

Low- to Moderate-Income (LMI) Housing Electrification Technical Conference Summary

New York State Department of Public Service | Friday, September 20, 10:00 am- 03:00 pm | Hybrid (Albany, NYC, Virtual) | Cases 18-M-0084/14-M-0094

LMI Housing Electrification Technical Conference Overview

Introduction and Background

On September 20, 2024, the New York State Department of Public Service (DPS) conducted a technical conference to discuss considerations for electrifying homes in the low-to moderate-income market segment, held simultaneously in two in-person locations and online. The agenda included presentations from DPS, the New York State Energy Research and Development Authority (NYSERDA), and the New York State Division of Housing and Community Renewal (HCR) on the state of LMI building electrification initiatives in NY. It also included presentations from stakeholders working in the field of LMI electrification and opportunities for attendees to share perspectives, ask questions, and receive answers. This is a summary of the technical conference, by theme, including summaries of the questions and discussions at the conference.

Desired Outcomes

1. Hear diverse stakeholder perspectives on issues, challenges, opportunities, and potential solutions for LMI housing electrification for NYS.
2. Learn more about the range of factors, constraints, and choices/tradeoffs at play related to LMI electrification in the near term and long term.

Meeting Agenda

Time	Session	Panelists
10:00am – 10:15am	Welcome & Housekeeping	<ul style="list-style-type: none">• DPS, Chris Coll• Kearns & West, Miquela Craytor• Kearns & West, Nicolas Townes
10:15am – 11:00am	NYS LMI Energy & Electrification Context	<ul style="list-style-type: none">• DPS, Chris Coll• NYSEDA, Michael Reed• HCR, Sunitha Sarveswaran

<p>11:00am – 11:45am</p>	<p>Panel 1: Case Studies from the Field Learnings from 1-4 family and multifamily projects that have or have not overcome barriers in electrification and efficiency</p>	<ul style="list-style-type: none"> • Association for Energy Affordability, Asit Patel, Sr. Director – Technical Services¹ • Green Team Long Island, Jay Best, President • Sustainable Finger Lakes, Gay Nicholson, President • Aztech Geothermal, John Ciovacco, President²
<p>11:45am – 12:30pm</p>	<p><i>Break</i></p>	
<p>12:30pm – 02:00pm</p>	<p>Panel 2: Perspectives on LMI Electrification Considerations and Recommendations from Community A multidisciplinary panel to discuss perspectives on priorities for LMI electrification policy and programs</p>	<ul style="list-style-type: none"> • Rebekah Morris-Gonzalez, Pratt Center for Community Development • Jeff Perlman, Bright Power • Kelly Ziegler, Con Edison • Lisa Marshall, New Yorkers for Clean Power • Lindsay Speer, Central NY Regional Planning & Development Board • Laurie Wheelock and Theresa Hotte, PULP • Hal Smith, Halco/BPCA • Mark Kresowik, ACEEE
<p>02:00pm - 02:50pm</p>	<p>Open Discussion Share insights on what future policy and program design to support LMI electrification needs to consider</p>	<p>All Attendees</p>
<p>02:50pm - 03:00pm</p>	<p>Closing Statements</p>	<p>New York City</p> <ul style="list-style-type: none"> • Kearns & West, Miquela Craytor • DPS, Chris Coll <p>Albany & Virtual</p> <ul style="list-style-type: none"> • Kearns & West, Nicolas Townes • Kearns & West, Trevor Reddick • NYSERDA, Michael DiRamio

¹ Presentation included in the LMI Electrification Technical Conference Presentation published alongside this summary.

² John Ciovacco did not deliver his presentation at the conference, but it is included in the LMI Electrification Technical Conference Presentation published alongside this summary.

Meeting Summary

Opening Remarks

Chris Coll, Project Director at DPS, provided opening remarks, thanking participants for their attendance. He noted that this Technical Conference on DPS Cases 18-M-0084/14-M-0094 was convened based on stakeholder interest.

Miquela Craytor and Nicolas Townes, the facilitators from Kearns & West for the event, introduced themselves and the agenda.

New York State LMI Energy & Electrification Context

Chris Coll of DPS provided an overview of the current context surrounding LMI building electrification in New York. Nearly half of New York State's population meets the income threshold to be considered low or moderate income, with 3.5 million households having an annual income at or below 80% of Area Median or State Median Income, whichever is higher. 2.3 million of these households meet the income threshold to be considered low income (60% of the State Median Income), and many experience an energy burden (the percent of annual income devoted to energy needs) that can exceed 10%. Many lower-income households have difficulty paying for their energy needs and receive bill payment assistance and/or risk being disconnected. Recent NYS policies have been driven by the Climate Act goals of decarbonization and energy efficiency, capping energy burdens at 6%, and transitioning away from natural gas, on which half the state still relies. These policies are being supported by energy and affordability programs funded by federal, state, and ratepayer resources for weatherization/energy efficiency, distributed energy resources, and bill payment assistance programs. The State invests over \$1 billion annually in public funds to advance energy affordability and access to clean energy solutions for LMI residents, with more than 70% of funds directed to bill assistance programs. Weatherization programs can help to provide long-term energy burden reductions for LMI homes and must be a priority. One key initiative to highlight is the recently approved Energy Affordability Guarantee Pilot, which will provide a backstop for low-income households that electrify through EmPower+ to ensure that their energy burden does not exceed 6%. This pilot is important because it will help us to collect data on the energy bill implications for electrifying space and water heating for low-income households, which we currently have limited data and insights into.

Next, Michael Reed of NYSERDA discussed the benefits and challenges of converting to heat pumps for home space heating. Benefits include increased comfort and control, improved air quality, and the convenience of receiving heating and cooling from one system. In terms of challenges, he focused particularly on the household cost impacts of operating heat pumps for space heating. Concerns about household cost impacts of electrification are focused primarily on households converting from natural gas. On a per-MMBtu basis, using statewide average monthly retail prices from 2020 – 2024, electricity is 2.5-5x more expensive than natural gas. However, heat pumps are more efficient than fossil fuel heating systems and, depending on a variety of factors, can use energy three times more efficiently than fossil fuel systems. The operating cost impacts of converting to heat pumps depend on multiple factors, including the region of NY State, the type of

fuel previously used to heat the home, and the efficiency of the heat pump system installed. Reed presented utility bill cost impacts for a range of heat pump conversion scenarios.³

Sunitha Sarveswaran of HCR provided an overview of the efforts to pursue electrification in affordable housing. These efforts include HCR’s Clean Energy Initiative, which offers direct injection of funds, and mid-cycle programs, which focus on weatherization first to reduce the overall load and then pair with electrification funds.

New York State LMI Energy & Electrification Context: Clarifying Questions & Answers

The following is a record of questions and answers covered during the NYS LMI Energy & Electrification Context session from questioners in Albany, New York City, and virtual questions submitted via Mentimeter.

Virtual questions posed to panelists were identified based on the highest number of upvotes at the time of Q&A. For a full record of all questions submitted, please review [Appendix A: All Virtual Q&A](#).

Location	Question	Response
Albany	In the examples of the conversions from delivered fuels and gas and then the cost differentials, was there any energy efficiency work done? What was the actual upgrade? Did you install a heat pump or did you also do some weatherization to the home to improve its efficiency?	NYSERDA: Yes, we assume weatherization and air sealing that resulted in a 15% reduction of space heating loads to the household.
Albany	In calculating the estimated utility savings or increased charges, did they include comparing the cooling season, where a lot of people use AC, and how that might offset the increase comparing heat pumps to natural gas?	NYSERDA: Heat pumps represent a more efficient way to cool the household, but they can also represent increased cooling load in households that were previously under-cooled. For these examples, we focused on the heating load impacts. Cooling efficiencies from heat pumps are a benefit, but this benefit may be offset by additional cooling the household was able to receive.
Albany	More of a comment. This model doesn’t take into account health and climate externalities. So when we are considering the overall costs of switching versus not switching, electrification is going to reduce illness and eventually reduce climate impact.	NYSERDA: That is completely correct, we are focusing on household budget impacts of potentially switching to a low to moderate income household. This exercise was just focused on those utility bill impacts.
Virtual	Why did DPS allow the utilities to stop providing Clean Heat incentives to NYSERDA-funded projects? This has been a huge loss in making projects affordable.	DPS: For clarity, it wasn’t a matter of DPS allowing utilities to stop offering Clean Heat incentives to NYSERDA projects. The Clean Heat program was not designed to be an LMI program. Clean Heat is a rebate program, with incentives provided after

³ Please refer to LMI Electrification Technical Conference Presentation that was published alongside this summary for additional details on the heat pump conversion scenarios presented.

Location	Question	Response
		<p>the heat pump is installed. The program was not designed to assess impacts on the cost to heat a home or overall energy affordability prior to install. The program was also not designed with the level of subsidy needed to support LMI households. Clean Heat budgets are already established and may not be able to support the deep subsidies necessary for LMI projects. The Department is working with NYSERDA and the utilities to understand the nature of the LMI projects that had previously been funded through Clean Heat, including energy bill impacts. In addition, the Department needs to understand the impact of an increase in projects on the Clean Heat program and budgets as a result of NYSERDA implementation of IRA rebates. These assessments are still underway.</p> <p>As the design of the energy efficiency and building electrification programs takes place through Case 10-M-0084, DPS expects that we will need to develop strategies to support the electrification of LMI homes while also addressing some of the other challenges we discussed already today. Namely, how do we ensure that the households are not left in a more difficult position in paying their bills? And how do we make sure that as we are rolling out programs in the future, we have one program that provides the right level of subsidy, rather than having multiple layers of programs coordinating together and the associated administrative burden?</p>
Virtual	How much of the heat pump operating expenses stems from the use of heat pumps for cooling that a customer may not have had access to before electrification?	NYSERDA: The bill impact scenarios presented focused on space heating. The assumption was that the household had some cooling before the retrofit, and had more efficient cooling after the retrofit.
NYC	There was a gas and electric bill listed. Does this assume all are dual-fuel systems?	NYSERDA: The examples assume that the household has one heating source pre-retrofit, which is either a delivered fuel or natural gas. Then it moves almost all the heating to a heat pump, post-retrofit. But it still has an electric bill before the retrofit. That is why you see both an electric and a gas or fuel bill pre-retrofit. Post-retrofit, there still is fossil fuel used for domestic hot water, cooking for natural gas households, or other uses, but most of the household's energy consumption has been converted to electric.
NYC	Okay so this is just space heat, what about scenarios where we are also converting domestic hot water?	NYSERDA: We wanted to focus on space heating since that represents over 50% of the household's

Location	Question	Response
		total energy usage, and domestic hot water represents a smaller portion.
NYC	Were these scenarios focused just on upstate two- to four-family homes or is there a wider variety?	NYSERDA: These scenarios were focused on one-unit homes located in two different regions, one upstate and one downstate, with two different sources of fuel.

Panel 1: Case Studies from the Field

Overview

This panel featured real-world examples of LMI electrification projects and lessons learned, including challenges that were encountered in the field. In the case studies presented of 1-4-family and multifamily projects, the panelists shared how they overcome the barriers in achieving electrification and energy efficiency in these building typologies.

Panelist Introductions and Opening Comments

- Asit Patel, Sr. Director - Technical Services, Association for Energy Affordability (AEA)
 - AEA is a non-profit energy efficiency services provider operating in NY and CA.
 - In NY, they have completed 11 projects on LMI multi-family buildings, which were all paired with Weatherization Assistance Program, as well as DOE and ARPA, funding.
 - They have worked with manufacturers for build for design elements, which resulted in 9 centralized heat pump water heaters.
- Jay Best, President, Green Team
 - Green Team is a home energy efficiency contractor working on Long Island and in Eastern Queens on 1-4-family homes, many built in the 1940s and '50s.
 - Projects that they work on are complicated, involving 3-4 different trades, and often include fixing the thermal barrier and upgrading to meet today's building codes before even focusing on retrofitting. To ensure all these elements work together, projects cannot be approached piecemeal.
 - The greatest challenge lately is working through the adjustments to incentive programs, as they don't always match the reality on the ground.
 - One concern is that currently, programs don't factor in the long-term support and maintenance of these electrification systems, which need a higher degree of ongoing maintenance than homeowners may be accustomed to.
- Gay Nicholson, President, Sustainable Finger Lakes
 - Sustainable Finger Lakes is an NGO working out of the Ithaca area.
 - In 2010, they launched the Finger Lakes Climate Fund designed to fight climate change and income inequality. Through the fund they've issued 98 grants, totaling over \$192k. These grants have supported single-income LMI families, allowing them to cover the costs of energy improvements, which have been primarily heat pump conversion projects.

- They have also supported a mobile home pilot project where they were able to leverage their funds and federal IRA dollars to help get envelope improvements and heat pumps into LMI mobile homes, with 21 complete awards and 28 underway out of 78 enrolled.
- They have worked to address many barriers to LMI communities. They have been able to reduce the cost to their awardees, who now only have to pay 8% of the project cost. While there are still many barriers to address, the top areas to focus on are to increase coordination, reduce paperwork, and provide a lot of human connections/touch points for homeowners to get them into these programs.

Panelist Discussion

- How do you approach energy affordability for low-to moderate-income, including renters and building owners? What resources do you pull from, and what's missing that will help you better achieve your goals? Examples are materials, funding, policy, regulatory, etc.
 - **Asit Patel:** Our primary services are weatherization assistance programs. A lot of our funding to support LMI communities is coming from the Weatherization Assistance Program. We bundle other incentives for all of our clients, not just electrification or weatherization, to do as deep as a retrofit as possible. We typically partner with other programs, wherever we can get as much incentive as possible to do as extensive of a retrofit as possible.
 - **Jay Best:** 70-80% of the time we work with the owner. We have had owners who rent the upstairs; they are keen to have some of the heating costs covered by tenants. People treat heating/cooling differently when they are responsible for the cost. Affordability is still important but should be factored in with behavioral implications. You're still selling something; trying to get people to understand it's worthwhile. People demand agency over equipment. We approach conversations by presenting the overall cost, discussing what is involved, and going over existing energy expenses and what to expect from future expenses.
- How do you approach the question of energy affordability for LMI customers or building owners that you discuss electrification with? What advice, if any, do you provide them?
 - **Gay Nicholson:** We leave it to the contractor and cost-owner to decide the most efficient cost share. Most people don't regret the choice to switch over from propane, fuel, firewood, etc. We ensure customers enter conversations ready with questions for the contractors that guide people to better choices. It would be great if contractors provided those choices directly, too. We offer additional incentives from NYSERDA/HCR/etc., so it's about gap financing and bringing people within reach of capital costs. The increase in the electric delivery rate is challenging and emphasizes the need for carbon pricing. LMI customers care about climate change, so we do our best to make sure homeowners have a best practices guide to managing heat pumps and thermostat settings.

Panelist Q&A from the Audience

Location	Question	Response
Albany	Has any coordination with other agencies (e.g. HUD) happened to extend financing options?	Asit Patel: AEA is working on a HUD project. Agencies have different requirements and timelines linked to funding sources, which can be challenging. An effort to align programs/guidelines/applications would simplify coordination and make it more feasible.
Albany	What are the different contractors that are generally engaged in these projects and how do they undertake coordination? What are the challenges there, and does firm size impact how much they charge? Are these workers licensed contractors by NYSERDA? Are there contractors not licensed by NYSERDA?	Jay Best: We use the trades instead of companies specifically because while any one company can include several trades, that assumes there's enough work to keep everyone busy. Sometimes that balance of work shifts, and contractors will work to readjust. If you bring in smaller companies who aren't involved in the program details, the overhead increases. And the challenge of working with bigger companies who have the ability to handle the paperwork, is that you have a higher cost.
Albany	What are some challenges of managing multiple contractors?	Gay Nicholson: We get lots of bids, so we recommend shopping around to increase options. Over the next 15-20 years, we're working to increase green job opportunities by training local firms to win more money from organizations to support LMI customers. Larger companies aren't realistic for LMI customers. NYSERDA's envelope-first emphasis is great, but we see a lot of installers who only do heat pumps and don't have installation partners. It's a long-standing challenge getting tradespeople together and minimizing their overhead administrative costs.
NYC	Many projects doing electrification don't include cooking. Keeping gas is bad based on internal air quality, and keeping a gas meter to get just a few therms of gas a month is pretty inefficient, too. Why is cooking not included?	Asit Patel: It is expensive. Even when targeting big end users, the money runs out and costs keep increasing. Doing a pilot that was to include cooking at NYCHA, we had to focus on energy efficiency first and we ran out of funds. The electrical needed an upgrade.
NYC	We are a contractor who has been in business for almost 15 years. And we insulate over 500 houses a year. Ever since Covid it has been more challenging. While service prices have stayed stable, our labor and materials are up more than 200%. And because programs like Empower+ alone have multiple rule changes, it just adds to our costs. Our staff need to be retrained, and contractors and marketing, customers need to be re-enrolled, and processing times are taking longer too. A	Jay Best: At our firm, we've worked with NYC and Long Island customers. There are logistical challenges in NYC, from older housing stock to trying to secure parking close enough to do an installation. This is on top of the challenges shared, that make work in the NYC area difficult for us.

Location	Question	Response
	lot of contractors don't even want to engage with Empower+.	
Virtual	Are you suggesting that a building/homeowner needs project management support that should be incentivized instead of assuming that they can manage multiple contractors?	Gay Nicholson: Recommend shopping a little, increasing the number of green jobs, training for them. We keep adding incentives through charity or taxpayers, yet prices keep going up. We need to think about how to shift the system design.

Panel 2: Perspectives on LMI Electrification

Overview

This multidisciplinary panel discussed a range of perspectives on the priorities of LMI electrification policy and programs. Panelists provided suggestions on future policy and program design to support LMI electrification.

Panelist Introductions and Opening Comments

- Rebekah Morris-Gonzalez, Senior Program Manager, Pratt Center for Community Development
 - The Pratt Center has been working alongside CBOs for ~15 years to help LMI homeowners and homeowners of color access electrification. They understand barriers in the field and advocate to improve the programs in NYC. According to the Pratt Center, 95% of all small residential LMI retrofits funded by NYSERDA have happened outside of NYC, despite NYC having 863K 1-4-family buildings as well as 60% of the disadvantaged communities. Pratt Center wants to see more work get done in NYC.
- Jeff Perlman, Founder and Board Member, Bright Power
 - Bright Power engages building owners where they are at. They find that electrification is not the primary goal of most building owners, so electrification and generally efficiency programs will have the most success when they are tied to other events in the real estate life cycle. Bright Power works with Fannie Mae on the Green Multifamily Mortgage Program and CPC on their Green Mortgage Programs.
- Kelly Ziegler, Department Manager, Con Ed
 - Con Edison has residential, small business, and multifamily customers and several LMI programs serving the multifamily segment. The company has a strong commitment to clean energy and energy affordability. They also recognize that housing costs in the city are high and rising, which they must take into account when they design programs, to not leave anyone behind. Policy pathways are needed for landlords to provide cooling to their tenants, in addition to heating. The cost-shifting between landlord and tenant along with the reliability of the electric system are key focuses as we electrify.
- Lisa Marshall, Advocacy and Organizing Director, New Yorkers for Clean Power
 - Lisa Marshall encourages the group to widen the conversation on the energy transition in homes and buildings. This is a major transition that costs a lot of

money and entails great effort. NY has been a leader in setting goals for climate, health, comfort, and safety, but we are now running into a disconnect between the state's goals and what's on the ground. An abundance mindset, not a scarcity mindset, is required to address the challenges ahead. NY should design programs to meet conditions on the ground. For example, people don't really think about replacing equipment until it's dying, so we should design programs to seize no-heat situations as an opportunity for fuel switching. Program designers should do ride-alongs with contractors and visit people's homes and consider using different ways to increase goodwill with LMI communities, like giving out free stoves.

- Lindsay Speer, Senior Planner, Central NY Regional Planning and Development Board
 - While Lindsay Speer works for the Central NY Regional Planning and Development Board and directs the NYSERDA-funded Central New York Regional Clean Energy Hub, her comments on this panel are on her own behalf.
 - She works for five counties in central NY, with a robust background in an energy management program for decades, including with solarized and cooling communities. A key to energy justice is to educate and empower households to make choices about their energy use that make the most sense for them, e.g. improving insulation, air sealing, and basic energy efficiency. It is always necessary to help homeowners see the cost savings and the benefits of change, particularly for homeowners aging in place. There are many air quality issues contributing to health concerns, as many homes have 2-3 systems patched together because they've been through many transitions—wood stove, gas, and baseboard electric—all in one structure. These are all dynamics that policies need to address.
- Laurie Wheelock and Theresa Hotte, Public Utility Law Project (PULP)
 - PULP is 40-year-old nonprofit whose mission is to educate, advocate, and litigate on behalf of NY's low-income utility customers. PULP offers several services in the space of energy affordability: financial assistance, efforts to lower usage through weatherization and energy efficiency, and policy work on things like rate structures and fixed charges that can cut costs and save money for ratepayers. PULP has seen a surge of people who cannot afford their energy bills as they are today. The energy burdens of LMI communities are too high, often surpassing the 6% threshold. While bill assistance and Energy Affordability Programs are helpful, they are not sufficient.
- Hal Smith, CEO and President, Halco/Building Performance Contractors Association of New York State (BPCA)
 - BPCA has about 100 contractors who are part of the association, primarily weatherization and home performance contractors. Most members work in heat pumps and electrification, and support each other to navigate transitions in programs, including paperwork. They meet with NYSERDA monthly. Halco has four different offices, in Ithaca, Rochester, Syracuse, and Phelps. Halco tries to offer a complete turnkey package across all the involved trades, starting with home energy evaluations and including insulation and air sealing. The housing stock in their region is very old, and sealing up homes to ensure energy efficiency can result in other challenges, such as mold.
- Mark Kresowik, Senior Policy Director, American Council for an Energy-Efficient Economy

- Critical efforts are energy efficiency to fight climate change impacts and centering the needs of those who are most overburdened and underserved in this transition. Energy burden is a real concern in the New York/New England region but is not exclusive to that area, for example also relevant in the Midwest and Mid-Atlantic. Low-income households currently using gas for heating cannot be the last ones on the gas system: as homes electrify and leave the gas system, gas rates go up. To address this, solutions include comprehensive retrofits and reforming rates.

Panelist Discussion

- To our NYC panelists Rebekah and Jeff, the discussion on LMI electrification seems to primarily focus on energy affordability for residents, the first/installation costs associated with projects, and access to programs that support electrification. In your estimation, are these the right focal points for developing long-term strategies and policies to support LMI electrification? Are there others that you would prioritize?
 - **Rebekah Morris-Gonzalez:** We need to define what is low-income, first. Many programs used Area Median Income (AMI) to determine incentives across the state. For NYC and downstate Long Island/Westchester, 60% of State Median Income (SMI) is lower than AMI. It can be up to \$20k in the differential. We need to talk about who or what affordability means. Partial electrification in a way that makes sense might help bring households along.
 - **Jeff Perlman:** There are capital costs, operating costs, and the brain space, time, and motivation to act. We need rate clarity and rate reform. Engage people where they are and make projects happen when others are already underway instead of starting a whole new project.
- Lisa, Lindsay, Laurie and Hal, in your estimation, how do you think about these goals and what is your thought on how the State can balance them?
 - **Hal Smith:** Long-term planning – plan for decades, not around current energy prices. With this approach, we can make policies that help make electrification less expensive and deal with the upfront and maintenance costs.
 - **Laurie Wheelock:** We need a centralized office of energy and climate equity to oversee the process overall, and to centralize energy affordability and equity resources statewide. This office will need to perform a careful review of the stacking of resources to know where LMI utility customers are, and if they're getting all the benefits available to them. Make it equitable across the state and ensure everyone has the access they need.
- Picking up on a point raised in the opening presentations by DPS and NYSEERDA, program budgets are finite and there are only so many homes that can be weatherized and electrified each year. Rebekah and Jeff, do you have thoughts on how to prioritize available budgets?
 - **Rebekah Morris-Gonzalez:** Prioritize communities that have been disinvested-in the longest—don't worry about money. The lack of money that is entering the low-income market is unjust and inequitable. There's plenty of money, it's not being directed in the right way.

- **Jeff Perlman:** Reduce the amount of subsidy required for energy efficiency by braiding it in with other events in the real estate lifecycle.
- **Mark Kresowik:** Concentrate resources we have on the dual focus of 1) low-income/overburdened/underserved/historically marginalized communities, and 2) focusing projects in territories where non-pipeline alternatives to the gas system can be most cost-effective to avoid ongoing system repair and replacement. This approach might be most efficient in terms of minimizing costs and maximizing benefits.
- **Lindsay Speer:** Get people to the table and fund people who are coming. Because of various program rules, we are turning away 80% of people who come to us for help. We need adequate funding and less onerous program rules.

Panelist Q&A from the Audience

Location	Question	Panelist Responses
NYC	What about maintenance costs? The service cost to maintain some of these units is much higher than for fossil fuel systems. Another thing we should worry about: these systems are not designed to last for four decades. If one component of the system goes bad, you have to replace it with the same manufacturer, otherwise you have to replace the whole system.	One panelist recommends keeping things modular. They underscore the disadvantage of systems that require all components to come from the same manufacturer, and recommend designing systems to avoid some of these issues down the line, learning lessons now and promulgating best practices. They also highlight that many LMI households can't get on the path to phased electrification because they need repairs and upgrades before air sealing. Money is needed from different sources to ensure flexibility in how that money is spent.
NYC	Thoughts on how NYSERDA can support the gap in LMI electrification because their budgets are more flexible than utilities' budgets are?	<ul style="list-style-type: none"> • Co-design, collaboration, and flexibility. Changes to program rules are difficult to navigate. If all of the actors involved have the same goals, why is there so much friction between them? • Geo-eligibility: making participation and qualification for participation easier will be critical in addressing some of the access issues. • LMI, smaller, multifamily buildings are struggling to find and acquire financing for their projects. They care about their community and tenants, but the projects are not to the scale that gets NY Green Bank financing, for example.
Virtual	Have there been any successful attempts by DPS, NYSERDA, or private consultants in identifying buildings heating with oil/propane AND connecting those customers with programs? Or more self-selection?	One panelist cited a marketing tool that NYSERDA made available through the Clean Energy Communities Clean Heating and Cooling program that helped to identify good candidate households for heat pump conversions. This was used in Central NY to do targeted mailing. Additionally, the Regional Clean Energy Hubs recently completed Regional Assessment and

Location	Question	Panelist Responses
		Barriers analyses that show which regions are served by oil and propane.
Virtual	While project economics are important, is there a risk to potentially over-emphasizing delivered fuels as a priority population?	<ul style="list-style-type: none"> • Agreement that there is a risk. Cost savings on paper aren't the same as what is seen in the field, because people aren't necessarily heating <i>only</i> with propane, or may not be heating their whole house. People often use unsafe methods to supplement their heating, such as space heaters and gas stoves, or they may only heat 1-2 rooms. • If resources are cut, there's a risk of leaving low-income households on the gas system last, which is an unethical outcome. • Customers that heat with natural gas today and transition to heat pumps for space heating will likely see an increase in the cost to heat the home or building. • We should start with the projects where we know the economics are going to be favorable. • Better data is needed to understand the economics. People who are struggling with a high energy burden are going to continue dealing with that. Phased electrification may be a necessary approach.

Discussion

Overview

After the panels were convened, in-person audience members in Albany and in NYC, and the virtual attendees online, each separated into their respective spaces where attendees shared comments with NYS DPS and NYSEERDA staff regarding the technical conference and their broader perspectives on LMI Electrification. After the three separate discussions were complete, the Albany and the Virtual rooms were joined back together, and short summaries of the conversation were delivered to the group. NYC remained separate due to technical issues. The following reflects the content of those summaries.

Albany Summary

Localized Solutions vs. Statewide Consistency

- Participants emphasized the need for local autonomy to address unique challenges within communities, but stressed the importance of statewide consistency in quality standards.
- The Clean Energy Communities program was noted for its success in certain regions, but concerns were raised about potential changes affecting long-term collaboration and educational opportunities.

- Participants sought to balance local flexibility with state oversight, describing the challenge as "threading the needle" between local governance and statewide policies.

Challenges with Program Accessibility and Navigability

- The complexity of navigating multiple clean energy programs across various entities (utilities, federal agencies, local stores) was a key concern, particularly for vulnerable populations.
- There was a call for a "one-stop shopping" approach to simplify program access and remove the administrative burden for customers.

Resource Needs and Community Capacity Building

- Participants stressed the need for significantly more resources to build community capacity, noting that current funding levels are insufficient to meet diverse community needs.
- Regional Clean Energy Hubs were seen as lacking adequate tools, hindering their ability to fulfill their original co-design vision.
- A clear, long-term commitment from senior leadership at NYSERDA to co-design was called for, to avoid short-term initiatives that might be abandoned after a few years.
- Strategic gas system mapping was proposed as a way to prioritize hybrid system solutions in areas where gas infrastructure will remain for decades.
- There was broad recognition that interagency collaboration and leadership from the governor's office are needed to address clean energy challenges comprehensively.

Trade Licensing and Quality Standards

- A lack of uniform licensing for trade professionals, like electricians, was seen as a key barrier to ensuring quality and consistency in clean energy work.
- Participants argued for a statewide standard for quality assurance and licensing to reduce local variations and streamline the process for contractors.
- Local contractors often face barriers to entry due to inconsistent requirements across regions, creating a perceived divide between NYSERDA contractors and local professionals.
- Consistency in state and local code standards was viewed as essential for improving the quality and efficiency of clean energy installations.
- Streamlining licensing requirements would reduce bureaucracy, making it easier for smaller contractors to participate in clean energy initiatives.

Programmatic Restrictions and Flexibility

- The EmPower+ program's exclusion of homes without a working heating system from receiving insulation upgrades was described as a "catch-22" that blocks many from accessing services.
- Participants called for more flexible standards in clean energy programs, allowing insulation work to be completed even if the heating system is not yet fully functional.

- Excluding natural gas users from clean energy funding due to cost-effectiveness concerns was seen as short-sighted, limiting access for those who rely on gas but are environmentally conscious.
- Concerns were raised about the rising costs of hybrid heat pump systems and the need for fair incentives to encourage their adoption.
- Participants discussed how focusing on short-term cost savings limits the long-term potential benefits of decarbonization and energy savings.

Feedback and Transparency in the Comment Process

- Participants expressed frustration over a lack of feedback after submitting comments through the Department of Public Service's Document and Matter Management system.
- There was concern that comments are not being implemented or even acknowledged, leading to a sense that community input is being disregarded.
- Participants requested a more transparent process where they receive feedback on why certain recommendations are not implemented and how decisions are made.
- Regular feedback loops between government agencies and stakeholders were recommended to build trust and ensure more effective participation.

Municipal Collaboration and End-of-Life Management

- Participants discussed the need for local governments to be involved in managing the end-of-life disposal of clean energy systems, such as decommissioned heat pumps.
- The absence of a coordinated approach for managing refrigerants and other components at the end of their lifecycle was seen as a looming environmental challenge.
- Participants highlighted the importance of long-term planning for the maintenance and disposal of clean energy technologies, especially for low-income households.
- Concerns were raised that municipalities often operate under different legal constraints than state agencies do, making coordinated action difficult.
- Municipal electric rates, which are often lower than standard utility rates, were cited as a potential area for cost savings if exceptions could be made for heat pump conversions.

Electrification, Building Decarbonization, and Long-Term Planning

- There was broad support for building decarbonization and electrification, particularly in urban areas, as a strategy for reducing emissions and transitioning to cleaner energy.
- Participants discussed the challenge of managing cooling-only heat pump installations, which undermines the goal of increasing heating efficiency in early heat pump programs.
- Some participants emphasized the need for phased electrification, with hybrid heat pump systems serving as a bridge for gas customers in the transition to decarbonization.
- Concerns about the cost and affordability of heat pump systems were raised, particularly for hybrid solutions that were once affordable but have become more expensive.
- The long-term rise in natural gas prices was noted as a reason to consider hybrid systems as a cost-saving measure for the future, despite short-term cost challenges.
- Participants called for better planning and more inclusive funding policies to ensure that communities are not left behind in the transition to clean energy.

Comment Cards

The following comments were written down and provided to the technical conference facilitators. While there was insufficient time during the technical conference to address all comments, including these below, DPS and NYSERDA will review, consider, and work to address all comments received.

1. We've heard many ideas about expanding eligibility for clean energy programs, yet there aren't enough funds to support projects for those currently eligible. Given finite resources, how do we strike a balance between expanding eligibility and supporting existing participants?
2. In regular conversions to Air Source Heat Pump (ASHP) from oil and gas, given that 50% of heating degree days upstate (and even more downstate) occur at 30°F and above, will scenarios that didn't show savings now demonstrate cost-effectiveness if a partial load ASHP is sized to cover heating needs at 30°F and above?
3. How do the systems perform after installation?
4. What feedback have multifamily tenants provided after system installations?
5. Municipal electric rates are significantly lower than standard utility rates. Can exceptions be made for heat pump conversions from gas in these communities?
6. The Consortium for Energy Efficiency (CEE) is reducing Energy Efficiency Ratio 2 (EER2) requirements for tax credit-eligible heat pumps in 2026, which could increase their contribution to summer peak demand. How will this impact energy savings and grid stability?
7. If grid concerns focus on cooling during the summer, why isn't rate design part of the conversation? If winter peak is a current or future concern, why is dual-fuel heating being discouraged? Why are utilities citing heat pumps as a rationale for raising electric rates?

NYC Summary

Stacking Incentives and Program Requirements

- Participants advocated for fuel neutrality in the administration of electrification incentive programs. Buildings with delivered fuel can have limited opportunities to access ratepayer-funded incentive programs if those programs do not support all fuels. Participants also observed that buildings cannot comply with the sustainability requirements of the Climate Modernization Act's Local Law 97 due to the insurmountable cost of electrification without incentives: stacking incentives is necessary to achieve sufficient funding support.
- The "stack-ability" of incentives is challenging due to conflicting program requirements and code and building standards. Program administrators should seek insights and best practices from the different regions, and community-based organizations on the ground, to promote the standardization of requirements across programs.
- Before weatherization and energy efficiency upgrades can occur, remediation of mold, asbestos, lead, and other hazards is necessary. Thus, remediation costs need to be considered in energy efficiency programming rules, because right now, these programs do not contain enough funding to support vital remediation activities.

- Participants recommended creating a customer-facing, user-friendly version of the table shared in the presentation, which detailed the ecosystem of electrification programs. This public resource would ideally also contain information evaluating program successes and challenges, so that those insights and best practices are not only being shared anecdotally.
- DPS should serve as the bridge between NYSERDA and stakeholders who are out in the field, including contractors. Both DPS and NYSERDA should ground-truth program structure and rules with the reality of what contractors experience, and should provide clear and proactive explanations when program rules change.
- Participants noted that utility programs do not seem to prioritize setting goals for those who need to be serviced. Overcoming this obstacle will require collaboration to develop and tackle a priority list, scale incentives accordingly, and lighten administrative burdens by managing complexity through cross-agency efforts.

Program Scalability and Adaptability

- The scalability of a program suffers when requirements change, as contractors must learn the new approaches and guidelines. Larger program budgets promote more consistent, repeatable programming.
- Contractors can do their own marketing and are very effective at marketing to their target audiences. DPS and NYSERDA should partner with contractors and local community organizations to inform the creation and scaling of electrification programs that real-world contractors can readily adopt and market.
- Participants suggested that program administrators should prioritize making programs flexible and adaptable so that contractors would not have to resubmit projects to programs multiple times.

Program Management

- Electrification projects take a very long time in affordable housing structures and often are abandoned along the way.
- Participants posited that consistently learning and applying lessons enhances both program design and project proposals.
- A dedicated team to support LMI households pursuing electrification programs and incentives would reduce the participation barriers for consumers who are balancing many life responsibilities.

Long-term Planning and Strategy

- There are 3.5 million homes in the LMI market segment and regardless of how much funding is available, it will be necessary to prioritize the work that is funded. Assuming the electrification of a home requires \$20,000, an annual program budget of \$100 million can only support 5,000 homes. Over 20,000 homes are weatherized today on an annual basis, so additional consideration is necessary to develop an approach to allow the phasing in of electrification while also weatherizing as many homes as possible (weatherization provides long-term energy burden reductions and is a pre-requisite for electrification).

- There is an ecosystem of energy, housing, and social service programs that need to be aligned to adequately support the electrification of homes for lower-income residents at a meaningful level. The state is in a transition, and it may take some time to get policy and program apparatuses aligned.
- Current electrification programs were designed to support the development of the electrification market, so additional supports and strategies will need to be considered to develop a long-term electrification strategy.
- Large, for-profit developers with abundant credit should enroll in loan programs and leave grants for non-profit developers and others who require up-front financing to fund electrification projects.
- Participants emphasized thoughtful program design and rollout. Suggested methods to make programs more seamless were prioritizing smaller programs that run longer and budget more carefully, and establishing and communicating an allocation system when a program budget is running low.
- NYSERDA should consider providing more incentives to contractors, to reflect how much contractor relationships benefit programs and efficiency.
- HEAP benefits provided to customers favor delivered fuels.

Virtual Summary

Holistic Feedback on Approaches to LMI Electrification

- The independence and agency of those living in LMI households must be at the forefront in planning efforts. A successful equitable energy transition must provide LMI households more opportunities to have their voices heard.
- Community groups are deeply concerned about how recent decisions by NYS DPS and NYSERDA have caused harm to their relationships with communities and affected their trust in NYSERDA. They seek more direct relationships with NYSERDA, including 1-on-1 dialogues, to share perspectives and address issues collaboratively.
- DPS should adopt a cross-docket approach to the cases impacting LMI Electrification—such as the Energy Efficiency and Building Electrification Portfolio—as there are cross-cutting issues and considerations that should be addressed holistically.

Policy and Regulatory

- Participants expressed hopes for the passage of legislation to support natural gas transition and increase resources and incentives for heat pumps.
- Both carrots and sticks help yield emissions reductions, with examples including a carbon tax and more stringent emissions controls on appliances.
- In order to better reflect and implement the New Efficiency New York Order (NENY Order), participants advised NYSERDA to refocus on air sealing in multifamily and high-rise buildings, including by reassessing methodologies for testing air leakage and mechanisms for assessing energy savings.

Program Design and Implementation

- Scale is an important factor in program design and implementation: making 2 million homes climate-friendly will require reducing, not increasing, the burdens of proving program eligibility.
- Gap funding to address non-energy measures such as mitigating health and safety issues or addressing structural deficiencies in homes will be required to achieve the energy transition.
- Participants called for more programs to incentivize load reduction.
- Although geothermal could be a key electrification solution, it is not a primary focus of electrification programs. If there is concern about operating costs (i.e. the costs associated with operating heating and cooling systems), some participants suggested that the rational programmatic response is to sustain, not cut, incentives.
- Partial electrification is viable and positive: energy audits, electrical system updates, and gas stove conversions are key steppingstones to improve the economics and comfort of shifting to electrification. However, caution is merited when implementing partial electrification solutions, as hybrid heating can contribute to downstream emissions issues that affect LMI communities.

Data Availability

- Participants inquired whether there have been successful attempts to identify buildings heating with delivered fuels to target them for conversions.
- Beyond the clean energy dashboard, participants expressed an interest in having program data available by installed measure, as part of efforts to track implementation at the building level.
- Seeing estimates of how natural gas bills are projected to go up in the coming years would help consumers understand the comparative costs and make informed decisions based on the prices of fuels.

Appendix: All Virtual Q&A

Session	Input	Upvotes	Answered at Conference?
NYS LMI Energy & Electrification Context	Where can I find more information on the Energy Affordability Guarantee?	0	
	Why did DPS allow the utilities to stop providing Clean Heat incentives to NYSEDA-funded projects? This has been a huge loss in making projects affordable.	5	Yes
	There was a slide on various average Cap Expenses associated w/ electrification. Is there a corresponding slide that includes average IRA and other incentives?	2	
	Hi! How can we take into consideration the amount of subsidies that the gas industry already receives from both state and federal backstage to make it "affordable" on the bill frontstage.	3	
	On slide 23 of Bill impacts of converting to HPs, one of the operational efficiency of heat pump variables is "Type and size of supplemental/backup heat", are you ending decommissioning requirements?	0	
	Are these numbers from Natural Gas to Heat pumps assuming full decommissioning of existing natural gas system?	2	
	Slide 4 illustration comparing costs - what makes the increases? Can you explain a little more? (Downstate gas)	1	
	For the single family electrification analysis, why was only 75% of heating fuel assumed to be reduced? Also, how does the bill impacts change if heat pump water heaters are added?	3	
	Will slides be distributed following the meeting?	3	
	How much of the heat-pump Op Ex stems from the use of heat pumps for cooling that a customer may not have had access to prior to electrification?	6	Yes
	For Sunitha S. How does DHCR ensure no tenant cost shift occurs in its sites? Is that approach slowing DHCR's ability to electrify its buildings?	2	
	By modeling the home to still be partially on gas, (only electrifying heating) the customer still has to pay the gas fixed charge. Curious about the operating cost comparison for fully electrifying.	3	
	The climate friendly goal is 2 million homes by 2030, with 800,000 of them LMI. What is or will be done to reach and convert the remaining 1.2 million market homes?	4	
Were shared boreholes (eg district geo/thermal energy network) considered in potential costs of GSHP systems?	2		
Panel 1: Case Studies from the Field	Jay: Are you suggesting that a building/homeowner needs project management support that should be incentivized instead of assuming that they can manage multiple contractors?	4	Yes
	Jay: How would you suggest that O&M be included in the various programs?	0	
	To all: What have been the biggest program participation challenges that you have experienced as implementers in each of the following categories: customer journey, admin burden, project economics?	0	

Session	Input	Upvotes	Answered at Conference?
	To the panelists: How much savings would be realized if NYSERDA and utility incentives + programs were centralized and/or streamlined?	0	
	Just a comment. Inverter-based variable speed heat pumps should mitigate the shoulder season short-cycling issues.	1	
	Can Jay and Gay elaborate on panel and service upgrades in single family homes? What funding resources are you stepping int?	0	
	Can you share the speaker's contact information because we would like to connect with them and work together.	0	
Panel 2: Perspectives on LMI Electrification	Have there been any successful attempts by DPS, NYSERDA, or private consultants in identifying buildings heating with oil/propane AND connecting those customers with programs? Or more self-selection?	3	Yes
	Timelines and completion dates for infrastructure projects affect the efficacy and reach of programs. Do we have a transparent timeline for the CE transition and, importantly, capacity upgrades?	1	
	As some grant-funded home intervention Health programs result in EE/BE, and as grant funded EE/BE result in Health savings (IAQ), are all savings (medical + energy) being diverted to more incentives?	0	
	Of the goal/of 2m homes to be climate friendly, 800k /are LMI. That leaves 1.2m market rate homes. There are virtually no incentives or effective marketing for this sector. How will this be fixed?	2	
	While project economics are important, is there a risk to potentially over-emphasizing delivered fuels as a priority population?	3	Yes
	I would like NYSERDA and DPS to respond to the panelists' comments and display a willingness to implement their ideas.	3	
	Can you talk about the process of helping LMI households make decisions for themselves, & recommendations for ensuring we can open up access to all while giving clear information about costs & benefit	0	
	What policy levers need to be addressed (e.g., leveraging/braiding funding) to expand access to LMI EE/BE programs?	0	
	Using the data provided, when combining the number of housing units that need electrification + efficiency improvements with the cost of such improvements, the costs are over 100 billion dollars.	0	
	How can the current business as usual pathways, as proposed by NYSERDA and the utilities under CASE 14-M-0094 and CASE 18-M-0084, be acceptable to DPS and the PSC given the evidence that	0	
	current programs will not scale to need these needs? Is the DPS and PSC willing to consider requiring NYSERDA and the utilities to propose true market transformative proposals especially with the substantive CEF and other investments that DPS is considering releasing with these orders?	0	
	Will DPS and NYSERDA consider using federal income guidelines associated with grant programs put out by US HUD OLHCHH? Either HUD adjusts to NY, or NY adjusts to HUD for braiding purposes...	1	

Session	Input	Upvotes	Answered at Conference?
	A recent study found that successful climate solutions combined carrot and stick approaches. We keep offering carrots but there's no stick for landlords with LMI tenants to invest in EE and RE.	1	
	CFHF projects are evaluated for financial health but NOT denied because of it. Main reason for rejection is physical condition because funds are limited to electrification scope items and not ECMs.	0	
	Is there an initiative to create a streamlined income verification process connected to people filing their taxes with the state? A household files their taxes, their income is verified for the year?	2	
	I'm concerned that LMI ratepayers are paying for clean heat program and empower+ programs and not getting their fair share out of those programs if we don't design programs that work for LMI.	3	