September 14, 2017

MEMORANDUM FOR: Ian Mead
Assistant Administrator for Energy Analysis

FROM: Jim Diefenderfer
Director, Office of Electricity, Coal, Nuclear, and Renewables Analysis

SUBJECT: Summary of AEO2018 1st Coal Working Group held on August 10, 2017

The working group presentation provided a discussion of the data and modeling updates expected for the AEO2018 Reference case, along with potential side case scenarios. These updates are included in the presentation materials provided as a separate document. Participants were also encouraged to contact Greg Adams (Greg.Adams@eia.gov) if they had any follow up questions or comments.

Model Updates

The meeting was kicked off by mentioning staffing updates. This was followed by a discussion of what to look for in the AEO2018, which will be the first to highlight the extension of the projections to 2050. An explanation of how EPA and state-level policies affecting coal consumption for electricity generation are handled in the model was also provided, followed by a discussion of the regulatory uncertainty associated with future polices where EIA has traditionally assumed 3% additional cost of capital required for any investments at new or existing coal facilities not achieving 90% carbon capture and sequestration (CCS).

The second portion of the presentation focused on a review of the AEO2017 projections, emphasizing the results for national and regional coal production, employment, exports, and prices. This material included key trends affecting coal markets. EIA's assumptions for labor productivity by coal supply region—an important factor in determining the price of coal over time—were also mentioned. Emphasis was placed on the range of outcomes with respect to the High and Low Oil and Gas Resource and Technology side cases relative to the Reference and the No Clean Power Plan cases.

The third portion of the presentation focused on AEO2018 development cycle. This portion of the presentation highlighted the need to focus on updating the models to properly account for several years of new data with an emphasis on documenting and further automating these processes. The details associated with these updates include the following tasks:

- Developing additional reporting capabilities in light of the conversion of the Coal Market Module (CMM) to the AIMMS programming language the previous year
- Evaluating updates to the Coal Production Submodule in CMM that will extend into the AEO2019 cycle
- Integrating contractor recommendations for updating and enhancing the coal transportation rate, international coal supply curve, and international freight rate methodologies in the CMM

Afterwards, a preview of the IEO2017 U.S. coal export results was provided.

Work towards the development of a design concept for an International Coal Market Module for integration into EIA's international modeling system was also discussed. This model will be used to develop EIA's International Energy Outlook projections based on recommendations from 2 independent Component Design Reports, which are now available on EIA's Model Development web page. A high-level overview of each contractor's effort was also presented, and EIA indicated it plans to make the other contractor deliverables available for review on its web site.

Discussion

Questions and comments on the presentation from participants mainly revolved around the topics of regulations, trade, and coal plant technologies.

Regulations

A participant noted that EPA's Effluent Limitation Guidelines were already subject to an administrative hold and that the schedule will be subject to an additional rule-making process.

Trade

A few participants noted the recent increase in U.S. coal exports and inquired if the trend was likely to continue and where the majority of the exports originate. EIA staff indicated it would likely be a short-lived gain in the export market, and that the exports are predominantly from the Eastern U.S. One participant also asked if EIA planned on modeling specific, proposed coal export terminals on the West coast. EIA staff responded that explicit terminal assumptions are not currently modeled; however, it may be considered going forward. EIA also indicated that exchange rates do not currently factor into our coal export projections in response to an inquiry from a participant.

Coal Plant Technologies

EIA confirmed that the value of enhanced oil recovery is not accounted for in its estimation of the levelized cost of capital for a new coal plant with CCS.

One participant mentioned that EIA used a 30% capture technology in the AEO2017 and asked if a 90% capture technology would be considered in AEO2018. Following the meeting, EIA staff verified that the AEO2017 included a 90% capture technology option, which will also be included in the AEO2018.

Additional Issues

During the meeting, a few participants noted that the current administration may support policies that contribute to a more economically attractive atmosphere for new coal plants. After the meeting, one participant followed up in an e-mail stating that utility generation decisions generally take a longer-term view and expressed the view that the current relaxation of carbon policy may not have a significant effect on new coal builds. They suggested that one potential solution to account for this policy uncertainty would be to incorporate a lower cost of new coal plants in the near term. However, this development could likely add a more significant risk factor premium to capital costs than is the case in the Electricity Market Module, where technologies below 90% carbon capture are subject to an additional 3% risk penalty applied to the cost of capital.

Attendees

Guests (in person)	Affiliation
José Benitez	Energy Ventures Analysis
Francis Wood	OnLocation, Inc.

Guests (WebEx/phone)	Affiliation
Amy Gibson	U.S. Department of Labor
Boddu Venkatesh	ICF International
Brian Fisher	U.S. EPA
Carl Lundgren	U.S. Department of Labor, MSHA
Carmen Bettis	U.S. Department of Labor
Carol Campbell	U.S. Department of Labor
Chris Nichols	National Energy Technology Laboratory (NETL)
Cynthia Simpson	U.S. Department of Labor
Delma Bratvold	Leidos
Emily Hunter	U.S. Department of Labor , OWCP
Emily Medine	Energy Ventures Analysis
Gang He	Stony Brook University
Gavin Pickenpaugh	National Energy Technology Laboratory (NETL)
Greg Moxness	U.S. Department of Labor, MSHA
Gregory Marmon	Wood Makenzie
James Sutton	GE
Jamie Heller	HELLERWORX, INC
Jamie Peters	Union Pacific
Jerry Eyster	GE Energy Financial Services
John Dean	JD Energy
Paul Sullivan	National Defense University, Georgetown
Kevin Steinberger	National Resources Defense Council
Kim Kasmeier	U.S. Department of Labor
Leslie Coleman	National Mining Association
Mark Gehlhar	U.S. Department of Interior, OSMRE
Michael Weiner	Carbon Utilization Research Council
Mike Caravaggio	Electric Power Research Institute
Nicolaos Kydes	OnLocation, Inc.
Ron Oster	Peabody Energy
Ryan Jansen	Saskatchewan Research Council (SRC)
Song Zhao	Leidos
Thomas Wos	Tri-State G&T
Trygve Gaalaas	Hawk Consulting Services, Inc
Brian Schaffer	U.S. Geological Survey (USGS)

EIA attendees (in person)

Bonnie West	EIA
Carolyn Mullen	EIA Contractor
David Daniels	EIA
David Fritsch	EIA
Elias Johnson	EIA
Greg Adams	EIA
Jim Diefenderfer	EIA
Laura Martin	EIA
Lori Aniti	EIA
Mike Cole	EIA
Rosalyn Berry	EIA
Samir Nandy	EIA Contractor
Scott Jell	EIA
Thad Huetteman	EIA