

**Power Gen Advisory Panel Meeting
March 10, 2021
Meeting Notes**

Attendees

Sarah Osgood – Acting Chair
Annel Hernandez
Betta Broad
Cecilio Aponte
Corinne DiDomenico
Darren Suarez
Emilie Nelson
Jennifer Schneider
John Reese
Kit Kennedy
Laurie Wheelock
Lisa Dix
Shyam Mehta
Stephan Roundtree
Thomas Congdon
Bill Acker

Not in Attendance

Rory Christian
James Shillitto

Introduction

Acting Chair Sarah Osgood kicked off meeting reviewing agenda and introducing topics to be discussed. The session featured a public input at the end of the meeting.

Recommendation Review

The panel reviewed three of the recommendations currently under consideration and a series of supporting actions. Sarah Osgood provided a brief overview of each recommendation and supporting actions, followed by an open discussion. Details of each recommendation can be found in the meeting materials.

Reliability

John Reese: The ease of implementation is marked as easy on Slide 6. The processes are in place and that part is easy but getting to the infrastructure goals are not easy. The ways to analyze the problems are there but solving them is not easy.

Emilie Nelson: Reliability is a critical part of the transition. We need to sustain what is working well and make improvements to things that are not. Continuing the strong communication is important and engaging in tough conversation is critical. This sets us up on a good path to solve the challenges in this transformation.

Kit Kennedy: Agreed with Emilie and thanked her for her leadership on this topic. Reliability is crucial to all New Yorkers for reasons ranging from public health to economic factors. Want to recognize interconnectedness of many of these issues and feels that the slide does a good job capturing those.

While there are challenges to scaling up renewables, integrating these renewables will bring benefits to mitigating climate change and resiliency. Climate change is making grid reliability harder, so operating the grid becomes harder. Adding renewables and flexible assets and DGs will help mitigate the stresses on the grid. Recommendation is coming along nicely and is crucial to success of the CLCPA.

Bill Acker: In discussing the last point on Slide 7, this recommendation is vital, and these are a strong set of recommendations. It's not going to be easy to do all of this but is necessary. On "the market products and technology standards updates", the recommendation should include how to evaluate reliability. Today, we evaluate reliability primarily on how much reserve margins we need if we lose a resource. When you get to very high renewables, the risk profile is different. Need to look at cloud cover, wind loss, and other extreme events. Need to evolve the studies as our grid changes. The NYISO is already looking to do this. The recommendation needs to be broadened to reflect this point.

Betta Broad: Asked if preparedness for power outages come up in the formulation of the recommendation. Even though we are doing everything we can to ensure reliability, people are still worried about reliability. How good of a job are utilities doing at communicating what happens if there is a power outage? Do people know where to go if there is a power outage? How good of a job are we educating New Yorkers in what to do if there are power outages?

Emilie Nelson: Asked about how to respond to extreme weather events and how utilities are preparing. Suggested that the second-to-last recommendation on the slide could be expanded to include the processes of effective communication. For the biennial checkpoints, it is necessary for these checkpoints to evolve through time and we integrate both these points into the recommendation. Suggested that the subgroup could take this point back and integrate it into the recommendation.

Distributed Generation / Distributed Energy Resources

Shyam Mehta: Finds these recommendations to be in good shape. In regard to siting and community opposition, one thing that is needed is to have some kind of regional discussion forum between local communities and the projects and have dialogue to understand everyone's perspective. NYSERDA may be looking to create such a forum, especially with agricultural communities. Noted the Agricultural Technical Working Group to be convened in April. It would be good to have that in the recommendations. With regards to community concerns about solar, there are issues that need discussion, but there are also some concerns where the science doesn't support them like leakage or soil erosion. We should have an initiative that addresses some of these concerns and the impacts they cause. On section 2 of the recommendation, suggested not bundling rate design and incentives into one point. They both deserve their own holistic discussions. On rate design, guardrails to protect customers who would otherwise be disproportionately impacted. Incentives should be combined with compensation because it is related to conversations about how VDER can be improved to help DERs.

Bill Acker: Agrees with Shyam. Point 1a and 1b are both essentially hosting capacity. Can either increase the local transmission infrastructure/invest. The other is to adjust how the devices interact and operate on the grid. For example, pairing solar and storage to allow for a bigger solar project, smart meters and other technologies to increase the amount of energy you can connect the grid. These are two sides of the same issue.

Shyam Mehta (via chat): Rate design also potentially has ramifications on overall load, peak load, reliability, and the value proposition for demand response. Just to reiterate, this is a critical topic that deserves its own discussion.

Stephan Roundtree: On the social equity side, there is still a risk of leaving disadvantaged communities behind. Wants to ensure that the state's role in connecting disadvantaged communities with DG/DER projects and resources is clear. Suggested stepping up these efforts and create an affirmative role for the state to achieve social equity goals. DG/DER and EE are the two primary ways to meet the social equity requirements of the law, as the market often does not serve these people. This should be reflected in the recommendations.

Shyam Mehta (via chat): Agreed with Stephan. Thinks the panel could use some additional recommendations to ensure the buildout of DER actually serves and benefits LMI, Environmental Justice and other disadvantaged communities. NYSERDA's upcoming LMI Adder for CDG projects is a great first step, but it's just a first step. More can and should be done.

Lisa Dix: Agrees with the recommendations and points made. Suggested linking these recommendations as a whole with the future of gas planning. Need to work in other technologies and opportunities with DG/DER in the context of phasing out gas and getting to zero emissions by 2040. Creative RFP-like structures to get gas out and bring these technologies forward in a comprehensive way could be a method for this. An example is the RFP on Long Island Power Authority/South Fork.

Betta Broad: Asked if the panel can add to the "high benefit projects" affordable multifamily housing, especially in downstate, as well as targeted incentives for collective solar and heat pumps. We can also identify where we can do geothermal downstate and prioritize benefits for affordable housing so that building owners can do DER and pair that with electrification. It would also be great to see more solar on big box stores, especially downstate.

Bill Acker: To Betta's point about big box stores, there are some recommendations that could be made around this issue. Recommended that the subgroup take a look at that.

Methane Leakage

Betta Broad: Asked if there has been any analysis on the job creation opportunities of transitioning from natural gas. The transition from gas can be a bigger job creator if done right. Detecting and repairing all these leaks could be a great job creator. Also, we need coordination regionally and federally, but we need to highlight the role of local municipalities as well because this a huge undertaking. We can make sure our local municipalities are part of this process, and prioritizing safety above all.

Sarah Osgood: NYSERDA is looking into the job impacts of the clean energy transition and coordinating with the Clean Energy Job Study that they do annually. We can get back to you with that information. Macy Testani will follow up.

Kit Kennedy: There are many interconnected issues. Natural gas has short term impacts on public health and climate, as well as long term infrastructure planning. We need to think about the natural gas infrastructure as a whole if we want to address methane leakage. We can't continue to approve the natural gas infrastructure as we have done in the past. This is an important recommendation and as we stop leaks in our current system, we need to also think about how we approve natural gas infrastructure.

Lisa Dix: We need to not make the problem worse by adding new infrastructure. Recommended a proposal to ban all new gas power plants and stop all new fracked gas infrastructure and pipelines. Suggested looking for feedback from anti-fracking stakeholder groups in NYS. This is relegated to infrastructure on the source side. There is an emerging issue of BTM power plant natural gas usage. This is a form of leakage. What kinds of limitations are we going to be putting on onsite emissions limits? Need to set the groundwork that all BTM using fossil fuel infrastructure as this is creating another

leakage problem. There can be some great recommendations on new air permits for emissions increases or limiting any increase (above 5 – 10% from onsite emissions over the last 5 years). Requirements that all BTM generation comes from renewables? As an example, the owners of the Cayuga and Somerset coal owners are doing creative things to reuse their sites. Taking in proposals for renewable energy projects, including data centers and making sure that they are running on renewables. Need to make sure that we have our eyes on this interim leakage.

Annel Hernandez: There are many fights around underground pipes, especially in Brooklyn. In addition to the pipelines themselves, we also need to consider the storage facilities, which are often in our industrial waterfront sites. Also need to consider the repowering of existing facilities and what constitutes new.

Betta Broad: Have we discussed mandating certain facilities, such as data centers, procure their power from renewables or requiring renewables?

Zero Emissions by 2040

John Reese: The independent evaluations of getting to 2040 (PSC, NYISO, NYSERDA work), all identify a large gap in technologies between 15 – 25,000 MW of generation/supply being needed. RNG was identified as a proxy, not a given. We need something else to keep the lights on, and we don't want this to be a fossil fuel, we want it to be a carbon-free resources. We need a "moon race" kind of investment in these technologies (long duration storage, green hydrogen). We need aggressive action towards these technologies. If we don't get there, we will have to default to a fossil future. We need to start now so we have the 2040 solutions on the table.

Bill Acker: Appreciate John's points on the magnitude of the challenge. It's the reason we have some of the other recommendations we have, such as long duration storage. We will need lots of options going forward. On green hydrogen, there is a lot of concerns around it being combusted in peaker plants or being used in ways that are dirtier than they need to be. Using green hydrogen with water and at low temperatures is environmentally pristine. It has a lot of applications including transportation. Need to make sure that we aren't lumping all hydrogen together and call out specifically the combustion of hydrogen. And to make sure that we aren't taking it off the table unnecessarily because of beliefs that hydrogen is not clean.

Lisa Dix: Takes issue with the "we need 15 – 25,000 MW in the future/fear mode". Not saying that it isn't serious, but we need to try and get policies in place over the next 5 years (local transmission upgrades, redesigning the grid, using the resources we have now, energy efficiency, storage, and demand response). This should also include a stand-alone storage docket that cites the need for 15 GW of storage. These need to be prioritized first for the next 5 years before we put a ton of money into the last MW solutions. We already know the solutions we want to put money into (long duration storage). Can the Greenbank help us? Worried about the reversal of priorities, where we are focused so much on the last megawatts and forgetting what we need to do in the next 5 years. Worried about new gas plants assuming they can use green hydrogen and RNG in 2040. We don't know this is clean and emissions free. Recommends that the PSC/DEC initiate a rule making process defining what is emissions free, as defined by the CLCPA.

Kit Kennedy: The set of recommendations we are converging on address seems to address the need for action. There is a risk in waiting too long for the 2040 decisions, but there is also a risk in deciding too early (public health, costs, emissions, scalability, etc.). Need an iterative process where we aren't taking solutions off the table, but we aren't wedding ourselves to them too early. The technology slides we have presented in the past get at this iterative process. We have seen dramatic decreases in the cost of

renewable technologies, and we know there is a huge potential for demand response and energy efficiency. The gap that we see today, may not be as large in 2040, or even be there. We need to think about this in an iterative way, and keep doing the research and asking the questions, while tracking the progress of current technologies.

Annel Hernandez: Emphasized the role of catalyzing the process and being more intentional about the deployment of renewables. In previous conversations, we have said multiple times that through 2030 the vision and the goal is focusing on the technologies we have now, while the 2040 goal is focused on research. We have had many conversations about the potential of RNG and green hydrogen and false solutions. There are still a lot of questions about the NOx, land use, and water implications of green hydrogen. Want to highlight the False Solutions Report that NY Renew published about these technologies that are getting in the way of progress. Many power plants are saying that they can switch in 2040 to hydrogen. We can't let these technologies be trojan horses for these plants.

Emilie Nelson: These recommendations and studies are meant to be a clear view of the future, not a threat. Part of the issue is communicating how big these challenges are. One of the things that we are all in agreement on is the need to refine our view through time. The studies being cited are based on what we know today. As we move forward in time, we can continue to refine our view and options. The panel is framing up the 2040 issues as a research need and a continuation of speaking the truth. One other opportunity that we have discussed. We need to think about the role of wholesale markets. Looking at the idea of carbon pricing, these are ideas of how we can make the markets work to bring these technologies forward. As long as we continue to review and acknowledge it, we are on the right path.

Bill Acker: We are getting some agreement. We have a lot of work still to do, and we need to do the R&D that we know we are going to need but continue to keep the door open to other areas. One factual correction on green hydrogen; the issue of NOx is solely from combustion of green hydrogen, and not with fuel cells. We can't overly focus on one application. Shares Annel's concerns about hydrogen combustion, but that does not mean that other applications are not beneficial. We have facilities looking at this now. There is still a lot to do in our studies related to overbuilding, long duration, energy efficiency, demand response etc. We are going to learn a lot, but we need to do it quickly so that we can begin deploying in 2030. Need not just research, but also development and deployment of these technologies.

Betta Broad: Agreed with Lisa that a proceeding on what emissions free means could be very helpful. On the nuclear recommendation, we also need to consider the costs of nuclear. Need to include analysis about whether the money in the ZEC program, if redirected to renewables and other technologies, could fill the gap of nuclear. How can we ramp up and do this at scale? Need to be honest about the costs for all of this and doing this analysis as soon as possible.

Darren Suarez: How does the ZEC program interact with renewables? The ZEC program provides savings on the wholesale market, but also increases the price of the renewable market. Should look at this interaction on the market, and how the renewables and nuclear fleets interact. Are there places where we are wasting resources? We should look at the interplay of that because they are sending mixed signals for the consumer.

Next Steps

Carl Mas provided a brief review of his presentation during CAC Meeting # 7 on the Integration analysis before the details of the next meeting were reviewed.

Carl Mas: Each advisory panel will put forward their detailed recommendations. The state team then integrates these into an economy-wide model over the next few months, for review by the CAC. We will be looking at all the costs, benefits (O&M, resource costs ,capital costs, avoided fuel savings etc.), social costs and benefits (health co-benefits, social cost of carbon etc.) over the next several months ahead of our final presentation as directed by the CLCPA.

The Next Advisory Panel Meeting is on March 24th at 9:30am EST followed by a public input session at 12:00pm EST.

The next Climate Action Council Meeting is scheduled for April 12th details can be found on climate.ny.gov.

The panel took a 15-minute break ahead of the 3:30pm Public Input Session

Public Input Session

Jeremy Koo (Cadmus) kicked off the public input session as the host, advising participants of the standard protocols for participation.

Anastasia Gordon

Alliance for Clean Energy New York

The Alliance for Clean Energy New York is a diverse coalition of private companies and non-profit organizations with a mission to promote clean energy, energy efficiency, and transportation electrification in New York State. We submitted written comments, about 21 of them. 10 of them were about building down barriers to achieve 70% renewables by 2030, 7 of them were about equity and cost effectiveness and 4 of them were about steps New York can take to prepare for 100% zero-emission electricity generation by 2040. In the interest of time, I'll focus on a few. In terms of short-term items related to the build out of renewables, New York should continue to procure on an aggressive schedule of at least 4,500 gigawatt hours per year from 2021 to 2026. We should also implement standardized taxation of renewable energy projects and we should successfully staff the ORES office which is essential for the new permitting process. In terms of transmission, there should be strategic efforts to accelerate transmission build out. The PSC should expedite approval of phase 1 projects, pursue renewable energy zones in transmission investment, examine local distribution and transmission needs, streamline article 7 siting process, and re-evaluate grid needs to achieve 9 gigawatts of offshore winds. In terms of cost reduction and equity, New York should continue to make strong commitments to equity and cost effectiveness by establishing EJ coordinators at DPS, NYISO, and FERC, maintaining rooftop and community solar, integrating economic development goals with clean energy goals supported by IDAs, pursuing energy efficiency and load flexibility measures, protection customers from the costs of this clean energy transition, and targeting energy storage where there's low or poor air quality. New York should assess, research, and define what last dispatchable emissions free resources would be needed to get to 100% zero emissions by 2040. Thank you for the opportunity to provide input.

Laura Burkhardt

Pearl River Resident

I live in Pearl River, NY in Rockland County. Wanted to speak today about the importance of shutting down peaker plants in the state and replacing them with storage or solar plus storage where that is feasible. As you know, peaker plants have several shortcomings, many of them are old and contribute significantly to local air pollution. They're usually located in disadvantaged communities and they greatly increase the cost of electricity to ratepayers due to the capacity payments that they receive just for existing. By replacing them, we can achieve multiple goals: reduction in air pollution, especially disadvantaged communities, and lower cost of electricity for ratepayers. Several studies have analyzed the feasibility of replacing peaker plants with storage and have concluded that it is quite possible. However long-duration storage, rather than just lithium ion batteries is an important part of such replacement and it's an important part of overall grid reliability when the grid is powered only by renewables. By long-duration we need multi-day that is longer than lithium ions (4 to 8 hours). So, I also want to speak about the importance of long-duration storage and the importance of researching and evaluating different forms of this storage. We know about current forms like pump hydro and compressed air energy storage, but newer implementations are being developed such as the aqueous air battery which was announced by Form Energy in May 2020 and which can potentially provide 150 hours of storage. So, I feel it's very important that we don't rely totally on the solutions that we know about today. To achieve our decarbonization goals, we must aggressively research and encourage the development of other technologies. Finally, I want to speak about the importance of more solar development especially in the Lower Hudson Valley. more Reports show that nuclear, Canadian hydro,

something else will be required. Recent reports produced for New York agencies state that some mix of fossil fuel and or nuclear generation and or Canadian Hydropower will be required.

Gail Pisha

Rockland County Resident

One of the most important actions that needs to be taken by New York State is to stop permitting new gas power plants, including those being proposed as so-called repowerings. These new plants will operate for another 30 years or more, which will keep NYS from reaching the goals of the CLCPA or they'll become stranded assets. Why should NYS be putting resources into building new gas plants when those same resources really need to be used to build renewable generation, upgrade our transmission, and developed distributed generation to increase the grid's reliability and resiliency. Right now, 68% of the grid is powered by fossil fuel so, adding more goes in the exact opposite direction from where we need to end up by 2040. But building renewables and distributed generation, plus upgrading transmission will provide jobs for New York workers as we move towards our 100% renewable energy economy. I think the advisory panel needs to develop a just and equitable plan to phase out all existing fossil fuel generation while our state adds solar and offshore and onshore wind supplemented by short- and long-term battery storage like Laura just mentioned. With all that, along with improved transmission, infrastructure, and energy efficiency, New York State will have a grid for the 21st century and beyond.

Rachel Makleff

I'm giving a talk that was basically written by a sister environmentalist at an organization called Beyond Coal. I agree with every single word she said and the previous speaker as well that we must phase out our current fossil fuel facilities ASAP. We are also concerned about time wasted discussing false solutions. Fracked gas was packaged as a false solution, packaged as clean bridge fuel. We've wasted the past decade building power plants and pipelines to import fracked gas from Pennsylvania where water was poisoned, and communities decimated. Climate breakdown is a global crisis and we're all in this together. We can't choose to pollute another area so we can have what looks like clean energy, whether the polluting is done in New York, Pennsylvania, or Canada. To that point, hydrogen gas production is carbon intensive, so it is not a good idea for now. It is not a solution. In terms of Canadian hydropower that is also a false solution. The difference that I see is hydropower from Canada has been studied for years. It is not going to change. It is not a research question. It is just plain wrong. Flooding land releases methyl mercury poisoning. Fish die, people can't eat, it's cold up there, there is no grocery store and these food sources are the primary source of nutrition for people. Hydro Quebec has admitted that its electricity emits methane and carbon dioxide. The clear cutting of boreal forest goes along and destroys carbon sinks. This is not a solution. Please let's not waste another minute on a false solution that will take us further in the wrong direction. Thank you.

Simon Strauss

Town of Olive's Conservation Advisory Council, Ulster County Environmental Management Council

I'm on the Town of Olive's Conservation Advisory Council, Ulster County Environmental Management Council, and participate in the meetings of the Mid-Hudson Regional Sustainability Coalition. A comment on Initiative #9 item 1a about hosting capacity, it says "proactive and timely investment in local transmission and distribution infrastructure and associated cost sharing with utilities". I'd like to ask how the panel on behalf of the Climate Action Council is going to first, ensure that the utilities do make these proactive and timely investments? Are they to be paid for by the State? Utility? Ratepayers? For example, in the pending Central Hudson rate case, I've asked how the utility plans to address its CLCPA goals for renewable energy by 2030 and 2040. The impression I have is that other than local transmission and distribution upgrades to permit large scale renewables to be brought on the

wholesale basis, there is no plan to beef up the local distribution grid to accommodate local community, distributed generation, and on these calls with the rate case, we hear no dissent from DPS staff. So I'd like to ask that the Power Generation Panel give strong guidance to the Climate Action Council and thus to the Department of Public Service that you are looking for very significant distributed generation in the renewable energy generation mix and an upgraded capable of accommodating that DG.

B. Arrindell

Director of Damascus Citizens for Sustainability

We essentially raised the awareness of fracking 13 and a half years ago on the East Coast. It's been slow but getting results. Wanted to bring up a very recent paper from the beginning of March this year ([The Surprising Source of Greenhouse Gas Emissions](#)). Honestly, I don't understand how they did measurements but basically saying that 9 of the 10 largest emitters of greenhouse gas are oil and gas pipelines which is amazing. They used publicly available data and paper is open access so everybody should look at it. Folks who are more schooled in this area look. I understand measurements and we used a fellow using a Picarro CRDS machine to measure methane around compressors and other places and every time they went over a pipeline, there was a spike. So, we know there was more methane coming out of the transmission line than immediate surrounding area. Urge you to take into account the impact of pipelines by looking at this article. Pipeline companies can charge 2.2% of the value of their product to ratepayers for lost and unaccounted for gas, LUG, to their ratepayers. So, they're admitting that they're losing gas, not sure about oil, but knows that is the affect with gas. Also looking at geographic areas, there should be a similar type of look see and everything going on and its aggregation not just single point sources. You can have 18 different things all related to gas drilling in one area and if you look at each, it's not considered a major emitter but surely the whole pile is. That's a very important thing.

Brian Campbell

I'm an electrical Engineer, BSEE. I want everybody to know about [electricitymap.org](#). This website looks at live emissions 24/7 and it reports the percentage of generation by various resources. The emissions are reported in carbon grams per kilowatt hour. Looking at the grids throughout North America, the lowest emission grid is Ontario and that regional transmission organization is 60% nuclear power. Right now, it's putting out 22 grams of carbon per kilowatt hour compared to NYISO at 290 grams per kilowatt hour. That's about 6- or 7-times NY has than Ontario and it's because of nuclear power. I also belong to an organization New York Nuclear. We are very concerned that we are shutting down unit 3 of Indian Point Nuclear Power at the end of April. That will increase New York's emissions 12-15 million tons of emission, mostly greenhouse gases, but any emissions are bad. I am hoping that this organization will take into account that Governor Cuomo has rammed through this shut down prematurely. It can operate until 2024 on its present license. If we are really concerned about emissions reductions, we need to keep our current nuclear. We need to keep our current upstate nuclear. Everyone says nuclear is expensive. It's not. Ontario is about 12 cents per kilowatt hour. NY is at least around 20 cents per kilowatt hour for ratepayers. Once we start the backbone, which is offshore wind, which is the most expensive energy we could possibly go to and is also intermittent. If you're looking at Texas, if we get a cold snap, we are going to have to divert our methane, our gas generation to heat just like Texas did. You better pray that they have enough oil on site because that's what they're going to be burning at Ravenswood down in New York instead of gas with more emissions and 2.5-micron emissions. Thank you.

Robert Ciesielski

Sierra Club

I listened to a lot of the presentation today on gas. Methane is 86 times more potent a greenhouse than carbon dioxide in the first 20 years of its release to the atmosphere. A previous speaker spoke about pipeline leakage which is a big problem nationwide. This is time to stop the construction of new gas plants and rehab of old plants in to gas or co-gen plants. We already have 86% of electricity and power in New York provided by gas and we need to reduce this, not build more. We have our goals for 2040 and we must stop these gas plants. There's also the talk about methane and green hydrogen. Very concerned that gas either as a primary or secondary source of power will be used to create green hydrogen. If there is going to be green hydrogen, it cannot be powered by gas or any backup of gas. Linkage is another problem. I live in buffalo. We have a 100-year old gas system in the city and the first drink suburbs with lots of leakage not being measured. We know gas is a problem and must get off of it. There was a mention by one of the speakers of Richard Perez. He gave an interesting discussion about constructing 50% overbuild of renewables powered by some storage. I know storage is expensive but if you overbuild your renewables by 50% and couple that with storage, you come up a cost of about 5 cents per kilowatt hour. It's a great study. I think it's a way that we can look at how we can proceed even after 2030. Thank you.

Lynda Schneekloth

Grandmothers Council of Niagara

We are concerned with leaving a habitable and healthy planet to our children, to the 7th generation, 14th and 100th generation. As elders, we feel we are responsible to look at proposed actions today in light of their impact on our descendants to our home, the earth. Climate disruption and the 6th extinction event are in the front of our minds and we, thank you in New York state for taking direct and urgent action towards 100% renewable energy to consider what kind and its impacts. To this end, we say stop all nuclear energy production. It is unconscionable that any generation of humans would decide to address a problem by producing a toxic and deadly substance that could if through accident of accumulation could kill. There is no safe exposure to radioactivity. Since the 1945 explosion of the atomic bomb to Fukushima to the West Valley Nuclear Waste Facility, we have spread this material across the globe. We've created elements like plutonium that are alien to the earth. There are many reasons to reject nuclear as a solution to climate change. It cannot be deployed within the time necessary meltdown risk and it's said that 1.5% of all nuclear power plants ever built have melted down to some degree. Mining for uranium is racist and causes cancer. Its cost is prohibitive and contrary to what some people say, nuclear is not carbon free when its life cycle is considered. In addition, we have the capacity, and we have the ability to use safer mechanisms. We have no right to continue the nuclear experiment, knowing that it brings death, not life, to our children and their children. No one in the entire world today knows what to do with nuclear waste. It must be guarded and taken care of for hundreds of thousands, millions of years. Some of the short-lived radioactivity will be gone in 300 years. Short? Hardly. The U.S. has only been around for less than 300 years. Remember the Great Lakes is only 12,000 years old.

Leontine Greenberg

Queens Resident

I teach an extracurricular science class for 8 to 10 years old and we've been talking about how human activity affects ecosystems. So, of course they talk a lot about climate change and how angry it makes them, which is very angry. It's really heartbreaking to talk to them and see how confused they are about the fact that we're still burning fossil fuels. They just can't understand why that's still happening knowing what we know. So, they've written letters which we're planning to send to the members of the Climate Action Council but when we found out about this hearing, we decided that you might want to

hear some of them too. I have 3 letters and I will read them quickly. The first one is from Masimo and he says, "Dear New York State Climate Action Council, climate has been affecting the earth since the 1900s. Ocean waters have been rising and coral reefs are dying. More forest fires are happening because of less snow and rain. Climate change makes me feel angry and annoyed. I feel that because it is affecting my life and other people's lives, we should use more wind and solar power. I want the state to put solar panels on all the houses for electricity and I also think we should not burn natural gas. Sincerely, Masimo." The second one is from Zoia. She says "Dear New York State Climate Action Council, When I think about climate change, I feel angry and sad. We are given so much smarts and brainpower and instead of making a literal paradise, we destroy the world. I want the future. I want the state to make electric cars more available to normal people. I also want less power plants. It affects both habitats and people suffering from asthma. More solar based energy would be ideal with other renewable energy sources. Sincerely, Zoia C." And then the last one is from Leo Musica, "Dear New York State Climate Action Council, Climate change is affecting the world. Ocean levels are rising, there are more forest fires, coral reefs are bleaching, and beaches are washing away. Climate change makes me angry because God made us a home and we are destroying it. Climate change makes me sad because forests are burning just because we want electricity. If we want electricity so bad, then let's use sources that don't pollute our home. Solar power is what I really want to see. Wind power is also a solution. All I really wanted to say is replace fossil fuels, natural gas, burning power plants with solar and other sources. Sincerely, Leo Musica". So, none of these kids can understand why we would ever build one more gas fired powerplant. It's completely inconceivable to them so they are hoping that your recommendations include an absolute ban on new fossil fuel infrastructure and an investment in renewable energy. Thank you.

Ann Finneran

A couple of things I want to address: there are two power plants that really should be shut down. One of them is the Greenwich Power Plant which was originally converted from coal fired to natural gas in 2017. Many of us fought that because it wasn't necessary, and it was not a closed loop system. It pulls water from Finger Lakes. When you think about climate change, don't just think about air emissions and greenhouse gas emissions. We're talking about potential desertification. 3/100ths of the plant is freshwater. That's very small and if we continue to use water for energy, we are not using it for its primary purpose, which is life. Please keep that in mind. It was proposed as a peaker plant. It was never intended to run at full capacity. It is currently running at full capacity and the greenhouse gases have increased tremendously since the bitcoin mining operation started. That should have never been allowed and it should be shut down. Something operating without air permit. Needs to be stopped pending air permit. Similarly, the CPV Power Plant in Middletown, New York is operating and has been without the air permit. That needs to be stopped pending air permit. It is very close, within a mile, to environmental justice communities. Emissions have contributed to covid deaths. You need to look at both of these power plants very deeply. The Greenwich plant is not being used for its intended use, its being used for bitcoin mining which uses a tremendous amount of energy. CPV at least it is closed loop. Greenwich is not closed loop and it's sucking out of the Seneca Lake and probably the feeder into Seneca Lake. So please consider both of those. Thank you, Grandma from Niagara. Nuclear waste is nothing to kid around with. We don't know how to deal with it. Waste is the number one issue to confront. Thank you.

Tara Vamos

I have NY Renewables on my name plate but am saying this as a private citizen. I would far prefer that we have rolling black outs than that we build an additional gas fired power plant. Enough is enough. New York's climate goals that are the panels are working towards and it's tough to meet them, those goals

are a good starting point but realistically if we look where things are actually at currently with ocean currents slowing down already, with the Earth's climate becoming wildly destabilized that we are already experiencing thousands of deaths per year and billions of dollars' worth of damage per year, we should be shooting for shorter time frames. It is absolutely unallowable that we allow gas plants build anything while saying they will switch to green hydrogen in the future. What would be outlier solutions that aren't being looked at? Temporary shut offs of electricity, encouraging efficiency and asking people to cut back on their power usage, which really isn't being truly addressed very much. In terms of things that have been talked about, that local grids get upgraded so there can be distributed generation in the form of solar. We clearly need more battery storage. I appreciate the work people are putting into this, but the level of urgency suggests that it is time to break out new solutions, so I am volunteering some blunt ones.

Mary Finneran

Thank you to people speaking about the gas and the Greenwich Power Plant. Would like to discuss the Iroquois EXC expansion by compression and using the expansion of compressor stations versus new pipelines. Says no new pipelines. Cheered Lisa dix when she said that. Plans to expand compressor station so that gas is going through old pipelines which will increase the leakage and the emissions at the compressor stations. Compressor stations are actually worse than power stations for their emissions. The Iroquois EXC is going to be used for heat in New York City, but Iroquois also does power the Cricket Valley and Athens Power Plants and other power plants in Connecticut. It is seriously endangering to be expanding pipeline compression and I'd like you to look at that, especially during blow downs. The emissions during blow downs from compressor stations, especially when they're going to be doubling or tripling the amount of gas going into them will be huge. The emissions are dangerous to people. In fact, they warn them to stay inside. I know the Dominion Pipeline was also an expansion project, which is in place now. Thank you for being here. Please take this under consideration.

Anne Rhodes

Energy Educator, Cornell Cooperative Extension in Tompkins County

Concerned with all things people have brought up but there are two things I want to especially note. One is how important it is to pay attention to storage and be ramping up storage right now if we are going to switch to mostly wind and solar. We need way more storage and there are a lot of solutions out there and probably new ones on the horizon. Emphasize that we don't wait on storage solutions and we move forward quickly. Concerned about community support that will be necessary to move these things forward. One of the things that will help mute resistance on a local level is if we take care of workers whose jobs we eliminate. We need to have a robust and equity-based plan to take care of workers, to retrain workers to make sure of that. The community needs to understand that we care about the people who are losing jobs in the fossil fuel industries and that will help build community support for many of the changes that are going to be necessary. I would also like to suggest we find ways to collaborate with local municipalities to reduce gas in new construction. The more gas in new construction can be reduced, the less gas is going to have to be produced and distributed and there must be some way for that kind of collaboration to be enhanced so the communities can be encouraged to produce green building policies that reduce the use of new gas infrastructure which will then become stranded assets very quickly. Thank you very much.

Eric Meyer

Volunteer with Climate Reality Project

Run an organization called Generation Atomic that is in support of nuclear energy in the fight against climate change. Crunching a few numbers about how much the social cost will be to shut down Diablo Canyon early because of all of the additional carbon that will be emitted. Not even thinking about the

methane associated with closing it down, just the extra carbon emissions at 125 dollars a ton results in 1.6 billion dollars a year in social cost that is incurred on New York and its neighbors and that's just crazy. If we're going to close it down, how long will it take to replace it? The world record for building out renewable energy (wind, solar, biomass and geothermal combined) is Denmark. If you took the speed Denmark did it per capita and applied that to New York it would take us 9 years to replace Indian Point when we don't have time to waste here. We are throwing away 90% of downstate clean energy. This isn't a permanent replacement. The one thing that's forgotten here is that after 25 years or so we will need to replace all of this energy again. There's an analysis of Mark C. Jacob's 100% renewables plan and it found that once we replace everything, it will require a daily replacement of 1.23 million meters of solar panel every single day for ever. That's a lot of mining, land use, habitat and in the meantime, people die because of extra air pollution.

Valdi Weiderpass

Endicott, Broome County Resident

I'm saddened and frustrated. I'm a retired engineer and have been looking into the climate problem for years now and closely looking at our energy situation, including what happened in Texas. I've spent hundreds of hours on the energy situation. The existing situation we have with our current generation mix, reliant mostly on fossil fuels, according to a Harvard University study that just came out a few weeks ago is basically killing one out of five people planet wide just because of air pollution alone. In the United States it's roughly 350,000 people that die per year. The existing situation is insane to allow to continue. We need to stop new gas fired generating plants and need to also stop repowering of existing plants using natural gas. We need to stop building new fossil fuel infrastructure, pipelines, and compressor stations. Thank you for all the work you're doing. We need to develop a really comprehensive plan to phase out all existing fossil fuels in our electric sector. Need to plan and invest to upgrade the grid to support 100% renewable energy, not just for current demand but for future demand when all industries switch over – transportation, heating. We need a just and equitable clean energy transition. Need to build massive amounts of storage. Lithium ion is right now the most proven, reasonable cost, practical method but there are others that can be used as well. Just in Broome County my former workplace, which was an Air Force Plant 59 ended up being demolished after the flood of 2011, which was a 500 year flood that happened in this county just 5 years after a 100 year flood and both of those started to top the levies that were built. In the aftermath of previous massive flooding from Hurricane Agnes, the most recent flood of 2011, dumped a foot of rain in some areas in 24 hours. It's also difficult for farmers so urgency is really important. Thank you.

Meredith Kane

Resident of Town of Copake, Columbia County, Sensible Solar for Rural New York

Sensible Solar for Rural New York is an organization of about 3,000 constituents in Eastern Columbia County and growing. All of whom are strong supporter of alternative energy, but they have organized to oppose the Hecate Energy Shepherd's Run Solar Project, a proposed 60-megawatt production for the Town of Copake. The issue is while 60 megawatts is a wonderful laudable contribution to the state's energy goals, the siting of these 500 or 400 acres of solar panels could not be more detrimental to the local community. It would take prime farmland, would be adjacent to wetlands, adjacent to the school and damaging to the local, fragile tourism and recreation local economy. This would transform it in a terrible way. As you are thinking about power generation and the Climate Leadership and Community Protection Act, please put some emphasis on community protection. You will get strong opposition to all of these large-scale projects unless you work closely with local government to site facilities appropriately. They are large land users and coming and riding over a town's land use regulations is a very difficult thing for local people to stomach in particular. I also want to support the notion and

importance of distributed generation rather than industrial scale generation. Not every area and every site are appropriate for industrial scale solar generation. We can achieve our goals and achieve in a way that is consistent with preserving farmland, other natural ecological attributes, and our rural environments if we do it in a way that is distributed at a small scale and nevertheless that can generate tremendous amounts of energy from solar and wind energy. It doesn't always have to be done at industrial scale and can be very devastating. Thank you.

Suzanne Hunt

I want to echo a number of things that have been said. Has been an environmental advocate her whole life and an environmental scientist. Put in geothermal, solar, wind and EV chargers at own farm upstate and consults for a company that funds community solar and other climate solutions. Hadn't planned on testifying but wanted to reframe how we are talking about green hydrogen. Hydrogen itself is a tool. It's not good or bad. It depends on how you use it. The most helpful thing the panel can do is write in recommendations that dictate how to use the tool correctly for climate. Fuel cells do not combust hydrogen. They are like a battery and are helpful to have in toolkit. Think about a hammer and a hammer can kill someone, but we don't take the hammer out of our tool kit. We make it illegal to use it to kill someone. You can use lots of tools badly and so we want to dictate the policy and the regulations and the enforcement mechanisms to prevent those uses. We don't want to remove the tools. Bill mentioned earlier that there is a company called Plug Power in New York State that is employing people already and they are selling tens of thousands of zero emissions fuel cell vehicles around the country and that is something that we want to support so please be nuanced in your recommendation about how you responsibly use hydrogen.

Kathleen McCarthy

Restoration Ecologist in New York City

Been alarmed by climate change ever since she saw a climate model with all of the positive feedbacks. Now that those models and projections have been verified by current conditions and have shown us veering towards the worst-case scenario, closer to being terrified. Animals and plants that sustain us cannot survive the changes projected without a drastic reduction in our greenhouse gases. Now that we are in the 9th hour, it is imperative that we implement real solutions, not false solutions, so that we have a net reduction of greenhouse gases. What we implement now will lock us in for decades or longer. A net reduction to me means we are not contributing to the flooding of boreal forests, which function as carbon sinks. We witnessed the disaster biofuels caused when other countries cut down forests to grow bio fuels for the US. Let's not repeat that disaster and mistake. We need to ban new fracked gas powerplants and not push it off and say we will do it in 40 years. This directly undermines our climate goals and we have to reject the proposals brought forward in New York State for new gas power plants. We need to build renewable energy now with good living wages and as we phase out fossil fuel plants, we need to protect workers and communities that have powered our communities for decades. We need to create a 21st century transmission infrastructure to move to 100% renewable energy generated here in New York and prioritize transmission of in state and truly clean out of state resources, not the false solution of Canadian hydropower. We want to address environmental injustice here in New York State and not export environmental injustice to Canada and elsewhere. Lastly, since you were talking about reliability earlier. Need to create reliability by scaling up green storage solutions. Thank you.

Miles McManus

I would like to amplify the idea about timing. This panel has very clear mandate and fairly clear pathways. Collectively, you have a moral responsibility to act now. This panel needs to shortcut the Climate Action Council timeline and come forward with the first step to ban all new non-renewable power infrastructure and practices in New York State now. It cannot wait until late 2022 or 2023. The

longer we wait, the more lasting harm is going to be locked in. Would create pressure for energy companies to transition now. It would force us to transition quickly so it improves our chances of success with the science, getting grimmer all the time. It prevents wasting tax payer money by spending time considering false solutions. Finally, side benefit is that it would save the activist community members, parents, and children of New York an enormous amount of time, energy, and stress. Thank you very much.

Catherine Skopic

Sierra Club

Thank you, members of the PSC and CAC. Speaking as a citizen and a member of Sierra Club New York City. Life has existed on this planet and through these millions of years has evolved us here. Our energy source has also evolved. What has served us in the past, fossil fuels, is bringing us to destruction. So, now we have in front of us, the choice of transitioning immediately to renewable energy and thank you for the good work you are all doing in helping us achieve this goal. Use only healthy, sustainable energy sources. Ensure an equitable for the workers of outdated, unhealthy, non-sustainable energy by retaining or enabling retirements for eligible workers. Full attention compensation to environmental justice communities that for past decades have suffered negative health impacts from fossil fuel emissions and plants. There is a problem considering nuclear energy as healthy and sustainable. We already have 83,000 metric tons of nuclear waste we don't know what to do with. Likes Lisa Dix's suggestion of having rule making on what actually qualifies as carbon free. Indian point has had a few near misses, only a few of which have been publicized. There was an accident, for example, at 3 Mile Island. There was a correction made in regard to core meltdown, then we had Chernobyl, the correction was made there. Then we had Hiroshima, who would have thought of a tsunami? We can't say there won't be accidents. Radiation in hands of the medical profession can cure. Radiation in the hands of nuclear power kill.

Joseph Campbell

President of Seneca Lake Guardian, Waterkeeper Alliance Affiliate

Greenwich generation received a certificate of public convenience and necessity from the PSC to convert an old coal fired power plant on the Seneca shoreline to natural gas to to operate as a peaker plant, supplying electricity only during times of peak demand. Since then they've installed 7,900 bitcoin servers which are basically high-powered computers that require an enormous input of energy and their plans are to expand to 30,000 servers. Now, instead of running intermittently, they plan on running at peak capacity 24 hours a day, seven days a week. DEC issued them water withdrawal and discharge permits and more importantly for us, Title 5 air permits based on that business model. Now, instead of burning natural gas intermittently they will be enormously emitting more and of course this flies in the face of Governor Cuomo's nation leading CLCPA to reduce emissions of greenhouse gases. Only thing standing in the way of this, since DEC grandfathered these permits from when it was a coal-fired plant, basically saying as long as they are within permit limits, they won't do anything. The PSC basically washed their hands of this saying that they don't regulate bitcoin mining. The only thing standing in the way is the Town of Torrey where the Planning Board appears they are going to approve the site plan. We hope someone can step in and hit the pause button on this before they get this approval.

Irene Weiser

I submitted a memo detailing the way in which the maneuver by the Greenwich Powerplant to produce power on site and use it behind the meter is an end run around the CLCPA, in actuality and intent. Suggest that the Panel recommends capping greenhouse gas emissions from existing generating sources. Concern extends to 100 odd peaker plants in environmental justice areas downstate that are subject to NOx regulations. They too could exploit this loophole to continue power generation for years.

Only need to look at the Albany Times Union opinion piece submitted by the Independent Power Producers of New York State boasting about Greenwich Power Plant direction an envisioning that for the future of the gas industry in New York State. Need to stand up to that. This is a critical action that honestly needs action long before the recommendations of the Climate Action Council are promulgated and go through public hearing. I urge quick action on capping greenhouse gas emissions from all existing generation sources so that there is a plan in place for structured reduction of those emissions.

Conclusion

Sarah Osgood thanked panel members as well as attendees for their participation. The panel noted their appreciation for the feedback and look forward to gathering feedback again in a couple weeks. Participants that were not able to speak during the day's session were encouraged to submit their comments to PowerGenPanel@dps.ny.gov.