

**Energy Efficiency & Housing Advisory Panel
Meeting 8 | February 10th, 2021**

Attendance

Attendees:

- RuthAnne Visnauskas, Commissioner, New York State Homes and Community Renewal (Chair)
- Janet Joseph, Senior Vice President, Strategy and Market Development, New York State Energy Research and Development Authority
- Peggie Neville, Deputy Director of Clean Energy, Department of Public Service
- Gina Bocra, Chief Sustainability Officer, New York City Department of Buildings
- Dan Egan, Senior Vice President, Energy and Sustainability, Vornado Realty Trust
- Bret Garwood, Chief Executive Officer, Home Leasing, LLC
- Jin Jin Huang, Executive Director, Safari Energy, LLC
- Clarke Gocker, Director of Policy and Strategy, PUSH Buffalo
- Jamal Lewis, Senior Policy and Technical Assistance Specialist, Green and Healthy Homes Initiative
- Sadie McKeown, Executive Vice President and Chief Operating Officer, The Community Preservation Corporation
- Bill Nowak, Executive Director, New York Geothermal Energy Organization
- Molly (Dee) Ramasamy, Head of Deep Carbon Reduction, Jaros, Baum and Bolles
- Daphany Rose Sanchez, Executive Director, Kinetic Communities Consulting

Not in Attendance:

- Amy Sugimori, Director of Policy and Legislation/Kyle Bragg, President, 32BJ SEIU
- Elizabeth Jacobs, Acting Executive Director, Akwesasne Housing Authority
- Laura Vulaj, Senior Vice President and Director, Sustainability, SL Green Realty Corp.

Attendance

Welcome and Overview (Ruthanne Visnauskas, NYSHCR and Vanessa Ulmer, NYSERDA)

- Commissioner Visnauskas kicked off the meeting, walked through the meeting agenda, and introduced the next steps in the process, including an overview of the timeline. See slides 4-5 for additional details.
- Vanessa Ulmer highlighted the upcoming CAC meeting on February 26th at 3pm. See slide 6 for additional details.

Building Decarbonization Policies – Preliminary Findings on Impacts and Costs (Cara Carmichael, RMI and Dan Aas, E3)

- Cara Carmichael (RMI) and Dan Aas (E3) provided a presentation on preliminary cost and impact findings on building decarbonization policy scenarios led by Rocky Mountain Institute, New Buildings Institute, E3, and ARUP. This work began under analysis conducted for the Carbon Neutral Buildings Roadmap. It assesses the contribution of four building sector policies to GHG

emissions reductions and performs an analysis of building-level economics for building decarbonization upgrades. See slides 24-61 for additional details.

Discussion:

- **Sadie McKeown:** Auto industry is struggling with becoming a technology industry building cars around new systems. She sees parallels in buildings. Builders in the sector are more “old school” and want to keep doing things the same way. Have we given consideration to the cost of training and moving the workforce to reach scale?
 - **Cara Carmichael:** Good question, up against a strong status quo and comfort bias. Mandates, increased consumer awareness, and risk mitigation all important.
 - **Rob Best (Arup):** Find successful examples early and leverage for mass scale approach.
- **Jin Jin Huang:** Wondering what the base number of units for multifamily buildings is, and what the other base assumptions are given diversity of multifamily stock.
 - **Rob Best:** Base assumption was 7 story building with 56 units. Source data primarily RSMMeans for cost data, back-checked against other cost data to see if it actually reflected costs in the field.
- **Vanessa Ulmer:** Responding to questions in the chat, the example upgrades (or use cases) shown in the slides do include estimated installation cost components such as upgraded wiring and removal of old equipment, but they do not include possible site-specific costs such as remediation of asbestos/mold. Also, we would like to hear from panelists regarding most useful approach to working session for use cases modeled. Tried to extract policy insights and themes.
- Q&A on ground source heat pump (GSHP) use case in single family new construction (SF NC):
 - **Cara Carmichael:** Similar baseline and measure package. Tax credits (around \$7k) and cost premium (approx \$10k) for gas baseline for GSHP in SF NC. Premium goes down in oil baseline.
 - **Vanessa Ulmer:** In this case, if GSHP is serving space conditioning and domestic hot water needs and takes the available tax credit, it’s more cost comparable to ducted air-source heat pump (ASHP) + standalone heat pump water heater (HPWH).
 - **Sadie McKeown:** Is the GSHP tax credit an income tax credit?
 - **Bill Nowak:** Yes, though can be spread over 5 years. It is a limit for low-income residents (and for any tax credit incentives in general). Premium built into 30-year mortgage can help mitigate higher upfront costs.
- **Vanessa Ulmer:** Modeling does assume a 16% discount rate to O&M and future energy savings. Chosen to align with a desired 6-year payback on residential building investment.
- **Daphany Sanchez:** The upstate model is not relatable to downstate. Cost due to older stock + higher cost of electricity is much higher downstate. Would like to see this analysis for buildings downstate more than 100 years old. How do we make sure that the added cost of electrification/shell does not lead to fewer affordable housing buildings being constructed?
- **Vanessa Ulmer:** I see a question in the chat: Can you speak to how these four policies are interrelated, as modeled in the policy scenarios?
 - **Dan Aas:** Policy 3 [Zero-Emission Standards for HVAC / Appliances] has the biggest impact since it hits every building. The other scenarios have much more limited scopes, but trigger more extensive set of upgrades. Need to think about these policies as scenario packages (not explicitly policy recommendations).

Debrief from Public Input Session (Kelly Richardson, NYSHCR)

- Kelly Richardson provided a debrief on common themes from the public input session and provided a recap on input from the housing roundtables held in November 2020. See slides 9-13 for additional details.

Debrief: Cross-Panel Collaboration with EE&H and Power Generation Panel (Mikhail Haramati, NYSERDA)

- Mikhail Haramati provided an overview of key points from the cross-panel discussion with EE&H and the Power Generation panel. See slides 14-16 for additional details.

Just Transition Working Group: Principles (Kara Allen, NYSERDA and Yvonne Martinez, DOL)

- Kara Allen and Yvonne Martinez provided an update on the JTWG's just transition principles, which were developed to "support a fair and equitable movement from fossil fuel-based economies towards the achievement of the carbon neutral future envisioned by the CLCPA." See slides 17-19 for additional details.

Group Discussion

- **Sadie McKeown:** First time we've seen cost estimates and economics. Recommend that we convene a subcommittee of finance folks to discuss how their capital can address financial gaps. Go beyond the water bond model to consider also other consumer loans, CRA credit convening with banks. Start thinking about more ways to bring private capital in. Look at other decarbonization models. NYSERDA may not always be the best agency here. Consider the model of the State Historic Preservation Office, which provides technical assistance, training, and workforce support.
- **Daphany Sanchez:** More discussion not only with building professionals but also the trades (and CUNYs/SUNYs). Look at existing models for DAC and minority engagement like HUD Section 3, article 15, and requirements for state agencies to devote funding to MWBEs. Leverage the 20% spending on MWBE thresholds for purchase over \$10k from utilities/NYSERDA. Explore more pathways for local economic development.
- **Janet Joseph:** We welcome any reactions to the principles of JTWG and how it aligns with workforce and other issues discussed by the panel.
- **Jamal Lewis:** Established that NY has relatively old housing stock. Need to see what can address these issues in parallel. Not just investing in training and education for electrification and efficiency, but also healthy housing and requiring verifications. Some models where healthcare facilities are directly investing in community benefit – broad sense of what that means. Example in Philadelphia, where UPenn is putting forward \$50M to remediate lead and asbestos in schools. Have an opportunity to leverage resources to support initiatives like this. One of the priorities in communities is the housing stock. Build out capacity to do so with new financing and use that to support the workforce.
- **Clarke Gocker:** Haven't really taken up consequence of developers passing on costs from policies to more vulnerable building occupants. Need to consider interventions here.

- **Peggie Neville:** Lack of clarity on what costs of this transformation need to be borne by ratepayers. Questionable how much more we can put onto the ratepayers. Costs are starting to be talked about, but there's an absence of discussion of funding sources.
- **Jin Jin Huang:** Didn't feel like discussion around stranded assets from cross-panel engagement with utilities was adequately represented here. Historically, long term planning for utilities has been driven by demand and supply from customers—reduction now in demand for gas as a reverse from previous and increased demand for electricity. And who is paying for it?
- **Bill Nowak:** We have been pushing for depreciation schedules to match what is aligned with CLCPA. Pushback has been that we need a framework from CAC to then make changes to depreciation. The longer we wait, the more problematic this will be. Really need to focus in on the depreciation issue.
- **Daphany Sanchez:** Use broader LMI definition and not DAC map. Start with those communities and invest resources. Integrate with job and workforce training, and establish models for getting it done.
- **Additional comments from Panelists:**
 - HDFCs in communities are not subsidized but considered affordable, which can create census tracts for DACs.
 - With finite resources, how are funds best utilized? Start with affordable housing. Ideally start with NYCHA by leveraging HUD and Section 8 payments, then take model from affordable housing to market rate.
 - Echoing, need clarity on where additional sources of funding will come from.

Next Steps and Reminders

- Janet Joseph provides an overview of next steps and reminders, including:
 - The next Climate Action Council meeting on 2/26 at 3pm.
 - Mid-March – deadline to finalize Panel recommendations.

Q&A and Chat

- *Richard Fennelly:* Maintenance of cooling equipment is very important. I think refrigeration and AC electric demand was missed by Cara. An Emerson testified before Congress a few yrs ago that 30% to 40% of energy consumption in commercial buildings went to cooling. See: <https://climate.emerson.com/documents/january-2018-wallace-delivered-senate-testimony-fr-ca-6735934.pdf>. Refrigeration: 30% to 40% is highest.
- *Daphany Sanchez:* Is the ground source heat pump at a lower cost for both downstate and upstate, or only upstate?
- *Sadie McKeown:* Can we use the WAP Program to enhance energy efficiency work scopes to decarbonize for low-income homeowners?
- *Valerie Strauss:* Do these costs include expenses for new electric upgrades to accommodate electrification, especially stoves?
- *Daphany Sanchez:* Or wiring?
- *Sadie McKeown:* And do they include removal of tanks, asbestos, old boilers etc. on existing buildings?
- *Daphany Sanchez:* And broadband infrastructure for electrification controls (solar, heating controls on GSHP/ASHP)?

- *Sadie McKeown*: Have you thought about the cultural challenges of moving the construction industry to a more technology-based approach?
- *John Cockerill*: Why not emphasize the long-term benefits of 30% conservation now?
- *Brian Cregan*: Does this analysis count the CO2 emissions of electricity generated by natural gas power plants - with the increase of electricity use due to heat pumps.
- *Michael Trunzo*: Instead of having current heating oil consumers spend \$10,000-\$20,000 to change their heating system to a new fuel, why not simply require them to use biodiesel fuel (a drop-in fuel with a 73% CO2e savings) to replace their petroleum diesel while continuing to use their current heating appliance as the appliance works with both fuels. Thus no need to abandon the current heating system and according to NYSERDA data, there is no increase cost to consumers for a renewable biodiesel heating fuel. The state should require the use of biodiesel in space heating for the 1.5 million homes that currently use heating oil. Thank you.
- *Brian Cregan*: Does this analysis count the CO2 emissions of electricity generated by natural gas power plants - with the increase of electricity use due to heat pumps.
- *Bill Nowak*: Will the data behind these graphs be made available?
- *Bill Nowak*: GSHP can provide far lower operating costs, especially when combined with voluntary demand-based delivery rates for electricity. They also have a major positive impact on peak demand, keeping electricity rates lower for everyone.
- *Michael Dunbar*: How are you going to win the participation of building owners and occupants? The marketing has not created the response needed to hit targets.
- *John Cockerill*: When will Building owners be warned about the need to set funds aside for these projects. Some may have to raise the rent.
- *Clarke Gocker*: Would be helpful to see a use case analyses for disadvantaged communities (upstate/downstate) which would recognize important variations in age of housing stock, quality of housing, access to capital including legacy effects of redlining and racism in housing and lending markets.
- *Brian Cregan*: Does this analysis count the CO2 emissions of electricity generated by natural gas power plants - with the increase of electricity use due to heat pumps.
- *Bret Garwood*: I'm happy to help workshop this. To help I'd like to see the data differently than just an NPV. We need to know the capital costs today versus the operating costs over the years being evaluated.
- *John Cockerill*: What is the utility infrastructure cost for upgrading the electricity to heat the multifamily building 25 families with electric heat. No mention for the need for ongoing research to make best recommendations to retrofits, on best materials, controls, and priorities of sequence of change. Truly becomes a thieves paradise. Nice road map. Where are the roads?
- *Kris DeLair*: There is current 1.5 million households in NYS currently using heating oil....have you considered requiring them to use renewable liquid fuels, such as biodiesel and / or renewable diesel? Biodiesel is a drop-in ready replacement for traditional heating oil. There is no added cost to the consumer and they can keep their current heating system at the same time reducing GHG emissions. Thank you.
- *Michael Dunbar*: Self install financial structures could create an Energy Reinvestment Account on utility bills for the DIY market. With finite funds, allow for people to install "no cost" measures and allow them to pay back the cost of materials through pro-rated models.

- *Richard Fennelly*: We have reached out to the PowerGen panel too about cooling equipment maintenance. It is not only an energy efficiency item but it will lower the need for electric generation as well (saving natural gas going to electric generation that is now being wasted). Cooling equipment maintenance will create a TON of jobs since the market penetration is minimal. For commercial refrigeration we can envision entry level jobs for one needed activity that we not conflict with established HVACR technicians too.
- *Michael Dunbar*: There is a mechanism on the bill that handles utility revenue losses from energy efficiency. Revenue Decoupling Mechanism "RDM".
- *Bill Nowak*: Re NYCHA - good example is Lockport Housing Authority which went to geothermal heat pumps.
- *Jin Jin Huang*: I think NYCHA is a great testing ground for quite a few of the concepts that we have been discussing.
- *Anne Reynolds*: What type of research would you recommend to know the right package of mandates vs. incentives? Confirming: Combining Policies 1, 2, and 4 wouldn't get you to the targets? And does 3 get you to the targets on its own? I know you had a slide which got at this but I couldn't absorb it fast enough.
- *Nick Catania*: What steps are being taken to ensure that energy efficiency projects are worth their investment from an environmental impacts perspective? Upstream emissions of materials, lifetime, total area of retrofits vs population, housing stock modeling, etc.