in AEO 2013, from the 2035 horizon used in AEO 2012. While most of the model development work has already been completed for this change, EIA needs to closely examine the results to determine what, if

any, issues arise with respect to resource, operational, technology, or other issues that may see significant change beyond the current forecast horizon.

Robert Smith(ECNRA), briefed the attendees on current efforts to update the biomass supply curves and improve the function of the biomass supply model. Current efforts are underway with the University of Tennessee and EIA contractors to substantially improve biomass modeling. Dr. Smith noted that current plans are to include this new module with AEO 2013, but cautioned that the compressed model development schedule may necessitate updating of the supply curve data for AEO 2013, with full implementation of the revised model to follow in AEO 2014. A DOE stakeholder asked if EIA was considering assigning fuel- or process-specific carbon intensities to biomass energy resources. Dr. Smith noted that the U.S. Environmental Protection Agency was still studying the issue and that EIA would likely wait for regulatory clarity on the issue before proceeding to model it.

Mr. Namovicz discussed a task to address certain aspects of wind intermittency, especially as it may affect the ramping and cycling behavior of existing fossil steam plants. While a contract task has been initiated for this work, the late task initiation and compressed development schedule will put this model development exercise on track for AEO 2014 completion. An industry stakeholder indicated that the National Renewable Energy Laboratory is doing work on this subject, which may be helpful for EIA to examine as work on the task progresses.

Finally, Mr. Namovicz solicited comments from the stakeholders. These comments are incorporated above to correspond more closely with the specific presentation areas that they address. A follow-up meeting will be held early in the fall to discuss EIA's progress toward AEO 2013 implementation.