

December 23, 2015

MEMORANDUM FOR: JOHN CONTI
ASSISTANT ADMINISTRATOR FOR ENERGY
ANALYSIS

PAUL HOLTBERG
TEAM LEADER, ANALYSIS INTEGRATION TEAM

JAMES TURNURE
DIRECTOR, OFFICE OF ENERGY CONSUMPTION &
EFFICIENCY ANALYSIS

FROM: BUILDINGS CONSUMPTION & EFFICIENCY ANALYSIS
TEAM

SUBJECT: First *AEO2016* Buildings Sector Working Group Meeting Summary,
presented on 12-08-2015

Attendees: Lori Aniti (EIA OEA)
John Conti (EIA OEA)
Fred Mayes (EIA OEA)
Kelly Perl (EIA OEA)
David Daniels (EIA OEA)
Bill McNary (EIA OES)
Joelle Michaels (EIA OES)
Carolyn Hronis (EIA OES)
Hiro Minato (EIA OES)
Bill Mytsak (EIA OES)
Maggie Woodward (EIA OES)
Colin McMillan (NREL)
Jack Mayernik (DOE EERE)
Amir Roth (DOE EERE)
Jenah Zweig (DOE EPSA)

Attending by WebEx/Phone: Danielle Mayclin (EIA OES)
Jay Olsen (EIA OES)
Marc Lafrance (DOE EERE)
John Ackerly (Alliance for Green Heat)
Jennifer Amann (ACEEE)
Justin Baca (SEIA)
Ines Azevedo (Carnegie Mellon)
Etan Gumerman (Duke University)
Jeff Harris (ASE)
Xiaojing Sun (Georgia Tech)
Marilyn Brown (Georgia Tech)
Frances Wood (OnLocation)
Kenneth Dubin (OnLocation)
Andrew Feierman (IMT)
Whitney Herndon (Rhodium Group)

Patrick Luckow (Synapse)
David White (Synapse)
Alan Cooke (PNNL)
Roderick Jackson (ORNL)
Isha Sharma (Energy and Resources Institute)

Buildings Team Attendees: Erin Boedecker
Behjat Hojjati
Kevin Jarzomski
David Peterson
Carol Brotman White

**WORKING GROUP PRESENTATION FOR DISCUSSION PURPOSES ONLY
DO NOT QUOTE OR CITE AS RESULTS ARE SUBJECT TO CHANGE**

The buildings presentation provided a discussion of the updates underway and anticipated for *AEO2016*. Topics presented include *AEO2016* content and schedule; modeling of efficiency programs for the Clean Power Plan; updates to federal equipment standards, end-use technology characterizations and residential stock efficiency and switching parameters; changes in commercial sector outputs from the Macroeconomic Activity Module; modeling distributed generation; and updates to historical estimates. Attendees were also asked to provide comments or suggestions for *AEO2016* and beyond, especially in the areas of growth of “other” electricity use and knowledge of research/references on end-use interactions, energy impacts and costs of energy efficiency programs, and building code compliance. The presentation materials are provided as a separate attachment.

Discussion/questions:

1. **Clean Power Plan (CPP):** Discussion of the policy assumptions for the CPP final rule prompted a question about whether energy efficiency rebates will be in the Reference case. EIA response: Yes, unless the CPP is blocked by court action.
2. **Energy Efficiency Actions:** One stakeholder requested the capability to represent energy efficiency actions at the state level rather than in the form of utility rebates so that electricity rates would not be affected. Is that capability there? EIA response: EIA has no current plans to modify the current approach that takes subsidy and program costs into account.
3. **Distributed Generation (DG):** Discussion of DG cost and performance updates led to a request for draft characteristics to be circulated. EIA response: cost and performance characteristics are definitely not yet final and cannot be circulated at this time.
4. **Solar PV:** EIA mentioned the recent addition of monthly historical generation estimates for distributed solar photovoltaics (PV) to published statistics and that the

presentation materials do not (but should) include EIA's updated calculation of solar generation in NEMS based on PVWatts5.¹

5. **Community Solar:** Which alternative modeling methodology for residential solar PV represents community solar? EIA response: neither; both options represent individual residential rooftop solar PV, not community solar. Stakeholders added that community solar characteristics vary even at the jurisdiction level and would be very hard to model.
6. **Demand Shifting:** As part of the discussion asking for stakeholder input, participants asked if control strategies for demand shifting are included in the models. EIA response: building controls are not explicitly modeled at the current time. Effects on energy consumption and intensity of use would be picked up in calibrating to historical estimates.
7. **Storage Technologies:** One stakeholder asked if storage technologies, including distributed storage are represented. EIA response: not in the end-use models; pumped storage is represented in the electricity sector, but that the effect is a shift in demand, not a change in the level of demand. EIA attendees explained that the electricity market module (EMM) has a peak response to demand up to a few percentage points and that end-use demand gets mapped to electricity module regions. EIA attendees highlighted the forthcoming publication of "near real-time" hourly electricity data on the EIA website. The same stakeholder continued to advocate for representing pumped storage in the end-use models.
8. **Summary:** Overall, few-to-no criticisms of our current modeling efforts or suggestions of data sources we should be using but are not; however, there was a sense of requests for the development of additional model capabilities based on some of the points above.
9. **Follow-up:** After the meeting, DOE attendees provided additional information in a few areas where EIA requested input. Specifically, attendees provided additional information on recent or scheduled appliance standards that were not highlighted during the working group meeting. Attendees also provided a DOE point of contact for field studies on building energy code compliance that are currently in progress.

Next Buildings Working Group meeting: February 18, 2016

¹ PVWatts5 is the most recent version of an energy cost and production calculator developed by the National Renewable Energy Laboratory (NREL).