



DECARBONIZING NYC CO-OPS

A Local Law 97 Compliance Roadmap

Technical Assistance Panel
May 20–21, 2025

About

Urban Land Institute

Urban Land Institute is a global, member-driven organization comprising more than 48,000 real estate and urban development professionals dedicated to advancing the Institute's mission of shaping the future of the built environment for transformative impact in communities worldwide. ULI's interdisciplinary membership represents all aspects of the industry, including developers, property owners, investors, architects, urban planners, public officials, real estate brokers, appraisers, attorneys, engineers, financiers, and academics. Established in 1936, the Institute has a presence in the Americas, Europe, and Asia Pacific regions, with members in 84 countries.

Cover photo: One of ten buildings on the Penn South campus in the Chelsea neighborhood. (ULI)

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ULI Randall Lewis Center for Sustainability in Real Estate

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The Net Zero Imperative

Thanks to a generous gift from Owen Thomas, ULI has launched the Net Zero Imperative—a multi-year initiative to accelerate decarbonization in the built environment. Additional gifts from Lynn Thurber, Joe Azrack, Franz Colloredo-Mansfeld, and Dan Cashdan further support and bolster the NZI program's scale and impact. Work to advance the initiative includes technical assistance panels in five global cities each year, designed to help developers, building owners, cities, and other relevant constituents reduce carbon emissions associated with buildings, communities, and cities.

The fundamental goal of the effort is to provide concrete ideas and strategies to real estate owners, public sector leaders, and the general public to eliminate carbon emissions from the built environment to reach net zero. Through its work, the initiative will create global resources (research, toolkits, and other tools) to help all ULI members accelerate decarbonization in their real estate operations and in their cities.

Mayor's Office of Climate and Environmental Justice

The NYC Mayor's Office of Climate and Environmental Justice (MOCEJ) works to make New York City's buildings efficient and resilient, ensure infrastructure is climate-ready, transform streets and public realm into living, open spaces, and make energy clean and resilient. Through science-based analysis, policy and program development, and capacity building, and with a focus on equity and public health, MOCEJ leads the City's efforts to ensure that New York City is both reducing its emissions and preparing to adapt and protect New Yorkers from the intensifying impacts of climate change.

ULI New York

The ULI New York District Council brings together real estate professionals, civic leaders, and the New York community for educational programs, initiatives affecting the region, and networking events, all in the pursuit of advancing responsible and equitable land use throughout the region. With over 2,900 members across the state, ULI New York furthers ULI's mission by locally delivering on the Institute's best practices in leadership development and by facilitating New York-based community service and enhancement of land use policy and practice. ULI serves the entire spectrum of land use and real estate development disciplines—from architects to developers, CEOs to analysts, builders, property owners, investors, public officials, and everyone in between. Using this interdisciplinary approach, ULI examines land use issues, impartially reports findings, and convenes forums to find solutions.

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Technical Assistance Panel (TAP) Program

The objective of ULI New York's Technical Assistance Panels (TAPs) program is to provide expert, multidisciplinary, and objective advice on land use and real estate issues facing local governments, public agencies, and nonprofit organizations throughout ULI's local geographies. Drawing from its extensive membership base, ULI New York conducts one- and two-day panels, offering unbiased, pragmatic solutions, best practice advice, and market-based strategies to local decision-makers on a wide variety of complex land use challenges, ranging from site-specific projects to public policy questions. The TAPs program is intentionally flexible to provide a customized approach to specific land use and real estate issues.

Learn more at newyork.uli.org.

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Executive Summary

In 2019, the New York City Mayor's Office published the OneNYC 2050 plan that sets forth ambitious goals to confront the climate crisis, achieve equity, and strengthen democracy across New York City. The climate goal specifically envisions a 2050 where "buildings, transportation, and our economy are powered by renewable energy—wind, solar, and hydropower—through a modern, fully electric grid... Every New Yorker benefits from these changes, which were undertaken in a fair way, and our adapted city is a model for the world to follow." ([OneNYC 2050](#))

A number of enabling regulations have since followed, designed to help the city—its residents, businesses, and building owners—find new paths toward reducing carbon emissions by 2050. State-wide legislation, such as the Climate Leadership & Community Protection Act (CLCPA), is pushing for a clean energy grid across New York State by 2040. In New York City, Local Law 97 is particularly focused on emissions produced by the built environment, specifically buildings over 25,000 square feet. By this measurement, a significant number of the city's cooperative residential buildings are now required to comply with LL97's emissions limits, which become increasingly stringent, progressing towards a goal of net-zero by 2050.

To further strengthen the climate, equity, and justice work envisioned by OneNYC 2050, in 2022 Mayor Eric Adams enlisted the Mayor's

Office for Climate and Environmental Justice (MOCEJ) to "do the critical work of addressing climate change in our city with a focus on equity, justice, and public health." This same office has recognized that complying with LL97 will be a challenge for many of the city's co-ops, particularly limited-equity co-operatives, which provide deeply affordable housing for low- and middle-income New Yorkers and are regulated by City and State housing agencies. These co-ops in particular will face significant difficulties paying for the system upgrades that LL97 will require.

To address the barriers to LL97 compliance faced by co-ops, MOCEJ turned to the Urban Land Institute New York (ULI New York) and ULI's Net Zero Imperative for assistance. Using its technical assistance panel process, ULI assembled a panel of real estate and related professionals for a two-day study of the challenge before co-ops. Following a briefing by MOCEJ, the panel toured one of the co-op campuses impacted by LL97, interviewed stakeholders, and deliberated their findings, ultimately arriving at the following recommendations to support the decarbonization of New York's larger co-op buildings.

Shift the Compliance Perspective

In order for co-ops to achieve LL97 compliance, it will be important for everyone involved in the effort to begin to view

the regulations as a 25-year pathway to financially sustainable decarbonization rather than overnight electrification. This shift must take place within and across City departments and be embraced by everyone leading and supporting the work. With this important shift in perspective, building owners and managers can begin to see how and when to make building decarbonization improvements.

Shift Financial Frameworks

The prospect of financing decarbonization solutions appears to be creating the greatest cause for concern among co-op boards and building owners. Understanding the financial strain that many co-op shareholders are under and recognizing that many are already managing expenses related to other compliance endeavors, the panel recommends exploring the following options in order to expand financing pathways for LL97 compliance efforts.

Allow incentives to flex and align with loans. Ideally, financial incentives should be flexible in order to align with existing building loans and needed improvements.

Provide information about incentives to contractors. The trusted co-op contractors need more information about the utilities' incentive programs.

- Shift some incentive focus to allow greater customer control of construction and installation using the New York City Accelerator or a similar resource.

- Design transparent funding pathways to help co-ops better plan their funding pursuits and incentivize early adopters.

Address the primacy of loans. The ability of Fannie Mae, Freddie Mac, Property Assessed Clean Energy lenders, and other funders to work together will be critical in the co-ops' ability to finance needed improvements.

- Bring key financing entities together to collaborate and find a solution.
- Provide a credit enhancement from the City to serve as a backstop for decarbonization funding.
- Explore alternative financing options such as "energy as a service" and moving items off the balance sheet to reduce the amount financed.

Consider forming a Development Corporation. The City could assist co-ops with their implementation by supporting the creation of a development corporation that would be focused on the decarbonization work after the initial audit and study is complete. This would allow buildings with commonalities to benefit from pooled resources to retain one-stop-shop services for planning, design, and implementation from experts engaged in a long-term, owner's representative role.

Explore regulatory financing tools. There are also City regulations that could be adjusted in order to help co-ops access additional financing.

- Relax maintenance increase requirements to help co-ops schedule cost increases to better support their decarbonization.
- Support individual co-ops voluntarily seeking new revenue sources by adjusting existing constraints, such as zoning constraints, and extending tax exemptions where applicable.
- Extend and expand J-51.

Form Cohorts

Use a cohort-based approach. By starting with a cohort of large low- and moderate-income co-ops, the City can roll out a series of near-, medium-, and longer-term tools to maximize the impact of public and private resources. The co-ops are already represented by a semi-organized cohort that could be leveraged and strengthened for this compliance effort going forward. With this model, the cohort would become a key contact point for the City, identifying buildings for a pilot test of targeted decarbonization interventions. The cohort approach could provide the following benefits to the co-ops:

- A one-stop shop for resources relating to LL97 compliance best practices.
- Economies of scale to contain costs.
- Power in numbers to potentially attract public resources more effectively.
- Access to best-in-class and trusted expertise, cost-sharing, and vetting of providers.

- Key insights, best practice modeling, and shared information.
- Close City engagement.
- Data access, transparent tracking, benchmarking, and measurement and verification data from similar buildings.

Build Capacity through Education and Training

The LL97-inspired urgency to decarbonize combined with seemingly insufficient information and financial support, is leaving co-op boards feeling hopeless as to a viable path forward to compliance.

Provide training, education, and capacity building. The co-op boards need reassurance that overnight decarbonization is not expected. The decarbonization process itself needs to be broken down into approachable and accessible incremental actions that can be supported by MOCEJ and its partner agencies in the work.

- Create resources and a toolkit focused on a zero-over-time (ZOT) approach to resource-efficient decarbonization (RED).
- Develop a charrette process using the toolkit to work through the action items and put the package to immediate and demonstrable use.

Build capacity in the cohorts. MOCEJ is encouraged to support the co-op building cohorts with capacity-building measures and the development of the following tools.

- Collect and assemble aggregated building data and share it back with the cohorts to help them refine and strengthen their actions.
- Assemble and release ZOT case studies.
- Provide targeted training for co-op teams and related professionals to demonstrate the RED process.

Align Regulations

Given the number of regulations and local laws with which the co-ops must comply, MOCEJ can serve as a leader in alignment and streamlining of City processes that would be supportive of co-op compliance.

Use rulemaking to streamline and prioritize action. This process could prioritize decarbonization along with health and safety by aligning capital and regulatory cycles and thus achieving synergies and reducing costs.

Encourage the creation of a long-term strategic decarbonization plan over multiple compliance cycles. The decarbonization planning work that co-ops undertake should reassure compliance teams that building leadership is on a viable path toward LL97 compliance.

- Formalize and define what a Decarbonization Plan is and identify the necessary components for co-ops.
- Recognize the Decarbonization Plan as a factor in compliance, acknowledging that buildings are committing to 2050 goals and recognizing that systems can be replaced at the end of their useful life.

This would also recognize that the grid does not yet have the capacity for 100 percent electrification and that the grid itself is not yet fully clean.

- Create a fast-track approval process for enabling upgrades to help ensure that co-ops can make upgrades when the need requires and not have to wait on permits and approvals.

Consider other regulatory improvements.

There are a number of other regulatory steps that the City can take that would recognize the co-ops' current progress.

- Recognize reductions beyond carbon that support residents' resilience.
- Give large co-op co-gen facilities different considerations, such as a different path to decarbonization that might include, for example, allowing flexibility to meet emissions requirements as long as buildings demonstrate Decarbonization Plan alignment.
- Consider providing innovation credits similar to a [beneficial electrification credit](#) (BE Credit) or other nod to the work that has been completed.

Leverage cohort common interests. Common interest approaches to compliance could include a collectively negotiated settlement pathway for common interest cohorts. Boards could opt into this pathway and the City would have a clearer understanding and assurance of compliance efforts.

Key Takeaways

The following key takeaways focus on the technical, financial, and regulatory barriers to co-ops' LL97 compliance.

Technical takeaways:

- Use a cohort model and close the strategy and planning gap to better leverage available technology resources.
- Share information and best practices.
- Change the narrative and phase and prioritize the work to help co-ops electrify over time.
- Deploy, document, and amplify pilot programs.

Financial takeaways:

- Respect the underlying mortgages.
- Respect the capital cycle and useful life of existing equipment.
- Use City and State resources creatively to unlock additional funding.
- Help co-ops understand how they can stack capital resources.
- Find and secure alternative revenue sources.

Regulatory takeaways:

- Coordinate LL84 benchmarking requirements, and the other building sustainability laws with LL97 to help make all requirements meaningful and efficient.
- Coordinate public agencies to streamline compliance processes.

- Recognize the efforts of affordable co-ops working toward their Decarbonization Plans.

Next Steps – The Next 12 Months:

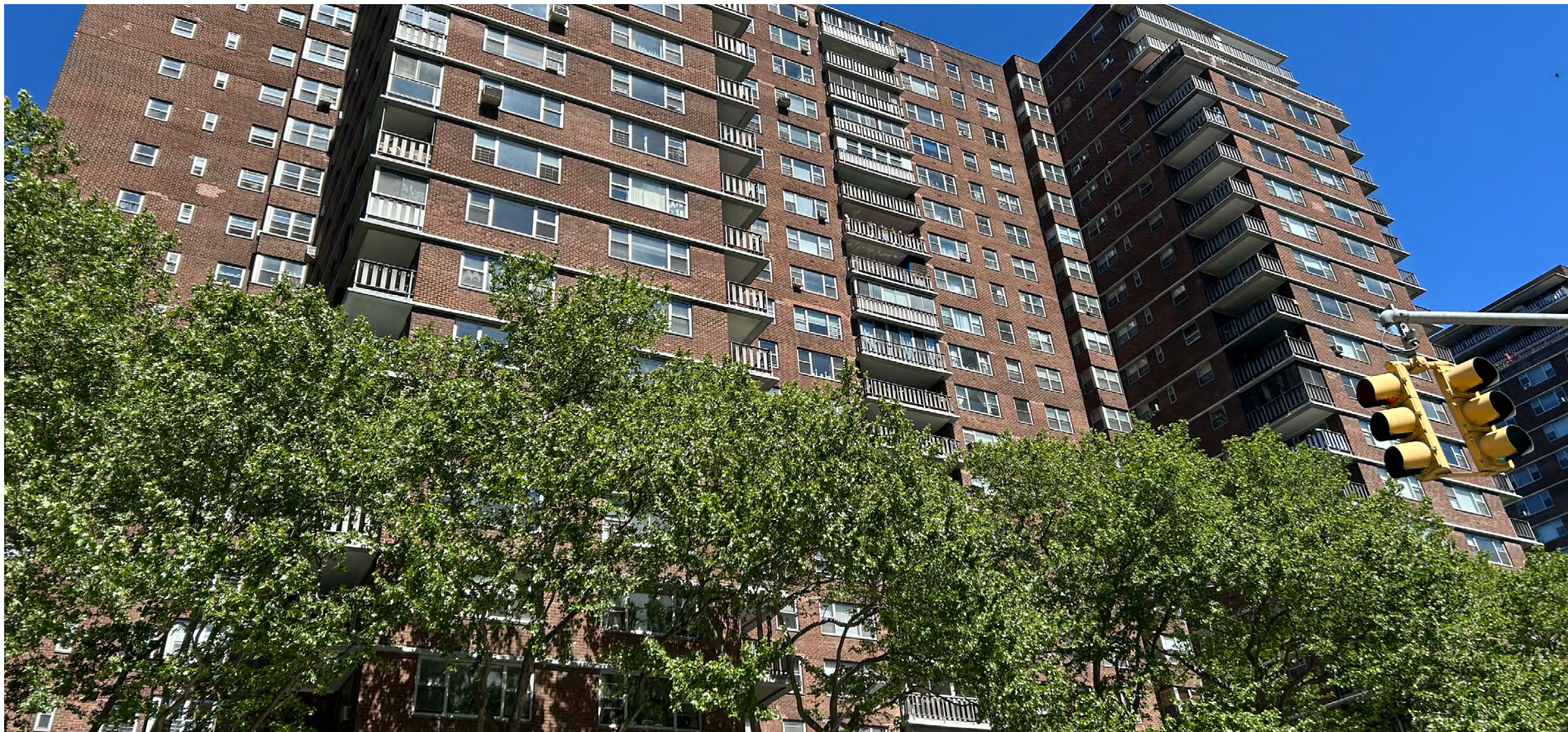
1. Select a cohort and launch meetings.
2. Create education toolkits and deploy training and charrettes.
3. Deploy funding for technical assistance.

The City and MOCEJ are also encouraged to convene financing partners in order

to unpack and address regulatory and financing barriers associated with mortgage subrogation and other financial technicalities.

Decarbonizing the city's buildings is an audacious goal befitting New York City and the residents of these buildings. In so many arenas, New York City is leading the way and is regularly first out of the gate, taking bold actions to create a better quality of life for all residents. With these impressive goals

often comes equally impressive challenges. With a clear eye on the challenges before the New York City co-op community, MOCEJ can increase support of the effort, supporting co-ops and their boards in their pursuits of regulatory compliance and even more importantly in their pursuit of a safe, healthy, and financially affordable place for their residents to call home.





Introduction and Background

New York City has adopted one of the most ambitious plans for reducing emissions in the nation. Local Law 97 (LL97) focuses on reducing greenhouse gas emissions from buildings of 25,000 square feet or more across the city with a goal to reduce building emissions by 40 percent by 2030 and achieve net zero by 2050. Today, LL97 is inspiring change across New York City, and building owners and operators are considering how, where, and when to invest in building systems and products that will help these large structures meet the stricter requirements LL97 dictates for 2030 and beyond.

The New York City Mayor's Office of Climate and Environmental Justice recognizes that the city's large housing co-operatives will face significant challenges in meeting the increasingly stringent requirements set by LL97. Achieving net zero emissions by 2050, as required, however, poses significant financial and technical challenges for these buildings, many of which are home to income-restricted residents who can ill afford to invest in the significant building and system upgrades required to reduce the buildings' net emissions to zero. Compounding this challenge is the fact that many of the city's co-op campuses have already invested significant resources over time to develop stand-alone, onsite cogeneration facilities, which provide power generation independent of the broader New York City Con Edison grid at a rate that is generally more cost-effective for residents.

Study Questions, Technical Barriers

1. What common technical strategies have TAP stakeholders proposed to meet LL97 mandates?
 2. Could several strategies be phased over time to align with LL97 compliance periods and emissions limits, with a goal of achieving net-zero emissions by 2050?
 3. How can we validate the technical approaches considered by large co-operative building stakeholders?
 - Identify existing case studies or leading actors driving decarbonization in large-scale multifamily housing with cogeneration/central plants.
 - Identify resources to help build consensus and accelerate adoption of identified technical solutions (e.g., pilot programs, technical workshops).
- How can local, state, and federal direct funding programs support meaningful decarbonization work in large cooperatives?
 - What barriers prevent access to existing incentive programs?
 - How can identified technical solutions (e.g., utility reconnection costs, geothermal, thermal distribution upgrades) be best aligned with incentive programs?
 - How can federal, state, local government, and utility stakeholders collaborate to design and deploy these programs?

Regulatory Barriers

1. What policy actions are needed to reduce regulatory friction (e.g., overlapping regulations, milestones, or requirements) for pursuing LL97 compliance?
2. How can utilities support decarbonization efforts of large multifamily developments with cogeneration systems?
 - What are key enabling mechanisms (e.g., preferential Con Edison tariff rates for conversions, expedited interconnection processes)?

Funding Barriers

1. What level of support is needed to bridge funding gaps and enable decarbonization?
 - What are the existing barriers to securing adequate financing?
 - What reforms should the City advocate that public and private

Understanding that decarbonizing New York City's co-ops poses significant challenges and also presents significant opportunity to reduce the city's carbon emissions, given the thousands of housing units represented in the network of co-ops, the Mayor's Office of Climate Equity and Justice (MOCEJ) turned to the Urban Land Institute New York District Council (ULI) and the ULI Net Zero Imperative for assistance in charting a path forward for the city's limited equity co-ops in pursuit of their 2035 emissions goals and 2050 net zero goals, recognizing that these co-ops face significant challenges above and beyond typical market-rate residential buildings.

Using its technical assistance panel (TAP) process, ULI assembled a panel of real estate and industry professionals with the expertise needed to answer the questions posed by MOCEJ (detailed on page 5) and begin to chart a path forward for the city's co-ops. The panel included individuals with expertise in development, engineering, energy and sustainability, housing affordability, and co-op management. For two days, the panel studied the issues, toured a co-op campus and cogeneration plant, interviewed stakeholders, and deliberated how to help the co-op community to best address LL97.

MOCEJ selected the co-ops below for analysis during the TAP as they share similar building scales and age. These co-ops also face similar regulations and all but two participate in City or State Mitchell-Lama programs. (The two that do not were once limited-equity developments that voted to opt out and convert to market-rate co-operatives.)

Property	Borough	Co-gen	Limited-Equity	# of Buildings	# Apts	Year Built
Amalgamated Housing Cooperative	Bronx	No	Yes	11	1,468	1927
Amalgamated Warbasse Houses	Brooklyn	Yes	Yes	5	2,585	1964
Big Six Towers	Queens	Yes	Yes	7	983	1963
Morningside Gardens	Manhattan	No	No	6	980	1957
Mutual Redevelopment Houses (Penn South)	Manhattan	Yes	Yes	15	2,820	1962
North Queensview Homes	Queens	No	No	1	364	1958
Riverbay Corporation (Co-Op City)	Bronx	Yes	Yes	35	15,372	1973
Rochdale Village	Queens	Yes	Yes	20	5,860	1963
Seward Park	Manhattan	No	No	4	1,728	1960

New York City's Co-Op and Affordability Context

From MOCEJ: New York City's limited-equity co-operatives trace back to 1927, with the founding of the Amalgamated Housing Co-operative. Sponsored by the Amalgamated Clothing Workers of America, Amalgamated was the first in a series of co-operatives developed through the 1926 Limited Dividend Housing Act, a state law that provided tax benefits to developers of multifamily co-operatives in exchange for long-term affordability requirements.

New York State's 1955 Limited Profit Housing Companies Act, or the Mitchell-Lama Act, built on the successes of earlier limited-equity housing laws by authorizing low-interest mortgage loans and property tax exemptions to developers of middle income rental and co-op units in exchange for profit limits, income restrictions, and regulatory oversight by either the NYS Department of Housing and Community Renewal (HCR) or NYC Housing, Preservation, and Development (HPD). Currently, there are about 97,500 units in 186 Mitchell-Lama developments in New York City, two-thirds of which are co-operatives.



The panel toured the Penn South cogeneration plant at West 27th and 8th Street with MOCEJ leadership and staff and building management.

What the Panel Heard

The panel interviewed over 30 leaders and staff from the City agencies, co-op board leaders, community members, and professionals working on decarbonization who shared this feedback:

Technical challenges and opportunities:

- Equipment should run to the end of its useful life and then shift to upgraded and compliant products
- Lead with the need of the building, not the energy improvements
- Need more focus on contractor and vendor capacity building and accountability
- Need to figure out better and more effective ways to leverage City resources
- There is pressure to electrify without boards first understanding outcomes or why it is a good idea

Financial challenges and opportunities:

- More lending may not be an option due to existing debt
- Debt subordination conflicts between primary mortgage holders and decarbonization lenders restrict access to financing
- Unknown future energy costs are making payback timelines difficult to project
- Technical feasibility is out there—the issue is selecting a path and paying for it
- Provide larger subsidies for earlier adopters

Regulatory challenges and opportunities:

- Other local laws completely drain resources
- Support owners' efforts to align compliance efforts with capital cycles
- Electrification is incentivized but non-electrification work on these buildings is just as needed
- Decarbonization challenges are too systemic to be a consumer choice issue
- Re-frame the messaging to a phased approach
- Trust is lacking between all parties
- "Keep options open"



A Shift in Perspective

The sheer size and complexity of decarbonizing New York City's co-ops can quickly become overwhelming for even the most seasoned professional. For the voluntary board members leading these co-op properties, the challenge often seems insurmountable.

The panel quickly realized the importance of properly framing the decarbonization conversation and identified the core purpose of their assignment as the following:

Fulfill the LL97 mandate to reduce carbon emissions from buildings in New York City to address the climate crisis and maintain or even enhance the quality and affordability of housing units for existing and future residents of New York City's co-op buildings.

Building upon this framework, the panel's recommendations lead with a clear articulation of LL97 implementation success. This success will be dependent upon an understanding of LL97 as a 25-year pathway to financially sustainable decarbonization. It is not a process by which buildings will embrace electrification overnight. It will require unpacking and reconnecting the interconnected agencies and cross-jurisdictional coordination that is required for an effort of this scale. Success will also depend on City agencies and related service providers' ability to build trust in the community(ies) needed to implement decarbonization projects at this scale.

By starting with a cohort of large low- and moderate-income co-ops, the City can roll out a series of near-, medium-, and longer-term tools to maximize the impact of public and private resources to the co-ops' benefit and in support of LL97 compliance.

A Cohort-Based Approach

Through the course of their work on this TAP, panelists recognized that the city's large co-ops are already participating in and are represented by sets of formalized and informal networks. These foundational organizations can and should be formalized and leveraged as a core principle and strength moving forward.

Through the course of an existing meeting and discussion platform, these large and low- and moderate-income building representatives have already become acquainted, have established relationships, and view one another as trusted sources of information. The buildings share a range of key concerns and attributes—legal, regulatory, and financial—that make their experiences sharable and scalable across their network.

Given this cohort's organization and representation across the co-op community, the cohort should become a key contact point for the City. The cohort can serve as a pilot test or manner by which to "pre-qualify" buildings for a range of targeted interventions that will support decarbonization progress.

Although the panel did not specify a particular organizational model—sample models can be found in the Appendix—there are a number of potential models that could serve the process well, each of which would be able to support the neighborhood-scale decarbonization work at hand. Further exploration of these models and discussion amongst co-op leadership is warranted. This work may also elevate potential economic opportunities for the co-ops going forward.

Longer term, if the cohort structure works for these co-ops, it could serve as a model for the City to use in addressing LL97 implementation with other owner entities like rental building owners.

Potential Cohort Benefits

There are a number of potential benefits that may derive from a cohort-based approach for the city's co-ops. For this study, the panel focused on the benefits that could be found in developing common interest cohorts to help members address LL97 compliance and find efficiencies in their efforts.

The City could play an important role in supporting a cohort approach. MOCEJ in particular should facilitate, support, and promote cohort member access to the following helpful resources and benefits:

- **A one-stop shop for LL97 information.** A one-stop shop for resources relating to LL97 compliance best practices would be beneficial. Resources compiled

and housed in one central source or location will save co-op boards valuable time gathering information and may expose members to new information or resources of which they were not yet aware.

- **Economies of scale.** When designing and implementing projects across buildings and co-op campuses, there is an opportunity for the co-op cohort to leverage economies of scale to contain the costs associated with upgrades.
- **Power in numbers.** Working together as a large group, the co-op cohorts may have a greater ability to attract significant public resources.
- **Access to best-in-class expertise.** Using an engaged, unbiased, and neutral owner's representative to work on behalf

of the cohort, members can gain access to best-in-class expertise, cost-sharing, and quality vetting of solution providers.

- **Key insights and shared information.** By sharing information across the cohort, members can replicate other projects' building and campus successes. This opportunity to learn and grow together, to share best practices (as well as learn from efforts that fall short), cannot be overstated. The volunteer boards, building management, and staff are hungry for information, short on time, and keen to do the right thing. Each co-op should not have to reinvent the wheel.
- **Close engagement with City departments.** Cohorts should have opportunities for direct engagement with City department administrators and

regulators to collaborate together, share progress on decarbonization plans, and find beneficial compliance pathways.

- **Engage with NYSERDA.** NYSERDA has an important supportive role to play in these efforts. The agency's [design charrettes](#) and other technical assistance could be leveraged at the cohort level.
- **Data access and shared learning.** The information and data the City gathers regarding LL97 efforts are valuable to other similarly situated co-ops. By having access to transparent tracking, benchmarking, and measurement and verification data from similar buildings, cohort members can find better, easier, and faster paths to success.



The Penn South cogen facility runs on a combination of natural gas and diesel, powering 2,820 apartments.



Financial Frameworks

Across the landscape of decarbonization challenges for co-ops, the prospect of securing financing for solutions appears to be creating the greatest cause for concern. More than the technical challenges or the prospect of finding the right expert to advise on the implementation, the prospect of finding financing for the tens of millions of dollars of improvements on the horizon is keeping building leadership up at night.

For the majority of the co-ops interviewed, outside financing is required to address building upgrades. While co-op owners may be able to shoulder small increases or one-time capital events to fund smaller maintenance projects, the scale

and magnitude of the upgrades that decarbonization requires will create a nearly insurmountable financial hurdle for many.

Understanding the financial strain that many co-op shareholders are under and recognizing that many are already managing expenses related to other compliance endeavors, the panel considered a number of avenues co-ops could pursue to fund their LL97 compliance efforts.

Alignment is Key

All of the buildings represented by interviewed stakeholders have a clearly defined capital timeline. With mortgages in place and payments budgeted, many co-

ops are generally able to manage what is on their plate today. For some Mitchell-Lama properties, the financial strains are already in full effect as they struggle to manage current debt. Asking or expecting co-op leadership to go out to the market and finance a major capital expense such as those anticipated to electrify a building, will not work. Most cannot shoulder the added expense and the issue of loan primacy becomes difficult to resolve.

In order to maintain affordability, a core purpose of many of these co-ops, it is best to align financial incentives with existing building loans and building actions.



The panel met with Penn South leadership and maintenance staff as they toured the co-op's cogen facility.

Incentives

Incentives will play an important role in assisting co-ops in their decarbonization efforts. The panel discovered, however, that the trusted contractors to which co-ops often turn may not have the information needed about the incentive programs and additional funding and resources are being left on the table.

Provide a credit enhancement. The City could also play an important role as a backstop for decarbonization funding. City-funded credit enhancement for mortgages, third-party financing, PACE funding, and other funding pursuits could provide the financial security the co-ops and lenders might need when pursuing alternative financing opportunities.

Explore alternative financing options.

With just a little bit of creativity, alternative accounting approaches, such as off-balance-sheet movements like decarbonization equipment leasing and positioning energy efficiency as a service, could shift these expenses out of the capital stack and thus reduce the total amount to be financed.

Shift some incentive focus to customer installation. Utility company incentive programs may mandate the use of pre-qualified contractors, who may not be contractors the co-ops trust most to work in their buildings. Using the New York City Accelerator or a similar organization's resources could enable utility incentive programs to have more applicable and

thereby successful customer-install options. Using this approach, co-op boards can use their own trusted contractors under the incentive programs and receive the incentive's financial benefit while using the service providers they know and trust.

Design transparent funding pathways.

Co-op boards generally move slowly and cautiously. Incentive programs that have clear and transparent funding pathways that make it clear how much time will be needed to secure funding and how much funding can be expected could help co-ops better plan their pursuits. Additionally, providing more incentives to early adopters and allowing others to phase out on a known timeline could provide boards with the additional motivation and the reassurance they need to act.

Loans

With so few co-ops in a position to self-fund decarbonization efforts, loans and the primacy of lenders were critical topics of focus during the study. The ability of Fannie Mae, Freddie Mac, Property Assessed Clean Energy (PACE) funding, and other lenders to work together will play a critical role in the co-ops' ability to finance needed improvements.

Bring financing entities together to find a solution. MOCEJ is encouraged to form and host a focus group in which key financing entities can collaborate and potentially re-order loan subordination with senior lenders (i.e., Fannie Mae, Freddie Mac) to help mitigate financial barriers to adoption.



USE TEMPORARY
WALKWAY

Penn South was able to negotiate the re-development of a one-story "taxpayer" building into a standalone rental property, securing a new revenue stream.

The current stances that these entities take regarding their inability to subordinate their loans leave all parties at an impasse.

A Development Corporation as a Vehicle and Resource

While there are good resources in the market to help co-ops conduct energy audits and evaluate their needed building upgrades, there are fewer resources to assist with or even spearhead implementation of the improvements, leaving co-op boards wondering where to begin and how to get the work done.

Support the creation of a Development Corporation. The panel encourages MOCEJ could assist co-ops with their implementation efforts by supporting the creation of a development corporation that would focus on the decarbonization work after the initial

audit and study are complete. In addition to providing valuable implementation expertise, a development corporation would allow buildings with commonalities to benefit from pooled resources to retain one-stop-shop services for planning, design, and implementation from experts engaged in a long-term, owner's representative role.

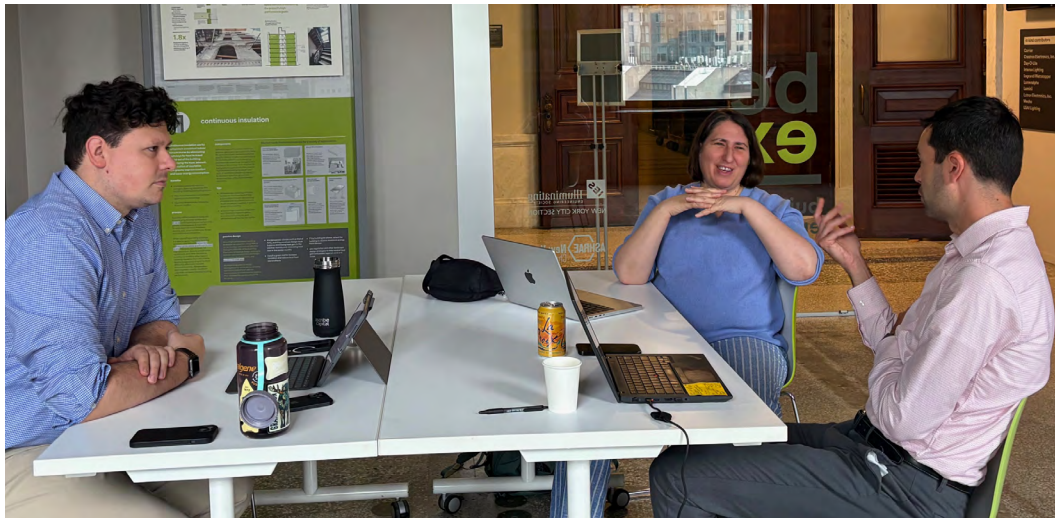
Regulatory Financing Tools

The City's regulations have an impact on co-ops' financing capacity, and with some adjustments, the City can reduce these additional barriers to financing.

Relax maintenance increase requirements. By loosening some of the regulations around maintenance increases, co-ops might be better able to time their cost increases to better support the broader decarbonization work at hand.

Adjust zoning constraints. For individual co-ops that seek to pursue new development on their property, adjusting zoning constraints to extend tax exemptions to land development could increase the benefit accessible by the co-op thereby mitigating the extent of maintenance and assessment increases that might otherwise be required to fund decarbonization and other compliance projects.

Extend and expand J-51. Several stakeholders noted the importance of extending and expanding J-51, the property tax exemption and abatement for renovating residential apartment buildings. This revision would free funding for decarbonization projects and ensure that the program is available to all relevant multifamily properties. (Panelists learned in post-presentation conversations that an extension may already be in process.)



Following the co-op campus tour and stakeholder interviews, the panelists discussed what they had heard and observed, working to answer MOCEJ's questions and frame their recommendations for the City's and the co-ops' consideration.



Building Capacity through Education and Training

The decarbonization landscape in New York City is infused with a sense of urgency, spurred by the impacts of climate change and supported by LL97 deadlines. At the same time, that sense of urgency combined with seemingly insufficient information and financial support and scattered educational resources, can leave co-op boards feeling hopeless in their efforts to meet regulatory goals and keep their buildings and campuses running well.

Training, Education, and Capacity-Building Protocols

The panel sought to address some of these educational and resource gaps by first breaking down the decarbonization process into approachable and accessible incremental actions supported by MOCEJ for LL97 compliance. The market, and the co-op boards in particular, needs to be reassured that decarbonization and electrification are not expected to happen overnight.

Create resources focused on zero over time. MOCEJ is encouraged to support the creation of a toolkit for co-ops that employs a zero-over-time (ZOT, [see page 18](#)) approach to resource-efficient decarbonization (RED). This toolkit should demonstrate how an incremental path to electrification and decarbonization could work, and it should be easily accessible and usable for building owners and shareholders. The toolkit should include best practices for technical and financial

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An instructive case study could demonstrate how a building owner first tackled weatherization then heating system electrification, and then finally moving to onsite energy generation installations.”

—ULI PANELIST



The boilers in Penn South's co-gen plant generate significant power and heat for the co-op.

analysis that could ideally also be leveraged for and incorporated into LL87 compliance reports. The toolkit would serve as a playbook on how to take action alongside all of a building's capital needs and should incorporate all potential existing financing timelines. The toolkit should also take into consideration regulations, like LL11 and LL97, and planning frameworks, like Remaining Useful Life (RUL), to minimize reporting requirements where feasible and streamline the work required of co-op leadership.

Develop a charrette process using the toolkit. Once the toolkit is in place, MOCEJ is encouraged to facilitate a charrette for owners and co-op leaders, pairing them with owner's representatives to work through the resources and action items in the toolkit and put the package to immediate practical use.

Capacity Building Elements

In addition to and concurrent with the toolkit and charrette processes, the panel recognized the value of providing the co-op building cohorts with the following additional tools to support their efforts.

Provide aggregated building data. Using the information provided by the reporting buildings, MOCEJ should support the aggregation, checking, and analysis of the building data, perhaps by leveraging the Accelerator, across multiple dimensions such as energy (using the information from LL84 and LL97 reporting), deferred investment, building capacity, and lifecycles.

There are important lessons to be learned and emerging trends within these reported figures that could be aggregated and shared back with cohort members to help refine and strengthen their decision making and actions.

Release ZOT case studies. Detailing how other buildings have achieved zero-over-time energy reductions can be instructive to those initially planning or launching efforts. Highlighting these successful ZOT projects can also provide assurances that the goals are indeed achievable.

Provide targeted training. Training designed for co-op teams (owners, boards, committees, and property managers) could demonstrate the [RED process](#). This training could detail how to plan for all stages of the process, how to collaborate effectively as a team, and options for executing the related construction and installation projects. Incentive program implementors, contractors, and finance partners should also be included, each providing deeper information and insights into accessing the incentives and financing needed to complete the work. It would also be helpful to include associated professionals, service providers, and agency staff in these training sessions to increase everyone's understanding across the ecosystem and open the door to new and strengthened relationships that could support compliance efforts.

Characteristics of a Successful Zero-Over-Time Approach

Excerpt from Guide: Best Practices for Achieving Zero Over Time for Building Portfolios (ULI, Rocky Mountain Institute)

Building Blocks of a Zero-Over-Time Approach

The ZOT approach focuses on cost-effective energy efficiency and renewable energy by prioritizing projects that pay back quickly in the short term, while aligning larger energy efficiency projects with major building life-cycle events, like equipment upgrades.

Major life-cycle events can serve as trigger events for energy upgrades, as incremental costs for these upgrades will be lowest. A prime example would be installing a more efficient and smaller rooftop HVAC unit once the old unit has reached the end of its useful life. An investment to replace the HVAC unit at this time will already be planned, so the investment in the energy project can be considered an incremental cost (the additional cost of an efficient unit above the cost that was budgeted for standard equipment).

Projects can go one step further by considering the greater systems impact of energy upgrades. Taking a holistic approach can reduce capital and operating costs further. For example, the HVAC unit in the example above could be downsized if it were paired with building envelope upgrades, which reduce the heating and cooling needs of the building. This kind of whole-systems thinking and planning is not happening enough today.

Overall, ZOT supports the long-term performance of a building and relies largely on information that building owners and asset managers are already collecting about the energy-consuming equipment in their buildings. This information is not always distributed to the relevant team members (e.g., the team's sustainability manager), so cost-effective energy upgrade opportunities can be missed. It is key for sustainability managers and others working closely on a portfolio's energy systems to work with other team members, gain access to the relevant tracked information, and understand key trigger events for each building. For large portfolios, this may be more challenging but also more profitable, so developing a thoughtful process is critical.

Achieving zero over time happens in two parts:

1. Decreasing building energy use and
2. Adding renewable energy. Ideally, a portfolio will operate within the solar generation capacity that can be generated on-site, with all available surfaces covered in solar.

[Read the full report here.](#)





Regulatory Alignment

MOCEJ recognized that there may be potential regulatory barriers impeding LL97 compliance by the city's co-ops. The panel provided the following insights and recommendations.

Alignment of Regulations

Given the number of regulations and particularly the number of local laws that the co-ops must respond to and comply with, finding all potential alignments and opportunities to streamline will be critically helpful and supportive of co-op compliance.

Use rulemaking to streamline and prioritize action. The City can facilitate more active compliance actions through a regulatory cleanup process that creates alignment through rulemaking. This process could prioritize decarbonization along with health and safety by aligning capital and regulatory cycles to achieve synergies and reduce costs. A sampling of applicable laws includes but is not limited to LL97, LL87, LL11, LL84, LL154, LL157, and LL152. This list is long and the associated regulations are longer. Alignment is needed to streamline and facilitate compliance.

Strategic Decarbonization Plan

Working with the understanding that decarbonization is an iterative, multi-year process, the planning work that co-ops undertake should provide some assurances that building leadership is on a path toward decarbonization and LL97 compliance.

Incorporate the Department of Buildings' Decarbonization Plan framework and identify the necessary components for co-ops. The City is encouraged to create a framework that co-ops can adopt and tailor to fit their building or campus needs.

Recognize a Decarbonization Plan as a factor in compliance. The panel recommends that the Department of Buildings begin to recognize a strategic Decarbonization Plan as part of an acceptable long-term compliance strategy, thereby applicable for a 2035 compliance pathway. The current mechanisms of decarbonization plans, linked [here](#), can be expanded to address cohort co-ops and allow the timing required to align LL97 and their investment cycles while still achieving the spirit of the law. Buildings would have to commit to meeting the Plan's milestones and achieve carbon-free goals by 2050. The goals should generally align with a resource-efficient decarbonization framework and LL97 goals but recognize the following key factors: systems can be replaced at the end of their useful life; the electrical grid may not yet have the capacity to meet the city's energy demands if all cogen-powered campuses moved to electric today.

Create a fast-track approval process for enabling upgrades. As the decarbonization plan would include details and a timeline for upgrades to systems, building owners and managers should be able to plan for these improvements, make those plans known to the City, and benefit from a fast-tracked

approval process when they are ready to make those upgrades. The speed of this process can help ensure that buildings can make the switch when the need requires and not have to seek another natural gas or other fossil-fuel alternative while waiting on permits and approvals.

Other Regulatory Improvements and Benefits

There are a number of other regulatory improvements that the City can pursue that would recognize the beneficial work co-ops already have underway.

Recognize investments to date and reductions beyond carbon. The City is encouraged to consider other energy reduction efforts and results as well as other benefits delivered to the community beyond just carbon reductions. In the case of Penn South, the co-op campus toured during the TAP, the cogeneration system is powering the campus and is able to deliver energy at lower rates than the electric utility, which supports housing affordability. In addition, the co-op has made investments in the building itself that has reduced energy needs. Resilience is another key factor that should be recognized and valued. Independent cogen facilities are able to continue to deliver energy to their residents during Con Edison power outages, which helps improve residents' resilience and supports their health and well-being during broader power outages.

Give large co-op co-gen facilities different considerations. The benefits the large co-ops provide their residents—in the forms of energy independence, cost-savings, and resilience support—and the value this delivers to the broader community in the form of reduced grid consumption, should earn the buildings a different path to decarbonization that might include, for example, allowing flexibility to meet emissions limits as long as buildings demonstrate Decarbonization Plan alignment. These efforts provide important value to residents and the broader community and should be recognized and rewarded as such.

Consider providing innovation credits. If a project is striving to “do the right thing,” is making a good faith effort, and still falls short of project emissions reductions, the City should consider providing the property with an innovation credit similar to a BE credit or other nod to the work that has been completed and the overall good faith effort. LL97 goals are important and largely achievable, but compliance should not be an all-or-nothing measure.

Cohort Common Interests

The panel also identified an innovative regulatory approach that could be tailored to specific co-op cohorts in the form of common interest cohorts.

Create common interest approaches to compliance. Working together, the Department of Buildings and groups of similarly situated co-ops could arrive at a collectively negotiated settlement pathway for the common interest cohort. Like in a mediated resolution, Boards could opt into a long-term negotiated pathway and then be obligated to meet the negotiated requirements and receive the resulting benefits. In return, the City would have a clearer understanding of the path forward and more effective assurances as to how this large group of similar properties is working to achieve compliance.

The scale and complexities of decarbonizing the city's co-ops pose tremendous decarbonization opportunities as well as impressive challenges.



Key Takeaways

The panel outlined the following key takeaways in each of the three primary areas of focus requested by MOCEJ, focusing on the technical, financial, and regulatory barriers co-ops face in their pursuit of LL97 compliance and decarbonization.

Technical Takeaways

Throughout the course of the stakeholder interviews, it became clear that the technical solutions to decarbonization were generally understood by the co-op community. What remained highly problematic however was the alignment of strategy, planning, and prioritization in a way that would facilitate the financing and adoption of the measures the co-ops must pursue to meet LL97 requirements.

Close the strategy and planning gap. The City and the co-ops will need to identify how to apply the right tools at the right time in the right place to comply with LL97 and better leverage available technology resources. By using a cohort model, groups of co-ops can share information and best practices. They can also find and share professional resources that can assist with the critical planning work.

Phase and prioritize. The work to electrify the co-ops will take time. The City should work to change the narrative around the lengthy electrification process, making it clear that work over time is expected and that decarbonization is not an overnight process. Phasing the work and identifying

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This is not about electrifying tomorrow but instead reaching that goal over time.”

—ULI PANELIST

which systems to replace and when can help create a framework that is manageable and achievable. A phased approach also allows co-ops to take advantage of the learnings from product pilots that are underway today, watching to see what solutions provide the best results for the types of buildings at hand.

Deploy, document, and amplify pilot programs. Case studies can be incredibly helpful as building owners, managers, boards, and committees evaluate the path ahead. Documenting work, both the successes and the efforts not worth repeating, can help everyone learn more quickly and more efficiently identify the decarbonization path that makes the best sense for a building or campus. Sharing information is critical as is ensuring that the information is coming from or through trusted sources. The City can facilitate the information gathering, assist with the case

study documentation, and help ensure that the information is readily available across the network of co-ops and distributed through the trusted contacts that the co-ops have already established and upon which they currently rely.

Financial Takeaways

The financial health of the city's co-ops, particularly the multi-building campuses that house low- and moderate-income residents, is founded upon an underlying mortgage that is unmovable. With this understanding, it is important to identify ways in which co-ops can leverage their assets, stack capital resources, and explore creative alternatives for additional funding.

Respect the underlying mortgages. The co-ops have worked very hard to establish a solid financial foundation, most often built upon an underlying mortgage that cannot be subordinated to any other lending instrument. These foundational mortgages should be recognized for the value they provide and assumed to be unmovable.

Respect the capital cycle. Similarly, the capital cycles of the larger co-op buildings and campuses are also fairly well locked in place. Boards have carefully budgeted to ensure that their building systems and structures can operate as expected for the planned duration. Interrupting these capital cycles and assuming that the co-ops can make significant capital outlays outside

of their budgeted plans is unrealistic and creates an environment in which the co-op boards feel completely misunderstood.

Use City and State resources creatively to unlock additional funding. New York City and New York State have tremendous capital resources at work across the city. It would be worth exploring how public funding resources could shift to better support decarbonization efforts in the near term, helping building owners meet compliance goals in the next few years before shifting that funding back to its original intention.

Stacking the capital is key. As noted, the foundational layer of building capital is locked within the underlying mortgage. Other resources can be stacked atop that mortgage to help buildings decarbonize. The City should explore ways it can help educate building leadership and boards about further

capital stacking and perhaps demonstrate several options through financial case studies.

Increase the accessibility and value of alternative revenue sources. Outside the scope of the cohorts, the city can support those co-ops that find creative potential funding resources to help maintain their affordability. Penn South, for example, identified excess land that it could carve out and offer for lease, which is, in turn, generating revenue for the co-op. This revenue can now be put to work, reducing the maintenance and assessment increases needed to cover the cost of compliance work.

Regulatory Takeaways

This is a 25-year process and the City, building owners, and co-op boards need

to work together to figure out the most strategic and safest path forward (physically and financially) for each building. The City can take the lead by addressing regulatory barriers and streamlining the path.

Coordinate local laws. The plethora of local laws and respective requirements should be coordinated in the service of LL97 and the capital cycle. Finding alignments among local laws, opportunities to maximize building improvements, and manners in which the work can be streamlined will serve the entire process well, help facilitate compliance across local laws, and create compliance pathways that are recognizable and manageable for co-op building boards and property managers.

Coordinate public agencies. Similar to coordinating local law, coordination among



regulating and implementing agencies will go a long way toward streamlining the compliance process and ensuring faster, easier, and more complete decarbonization efforts.

Recognize the efforts of affordable co-ops working toward their Decarbonization Plans.

Large co-ops that are home to low-income residents and that feature co-generation plants today should receive some benefit, relief from, or extension of the efficiency standards or deadlines in recognition of the benefits they currently provide their residents and the broader community.

Next Steps for the Next 12 Months

1. Select a cohort and launch meetings.

Partner with co-op organizations to select founding members for the first cohort. Host meetings that focus on building trust, financing, and best practices for installations.

2. Create and deploy training and frameworks for decarbonization plans.

The City and its partners will need to identify funding to create the training programs and decarbonization plan pathways that can be deployed across the co-ops and cohorts. These resources should be used in the cohort design charrettes to help co-ops strategize and plan their

decarbonization adoption path. The training, designed for service providers and trusted contractors, will help ensure that everyone working across the effort can access the available incentives and use standardized tools.

3. Deploy funding for technical assistance.

The City, MOCEJ, and the NYC Accelerator should provide or procure funding to host a pilot panel of industry advisors and owner's representatives. This panel will guide the cohort, help the co-ops plan for and implement the decarbonization measures, and help refine the processes for broader rollout.

Across all of these steps, the City and MOCEJ should convene collaborative discussions, particularly with financing partners, in order to unpack and address regulatory and financing barriers associated with mortgage subrogation and other technicalities. Additional funding to support these convenings and net-zero pursuits may be available through an implementation grant.

The LL97 regulations provide important guidance and measures for New York City's buildings and building owners. By viewing decarbonization and compliance as a 25-year effort, yet employing near-term actions to set co-ops on an actionable and achievable path forward, everyone can begin to see how the city can become a net zero model of livability by 2050.

Additional Resources

The panel shared the following additional resources for supporting the work outlined in this report:

- [Integrated Physical Needs Assessment \(IPNA\) Standard for New York City and State Low/Moderate Income Multifamily Buildings](#)
- [Resilient & Equitable Decarbonization Initiative \(REDi\)](#)
- HPD's [321Go!](#)
- [Clean Energy Initiative Program](#)
- [NYC Accelerator](#)
- [NYC Accelerator Property Assessed Clean Energy \(PACE\)](#)
- [Building Energy Exchange](#)
- [Urban Green Council](#)
- [Council of New York Cooperatives & Condominiums](#)



Appendix: Potential Cohort Organization Models

Potential Cohort Organization Models

A cohort can be organized and governed under various organizational models and structures.

- A common interest group can informally gather to achieve collective action and share in benefits.
- A formal organization can be engaged or created to manage collective actions. The organization can conduct simple or complex activities including planning, development and finance.
- The City can form an organization to perform for the cohort; e.g., create a Local Development Corporation (LDC) or Improvement District or even a municipal utility to achieve collective goals. For work focused on decarbonization, these organizations could include a Local Decarbonization Corporation, a Neighborhood Improvement District, or a Thermal Utility.
- The state can form an organization to perform, such as a Decarbonization Authority.





About the Panel

Jonathan Meyers

Panel Chair

Partner

HR&A Advisors



Jon has deep experience advising public and private sector clients on the financing and implementation of complex real estate projects. With a dedicated focus on real estate policy, carbon reduction efforts, and strategic approaches to implementation, he is able to develop sound and effective strategies for deploying public-private partnerships.

In 2016, Jon returned to HR&A after serving as the Chief Operating Officer of the Trust for Governors Island, where he was responsible for capital projects, operations, and finance for a complex redevelopment project in New York Harbor.

During his initial tenure at HR&A, Jon was instrumental in creating an economic rationale for the re-use of the High Line in New York City. He led HR&A's efforts to estimate the impact of saving the High Line as a public open space as an alternative to demolishing the historic structure. Jon also served as the project manager for HR&A's work creating economic development strategies for downtown Columbus and Cincinnati, Ohio.

Since returning to the firm, Jon has been a leader in energy efficiency and carbon reduction policy analysis nationwide. Jon has is also a key component of the firm's practice in developing real estate policy analysis in New York, including the future of downtowns, and real estate and housing policy analysis. Additionally, Jon has worked on strategic plans and real estate asset plans for a number of nationally-recognized cultural organizations.

Jon holds a Masters in Business Administration from Columbia University and a Bachelor of Arts in Geography from Dartmouth College.

Alicia Fernandez

Treasurer

Queensview, Inc.



Alicia has served as a full-time volunteer board member at Queensview since 2016, including terms as President and, currently, Treasurer. She has played a key role in ensuring the financial and operational stability of the cooperative, which consists of 14 buildings, 726 apartments, and over 2,000 residents in Long Island City. Alicia led the transition to a market rate sales model in 2019, secured a \$22 million Freddie Mac underlying mortgage in 2022, and introduced priority-based budgeting for capital and operating expenses, preventing insolvency.

She has also been an active member of the Coordinating Council of Cooperatives since 2016, a network and advocacy group representing limited equity cooperative communities across NYC. In addition, Alicia joined the Executive Committee of the Presidents Co-op and Condo Council in 2023, supporting efforts to educate officials and the public about the harmful impact of treating affordable, owner-occupied co-ops and condos as market rate properties.

Alicia has also been a member of the Council of New York City Cooperatives and Condominiums since 2016, contributing to advocacy on legislative and administrative issues. She is a co-founder of the Western Queens Co-Op

Coalition, an organization that hosts town hall meetings to address issues affecting cooperative communities.

Alicia holds a B.A. in Communication and Media from the CUNY School of Professional Studies and an M.S. in Curriculum Development and Instructional Technology from the University at Albany, SUNY.

William Kalbacker

Senior Mechanical

Engineer

Steven Winter

Associates, Inc.



As a Senior Mechanical Engineer, Will leads Steven Winter Associates' decarbonization and electrification study services. These studies aim to help buildings achieve long term carbon reductions to comply with NYC's Local Law 97, increase energy efficiency and occupant comfort, and improve operations and maintenance procedures. Will has lead studies for millions of square feet of multifamily and commercial properties.

In addition to his decarbonization study work, Will is also involved in implementation projects and research at SWA, focusing on heat pump technologies and steam optimization. He is regularly in the field conducting energy audits and speaking with building owners, operators, and residents.

Will received a bachelor's degree in physics from Hamilton College as well as a master's degree in mechanical engineering from the City College of New York.

Derick Kowalczyk

Multifamily Program Manager
Willdan Energy Solutions



Derick Kowalczyk is a Program Manager at Willdan Energy Solutions, where he leads the implementation of Con Edison's Multifamily Energy Efficiency Program, Affordable Multifamily Energy Efficiency Program, Clean Heat Program, In-Unit Direct Install Program, and Multifamily Neighborhood Program.

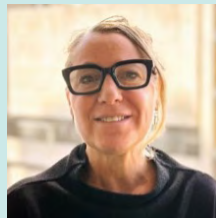
Derick directs a matrixed team of 40 engineers, data analysts, project managers, inspectors, and outreach specialists to deliver 3,000 energy efficiency and electrification projects annually, issuing over \$180 million in incentives each year and delivering savings of 7 million therms, 26,000 MWh, 175,000 MMBtu from electrification projects, 2,000 gallons of fuel oil, 3,500 MLbs of steam, and 8.5 million gallons of water.

Previously, Derick worked at Bright Power as Associate Director of Lender M&V Services. There he managed the national Fannie Mae Green Measurement and Verification Service, supporting over 4,000 multifamily properties in annual energy and water benchmarking.

Derick brings a unique combination of program implementation, technical expertise, and market insight to his work, with a strong focus on scaling practical decarbonization solutions for multifamily buildings. He has worked with major utilities and green lenders, including Con Edison, NYPA, NYSEG, RG&E, Fannie Mae, NYCEEC, and the Community Preservation Corporation (CPC). Derick attended Rochester Institute of Technology, graduating with a Masters in Sustainable Engineering.

Jennifer Leone

Assistant Commissioner, Chief Sustainability Officer
NYC Department of Housing Preservation & Development

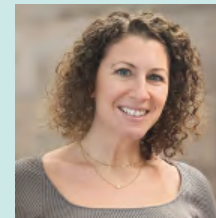


Jennifer Bloom Leone an Assistant Commissioner and the Chief Sustainability Officer at NYC's Department of Housing Preservation & Development, where she oversees the strategic development and implementation of HPD's sustainability goals, programs and policies. In this role, she has leveraged over \$100 million in funding to scale equitable decarbonization for low and moderate income New Yorkers and has developed critical policies and standards to support this work while safeguarding the City's most vulnerable residents.

Jennifer is a licensed architect with a background in architecture, construction management, and sustainable development. She holds an M.Arch. from Yale University, a B.A. in Environmental Design from the University of Pennsylvania, and an M.S. in Sustainability from the City College of New York.

Samantha Pearce

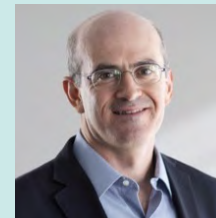
Vice President of Sustainability
New York State Homes & Community Renewal



Samantha Pearce is the Vice President of Sustainability at NYS Homes and Community Renewal, where she oversees the states Weatherization Assistance Program, the Clean Energy Initiative program, the Climate Friendly Homes Fund, and aligns and implements agency sustainability standards with the New York State's Climate Leadership and Community Protection Act. She has over fifteen years of experience supporting housing and building operators and owners to reduce utility and operations costs. Samantha is a LEED AP, Associate AIA member, and has a Bachelor of Science in Architectural Engineering.

Jeff Perlman

Founder and Chief Strategy Officer
Bright Power

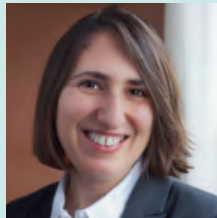


Jeffrey Perlman is the Founder and Chief Strategy Officer of Bright Power. An experienced energy auditor, energy analyst, and solar-energy-system designer, Jeff is as happy in a boiler room or on a rooftop as he is in a corporate boardroom.

As CEO, he built Bright Power from a single rented desk in a shared office into an industry leader. Jeff was named to Crain's New York 40 Under 40 Class of 2018, listed as a 2019

Environmental + Energy Leader 100 honoree, recognized as a top power player by City & State's Energy & Environment Power list in 2019 and 2020, recognized as a RealLeaders Earth Advocate in 2021, and recognized as a top impact CEO by the MO 100 Awards in 2022 and 2023. In 2023, he moved into the role of Chief Strategy Officer to focus on the growing opportunities that are emerging from city, state and federal initiatives as well as driving the sustainable buildings industry forward through policy activities and thought leadership.

Rebecca Poole
Director of Membership
and Communication
Council of New York
Cooperatives and
Condominiums



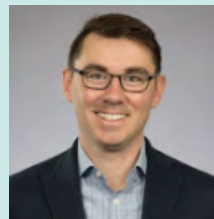
Rebecca is the Director of Membership and Communication for the Council of New York Cooperatives and Condominiums (CNYC Inc.), a not-for-profit membership organization that provides education, information and advocacy to New York's cooperatives and condominiums. Rebecca empowers co-op and condo board members and homeowners by facilitating regular discussion groups that allow board members to develop deep connections, running a roundtable series where professionals answer co-op and condo questions, curating topic specific evening classes, running Town Halls, and providing ongoing information. The LL97 Series Rebecca developed and hosts, "Sustainability with Affordability" now spans eighteen webinars specifically tailored to help co-ops and condos discover and evaluate feasible and fiscally responsible means to

reduce carbon emissions. Through a collaboration with JB&B's Deep Carbon Reduction Group, Rebecca was able to procure a LL97 Decarbonization Pathway Tool designed by JB&B specifically for use by lay-person co-op and condo board members.

Prior to her time at CNYC, Rebecca was the co-founder and principal of a property management firm. In her two plus decades as a property manager and business owner, Rebecca slashed operating costs, developed capital plans, oversaw multiple capital projects, found innovative solutions to longstanding problems and proactively addressed homeowner concerns. While serving as a board member in own cooperative, Rebecca helped start a family garden and composting program, and organized assistance for housebound seniors during an elevator modernization project.

Rebecca was an Emily Roebling Scholar at Rennselaer Polytechnic Institute, where she earned a BS in Management Information Systems. She is a life-long New Yorker, a shareholder in a cooperative, and an alumna of Stuyvesant High School.

Jared Rodriguez
Principal
Emergent Urban
Concepts



Jared is the founder and principal of Emergent Urban Concepts, a planning, policy, and development advisory firm. Combining expertise in sustainability, urban planning, and real estate development, Jared has extensive experience leading policy and

regulatory efforts for energy- and climate-related initiatives. Jared works with businesses, state and municipal governments, and other organizations on issues related to decarbonization, technology, real estate planning, development and management, shared infrastructure and transportation.

Jared's clients include NYSERDA, HEET, EarthJustice, PIRG, the Building Decarbonization Coalition (BDC), Northwell Health, the City of New Haven, the Institute for Market Transformation, various housing cooperatives and condominiums, large commercial real estate owners, public and regulated investor-owned utilities, and other organizations. In all his work, Jared develops effective approaches to complex problem solving, identifies appropriate solutions, prioritizes actions to help his clients meet challenging goals over time.

Jared holds a BS in Civil Engineering and Architectural Studies from Tufts University and an MS in Real Estate Development from New York University. He serves his community in his second term as Trustee of the Village of Sleepy Hollow and as a Commissioner of the Taconic Regional State Parks Commission.