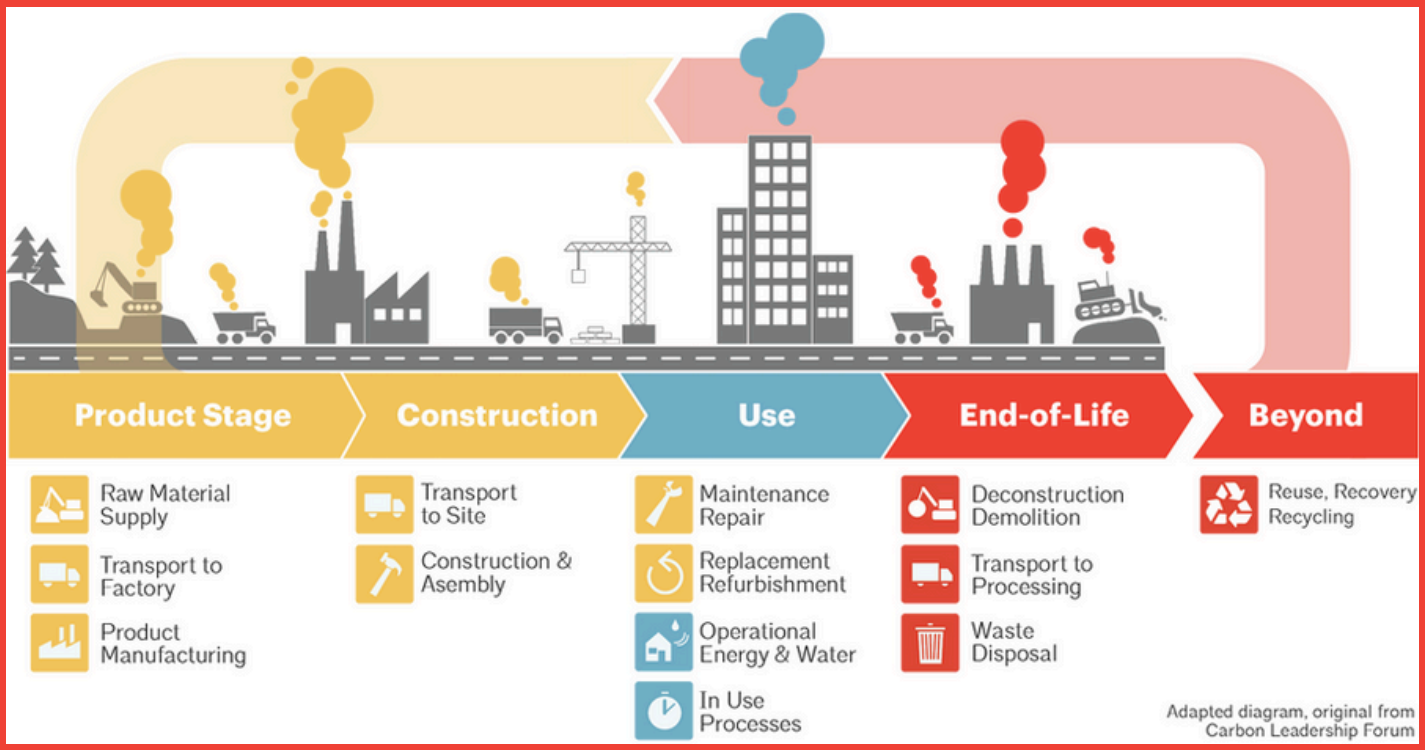
AIA New York

BUILDING DECARBONIZATION ACTION PLAN FOR NEW YORK CITY



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INTRODUCTION

As New York City charts a bold course towards an equitable low carbon future, the next four years present a critical window to accelerate progress towards our greenhouse gas emission (GHG) reduction goals. Particularly in the wake of massive federal cuts, a comprehensive building decarbonization strategy is needed in New York to improve air quality for public health, increase resilience to storms and blackouts, and maintain leadership combating climate change. Facing challenges with energy affordability, security and resilience, waste and landfill capacity, and meeting City climate goals, the next administration must have a clear vision and action plan that is achievable, cost-effective, and ambitious.

In an effort to make New York resilient in the wake of federal backsliding on decarbonization policy, namely the work of the U.S. Environmental Protection Agency (EPA), American Institute of Architects New York Chapter (AIANY) developed a strategic plan to enhance the City's current goal of reducing operational GHG emissions 40% by 2030 and 80% by 2050 and strategies to tackle the whole life cycle of carbon in the built environment. To shape this action plan, AIANY Committee on the Environment (COTE) convened industry leaders in design, construction, finance, and real estate for a series of stakeholder engagement sessions to examine the future of decarbonization policy.

Continuing the City's climate leadership, the next administration must take ambitious and decisive action to reduce carbon in our built environment with a balance of carrots and sticks to effectuate change in design and construction. New York has been a proven leader in reducing operational carbon; however, mechanisms to reduce other forms of carbon emissions in buildings are needed to manage the embodied carbon of construction and support a transition to a circular economy. The following recommendations detail a strategy to regulate the whole life cycle of carbon through three stages: production and construction (Embodied Carbon), use and maintenance (Operational Carbon), and end of life (Circularity). These recommendations include governance strategies, legislative action, code changes, and agency guidelines.

ABOUT AMERICAN INSTITUTE OF ARCHITECTS NEW YORK CHAPTER

Established in 1857, AIA New York Chapter (AIANY) is the oldest and largest chapter of the American Institute of Architects (AIA), representing more than 5,000 architects and design professionals committed to positively impacting the physical and social qualities of our city. With more than 100,000 global members, AIA is the largest design organization in the world. The AIANY Committee on the Environment works to advance, disseminate, and advocate building design practices that enhance design quality, decarbonization, resilience, environmental justice, and ecology.

CITY POLICY PRECEDENT

Climate Mobilization Act
Comprised of six laws aimed at reducing operational carbon

- LL92 & LL94 – Requires green roofs or solar photovoltaic systems on certain buildings
- LL95 – Mandates large buildings post a building energy efficiency grade
- LL96 – Creates the Property Assessed Clean Energy (PACE) financing program
- LL97 – Establishes emissions limits for large buildings
- LL98 – Provides guidelines for large wind turbines

2019

2021

All-Electric Buildings Act (Local Law 154)
Prohibits the use of fossil fuels for heating, hot water, and appliances in new construction

Executive Order 23
Orders agencies to incorporate low carbon concrete specifications, mandates submission of environmental product declarations (EPDs) for concrete and steel, and establishes guidelines for life cycle assessments (LCAs)

2022

C40 Clean Construction Commitment
Signed on by NYC committing to a range of actions that are related and complementary to embodied carbon. These include prioritizing reuse of existing building stock, leading by example with municipal procurement, procuring zero emissions construction equipment, piloting net zero emission construction, and facilitating the growth of local manufacturing and circular economy.

EDC Circular Design and Construction Guidelines
Operating framework for reducing waste and embodied carbon implemented on all of EDC's capital projects with goals of diverting 75% of construction and demolition (C&D) materials from landfills and reusing or recycling 95% of concrete and soil.

2024

STATE POLICY PRECEDENT

2019

Climate Leadership and Community Protection Act (CLCPA)
Requires the State to lower carbon emissions 40% by 2030 and 85% by 2050

2021

Low Embodied Carbon Concrete Leadership Act (LECCLA)
Requires the Office of General Services to establish procurement guidelines for low embodied carbon concrete

2022

Executive Order 22
Outlines the state's commitment to environmental quality, public health, economic prosperity, and social well-being; directs the Office of General Services to develop guidance focused on environmental product declarations (EPDs) and project life cycle assessments (LCAs) for state projects

2023

All-Electric New Buildings Law
Prohibits fossil fuel equipment and building systems in most new constructions; passed in the FY24 NYS Budget and phased in over time based on building height

2025

NYS OGS Embodied Carbon Guidance
Issued per EO22 for public projects focused on data collection of material quantities and environmental product declarations (EPDs) to drive demand and creation of EPDs in market and benchmark NYS's performance and environmental impact of construction materials

Alongside these regulations, the Port Authority of New York and New Jersey (PANYNJ) and Metropolitan Transportation Authority (MTA) have established their own Clean Construction Programs, which mandate EPDs for common construction materials (concrete, steel, asphalt, and glass). In an effort to promote the transition to a circular economy and identify the opportunities and challenges of deconstruction and material reuse, NYC Economic Development Corporation (EDC) released Circular Design and Construction Guidelines, which have been used on all their capital projects since 2024. Additionally, both HPD and HCR have advanced their construction guidelines to support energy efficiency, electrification, healthy construction materials, and reduced embodied carbon.

GOVERNANCE

Strong leadership and clear intention within City Hall are essential to drive effective decarbonization policy across New York's building sector. Transforming how the city approaches construction, operation, and end-of-life building practices requires both ambitious policy goals and the institutional capacity to deliver. Achieving these outcomes demands strong executive leadership, transparent oversight, and dedicated budget support to translate decarbonization commitments into measurable, lasting change for the City.

1: Delegate a Deputy Mayor to oversee building decarbonization
Sends a strong signal to the market of the City's commitment to decarbonization and ensures sustained oversight, accountability, and coordination across agencies (specifically, DOB, DDC, DSNY, and HPD).

2: Establish a Mayoral Taskforce on Affordable Building Decarbonization
Create a structured platform for collaboration between government, industry, and community experts to inform equitable, data-driven policy decisions, aligning local initiatives with state-level advocacy, modeled after the Mayor's Capital Process Reform Taskforce.

3: Embed "whole life cycle carbon" language into city policies/plans and reframe construction "waste" as useful materials.
Signals a cultural and operational shift toward circular economy principles and enables a pathway towards a more circular economy, in line with similar international policy efforts in London, Vancouver, and Boston that share the City's climate goals.

EMBODIED CARBON

Contributing 17% of global GHG emissions, embodied carbon refers to the greenhouse gas (GHG) emissions generated by the manufacturing, transportation, installation, maintenance, and disposal of construction materials used in buildings, roads, and other infrastructure. Decisions that impact a project's embodied carbon emissions tend to happen very early in the process of project design. Examples include: how much to build and what existing materials to reuse or save. These actions can be more difficult to influence than those that occur later in the design process, so it's imperative that support is available to design professionals to conduct the necessary analysis to investigate embodied carbon reduction opportunities. A strategic balance of carrots and sticks will bolster a resilient market for cost competitive low carbon construction materials, helping achieve the PlaNYC goal of reducing the carbon footprint of the construction industry by 2033.

EMBODIED CARBON

City

1: Incorporate embodied carbon into the City's greenhouse gas inventory
Ensures that emissions from building materials and construction are tracked alongside operational energy. Provides a more complete picture of the built environment's climate impact and creates the foundation for future reduction targets. Requires increased agency capacity through additional staffing, dedicated funding, and technical expertise focused specifically on embodied carbon analysis and program implementation.

2: Collect data on as-built material quantities to inform benchmarking local whole building embodied carbon intensity
Serves as a resource for policymakers to determine reasonable embodied carbon thresholds and for architects, engineers, contractors, developers, and owners to evaluate projects against comparable building types. Model after Local Law 84, which requires building owners to report their annual energy consumption.

3: Standardize reporting for a public citywide central database on whole building embodied carbon intensity
Requires use of City issued standard form for EPDs and LCAs to ensure robust database and manageable use for building professionals. Transparency of publicly available data serves as a major market transformation tool leveling the playing field. See Carbon Leadership Forum's template for Building LCAs as an example of a standard form.

4: Establish public procurement requirements for EPDs and project LCAs
Demonstrates a commitment to using low carbon construction materials, modelled off NYS OGS's Embodied Carbon Guidance (issued per EO22). Ensure all EPDs and LCAs use a standard form and are publicly disclosed in a city managed database. Include provisions in green public procurement to incentivize embodied carbon reduction.

5: Establish EPD submission requirements and GWP thresholds for common construction materials
Executive Order 23, the "Clean Construction" Executive Order, called on City agencies to require EPDs for concrete and steel. While leadership on public projects is essential, setting reporting requirements and thresholds for private projects is needed to generate the market transformation the City demands.

6: Expand PACE financing for embodied carbon
Unlock a valuable green financing tool by expanding eligibility criteria of the Property Assessed Clean Energy (PACE) financing program. PACE provides low-cost, long-term financing for property owners to fund green energy improvements, repaid through property tax bills. The expansion would apply to common construction materials - including concrete, asphalt, steel, and timber - with a reduced global warming potential (GWP) and cover the qualifying materials, labor costs, and related soft costs. This support would help projects that invest in low-carbon construction to pencil out.

7: Provide density bonuses for projects meeting low embodied carbon building standards
Building on the City of Yes for Carbon Neutrality framework, leverage zoning incentives - such as the Ultra Low Energy Building Bonus - by offering density/floor area ratio bonuses for projects that demonstrate embodied carbon reductions through whole building life cycle assessments. Model off the FRESH program, which successfully combined tax incentives with zoning benefits to expand access to healthy food across the city.

EMBODIED CARBON

State

1: Provide a sales tax exemption for low carbon construction materials
Incentivize use of low carbon construction materials by aiding cost competitiveness of materials. Between March 2023 and February 2024, 2.7% of total taxable sales in New York was contributed by the construction industry. Low carbon construction materials is a small fraction of taxable sales in NY, making a sales tax exemption have minimal fiscal impact while helping keep material costs affordable. Exemption should apply to low carbon construction materials that meet a minimum 15% reduction in global warming potential (GWP), verified through a Type III EPD. Qualifying materials could include: concrete, steel, engineered wood products, insulation, and various finishes (carpet, ceiling tiles, etc.).

2: Establish a grant program for low carbon construction material manufacturers to develop EPDs
In an effort to support local material manufacturers, promote market innovation, and foster competition, a pilot program providing grants to manufacturers to develop EPDs would provide a key incentive and help manufacturers offset costs of research and development for low carbon materials. A grant program would ensure smaller manufacturers are not overly burdened by EPD requirements and support local manufacturers in a moment of uncertainty with tariffs and other looming federal budget cuts and regulations.

3: Expand eligibility for R&D tax credit
Broaden definition of qualified research expenditures (QREs) for green projects to include whole building life cycle assessments (WBLCA) and other research related to the development, use, and reuse of low carbon construction materials. The R&D Tax Credit is a federal program to incentivize businesses to invest in research and development within the US, which is also offered in New York as an expanded incentive to encourage additional R&D within the state. New York's program allows taxpayers to claim up to 50% of their federal R&D credits that were conducted within the state. The credit is capped at 6% of QREs or 8% for qualified green projects.

4: Establish Embodied Carbon Reduction Challenge Operated by NYSERDA
Program to provide demonstration projects to push the market and design industry forward and show innovative opportunities for significant embodied carbon reduction, similar to NYSERDA's Building of Excellence Program. Modelled off of Massachusetts Clean Energy Center's (MassCEC) first in the nation Embodied Carbon Reduction Challenge, the program would be a yearlong competition where design professionals submit new construction or major renovation building projects that demonstrate low-cost, high-impact strategies to reduce embodied carbon.

5: Set three compliance pathways in the Building Code for embodied carbon reduction
Establishes a long-term strategy for reducing embodied carbon in public and private building projects by setting three compliance pathways for reducing embodied carbon in the Building Code. Projects can demonstrate embodied carbon reduction via one of three options: (1) reuse at least 45% of an existing building's primary structural elements and existing building envelope; (2) procure materials that meet material carbon caps for key products; and (3) meet performance requirements at the building scale demonstrated by using whole building life cycle assessment (WBLCA). The flexibility of the three pathways makes it possible for all projects to comply while gradually creating a guide towards decarbonization using all possible means of reduction - through reuse, building design, construction, and material choice.

OPERATIONAL CARBON

Operational carbon refers to the GHG emissions generated during the daily operation of a building over its lifetime, primarily from heating, cooling, lighting, ventilation, etc. Buildings account for two-thirds of GHG emissions in NYC, driven in large part by energy use related operations, with the majority of emissions concentrated in existing structures. Working towards a closer integration between electrified buildings and the power grid will be critical to meet the City and State long term decarbonization goals. Energy related emissions are also tied with challenges of affordability and equity: Buildings responsible for the highest operational emissions also face the highest energy bills. While NYC has taken significant steps in tackling these issues by introducing a first of its kind successful policy in Local Law 97, a more strategic development of both existing and new policies can accelerate the transformation of existing buildings to meet the needs of NYC's decarbonizing grid.

OPERATIONAL CARBON

City

1: Amend Local Law 97 to enable flexibility for strategic building decarbonization
Local Law 97 and the successive rulemaking phases since its introduction have created a successful framework to encourage the reduction of building emissions. However, it offers limited tools to accommodate the specific renovation cycles, investment opportunities or occupancy characteristics of individual buildings, reducing its potential impact for existing buildings. Allow building owners to pursue timeline flexibility in compliance by developing a Decarbonization Plan that details the current building systems' useful life and other upcoming regulatory requirements, such as Local Law 11 compliance. This would allow owners to tie timelines with existing building requirements, such as facade inspections or LL87 audits, to prevent duplicative expenses and needs for more sidewalk sheds, and focus on conducting retrofits in the most efficient and cost-effective manner. By conducting decarbonization plans across an owner's portfolio, this measure will enable opportunities for bulk procurement, lowering costs and providing stability in the market. Similarly, it will create a project specific plan that can become a requirement for other decarbonization incentives.

2: Bolster LL97 offset program supporting energy efficiency retrofits for affordable housing
Early success in helping affordable housing owners comply with emissions limits has been demonstrated through investments in proven, high-value efficiency measures reducing energy costs, improving comfort, and cutting carbon simultaneously. Expanding the existing offset program to allow for allocating emission fines beyond affordable housing projects will accelerate the city's progress toward its climate and housing affordability goals. Evaluate additional offset mechanisms to introduce similar programs for other building types and ownership structures, leveraging opportunities of an open offsets market. Additionally, incorporate lessons learned from the joint HPD-NYSERDA Resilient and Equitable Decarbonization Initiative (REDi) on refrigerant leakage prevention for high energy efficient retrofits, protecting occupant health as refrigerants are potent greenhouse gasses.

3: Improve data transparency on energy efficiency to support quantifying retrofit paybacks
Building on Local Law 84, expand data collection requirements and energy efficiency labeling for buildings. Require building owners to document minimum upgrade scenarios at regular intervals, including associated costs, creating a robust dataset to quantify retrofit payback periods. Reporting could be tied to existing incentives, such as demonstrating good-faith efforts under Local Law 97 or qualifying for financial hardship waivers, encouraging participation without adding undue burden. With increased data transparency, a firmer understanding on the cost of energy efficient retrofits can be captured to inform how best to support affordable housing retrofit projects.

4: Create a citywide map of grid capacity and infrastructure needs
Large scale building electrification is a critical step in achieving NYC's goal to transition to a decarbonized power grid, which will transform the profile of electricity demand and require the integration of power storage in the City. Serving as a comprehensive citywide planning and coordination resource, the map would show electric service available and identify electrical infrastructure needs, in alignment with ConEd's utilities development roadmap and NYC's vision for a decarbonized grid as presented in Power Up NY. Such information would support the early planning of large electrification projects, enable design teams to identify infrastructure needs and opportunities early in the process, and engage with ConEd in conversation regarding upgrade and operational costs, rather than facing load availability challenges down the line. Data captured in map could support incentive policies for electrification infrastructure, power storage, and building retrofits, modeled off MassSave's incentives.

OPERATIONAL CARBON

City

5: Re-evaluate the Ultra Low Energy Building zoning bonus definition relative to NYCECC 2025
A new NYC Energy Code will come into effect in early 2026, expected to meaningfully raise minimum energy efficiency requirements, in line with NYS upcoming energy and stretch energy codes. The impact of the new energy code on the Ultra Low Energy Building (ULEB) Zoning bonus, which allows a 5% zoning floor area bonus with certain criteria including 15% efficiency improvement over energy code, is not known. Part of the larger City of Yes for Carbon Neutrality framework, the ULEB zoning bonus has been a popular incentive to achieve more housing in new developments, much of it affordable. Anecdotally, it is already very difficult to achieve the 15% improvement for some building types. The NYC Zoning resolution enables the Department of City Planning to review and update the ULEB definition "exclusively for the purpose of keeping such requirements aligned with advancing technological and construction practices". We recommend the percentage improvement be evaluated relative to the new energy code and current technology, and adjusted if necessary to continue incentivizing the development of high performance buildings, especially in the case of housing.

6: Expand green density incentives to promote sustainable development
Build on the success of City of Yes for Carbon Neutrality by expanding density bonuses and expedited permitting to support high energy efficiency projects, electrification infrastructure, power storage, and resiliency to provide housing in a manner that supports the city's environmental justice goals. With an agenda focused on affordable housing development, the next wave of building construction must be regulated and incentivized to promote sustainable development. Leverage zoning and related incentive mechanisms, such as the MTA's Zoning for Accessibility (ZFA), proven to be an effective tool in encouraging developers to exceed code requirements and support infrastructure improvement projects.

7: Allow best practice energy efficiency standards within city codes and incentive programs, to support affordable, healthy, and safe buildings
Integrate advanced energy and construction standards within city codes, to maximize energy savings in operation, tackle fuel poverty, and improve resilience and occupant health. Adopt a Passive House performance pathway within NYCECC. Passive House is the leading proven standard based on five principles for ultra-low carbon buildings that require minimal heating and cooling, and that stay habitable substantially longer during power outages. Adoption would eliminate the costly and duplicative requirement of conducting separate Passive House and code energy models and accelerate market adoption of ultra-low energy design, particularly for affordable housing projects. Standards, such as Passive House, also contribute to reducing peak electricity demands during winter, minimizing the strain on the grid as it integrates renewables and storage, and result in improved indoor air quality for residents.

OPERATIONAL CARBON

State

1: Amend affordable housing tax incentives to align with climate goals
The unintended consequence of recent changes to affordable housing tax incentives programs is a reduction in building density. Disincentivizing density inherently goes against the City's goal of optimizing operational energy efficiency in addition to slowing down the journey to tackling the affordable housing crisis. In addition to making the current incentive programs work better to encourage density, an evaluation of additional opportunities to add energy efficiency, electrification, and resilience requirements to incentive programs would enable the State to capture a duality of its stated priorities. Support efforts to make green affordable housing projects pencil out.

2: Establish program to provide support for energy efficient building retrofits
To meet the ambitious emission reduction targets of Local Law 97, building owners in the City need robust financial and technical support policies that make energy efficient retrofits more affordable and accessible, particularly for co-ops and condos that face unique governance and financing challenges. Establish a turn-key program to support building owners with the cost and complexity of compliance with financial support, targeted provisions to ensure equity and affordability, and technical support with clear retrofit roadmaps and a central database of prequalified installers to streamline implementation. The program would support accelerated compliance with Local Law 97 and ensure the retrofit transition delivers equitable benefits citywide. While State authorization is needed to develop such a program, the City could pilot a program to demonstrate the viability of such a system, focusing on multifamily and co-op housing retrofits.

CIRCULARITY

Currently, the built environment largely follows a traditional model with the linear economy where new material is used and then disposed of at the end of life: Extract → Produce → Build → Use → Demolish. This results in significant embodied carbon emissions locked in from one-time material production and large volumes of waste. Considering the whole life cycle of carbon factors in what happens at a materials end of life. Deconstruction, reuse, and recycling unlock opportunities to keep materials in circulation, extending their useful life and reducing burdens on landfills. Landfills in New York are becoming more and more constrained, with capacity expected to be reached within 16-25 years. Nearly half of the waste generated in NY annually is construction and demolition (C&D) debris; this is unsustainable and demands strategic action to support a transition to a circular economy.

CIRCULARITY

City

1: Establish Circular Design and Construction Guidelines for all city agencies
Modeled off NYCEDC's Clean and Circular: Design & Construction Guidelines, create a citywide guide for all agencies on how to implement circularity into building projects, incorporating the lessons learned with the first EDC projects to have utilized the guidelines. Serve as demonstration projects to understand best practices, identify critical challenges, and develop thoughtful strategies to circularity at scale.

2: Establish deconstruction pilot program for city building projects
Create a pilot program to unpack the implications of deconstruction versus demolition, capturing data to inform feasibility and best practices. Allows the city to develop a toolkit on how to approach and execute deconstruction. Having robust case studies enables the city to showcase innovative strategies and identify financial tools (such as tax incentives or landfill tipping fees) needed to implement deconstruction requirements at scale to keep costs affordable. The program will identify challenges with different material streams, enabling future requirements to be tailored to materials unique logistical needs for reuse. All case studies should be made publicly available, including information on project costs, material salvage values, avoided landfill fees, upfront planning and design needed, labor requirements, scheduling impacts, and material recovery rate per material stream. Based on the information captured during the pilot program, expand requirements for deconstruction plans and reuse assessments to document on-site material inventories, end of life pathways, and the monetary and emissions value embedded in the asset.

3: Build physical and digital infrastructure to support material reuse
To support large scale disassembly, storage, and redistribution of construction materials, the City needs to invest in building physical and digital infrastructure, leveraging city-owned land for material and exchange hubs. A key question with circularity is once a building is deconstructed, where do the materials that are eligible for reuse go? The challenge of material storage and logistics requires the City to lead by example and identify strategies that make circularity feasible using city projects. A corresponding digital platform is critical to prioritize connectivity and efficiency of material flow, capturing key components of materials and specifications for future reuse.

4: Promote strategic end of life use with Design for Disassembly voluntary guidelines
Change the way waste is conceptualized by considering end of life use in early design phases by creating a set of voluntary guidelines for design for disassembly (DfD). Details best practices for architects and developers to incorporate DfD principles into building designs. Encourages modularity and use of materials optimized for future reuse. Establishes a framework to build out material passports, documenting key components of materials and specifications for future reuse.

CIRCULARITY

State

1: Establish green building incentives to support adaptive reuse projects
Reward adaptive reuse projects more robustly by offering zoning benefits, expedited permitting, and targeting tax incentives, modeled off 467m (Affordable Housing from Commercial Conversions) and J-51 programs, encouraging building retrofits and reuse at all scales.

2: Provide grants for innovators building infrastructure for circularity
Support organizations advancing material reuse – such as salvage operations, remanufacturing facilities, product buyback and repair programs, and efforts to create warranties for reclaimed materials – to strengthen circular markets and ensure reliability of supply.

3: Fund reuse infrastructure via tipping fees on construction and demolition (C&D) waste
Serves as disincentive to demolition by making the cost of disposing materials more expensive than the impacts of deconstruction on the schedule. Fees generated through increased tipping fees should go into a fund to support reuse infrastructure, similar to the LL97 offset program funding affordable housing energy efficient retrofits. Additionally, for public projects, require more time in schedule for deconstruction to enable more flexibility for the added time and staging logistics challenges.

4: Create training program for demolition contractors on deconstruction and specialized reviewers to evaluate deconstruction opportunities
Establish opportunities for existing demolition contractors to obtain technical training on deconstruction to support local businesses' transition to green jobs and circular economy. Expand NYSERDA's Energy Efficiency and Clean Technology Training to cover deconstruction for demolition contractors. This program provides up to $1 million to the development and delivery of technical training programs.

CONCLUSION

These decarbonization policies are directly linked to the City's priorities for public health and environmental justice. An Urban Green Council study on equitable electrification underscores the health co-benefits of transitioning buildings to clean energy, particularly for frontline communities historically burdened by poor air quality and seasonal "peaker" power plant pollution. Advancing sustainable and healthy buildings enhances resiliency from reducing exposure to extreme heat to lessening risks associated with blackouts and brownouts as climate-driven weather events intensify. New York can strengthen its public health outcomes and long-term resilience by designing and maintaining buildings that are energy-efficient, all-electric, and constructed from safer, low-carbon, and reused materials.

AIANY's recommendations on decarbonization policy will help the City be a healthier and safer place for all New Yorkers to live and work. We look forward to working with the next administration to execute this action plan to create a healthier, more resilient, affordable, and low-carbon built environment.

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