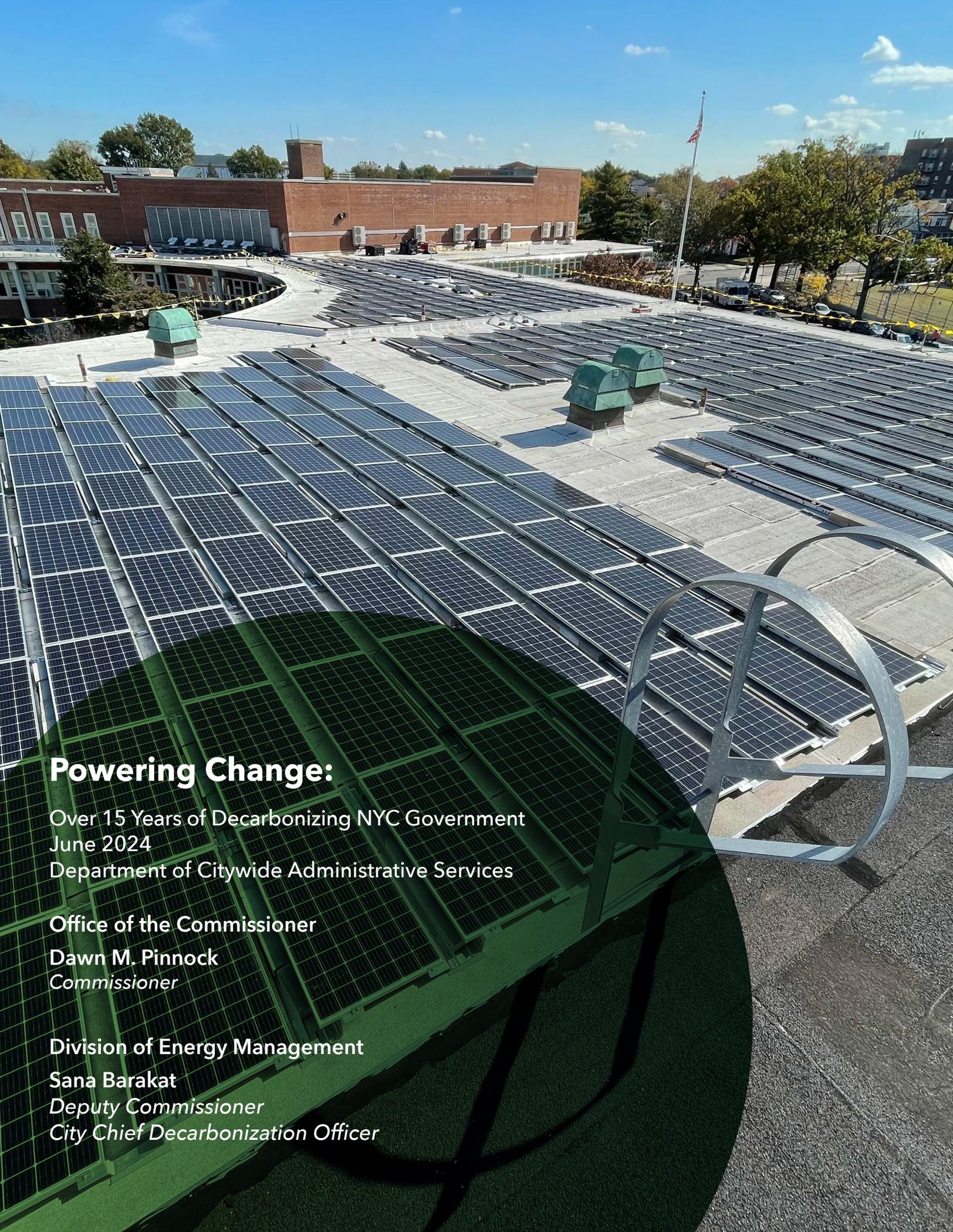


# Powering Change

Over 15 Years of Decarbonizing  
NYC Government



## Powering Change:

Over 15 Years of Decarbonizing NYC Government  
June 2024

Department of Citywide Administrative Services

Office of the Commissioner

Dawn M. Pinnock  
*Commissioner*

Division of Energy Management

Sana Barakat  
*Deputy Commissioner*  
*City Chief Decarbonization Officer*

## About DCAS

The NYC Department of Citywide Administrative Services (DCAS) makes city government work for all New Yorkers. Our commitment to equity, effectiveness, and sustainability guides our work providing City agencies with the resources and support needed to succeed, including:

- Recruiting, hiring, and training City employees
- Managing 55 public buildings
- Acquiring, selling, and leasing City property
- Purchasing over \$1 billion in goods and services for City agencies
- Overseeing the greenest municipal vehicle fleet in the country
- Leading the City's efforts to reduce carbon emissions from government operations

## About DCAS' Division of Energy Management

DCAS' Division of Energy Management (DEM) leads the City's energy conservation and sustainability efforts. It oversees more than 10,000 utility accounts for city government agencies across 4,000 public buildings. Moreover, DEM implements creative solutions to reduce energy consumption, promote energy efficiency in public buildings, and to generate clean energy on City-owned properties.

## Dedication

This report is dedicated to partner City agencies and DCAS staff for their dedication to the mission of decarbonizing city government operations, and to all the individuals and organizations outside of government who work each day to address climate change, both here in New York City and across the world.

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## Letter From the City Chief Decarbonization Officer



For over 15 years, New York City has led the way on urban climate policy, culminating in the landmark emissions reduction law - Local Law 97 of 2019 (LL97) - which requires the city's largest buildings to limit their greenhouse gas emissions (GHG) and requires a citywide GHG reduction of 40% by 2030. City government is leading by example and going further, faster. LL97 requires that we reduce emissions from government operations 50% by 2030. The City has also committed to cut energy consumption 20% by 2030 and achieve fossil fuel-free operations by 2050. These targets are incredibly ambitious, and we are well on our way to reaching them.

As the City's Chief Decarbonization Officer I am deeply proud of the City's progress. Our energy efficiency and renewable energy projects have driven a 25% reduction in GHG emissions since 2006 and we are saving New York City taxpayers over \$125 million per year in avoided energy costs. Our work has created living-wage jobs, reduced harmful air pollutants in disadvantaged communities, and made NYC public buildings healthier and more comfortable for all. City government's decarbonization efforts, led by DCAS, are significantly outpacing the private sector, demonstrating that large-scale emissions reductions are not only achievable and cost-effective, but also pivotal to our city's future.

Significant work lies ahead. We must continue to scale our work to achieve the deep decarbonization mandates of Local Law 97 and avoid the catastrophic impacts of climate change. We must do so despite challenges including resource constraints, supply chain delays, complex project delivery pathways, and the enormity of the City's operations.

I am confident in our ability to overcome and learn from challenges so that New York City can continue to lead the globe in urban climate action while ensuring that we improve air quality, grow a green economy, and make buildings healthier and more comfortable for all New Yorkers -- one school, library, hospital, and office building at a time. We are at an inflection point with many of the necessary resources, accountability frameworks, contracting innovations, people, and projects in place. We will get decarbonization done!

### **Sana Barakat**

*DCAS Deputy Commissioner for Energy Management  
City Chief Decarbonization Officer*

## Executive Summary

New York City’s leadership of the global urban sustainability movement—which began in 2007 with the publication of PlaNYC and the enactment of the Climate Protection Act—culminated in the passage of Local Law 97 of 2019, which established the nation’s first greenhouse gas performance limits for large existing buildings and dramatically accelerated emission reduction targets for city government operations and citywide.

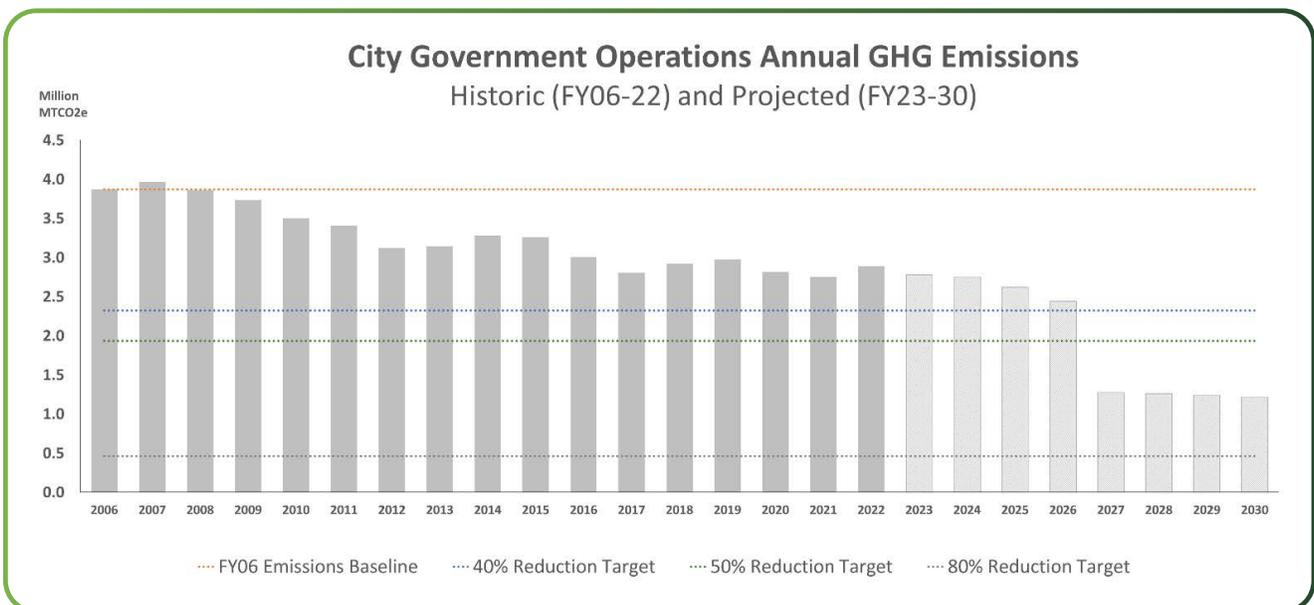
### Leading by Example

Local Law 97 (LL97) requires city government to reduce its GHG emissions further and faster than the private sector, continuing the tradition of the City leading by example. The law requires the City to achieve a 50% reduction by 2030, with an interim 40% target by 2025.

The City has already completed over 14,000 energy conservation measures across 2,300 unique city government facilities over the past decade, leading to GHG reductions equivalent to removing 80,000 cars from the road and saving New York City taxpayers over \$125 million in annual energy costs. Over the next decade, the City will invest an additional \$6 billion to retrofit and electrify its buildings, install clean energy, and advance towards its 2050 goal of fossil fuel-free government operations.

### Progress to Date

City government reduced its GHG emissions by 25% from a FY06 baseline as of the end of FY22, compared to a 17% reduction citywide, according to most recent New York City Inventory of Greenhouse Gases, which was published by the Mayor’s Office of Climate and Environmental Justice in November of 2023. Although the City is behind schedule due to unforeseen and unprecedented challenges over the past several years, we forecast that we will surpass the LL97 40% reduction target by 2027 and significantly exceed the 50% target before 2030.



## People, Projects, and Places

The City is taking a holistic change management approach to decarbonization. We focus as much on the **people** who get stuff done and the **places** that our work benefits as the **projects** themselves.

### *People*

The City has built an energy management “community of practice” with over 120 dedicated staff across 21 agencies, and we have trained over 2,800 public servants through our Energy Management Institute in partnership with the City University of New York (CUNY).

### *Projects*

The City does not just implement projects and then leave. We attend to the entire lifecycle of buildings. We have “retro-commissioned” over 1,200 facilities to address operational deficiencies and restore states of good repair, and we are now enacting a strategic shift towards preventive and predictive maintenance and data-driven continuous commissioning of building systems. Our energy management objective is to re-engage with each of the City’s more than 4,000 buildings, make them immediately better than we found them, and stand by them to optimize performance going forward.

### *Places*

The City prioritizes achieving community co-benefits from its energy investments and has completed nearly 60% of projects and emissions reductions in designated Disadvantaged Communities (DACs).

## The Work Ahead

We are now at an inflection point. We have built a multi-agency team of dedicated public servants, developed an aggressive and focused plan, and rapidly scaled up our work since the COVID 19 shutdown despite significant obstacles.

To fully decarbonize city government operations by mid-century, however, we must work faster, broader, and deeper to reduce emissions. DCAS, along with agency partners will:

- **Continue to pursue large comprehensive projects with significant GHG reduction impact.** These projects, while complex and expensive, are necessary to get us closer to our targets faster, and we intend to complete and identify more in the coming years.
- **Scale electrification projects in buildings.** Electrification is logistically challenging and costly, but the City has made strides in learning how to do it in an efficient and cost-effective manner, focusing especially on our schools.
- **Drive down energy consumption.** City government has already driven down its energy consumption 8%, and we intend to reduce it another 12% by 2030.

- **Solidify accountability structures at agencies.** The City established agency-specific emissions targets, annual progress reporting, and dedicated energy personnel to situate energy management and decarbonization as a priority at the highest levels of City governance.
- **Prioritize decarbonization in capital planning.** Going forward, the City will incorporate carbon reduction into every aspect of its decision-making around capital spending.
- **Pursue the most efficient and cost-effective ways to complete projects.** Decarbonization efforts must continue at full speed, no matter what resource challenges the City faces. As such, City government must continue to identify cost-effective and efficient projects and delivery methods.

New York City has a unique leadership role in the global sustainability arena. We have the legal mandates, the comprehensive plans, and the dedicated work force to achieve our goal of a carbon neutral New York City of the future.

**We will get decarbonization done!**

# Introduction

## Over 15 Years of Policy Innovation

New York City has led the global urban sustainability movement since 2007 when the City developed the first-of-its-kind long-term sustainability plan, PlaNYC, and enacted the New York City Climate Protection Act, which mandated a 30% reduction in citywide GHG emissions by 2030 and established the accountability structures to position the city for success.

In 2009, the City expanded upon this initial policy framework through the enactment of the Greener, Greater Buildings Plan (GGBP), a package of legislation that required large buildings to take action to reduce their greenhouse gas emissions. Large buildings must annually “benchmark” energy and water consumption against national datasets (Local Law 84); conduct energy audits and implement improvements to building operations through a process known as “retro-commissioning” once per decade (Local Law 87); and upgrade to more efficient lighting systems by 2025 (Local Law 88). The GGBP also created a stringent New York City-specific Energy Code that applied to any renovation or alteration project (Local Law 85).

New York City’s decarbonization efforts took another major step forward in 2010 when the City received an \$81 million grant from the federal stimulus program, the American Recovery and Reinvestment Act (ARRA). Overseen by DCAS, the ARRA grant funded over a dozen large-scale energy efficiency retrofits and hundreds of energy audits, creating a decade-long project pipeline. ARRA funding was also used to create an operations and maintenance (O&M) program for City buildings and to launch the nation’s first and most successful urban green bank, the New York City Energy Efficiency Corporation.

Over the past decade, the City has ratcheted up its climate commitments, starting with Local Law 66 of 2014, which mandated a citywide GHG emissions reduction of 80% by 2050, making New York City the world’s largest to adopt this target. Then in 2017, the 1.5°C Plan to align with the Paris Climate Agreement pledged to reduce overall energy use from city government buildings by 20%.

Finally, Local Law 97 of 2019—the cornerstone of New York City’s Climate Mobilization Act—imposed the nation’s first GHG performance limits for large buildings and mandated city government to reduce its GHG emissions 50% by 2030, with an interim target of 40% by 2025. Under LL97, the City is mandated to reduce emissions significantly further and faster than the private sector, continuing the tradition of New York City leading by example.

## Timeline of New York City Policy Innovation 2007 to Present



## Local Law 97 Implementation Action Plan

The signing of Executive Order 89 of 2021 (EO 89) required DCAS to lead the development of an Implementation Action Plan (LL97 IAP) to achieve the LL97 mandates and to put into place accountability and transparency measures, including agency-specific emissions reduction targets for the highest-emitting agencies and annual reporting requirements.

The LL97 IAP, published in December 2021, laid out a comprehensive, actionable plan for how city government overall--and City agencies individually--would meet the LL97 targets.

### Methodology

DCAS worked with engineering and energy economics consultants to develop the analytical framework for the LL97 IAP and collaborated extensively with partner agencies to ground the research in current business practices. The LL97 IAP evaluated emission reduction opportunities in all sectors and focused primarily on the City's portfolio of over 4,000 municipal buildings--schools, universities, fire houses, police stations, sanitation garages, courts, hospitals, museums, zoos, public libraries, and more-- which account for 68% of annual emissions from city government operations.

The LL97 IAP undertook the following approach to identifying pathways to achieve the LL97 targets:

- **Identified and analyzed the City's most common building types:** Energy models were created for 15 of the city's most common building types to assess energy efficiency opportunities.
- **Segmented each agency's portfolio:** Agencies were evaluated for energy reduction opportunities based on the prevalence of each building type, as well as each agency's cost structure and technical and practical feasibility.
- **Prioritized the most cost effective and feasible strategies:** To create an overall plan and individual agency targets, the plan developed bundles of emission reduction opportunities that were the most cost effective and feasible and determine how much each agency would be able to reduce its emissions.
- **Developed multiple GHG reduction pathways:** The plan evaluated several overarching pathways to achieve the LL97 targets and related energy commitments including the 20% reduction in total energy consumption, the installation of 100MW of solar, and purchasing 100% renewable electricity.

## Executive Order 89



### **Develop an LL97 Implementation Action Plan**

DCAS published the LL97 Implementation Action Plan (IAP) in December 2021, focusing on GHG reductions in buildings.



### **Set City Agency-Specific GHG Reduction Targets**

The LL97 IAP establishes 2025 and 2030 GHG reduction targets for 24 City agencies.



### **Publish Annual Agency-Level GHG Inventory**

DCAS published the first annual EO89 Agency-Level GHG Inventory in December 2022.



### **Develop a Capital Plan Carbon Budget**

DCAS supported OMB in developing the first Capital Plan Carbon Budget in 2022.



### **Hire Agency Chief Decarbonization Officers**

Five City agencies have hired Agency Chief Decarbonization Officers (ACDOs) and six agencies are currently in the process.



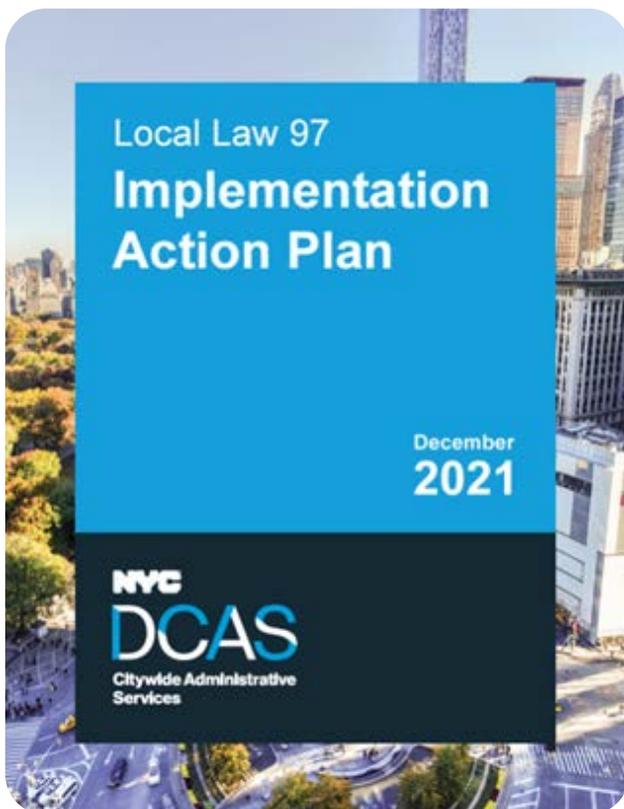
### **Incorporate Emissions Reduction into Agencies' Missions**

As ACDO's are identified, they will work with agency leadership to make emissions reduction mission-critical.

## Findings

The selected pathway from the LL97 IAP focused on the following components and interventions:

- **Scaling Energy Project Delivery:** In addition to completing projects that were active or in the pipeline at the time of publication, the LL97 IAP called for conducting additional energy savings projects to achieve the LL97 mandates and 20% total reduction in energy consumption.
- **Improving Building Operations:** The LL97 IAP emphasized the importance and cost-effectiveness of preventatively maintaining and effectively operating buildings, including through optimizing building automation systems (BAS).
- **Heat Electrification:** Electrification of heating systems is critical to achieving an 80% reduction in GHG emissions by 2050. The LL97 IAP recommended increasing the pace of electrifying heating systems to a pace of 2% of City building square footage per year by 2030.
- **Implement Large-Scale Renewables:** The LL97 IAP assumed the procurement of large-scale renewable electricity by 2026, and assumed the City would purchase renewable electricity for at least 85% of its 2019 consumption.



- **Implement Accountability and Planning Systems:** To help track progress toward agency emissions reduction targets the LL97 IAP called for enhanced reporting and transparency. Correspondingly, EO89 directed the City's Office of Management and Budget (OMB) to establish a Capital Plan Carbon Budget (CPCB) that would report the emissions impacts of capital projects valued over \$1 million that involve certain upgrades to building systems or envelopes.

## Related Plans & Initiatives Progress to Date

The City has integrated multiple planning efforts and workstreams to achieve deep decarbonization. Together, these efforts set forth clear actions the City will take to ensure it achieves a clean energy future.

### The Clean Fleet Plan

Under DCAS' leadership, the City has built the most sustainable municipal vehicle fleet in the country. Guided by the Clean Fleet Plan published in 2015, the City has achieved key milestones, with over 5,000 electric vehicles on the road and the transition from diesel to 100% renewable fuels, which will be completed this year. The City is on track to achieve the Clean Fleet Plan's goal of a 50% reduction in greenhouse gas (GHG) emissions by 2025 and 80% by 2035, from a 2005 baseline.



### PlaNYC: Getting Sustainability Done

In 2023, the City unveiled its fifth quadrennial long-term sustainability plan, PlaNYC: Getting Sustainability Done, which contains dozens of initiatives to protect New Yorkers from climate threats and improve quality of life. Specific initiatives for city government operations include (1) pursuing fossil fuel-free city government operations by 2050; and (2) maximizing climate infrastructure on City-owned property.

### PowerUp NYC

PowerUp NYC is New York City's first long-term energy plan. It provides information on basic components of the city's energy systems, describes opportunities to achieve a just clean energy transition, and outlines how the initiatives the City will take to get there. Specific initiatives for city government operations include (1) develop energy storage and solar power generation on city-owned land and (2) catalyze innovation and scale electrification.



## Progress to Date

### Completed and Active Energy Projects

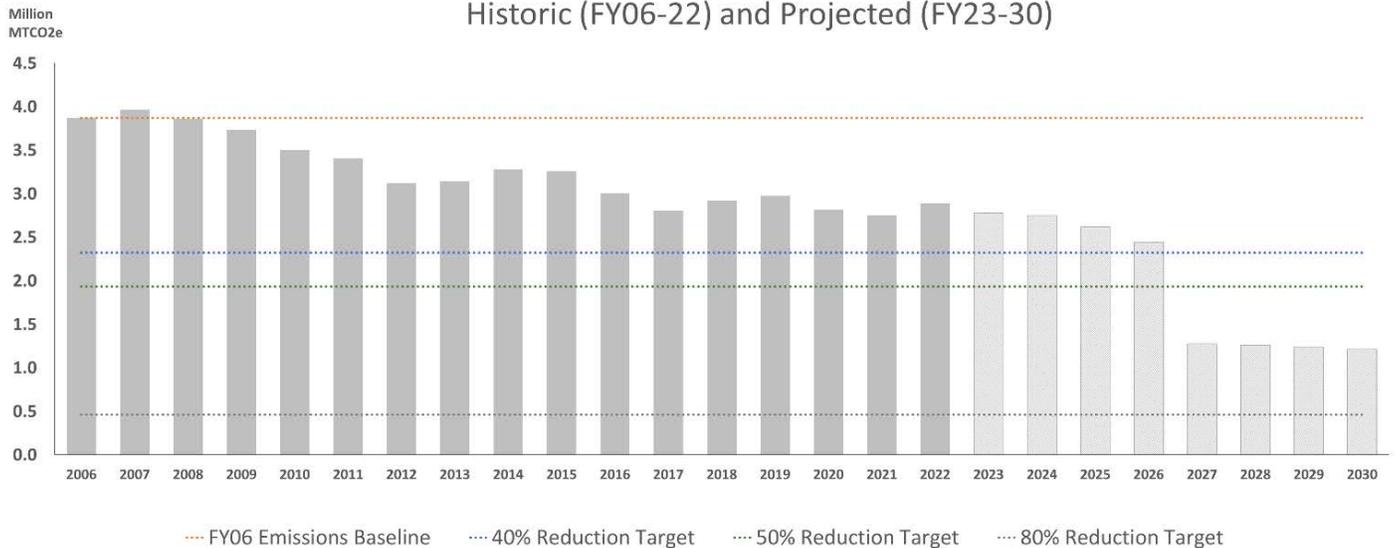
Over the past decade, DCAS and partner agencies have completed over 14,000 energy conservation measures across 2,300 unique city government facilities. Together these projects are estimated to have reduced 372,000 metric tons of carbon dioxide equivalent, which is approximately the same impact as removing 80,000 cars from the road. These projects are estimated to have reduced annual energy costs by \$128 million.

**14,000**  
Measures Implemented

**372,000**  
MTCO<sub>2e</sub> Reduced

**\$128M**  
Saved Annually

**City Government Operations Annual GHG Emissions**  
Historic (FY06-22) and Projected (FY23-30)



### Emission Reduction Outcomes

The City has reduced emissions from government operations by 25% from a FY06 baseline as of the end of FY22, which is the last year for which the Mayor’s Office published the Municipal GHG Inventory.

While city government is leading by example and outpacing the private sector, we are two years behind schedule in achieving the LL97 40% reduction target and will reach it in 2027.

## Overcoming Challenges

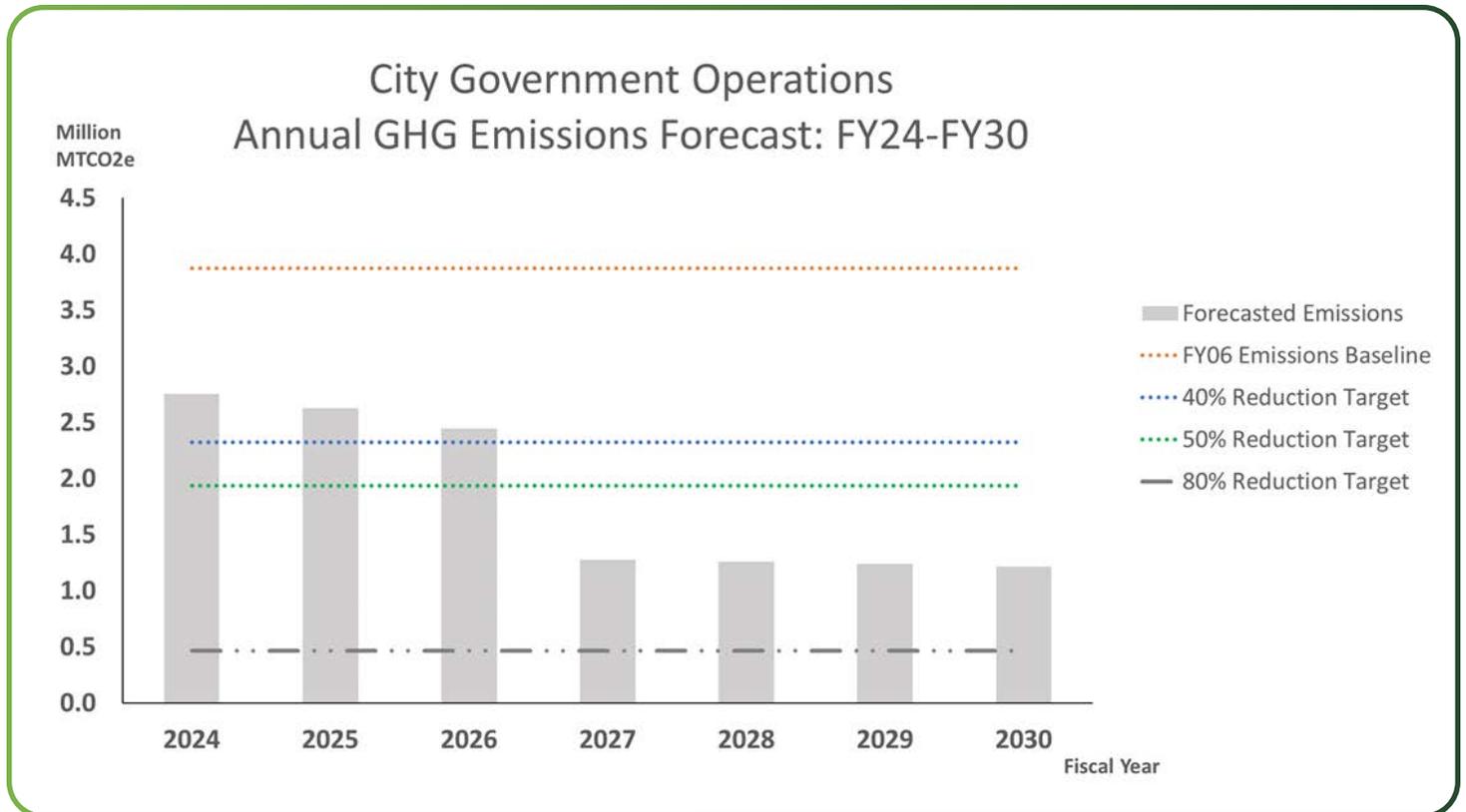
### Unforeseen, Unprecedented Challenges

The City has faced significant challenges over the past few years that have slowed its progress towards the LL97 GHG reduction targets. Challenges include:

- **COVID-19 shutdown:** The COVID-19 shutdown set off cascading impacts that set the City's progress back by approximately two years. During this time, site access was limited, projects were significantly delayed or cancelled, procurements were delayed or cancelled, and preexisting staffing limitations were exacerbated due to attrition and a hiring freeze.
- **Equipment lead-times:** Since the COVID-19 shutdown, the City has faced extraordinarily long lead times for the equipment that is needed to decarbonize buildings—everything from electrical breakers and lighting controls to solar inverters and more. Global supply chains were severely disrupted by the pandemic and more recently, surging demand for clean energy equipment has added more strain to production systems.
- **Dirtier electricity grid:** The closure of the Indian Point nuclear energy center in 2021 has caused significantly greater use of fossil fuels to generate New York City's electricity. This shift from emissions-free nuclear power to fossil-fuel electricity generation increased the greenhouse gas intensity of the electricity grid by 12 percent compared to 2019 before Indian Point shut down.
- **Procurement timelines:** Implementing energy efficiency projects at the scale required to achieve the LL97 targets requires procuring design, engineering, and construction services in new ways that allow faster project delivery across numerous partner agencies' portfolios. In many cases, procurements of these types and volumes are without precedent and the City has experienced longer than expected timelines for securing contracts.
- **Budgetary pressures:** Finally, the City is facing budgetary constraints that have led to delays in active and pipeline projects. Future budgetary pressures could mean doing more with less in the coming years.

### Overcoming Challenges

Despite these challenges, we have built the momentum that it will take to surpass the 40% target in 2027 and surpass the 50% reduction mandate by 2030.



The City’s decarbonization plan for government operations incorporates both supply-side purchases of renewable electricity and demand reductions through implementing energy efficiency and clean energy projects are essential to achieve the scale of emissions reductions needed to reach our 50x30 mandate.

On the supply side, the City is investing in bringing large scale renewable energy directly into the heart of New York City. The City committed \$6 billion to procure clean energy from Champlain Hudson Power Express (CHPE) and Clean Path New York (CPNY) transmission projects through the purchase of Tier IV Renewable Energy Credits (RECs) from the New York State Energy Research and Development Authority (NYSERDA). The City’s investment is enabling these projects to be built and deliver renewable solar, wind, and hydroelectric power from upstate New York and Canada into New York City’s grid.

As it relates to demand, the City is committed to reducing its energy consumption by 20% by 2030. To meet this benchmark, the City will continue to implement energy efficiency projects and initiatives across its entire portfolio. In fact, New York City has already reduced energy consumption by eight percent relative to a five-year average of its consumption levels from 2007 to 2011, before the City scaled up its investments in energy efficiency, despite significant growth in total square footage of our building portfolio.

## People: Growing the City's Green Workforce

Behind every policy initiative and project implementation are dedicated public servants who drive change and get stuff done. Having an adequately sized and skilled workforce is essential for the City to complete energy efficiency, electrification, and renewable energy generation projects on a scale needed to hit its LL97 targets. DCAS is working to both expand the City's green workforce and train energy personnel so that agencies have the capacity to implement necessary projects and maintain their building systems.

### Agency Energy Personnel Program

DCAS' Agency Energy Personnel (AEP) program provides funds for and supports the recruitment of energy professionals, serving varying roles such as Energy Managers, Energy Analysts, Energy Project Managers and Energy Engineers, at the City's largest government agencies. These dedicated staff are charged with creating accountability at the agency level for meeting emissions reductions goals, developing, implementing, and tracking their agency's energy and emissions reduction efforts, identifying potential energy efficiency projects, applying for competitive DCAS funding, and supporting cultural change to promote energy efficiency across their organizations.

Between 2022 and 2023, the City received approval to create several new energy-specific civil service titles. These titles were created to help City agencies recruit and hire professionals who have specialized energy management experience and to retain experienced public servants through offering new green career paths that will enable them to contribute to the decarbonization of City government operations. The following new titles were created:

- Climate Policy Officer
- Chief Sustainability Officer
- City Chief Decarbonization Officer
- Agency Chief Decarbonization Officer
- Director, Energy Management Strategy
- Energy Conservation Specialist
- Administrative Energy Conservation Specialist

Thus far, the AEP program has successfully recruited 50 energy personnel at 21 of the City's largest government agencies. Agencies are continuing to recruit for over 50 more open positions and will fill more energy roles in the coming months and years. With the support of these staff, DCAS has laid the groundwork with agencies to develop a robust pipeline of energy efficiency, electrification, and renewable energy generation projects that will set us up for success.

## Agency Chief Decarbonization Officers

The Agency Chief Decarbonization Officer (ACDO) role is intended to position energy efficiency and decarbonization planning as a priority in the highest levels of agency decision-making and daily operations. Pursuant to EO 89 and with DCAS' support, 11 of the City's highest emitting agencies will appoint ACDOs. The ACDOs will be responsible for ensuring their respective agencies meet their LL97 decarbonization mandates by providing top-down support to integrate decarbonization into policy, operations, and capital planning at these agencies. To date, ACDO's have been appointed at five agencies, including the New York City Departments of Environmental Protection, Transportation, Sanitation, Citywide Administrative Services, and NYC Health and Hospitals, and the remaining agencies are working to appoint their ACDOs.



## Training and Empowerment

DCAS created the Energy Management Institute (EMI) in partnership with the City University of New York (CUNY) to train and empower city employees to make energy-smart decisions, implement operational improvements, and advocate for energy efficiency retrofits and clean energy projects. EMI offers a diverse set of energy management, building operations, and HVAC engineering courses that provide targeted competency-based training and offer national energy certifications. Since 2009, the EMI program has trained over 7,000 learners and enabled over 1,900 city employees to obtain energy and building operations certifications.

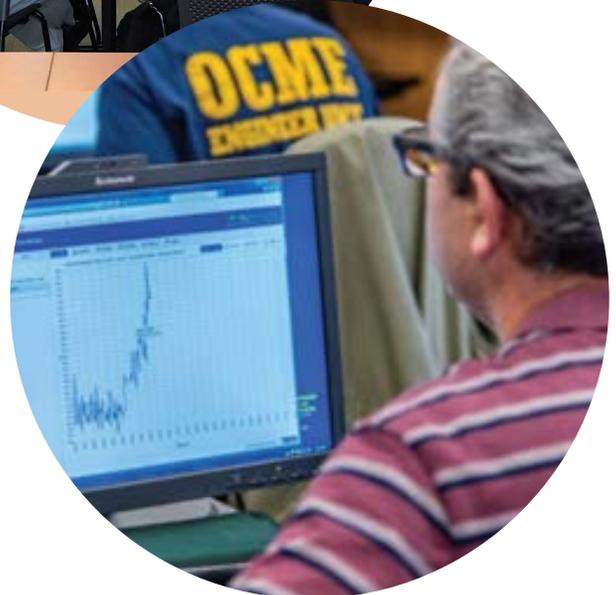
## Coaching and Collaborating

The unsung heroes of reducing GHG emissions and meeting the LL97 mandates at municipal buildings are our building operators. DCAS and CUNY have created and deployed a suite of building operator-specific coaching offerings to empower the City's operator workforce with the tools necessary to optimize building performance. The offerings build practical skill sets on complex building systems as well as providing building operators with tools and templates to sustain optimization beyond the class. DCAS offers a range of coaching opportunities including one-on-one sessions, as well as small, intensive classes. To date, DCAS has coached over 500 building operators in finding ways to optimize their building performance.

2,800+  
Employees Trained

40+  
Agencies

50+  
Course Offerings





## Projects: Getting Stuff Done

New York City's commitment to decarbonization hinges on real action. Over the past decade, DCAS has partnered with City agencies to complete nearly \$1 billion in building energy efficiency projects. These investments have led to a net-reduction in annual energy consumption from city government operations by approximately eight percent (compared to a five-year average from 2007-2011), despite that the City has significantly expanded services and facilities serving New Yorkers. By comparison, citywide energy consumption over the same period has seen no reduction.

We must continue to accelerate our work and deepen its impact to achieve the LL97 targets and carbon-free city government operations by mid-century. This section outlines the City's approach and spotlights successful projects that are in progress or were completed within the past five years.

### Transitioning Away from Fossil Fuels

The City of New York is electrifying buildings, including heating, hot water systems, and appliances to reduce reliance on fossil fuels, improve local air quality, and to realize the benefits of the City's purchase of renewable electricity in the coming years. The City has committed \$3.5 billion as part of the Leading the Charge initiative to electrify 100 existing schools over the next decade and build all new New York City schools all-electric. DCAS is also working with the Department of Sanitation, the New York City Police Department, Cultural Institution Group members, and other agency partners to develop electrification plans and projects.

*(Associated case study: Leading the Charge)*

# Spotlight: NYC Public Schools

## Leading the Charge



*Mayor Eric Adams launches the “Leading the Charge” plan at PS 5 in the Bedford-Stuyvesant neighborhood of Brooklyn. The plan will phase out fossil fuel.*

### What

The Leading the Charge initiative will electrify 100 existing schools over the next decade, accelerate the phase out of highly polluting No. 4 heating oil by mid-2025, and build all new NYC schools all-electric. The electrification upgrades, which include converting fossil fuel burning boilers to high-efficiency, all-electric heat pumps, will contribute to a total reduction of GHG emissions of 120,000 MTCO<sub>2</sub>e over the next decade.

### Where

Various locations throughout NYC  
Disadvantaged Community Areas

### When

- Elimination of No. 4 heating oil by mid-2025
- 100 School electrifications complete or in progress by 2030

### Why

To achieve the PlaNYC goal of fossil fuel-free City government operations by 2050, NYC must electrify thousands of public buildings, including schools. Leading the Charge will demonstrate the viability of this approach and focuses on providing both immediate air quality benefits and long-term sustainability to school communities that are located in the City’s most environmentally burdened neighborhoods.

### How Much

- Annual GHG Reduction: 120,000 MTCO<sub>2</sub>e
- Project Cost: Over \$4 Billion
- Cars off the road equivalent: 26,000



## Lighting the Way

Because light fixtures in a building account for approximately one-third of total electricity consumption and costs, retrofitting lighting systems with LED technology and control systems is cost effective when done strategically. That is why DCAS and partner agencies are: 1) upgrading lighting at large marquis facilities, such as museums and performing arts centers that have demanding aesthetic and technical requirements; and 2) undertaking an accelerated “[direct install](#)” approach to retrofitting lighting in common building types to achieve scale.

(Associated case studies: *Met Museum lighting upgrade; Direct Install Program*)

## Spotlight: Metropolitan Museum

### *Comprehensive Lighting Upgrade*

#### What

DCAS, in partnership with NYPA, is working with the Metropolitan Museum of Art to replace all 29,850 of its gallery and non-gallery lighting fixtures with energy-efficient alternatives. As the largest art museum in the United States, The Met houses an encyclopedic collection of over 2,000,000 artworks. This facility-wide lighting renovation not only offers measurable energy efficiency benefits but also enhances safety and security, lowers maintenance expenses, and boosts visual comfort and clarity for millions who visit this iconic institution each year.

#### Where

The Metropolitan Museum  
Manhattan (Council District 4)

#### When

Expected substantial completion in 2025.

#### Why

The Met lighting upgrade is an opportunity for DCAS to demonstrate that it can deliver large energy savings while meeting demanding aesthetic and functional requirements.



*Gallery lighting upgrade at the Met  
(photo credit: Guth DeConzo)*

#### How Much

- Annual GHG Reduction: 1,840 MTCO<sub>2</sub>e
- Project Cost: \$16.5 Million
- Energy Savings: 5,695,684 KWh
- Cars off the road equivalent: 399

# Spotlight: NYPD 24th Precinct

## Direct Install Lighting Program



Direct install lighting upgrade at the NYPD 24th Precinct in Manhattan, completed in 2023.

### What

DCAS, in partnership with NYPA, designed the direct install lighting program to accelerate LED lighting upgrades by retrofitting existing fixtures on a one-for-one basis with pre-configured kits, reducing costs and project timelines by up to 70%.

### Where

Pictured above is NYPD's 24th Precinct, which was the first completed direct install lighting upgrade out of 67 NYPD facilities. DCAS is also working with NYC Public Schools and other agencies to retrofit over 1,000 additional buildings over the next several years.

### When

NYPD portfolio was completed Spring 2024.

### Why

The vast scale of the City's portfolio requires a systems-based approach to delivering projects—rather than thousands of unique designs to reduce costs, increase speed, and simplify maintenance.

### How Much

- Number of NYPD Projects: 65
- Annual GHG Reduction: 1,800 MTCO<sub>2</sub>e
- Project Cost: \$17 Million
- Cars off the road equivalent: 396



## Comprehensive Upgrades

The City is doing much more than lighting upgrades to meet the LL97 targets. Comprehensive retrofits to building systems—including heating, ventilation, and air conditioning (HVAC) systems; hot water systems; pumps and motors, elevators, onsite generation, energy recovery and building automation systems—are critical to the City’s success. DCAS is working with numerous agencies to conduct comprehensive building retrofits, including Health + Hospitals, City University of New York, New York City Department of Sanitation, the New York City Police Department, the New York Public Library, and members of the Cultural Institutions Group. Comprehensive upgrades can reduce building energy consumption by over 20% and projects can address state of good repair and building infrastructure needs while saving energy.

The City is planning to accelerate its delivery of comprehensive retrofit projects through the use of design-build procurements.

*(Associated case studies: Lincoln Hospital Multi-phase retrofit; Bronx Zoo)*

## Spotlight: Lincoln Medical and Mental Health Center

### Multi-Phase Comprehensive Retrofit

#### What

With DCAS funding support, Health and Hospitals (H+H) recently completed the first phase of an energy upgrade project at Lincoln Medical and Mental Health Center. Phase I provided comprehensive retrofits to the existing air handling units and lighting systems. Phase II is currently underway and will provide further upgrades on the BMS, chiller plant, boiler plant, and elevator modernization.

#### Where

Lincoln Hospital  
South Bronx (Council District 17)  
Disadvantaged Community Area

#### When

Expected completion in 2024.

#### How Much

- Annual GHG Reduction: 5,300 MTCO<sub>2e</sub>
- Project Cost: \$38 Million
- Energy Savings: 8,600,000 kWh
- Cars off the road equivalent: 1,156



# Spotlight: Bronx Zoo

## District Heating Infrastructure Upgrade

### What

DCAS partnered with the Wildlife Conservation Society (WCS) to upgrade to the Bronx Zoo's district heating system, which provides comfortable temperatures to dozens of the animal habitats that over two million people visit annually. The project included upgrading a two-mile long system of pipes that distribute medium temperature hot water throughout the zoo and reconstructed the zoo's co-generation plant, which generates both electricity and the heat that is used to warm water for the district heating system. Energy recovery units were installed in the cogeneration plant and at each zoo structure to ensure that excess heat is reused in the system rather than wasted.

### Why

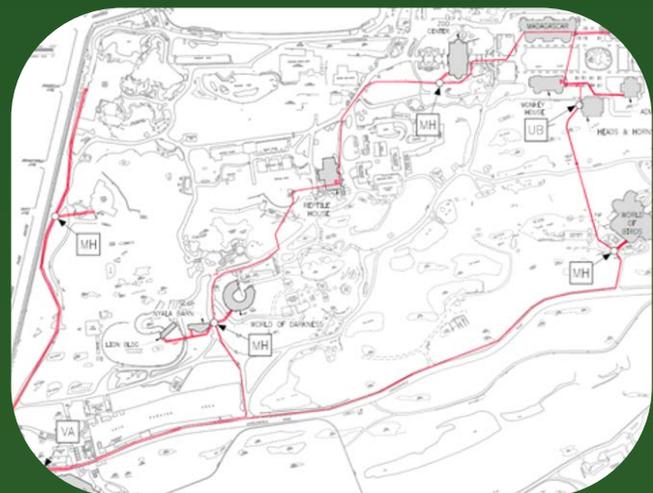
Ensuring that the 6,000+ species at the Bronx Zoo are safe and comfortable is WCS' primary responsibility and they are now able to do that while consuming much less energy and reducing costs by approximately \$500,000 annually. Aside from saving energy, the project addressed significant degradation of the plants infrastructure, which will now last for decades to come thanks to this investment.

### Where

Bronx Zoo  
Bronx Park, The Bronx (Council District 15)  
Disadvantaged Community Area

### How Much

- Annual GHG Reduction: 3,100 MTCO<sub>2e</sub>
- Project Cost: Over \$17 Million
- Cars off the road equivalent: 700



## Deep Energy Retrofits

To achieve the PlaNYC goal of fossil-fuel free government operations by mid-century, the City's largest existing buildings will need to be pushed to their limits in terms of energy performance. DCAS is working with several agency partners, including the Department of Sanitation and the Brooklyn Museum to implement "Deep Energy Retrofit" projects, which seek to reduce total energy consumption by greater than 50% through a combination of comprehensive mechanical system upgrades, windows and building exterior upgrades, electrification, and on-site renewable energy generation. Over the coming years, DCAS and agency partners will implement the City's first Deep Energy Retrofits and develop a large pipeline of projects for implementation over the next decade.

*(Associated case studies: 57th Street Garage; Brooklyn Museum)*

## Spotlight: 57th Street Sanitation Garage

### Deep Energy Retrofit

#### What

The Deep Energy Retrofit of the DSNY Manhattan District 4/4A/7 Garage ("57th Street Garage") will reduce energy consumption by up to 70% and reduce annual energy costs by over \$3 million. The project will transition from district steam to in-house steam generation, partially electrify cooling, improve ventilation distribution, modernize the building management system, and retrofit lighting and elevators. A major highlight includes the installation of a solar photovoltaic system exceeding 500 kW, which will power electric vehicle chargers on site, as well as building operations.



#### Where

DSNY Manhattan District  
4/4A/7 Garage  
Hells Kitchen, Manhattan  
Disadvantaged Community

#### When

Expected completion in 2027.

#### Why

Achieving the LL97 targets requires slashing energy consumption at the City's largest facilities, including those that operate 24/7 and provide critical services to New Yorkers.

#### How Much

- Annual GHG Reduction: 4,800 MTCO<sub>2e</sub>
- Project Cost: Over \$50 Million
- Cars off the road equivalent: 1,100



# Spotlight: Brooklyn Museum

## Deep Energy Retrofit



Brooklyn Museum; (Photo Credit: Ajay Suresh, August 21, 2022)

### What

The Brooklyn Museum will become the City's first cultural institution to undergo a deep energy retrofit, leading to a reduction of more than 50% of energy usage. The project includes major upgrades to mechanical systems, including a conversion from steam boilers to hot water, installation of a new heat recovery chiller, installation of electric heat pumps for heating/cooling and domestic hot water, weatherization of the building envelope and windows, LED lighting upgrades, fan motor and controls replacements, efficient plug load shut off controls, and new electrical transformers.

### Where

Brooklyn Museum  
Crown Heights, Brooklyn (Council District 35)  
Disadvantaged Community Area

### When

Expected completion in 2026.

### How Much

- Annual GHG Reduction: 3,700 MTCO<sub>2e</sub>
- Project Cost: \$43 Million
- Cars off the road equivalent: 800

## Operations & Maintenance

To make the most out of the City's energy efficiency investments, buildings need to be maintained in a state of good repair and operate efficiently, both before and after building retrofits.

### Retro-Commissioning

LL87 requires buildings over 50,000 square feet to undergo a process known as "retro-commissioning" (RCx) once per decade. In the RCx process, qualified professionals conduct a series of tests and visual assessments to determine whether a building's mechanical systems are in a state of good repair and operating efficiently. When problems are found, building owners must address them to achieve compliance with the law. Over the past decade, DCAS has worked with agency partners to retro-commission over 1,200 buildings, leading to a GHG reduction of 46,000 MTCO<sub>2</sub>e.

### Replacement of Condensate Unit and Piping



*Before - A failed vacuum condensate unit*



*After - A replaced vacuum condensate unit*



*Before - An uninsulated pipe*



*After - An insulated pipe*

## Preventative Maintenance

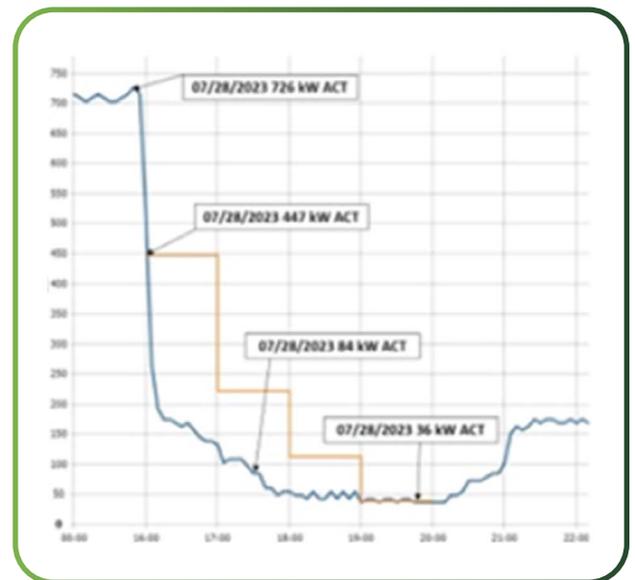
To sustain energy and emissions savings, and ensure the longevity of building systems, the City is working to shift to a preventative and predictive approach to maintenance, rather than reacting to system failures after they occur. DCAS is laying the groundwork for a citywide preventative and predictive maintenance program, which will require sufficient skilled trades staff who are trained in energy management, enabling technologies such as enterprise asset management systems and data analytics to monitor the performance of every building and respond to early warning signs signals of system problems. Optimizing building operations in this way is the most cost-effective GHG reduction approach.

## Data-Driven Energy Management

With an annual energy utility budget exceeding \$960 million, DCAS' management of the City's utility accounts requires a data-driven approach to control costs, optimize energy consumption patterns, and reduce demand.

## Demand Response

The City has worked over the past decade to develop tools and techniques to provide nimble support to utilities in reducing strain on the electricity grid. The Demand Response (DR) program enables agencies to earn revenue by reducing their energy usage during times of peak demand. The City's DR program, which DCAS oversees, is the largest in Con Edison's service territory and contributes more than 20% of total committed energy reductions in New York City. In summer 2023, over 600 facilities from 34 agencies participated in DR, committing over a reduction of over 115MW, or approximately 13% of City government's load. This not only helped safeguard the city's grid but also earned \$15.9 million in net revenue.



## Real Time Metering

To date, the City has installed over 1,100 electricity real-time meters (RTM), covering 77% of base electric demand. RTMs continuously monitor electricity consumption and provide high resolution data that can be used to optimize building operations and increase energy efficiency throughout the day and across the year. These RTMs help agencies effectively participate in the DR program and they are essential tools for optimizing building energy usage patterns.

## Building Controls Optimization

In addition to real time metering, some City properties have Building Automation Systems (BAS), which enable operators to monitor and remotely control multiple building systems and networked electronic devices. BAS are powerful tools for energy management, but only if they are programmed effectively and if the equipment and devices that they control are well maintained. DCAS, in partnership with the CUNY Building Performance Lab, provides extensive training and coaching to building operators so that they can best utilize their BAS systems and “re-tune” their buildings for optimal energy usage, which has resulted in savings of over 4,500 MTCO<sub>2e</sub> over the past 7 years. DCAS is also developing contracts with leading BAS service providers to ensure that the systems are regularly maintained.

*(Associated case studies: OCME Hirsch Center)*

## Spotlight: Charles S. Hirsch Center for Forensic Sciences

### Building Controls Optimization

#### What

DCAS partnered with building operators at the Office of the Chief Medical Examiner (OCME) Hirsch Center—the largest public DNA crime laboratory in North America—to make simple improvements to building operations and calibrate building systems to reduce energy consumption when it was not needed. Implemented measures included rescheduling fan operation, minimizing simultaneous heating and cooling of the building, and adjusting zone temperature setpoints.

#### Why

Significant energy savings can be realized almost instantaneously with no financial investment through optimizing building controls. DCAS is working with agency partners to provide the training, coaching, and tools they need to perform this work on an ongoing basis and at scale across the City’s portfolio.

#### Where

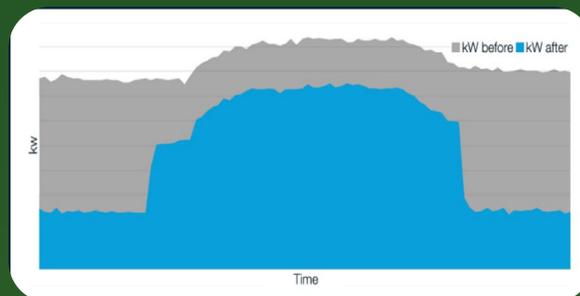
Charles S. Hirsch Center for Forensic Sciences  
Kips Bay, Manhattan (Council district 4)

#### When

Completed in 2017

#### How Much

- Annual GHG Reduction: 575 MTCO<sub>2e</sub>
- Total Project Cost: \$0
- Electricity Reduction: 10%



## Harnessing and Storing Solar Energy

An important way to reduce dependence on fossil fuels is to harness energy from renewable sources, including solar. DCAS, in partnership with City agencies, has installed over 24 megawatts (MW) of solar photovoltaic units on City facilities. We are on track to install 100 MW of solar on City-owned property by 2030.

As part of our solar pipeline, DCAS is working with the New York Power Authority (NYPA), New York State's public power utility, to install 10 MW of solar photovoltaic units at the Wards Island wastewater resource recovery facility (WRRF), using the novel approach of installing solar canopies over process tanks. This will be the largest clean energy installation on a wastewater treatment facility anywhere in the world.

In addition to expanding the City's solar portfolio, we are also ramping up the City's battery storage capacity. Expanding that capacity is essential to ensuring the reliability and resilience of our grid as the City transitions away from fossil-fuels and increases its electricity use. So far, the City has installed approximately 0.28 MW of battery storage on City properties, including four libraries, the Brooklyn Army Terminal, Red Hook Recreation Center, and six FDNY firehouses.

In the coming years, the City will exponentially increase the size of its energy storage portfolio, including the installation of 19 MW of energy storage at Wards Island and other DEP infrastructure facilities.

*(Associated case studies: Wards Island; Thomas Edison HS)*

# Spotlight: Wards Island Renewable Energy Installation

Solar Energy + Battery Storage



*Design proposal of the DEP Wards Island Wastewater Resource Recovery Facility created by Ameresco, which will serve as the developer of the solar PV projects. (Photo Credit: Ameresco, September 2023.)*

## What and Why

The Wards Island Renewable Energy Installation is part of a critical update to NYC infrastructure that will generate 10 MW of solar power and 5 MW of large-scale battery energy storage. As part of a collaboration between NYPA and DCAS, the installation will build solar canopies over aeration tanks, an innovative and challenging design and construction that is unlike typical solar rooftop installations the City has completed in the past. Work on these projects will bring opportunities for union electricians including members of the International Brotherhood of Electrical Workers, Local 3. This project, with construction beginning in July 2024, will be the largest clean energy installation at a wastewater treatment facility.

## When

Expected completion in 2026.

## How Much

- Solar Capacity: 10.6 MW
- Storage Capacity: 5 MW
- Annual GHG Reduction: 4,000 MTCO<sub>2e</sub>
- Cars off the road equivalent: 860

## Where

DEP Wards Island Wastewater Resource Recovery Facility  
Wards Island, (Council District 8)  
Disadvantaged Community Area



# Spotlight: Thomas A. Edison Career and Technical Education H.S.

*Solar Energy Installation + School Curriculum*



*Thomas A. Edison High School Solar System December 2021;  
(Photo Credit: Edison Energy)*

## What

The installation of over 1,500 solar photovoltaic panels at Thomas A. Edison Career & Technical Education High School in Jamaica, Queens is not only one of the City's largest solar energy systems, but also an invaluable learning tool. Students who participate in solar education programs at the school have the opportunity to track performance of the solar system in real time as it generates enough electricity to power 65% of the school's electricity needs on a sunny day.

## Where

Jamaica, Queens (Council District 24)  
Disadvantaged Community

## When

Completed in 2022

## Why

DCAS provides the funds for educational programs at Career and Technical Education (CTE) high schools like Thomas Edison. The funds provide education and hands-on technical training in order for students to learn not only the benefits of solar energy but also the skills to support the installation of solar panels. As of June 2023, 21 schools, 51 teachers and over 2,500 students have benefited from this program.

## How Much

- Solar Capacity: 582 kW
- Annual GHG Reduction: 270 MTCO<sub>2</sub>e
- Project Cost: \$490,000
- Cars off the road equivalent: 58

## Net Zero Buildings

With approximately 4,000 buildings already in the City's portfolio, the opportunity to build from scratch does not come around very often, but when it does, the City must strive for designs that achieve net-zero carbon emissions through a combination of highly efficient building systems and materials, and on-site renewable energy generation and storage. The City has already implemented two net-zero buildings, with more in progress. DCAS will continue to offer its agency partners support to make their building renovations and new buildings net-zero designs.

*(Associated case study: Charleston Branch Library)*

## Spotlight: Charleston Branch Library

### *City's First Net Zero Carbon Emissions Public Library*

#### What

The Charleston Branch Library in Staten Island is the City's first "net zero" carbon emissions public library and only the second such public building overall. Relying on renewable energy generated on site and constructed with highly efficient mechanical systems and materials, the all-electric building produces no carbon emissions on an annual basis. New York Public Library (NYPL) partnered with the Economic Development Corporation (EDC) to design and build the library, with DCAS contributing technical expertise and funding to make the building net-zero. The project underscores the advantages of early engagement and collaboration in integrating energy objectives into the capital planning process. DCAS and EDC are also currently collaborating with the Brooklyn Public Library on a second net zero library in Red Hook, which is currently under construction.

#### Where

Charleston, Staten Island  
Council District 51

#### When

Completed in 2022



*Charleston Branch Library. (Photo Credit: Economic Development Corporation)*

#### Why

The chance to build a new library building does not come around that often in New York City, and this project was an opportunity to build something transformative. All electric buildings with on-site renewable energy generation are key to decarbonization efforts.

#### How Much

- Solar Capacity: 60 kW
- Annual GHG Reduction: 29 MTCO<sub>2</sub>e
- Project Cost: \$1 million
- Cars off the road equivalent: 6



## Fostering Innovation

While the City is implementing a variety of demonstrably effective, scalable programs to reduce emissions and conserve energy, we also recognize that we must always consider new technologies and ways of doing things and innovate wherever possible.

### The IDEA Program

To encourage innovation, DCAS launched the Innovative Demonstrations for Energy Adaptability (IDEA) program in 2014 which engages vendors to build demonstration projects to test new or underutilized energy technologies in City buildings. The IDEA Program helps vendors gain experience implementing their solutions while also addressing City building system or operational challenges and informing DCAS' strategy and investments.

Building on the success of the IDEA program, DCAS has worked with other partners to explore further innovation opportunities under two new programs:

### PropTech Pilot Program

DCAS is partnering with the Economic Development Corporation (EDC) and the New York City Housing Authority (NYCHA) on the PropTech Piloting Program, which aims to connect the most innovative property technology companies with the one of the nation's largest public sector real estate portfolios. The goals are not only to test new technologies but also to identify opportunities for scaling up deployment of successful technologies across the City. Technologies currently under consideration for the PropTech Piloting Program focus on saving energy and improving operations through advanced building automation systems that utilize machine learning to automate building controls such as temperature settings and HVAC sequence of operations.

### Smart Cities Test Bed

DCAS is also partnering with the NYC Office of Technology and Innovation's (OTI) Smart City Testbed Program, which launched in October 2023, to test software and hardware-based energy management solutions. For the first project, DCAS and OTI partnered with New York University researchers to use drones to scan building rooftops and facades for deficiencies that increase the energy needed to heat and cool buildings and determine if maintenance is required for rooftop solar systems.

*(Associated case studies: solar powered fabric canopies; waste heat recovery systems).*

## Spotlight:

### IDEA Technology Demonstration Program



#### Solar-Powered Fabric Canopies

Photovoltaic fabric structures double as both a canopy and a solar panel. With a design able to withstand harsh weather conditions and simple installation and removal, these canopies can generate electricity – creating further amenities to users such as charging stations and lighting. The New York Botanical Gardens (NYBG) implemented eight structures: seven of which are connected to the electricity grid and one in an off-grid application, providing batteries, lighting, and an electrical device charging station. Both the structures and solar electric system have been performing well. The implementation was a success, providing both clean solar energy and comfort to its users.

#### Waste Heat Recovery System

A special generator uses a process that can recover low-grade heat for electric power generation to produce electricity from hot water heated by biogas produced at a wastewater resource recovery facility. Such a process reduces flared gas at the plant as biogas flows to boilers to produce hot water to drive the generator, which in turn reduces emissions and improves air quality. Installed at the Port Richmond wastewater resource recovery facility in Staten Island, the generator has been operational, and the project is ongoing with results expected this calendar year.

## Scaling up Project Delivery

Energy consumption and emissions reduction can only be achieved as fast as the City can complete projects, and DCAS is using all tools in its toolbox to complete projects as quickly and efficiently as possible. There are many ways to complete City-funded energy projects, and methods differ depending on the type of funding, agencies and other government entities involved, scale of the project, and other factors. DCAS has developed expedited project delivery mechanisms aimed at enhancing our operational efficiency and widening our breadth of work, including the Direct Install Lighting Program.

DCAS has received authorization from the State to use an expedited capital project delivery method known as “design-build,” whereby the City may procure the same vendor to complete both the design and construction of a project, resulting in a more streamlined process than the traditional “design-bid-build” method, in which separate contractors must be procured for the design and construction phases. DCAS will release solicitations for vendors to deliver solar installations and energy efficiency projects in buildings using design build methods before the end of 2024.

## Places: Where and Why it Matters

### Where are “City Government Operations?”

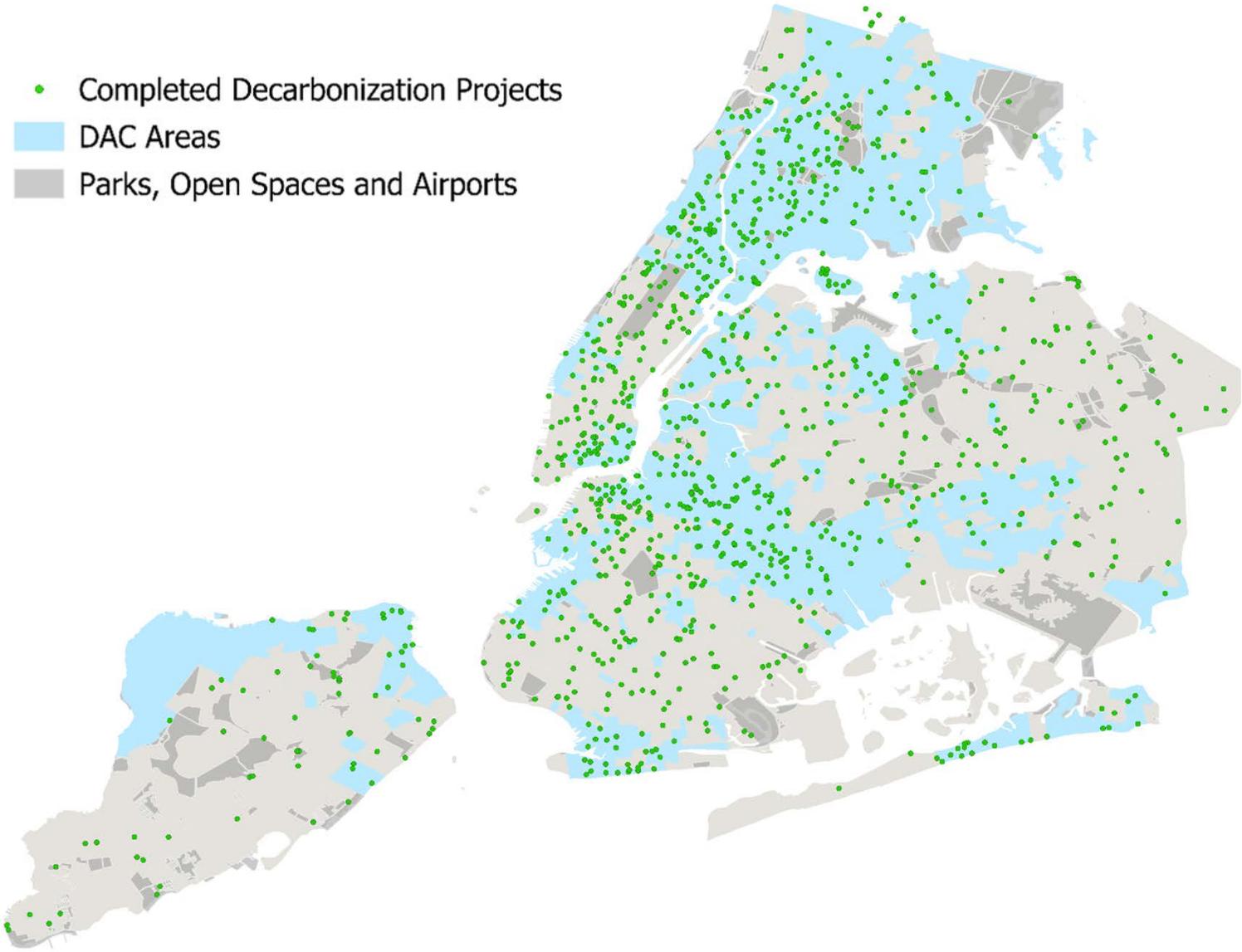
Walk down any street in any New York City neighborhood and you are almost guaranteed to see “City government operations” and the communities they serve. Children on their way to public schools, fire trucks and ambulances returning to base, community health centers offering free screenings, fresh drinking water coursing its way from upstate reservoirs to water fountains at local playgrounds. These are just a few examples of how the City’s over 4,000 buildings, and thousands of miles of infrastructure, and fleet of more than 28,500 vehicles—City government operations—make daily life for New Yorkers safe, interesting, and fun.

The City’s work to decarbonize government operations also touches all five boroughs and practically every New York City neighborhood. Demonstrating the City’s commitment to addressing historical disinvestment and disproportionate environmental burden, the majority of the City’s decarbonization projects are located in State-designated Disadvantaged Communities (DACs). For example, approximately 56% of solar capacity installed on City buildings is located in DACs, while 57% of total estimated GHG reductions from City decarbonization investments occur in DACs, and 53% of particulate matter reductions have been in DACs.



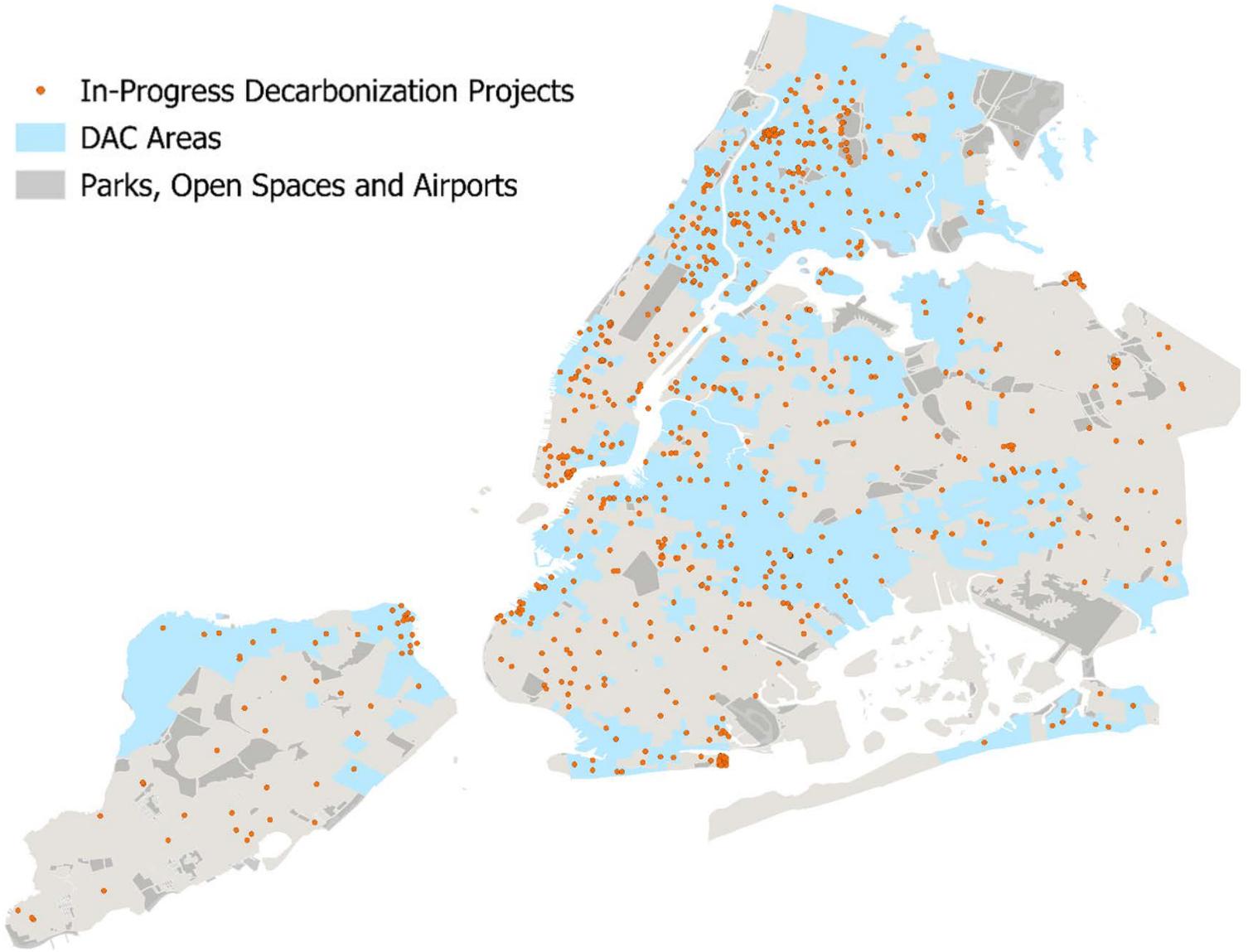
### New York City Disadvantaged Communities (DACs) and Completed Decarbonization Projects (FY14-24)

- Completed Decarbonization Projects
- DAC Areas
- Parks, Open Spaces and Airports



## New York City Disadvantaged Communities (DACs) and In Progress Decarbonization Projects

- In-Progress Decarbonization Projects
- DAC Areas
- Parks, Open Spaces and Airports



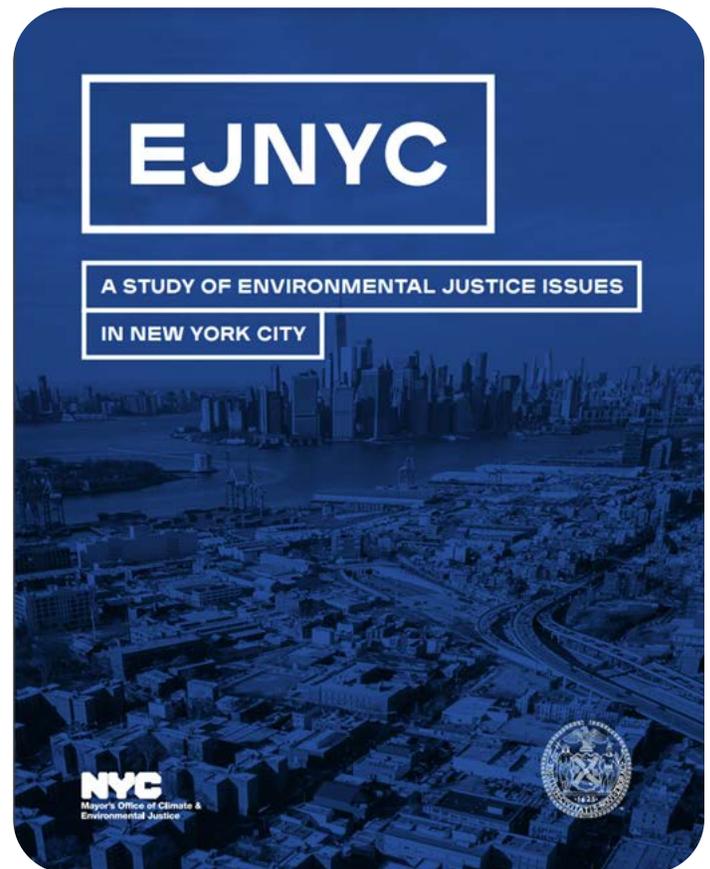
## Why it matters?

Climate change threatens New Yorkers' way of life and it disproportionately impacts Disadvantaged Communities. As Mayor Adams stated in his opening letter to the Mayor's Office of Climate and Environmental Justice's recently published report, EJNYC:

"New York City is the greatest city in the world, but it has not always been the fairest. The lasting legacies of federal, state, and local policies have created economic and environmental inequalities within our city. Today, climate change threatens to exacerbate these disparities, putting the most vulnerable New Yorkers at even greater risk."

Decarbonization investments can play a role in addressing historic inequities and disproportionate environmental burdens.

Following the publication of the EJNYC report, DCAS and its partner agencies are committed to redoubling efforts to incorporate equity measures into their decarbonization planning and decision-making. This will include assessing how to better incorporate environmental justice metrics into the evaluation of project opportunities, increased engagement directly with communities to increase awareness and the inclusivity of decarbonization efforts, and working with MOCEJ to support the implementation of EJNYC recommendations, including improvements in interagency City processes that would enable greater prioritization of equity and environmental justice in programs addressing climate change.



## Conclusion

The bedrock purpose of city government is to serve New Yorkers, and government has a duty to tackle problems that no one individual or group can solve. For the past 15 years, the City has made extraordinary, proactive efforts to address the existential threat of climate change so that New Yorkers today and in future generations can live, work, and play in a thriving, safe, and comfortable city. City government has led the way in setting ambitious emissions mandates and energy reduction commitments, and implementing the projects and programs needed to get there, all made possible by a growing, highly-skilled workforce of dedicated public servants.

We are now at an inflection point. As we celebrate the past nearly two decades of planning and project implementation, we must accelerate our work by:

- **Continue to pursue large comprehensive projects with significant GHG reduction impact.** Projects like the Wards Island solar and energy storage project, 57th St. DSNY garage and Brooklyn Museum deep energy retrofits, and Lincoln Hospital comprehensive energy upgrade will yield significant benefits. Projects at this scale reduce thousands of metric tons of carbon dioxide equivalent from reaching the atmosphere each year and can save the City millions of dollars in energy costs. These projects, while complex and expensive, are necessary to get us closer to our targets faster, and we intend to complete and identify more in the coming years.
- **Scaling electrification projects in buildings.** Full electrification of building systems is the most impactful tool the City has to achieve major GHG reductions from its number one source of emissions - buildings. Electrification is logistically challenging and costly, but the City has made strides in learning how to do it in an efficient and cost-effective manner, focusing especially on our schools. The City will continue to ramp up its electrification efforts and learn from the process along the way. Electrification will become all the more impactful after 2026, when the CHPE large-scale renewable project will be complete, and the City can tap in to the 100% clean electricity it will deliver to the city's grid.
- **Driving down energy consumption.** City government has already driven down its energy consumption 8%, and we intend to reduce it another 12% by 2030. We have stood up many programs that reduce energy consumption in different ways - from Direct Install lighting upgrades to building system re-tuning to Demand Response - and intend to harness these programs to their full capacity to reduce energy use even further.
- **Solidifying accountability structures at agencies.** The City established agency-specific emissions targets, annual progress reporting, and dedicated energy personnel to situate energy management and decarbonization as a priority at the highest levels of City governance. In the near future, the City will work to appoint all 11 ACDOs and fill remaining energy positions at agencies to ensure agencies have the workforce in place to stay accountable for their targets.

- **Prioritizing decarbonization in capital planning.** EO 89 established a framework for evaluating capital spending in terms of what impact it has on carbon reduction. Going forward, the City will incorporate carbon reduction into every aspect of its decision-making around capital spending.
- **Pursuing the most efficient and cost-effective ways to complete projects.** The City must always grapple with limited resources and a myriad of important priorities. Decarbonization efforts must continue at full speed, no matter what resource challenges the City of New York faces. As such, city government must continue to identify cost-effective and efficient projects and delivery methods.

New York City has a unique leadership role in the global sustainability arena. We have the legal mandates, the comprehensive plans, and the dedicated workforce to achieve our goal of a carbon neutral city of the future. We will get decarbonization done!

# DCAS

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