

Power Generation Advisory Panel Meeting
November 20, 2020

Attendees

John Rhodes*
Corinne DiDomenico
Annel Hernandez
Betta Broad
Bill Acker
Cecilio Aponte III
Darren Suarez
Emilie Nelson
Jenn Schneider
John Reese
Kit Kennedy
Laurie Wheelock
Rory Christian
Shyam Mehta
Stephan Roundtree

Not in Attendance

Lisa Dix

Meeting Notes

Future of Electricity

- Dispatchability, flexibility, managed load, transmission, and innovation are needed.
 - Rory Christian: At what point will emissions-free dispatchable energy be needed? Response: There is enough flexibility on the system currently to meet the 70% by 30 goals (with increased use of batteries). As we move towards zero carbon in 2040, we will need to look towards alternatives this flexibility. A UC Berkeley study states that it's the last 10% that we will need new resources.
 - Emilie Nelson: I'm looking to understand the tradeoff between transmission buildout and resource buildout. Response: There is a need to increase granularity, especially downstate. Other studies will cover transmission needs in more detail.
 - Darren Suarez: Does the model capture diversity in locational needs and energy imports? Response: The model does take into account different locations (e.g. OSW vs. Land-based). It does not include significant amounts of imports. The model is focused on the ability to meet in state resources and the ability to meet needs. It does include some imports from PJM and ISO-N.E.
 - Bill Acker: There are tradeoffs between generation, storage, and transmission. The Power Grid Study will look at detailed cost modeling of these issues. It will leverage that into the E3 work.
- Continued reliance on thermal units with bioenergy, limited use.
 - Kit Kennedy: What is slide 16 telling us about the future of fossil generation in the state? Response: By 2040, there would be no fossil generation without carbon capture. Kit Kennedy: Regarding slide 18, has there been an analysis that rules out being able to meet reliability with variable resources? Response: For NY, this analysis has not yet been done, but E3's work with other jurisdictions and what's found in literature show that this is very unlikely.
 - Annel Hernandez: Does it confirm the need for firm zero-emissions resources beginning in 2040 or is the timing of need sooner? Response: Yes, in 2040 because we're assuming the reliance on gas-fired plants before that. Annel Hernandez: We need to balance future looking needs with current

- needs. We don't want to build out fossil infrastructure. There are concerns about hydrogen emissions profiles. Response: We will be looking at health benefits and risk points of these mitigation scenarios.
- Bill Acker: Local transmission upgrades will need to unbottle renewables, but energy storage on either side of the bottleneck should also be a solution. Ideally, when days are light on wind and solar, we should steer vehicle charging away from those days.
 - John Rhodes: Co-Optimization between the grid side and the demand side is a key part of the solution.
 - John Reese: Transmission development in New York takes a long time. What needs to happen to incorporate the grid study work in these transmission decisions to get us to 2030 – real-time decision making is needed? Response: The Commission Proceedings Energy Forum which came out of the Accelerating Renewable Energy Act will be working on this.
 - Emilie Nelson: Appreciates observation of being able to control charging of vehicles; we need to make sure we have the appropriate signals and structures to have controllability. It will be interesting to see where heat pump technology is, especially for performance during cold weather. Response: Cold climate heat pumps are an emerging technology, but they can help with loads and we are looking at them for buildings. We need to see how they work in the market place and how they scale.
 - Betta Broad: When will the roadmaps be available for review? And will the Strategic Advisory Group (SAG) be able to integrate them into their analysis, and will the PGAP and other panels be able to review them and integrate them into our final analysis? Response: The work that SAG is doing is not that relevant to our work here. With regards to the roadmaps, we were aiming for the start of 2021, but we are working with the various panels to integrate this work with theirs and the timing will depend on this engagement. The respective roadmaps are being integrated with their respective panels, but we should be able to see interim findings. The E3 framework is not a transmission planning tool, it will be pulling in specific information from other deep-dive studies. The findings will be available for use.
 - Kit Kennedy: What assumptions of OSW are built into this analysis and the interconnections with ISO N.E. and PJM. Can we see a summary of this power study? Response: The E3 tool does not address interconnection, but there are other studies that do. The Transmission Tech Conference on Monday (11/23) will address this. We will send the tech conference information to panelists. And we will have a Power Grid Study presentation for Panel when results ready.

Housekeeping

- **Key Group Engagement**

- Schedule meetings for engagement – panel style with 4-5 panelists in small groups and 60-90 mins for each topic area. The Italicized organizations means they are already represented on the PGAP or in the broader CAC community including the Power Generation staff team.
- Annel Hernandez: Additions to EJ – Point CDC in the Bronx, National Equal Justice Association (NEJA) and Uprose in Brooklyn.
- Darren Suarez: Additions to Labor – Workforce Development Institute
- Kit Kennedy: Can we ask Anne Reynolds (ACE NY) to present on one of the panels or should she be a standalone presentation? Either way, I think we should add ACE NY and NYSEIA and New Yorkers for Clean Power. It should be inclusive, but also efficient.
 - John Rhodes: Are there certain individuals we want to dedicate a larger amount of time to? Let's start an email conversation about this.

- Rory Christian: We should really discuss the suitability of long duration storage technology options. Who could present this? RMI and New York Battery and Energy Storage Consortium (Bill Acker)
- Stephan Roundtree: Additions to Labor – We already have Jenn Schneider (IBEW) in the group. We can add Local 12 and New York Community for Change. Jen Schneider: I can pull other people from IBEW and Local 12 (the Utility Workers Union).
- John Reese: If we are going down the trade group route, we should add IPPNY and NYBEST. But if that's not the objective, then we shouldn't include trade groups. I guess I am a little confused about this process.
 - John Rhodes: The purpose is to gather information and points of view that would be most helpful. Could span from advocacy groups to experts.
- Bill Acker: I'd like to reiterate the need for a long-term storage discussion.
- Betta Broad: Do we want to hear from any regional planning associations/local leaders to have a "boots on the ground" perspective, so we aren't just coming up with something from the state level, but also considering issues within the regions, especially for topics like siting. For example, we should hear from Brad Tito and Houtan from NYSERDA.
 - John Rhodes: NYSERDA can provide a list of entities. Corinne, can you connect with Kelly and Brad (NYSERDA) to get list of entities that we can connect with for communities/municipalities?
- **Cross-Panel Engagement**
 - John Rhodes: Some homework for the group. Panel members who want to participate in the CJWG meeting should email us with their preferred date and who from the PGAP will attend. Keep in mind the agenda is dynamic.
- **December Report Out to CAC**
 - The PGAP will do this for the December 15th meeting. A draft presentation will be sent out for review by Dec. 8th.
 - A deep dive decarbonization workshop is being organization which will discuss: Carbon Capture and Storage (CCS), Green Hydrogen, long duration storage, a post-HFC world.

Subgroup Kickoff

- Resource Mix: Peakers, Natural Gas Transition, Demand Response
- Solutions: Technology Innovation, Markets, Bioenergy
- Equity: Affordability, Access, Jobs
- Barriers: Siting, Transmission, DG Compensation
- Emilie Nelson: I am concerned about how these got narrowed down without the subgroups meeting yet. I am unsure about the opinions and we need further discussion.
 - John Rhodes: This was an honest attempt at a starting point for the panel to give us a set of more manageable topics to discuss to limit overlap without ignoring other topics. We can add reliability.
- Bill Acker: Is this a starting point or a reduction in scope? I have concerns that we are missing things, even if it's just a starting point. We need to include multi-day gap.
 - John Rhodes: Storage is included in technology innovation. This is not intended to be a reduction in scope. It was intended to try and organize what we have heard so far. We can change transmission to energy delivery.
- Markets:
 - John Reese: The best thing the market can bring is nimbleness and pricing, and there is value in instantaneous response and I believe that will increase. FERC will change a lot in the next 6 months and we need to be aware of this.
 - Emilie: A lot of these challenges have near term solutions that the NYISO will implement in the next year. I think we need to look at the bigger picture. What are the critical recommendations that will

allow the transition towards 2030 and 2040 and 2050? One idea is carbon pricing - it includes the attribute that you are seeking. This is something the panel needs to think about. Reliability Standards – WRT preserving the reliability standards for NY, which are some of the highest in the world. The conversation should revolve around preserving these standards, not adding standards.

- Darren Suarez: Markets provide opportunities for investments and signaling. We need to examine ancillary services and how generation in the future will affect the grid. The market needs to value these attributes so that systems will act accordingly.
- John Reese: The CES plan has laid out what kinds of systems can come online for 2030. We have a path and a head start of what will go into 70% by 2030. We know what the 2030 systems will be, and we can frame the market around that. We need to identify barriers in advance and overcome them.