

Encouraging Sustainable and Equitable Upgrades to New York City's Affordable Housing Stock

Nicholas School of the Environment Master's Project

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Executive Summary

The topic of this Master's Project is Encouraging Sustainable and Equitable Upgrades to New York City's Affordable Housing Stock. This study offers a qualitative appraisal of the interaction between affordable housing policies and energy efficiency in New York City. We summarize key affordable housing policies and energy efficiency programs at the federal, state and local levels, profile relevant government organizations, assess the current efficiency potential in New York City's affordable housing stock. We identify confounding informational, financial, and policy barriers that prevent the full realization of this technical potential. These major barriers include: a lack of affordable housing energy performance data, a lack of information about existing funding resources, misalignment between housing subsidies and energy conservation, substantial upfront investment and transaction costs, underfunding of existing efficiency programs, and the tenant-landlord split incentive.

Lastly, we recommend strategies to enhance the energy performance of affordable housing in New York City through policy interventions that benefit both tenants and building owners. This research will be utilized by BetterBuildingsNY to inform their building advocacy efforts. Specific policy recommendations include:

- 421-a Tax Incentive – link tax incentive eligibility to compliance with Local Law 87 building codes (for new large buildings) or regular energy audits (for new small buildings).
- J51 Tax Incentive – link tax incentive eligibility to compliance with Local Law 87 building codes (for large buildings) or regular energy audits (for small buildings).
- Low Income Housing Tax Credit – incorporate existing Enterprise Green Community certification score into the competitive allocation criteria.
- Major Capital Improvement Provision – incorporate energy savings into the recoverable cost calculation during the application process.
- Submetering – provide education to newly submetered tenants; provide low-interest loans/grants to subsidize meters; BBNY should become engaged in DHCR submetering review process.

- Public Housing – promote submetering; NYCHA should benchmark buildings and monitor energy consumption and greenhouse gas emission reductions; collaborate with Energy Service Companies to expand energy efficiency project funding sources.
- Rent Regulation – Integrate building energy performance data into rent increase calculations.
- Mitchell-Lama – Developers who make energy efficiency upgrades should receive priority for refinancing options; BBNY should engage with HFA to evaluate the effectiveness of the Rehabilitation and Preservation program.
- Section 8 – Develop subordinate rental bonus program for landlord or tenants who invest in energy efficiency upgrade; waiting list priority for candidates that participate in energy efficiency education program.

Acronyms

AHC	Affordable Housing Corporation
BBNY	BetterBuildingsNY
DHCR	New York State Division of Housing and Community Renewal
DOE	U.S. Department of Energy
EEM	Energy Efficient Mortgages
ESCO	Energy Service Company
FHA	U.S. Federal Housing Administration
GHG	Greenhouse Gas
HCR	New York State Homes and Community Renewal
HDC	New York City Housing Development Corporation
HFA	New York State Housing Finance Agency
HPD	New York City Department of Housing Preservation and Development
HTFC	New York State Housing Trust Fund Corporation
HUD	U.S. Department of Housing and Urban Development
IRS	U.S. Internal Revenue Service
LIHTC	Low Income Housing Tax Credit
MFI	Median Family Income
NPV	Net Present Value
NYCHA	New York City Housing Authority
NYMA	New York State Mortgage Agency
PHEE	U.S. Partnership for Home Energy Efficiency
RGB	New York City Rent Guidelines Board
RAP	Rehabilitation and Preservation program
WAP	Weatherization Assistance Program

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Methodology

This study offers a qualitative appraisal of the interaction between affordable housing policies and energy efficiency in New York City. We compiled information on this topic from a variety of resources, analyzed the impediments to improving energy efficiency, and made recommendations for ameliorating these impediments.

An overview of affordable housing policies in New York City was compiled from government and academic publications, particularly the Furman Center at New York University's Directory of New York City Affordable Housing Programs.

An overview of energy efficiency in NYC affordable housing was compiled from government, commercial and academic publications, particularly the McKinsey energy efficiency report, NYC sustainability plan and EPA's guideline in planning local energy efficiency in affordable housing. Barriers and opportunities are uncovered to release the full potential of energy efficiency in NYC's affordable housings by comparing the current NYC energy efficiency programs design and plan with US EPA's guideline and other research results. In addition, a specific assessment of barriers and opportunities for energy efficiency implementation was done for different ownerships and energy billing systems.

Chapter 1: Overview of Affordable Housing Initiatives in New York City

1. What is affordable housing?

Within the housing policy context, a home or apartment is considered “affordable” if a family does not need to spend more than 30% of their income to live there¹. Since it is linked to individual family income, a unit that is affordable to some may not be affordable to others. Families are placed into income categories based on their geography’s Median Family Income (MFI), which determines which affordable housing programs they are eligible for. The MFI for the New York Metropolitan Area is \$76,800. Affordable housing units typically have income restrictions expressed in terms of percentage of MFI. For example, in order for a family to qualify for Section 8 Housing Vouchers they must make 50% of the MFI or less. These families would be considered “low-income” or “very low-income².”

2. History of affordable housing in New York City

The New York City housing market has historically posed serious challenges to low- and middle-income families seeking an affordable place to live. Rents are rising, yet incomes remain stable³. As of 2009, nearly half of New York City residents spent over 30% of their income on rent, or what would be considered an “unaffordable” amount⁴. The government response to this problem has evolved over time. In the 1930s, the city constructed buildings and maintained them as affordable housing using federal funds. New York City was the first in the U.S. to implement this program, known as Public Housing, which still exists today. Affordable housing policy shifted away from direct provision of housing in the 1970s in favor of providing subsidies to families for private market housing, known as the Section 8 Program. Newer programs, such as the Low Income Housing Tax Credit, target private developers and landlords to encourage the creation of affordable housing units⁵.

3. Key Public Organizations

Over a dozen organizations are directly involved in the provision of affordable housing in New York City, spanning federal, state, and local governments. Many affordable housing programs require coordination between multiple organizations, with funding commonly flowing from the federal or

state level to the city level for implementation. See Figure 1 for display of relevant affordable housing entities. These can be classified at the Federal, State, and Local level, and we discuss these levels in turn.

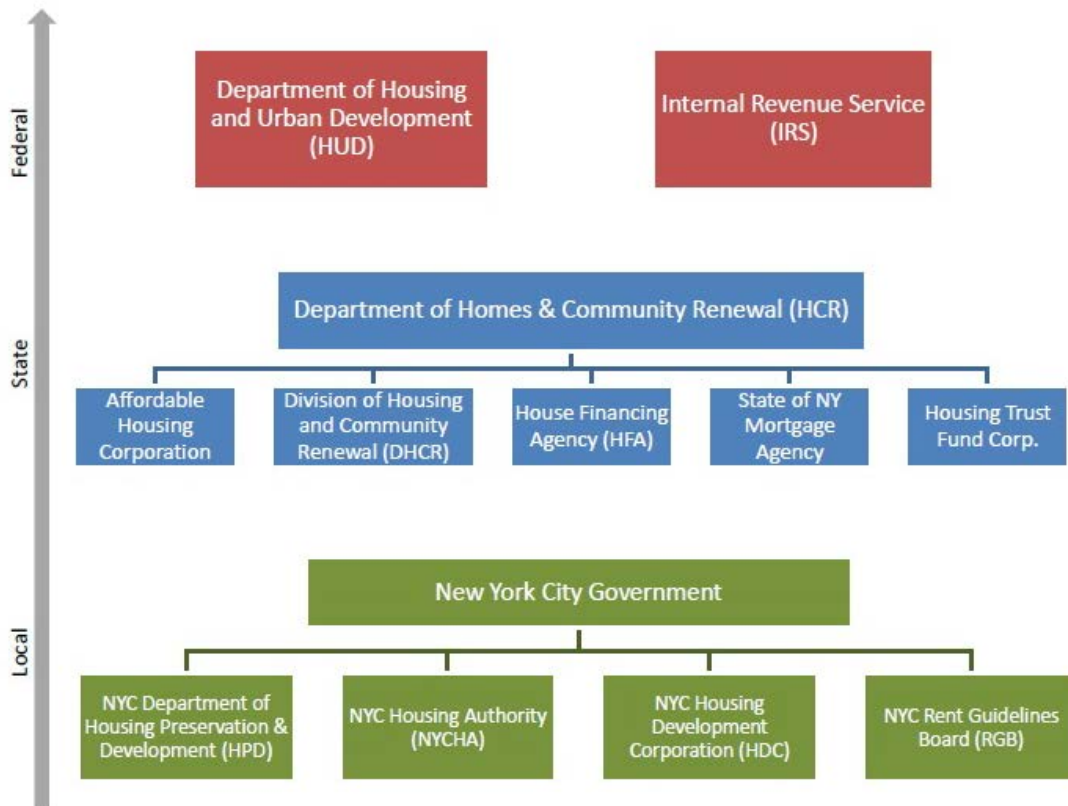


Figure 1. Affordable Housing Organizational Hierarchy

Federal

Department of Housing and Urban Development

Founded in 1965, the Department of Housing and Urban Development (HUD) is a cabinet level agency responsible for promoting affordable, non-discriminatory, sustainable communities in the U.S.⁶ HUD’s mission is to “strengthen the housing market to bolster the economy and protect consumers; meet the need for quality affordable rental homes; utilize housing as a platform for improving quality of life; [and] build inclusive and sustainable communities free from

discrimination⁷.” The HUD program offices most relevant for this discussion are Housing (manages the Section 8 program)⁸, Public and Indian Housing (manages the Public Housing Program)⁹, and Community Planning and Development (manages grant programs for affordable housing)¹⁰. Much of the funding and guidelines for affordable housing programs in New York City flow from HUD¹¹. Their budget in 2012 was \$42 billion. The current HUD Secretary Shaun Donovan is a former Commissioner of the New York City Department of Housing Preservation and Development (HPD)¹².

Internal Revenue Service

The Internal Revenue Service (IRS) is responsible for administering the tax system in the U.S. Tax breaks are an important component of affordable housing incentives, particularly for developers¹³. The Low-Income Housing Tax Credit (LIHTC)¹⁴ and the Mortgage Interest Deduction¹⁵ are the primary tax-based programs used to encourage affordable housing. New York City benefits from \$10 - \$12 million in credits per year through the LIHTC program¹⁶.

State

New York State’s housing agencies operate within the Department of Homes and Community Renewal (HRC)¹⁷. The state’s housing agencies have evolved over time, and currently include: the Affordable Housing Corporation, Division of Housing and Community Renewal, Housing Finance Agency, State of New York Mortgage Agency, and the Housing Trust Fund Corporation¹⁸. We now discuss each of these in more detail.

Division of Housing and Community Renewal

The Division of Housing and Community Renewal (DHCR) is responsible for supervising, maintaining, and developing affordable housing in New York State for low and moderate-income residents¹⁹. They oversee the state’s public housing, rent regulations, community development programs, and provide financial incentives for developers of affordable housing²⁰.

State of New York Mortgage Agency

The State of New York Mortgage Agency (SONYMA) provides first time homebuyers in New York State with affordable financing²¹. Their Achieving the Dream program specifically targets low-

income first time homebuyers. SONYMA financing programs are available for single family homes, condominiums, and co-op apartments²². SONYMA also partners with Habitat for Humanity to provide low interest mortgages to low-income first time homeowners who participate in the Sweat Equity program²³.

Housing Finance Agency

The mission of the Housing Finance Agency (HFA) is to create and preserve affordable multi-family rental housing in New York State²⁴. They provide financing to for-profit and non-profit housing developers through loans and agency-issued bond²⁵. HFA financing mechanisms include the Low-Income Housing Tax Credit, the 80/20 New Construction program, the Taxable Mortgage Initiative, and 501(c)(3) bond financing²⁶.

Housing Trust Fund Corporation

The Housing Trust Fund Corporation (HTFC) is a subsidiary public benefit corporation of the HFA established in 1985²⁷. Their mission is to provide loans and grants to local housing partnerships for the development and rehabilitation of low-income housing. Originally founded to administer loans under the Low-Income Housing Trust Fund Program, HTFC's portfolio now consist of a dozen housing programs including the federal Project-based Section 8 and Community Development Block Grant programs²⁸. During the period of April 2011 to March 2012, HTFC awarded nearly \$13 million to the New York City area (about 11% of the awarded funds)²⁹.

Affordable Housing Corporation

The Affordable Housing Corporation (AHC) is also a subsidiary of HFA created in 1985. Their mission is to assist low- and moderate-income families achieve homeownership. AHC awards grants to government and non-profit organizations to subsidize the construction or renovation of homes for low- and moderate-income families. In New York City, AHC will grant up to \$40,000 per unit³⁰.

Local

New York City Department of Housing Preservation and Development

The Department of Housing Preservation and Development (HPD) is the nation's largest municipal developer of affordable housing³¹. HPD administers federal, state, and local affordable housing programs in New York City³². The Department "strives to improve the availability, affordability, and quality of housing in New York City" through partnerships with private, public, and community organizations³³. In 2010, HPD released their *New Housing Marketplace Plan*, which includes \$8.5 billion in investments over 10 years to create and preserve 165,000 homes and apartments in the city³⁴.

NYC Housing Authority

Often confused with HPD, the New York City Housing Authority (NYCHA) also plays an important role in promoting affordable housing at the city level. NYCHA is the largest housing authority in the U.S.³⁵. They are responsible for administering the city's Public Housing Program, and also provide rental subsidies through the Section 8 Leased Housing Program. These programs combined provide housing for nearly 5% of the city's population (as of 2010)³⁶. NYCHA is focused on assisting low- and moderate-income families³⁷.

New York City Housing Development Corporation

The New York City Housing Development Corporation (HDC) was founded in 1971 as an alternative to funding housing projects through the City's capital budget³⁸. Their mission is "to increase the supply of Multi-family housing, stimulate economic growth, and revitalize neighborhoods by financing the creation and preservation of affordable housing for low, moderate and middle income New Yorkers³⁹." HDC issues bonds, and provides subsidies and low interest loans to affordable housing developers⁴⁰.

New York City Rent Guidelines Board

The New York City Rent Guidelines Board (RGB) is a mayor-appointed board responsible for setting maximum rental rate adjustments for the City's Rent Stabilization Program⁴¹. The RGB conducts research on the costs of maintaining the buildings, financing costs, and other economic indicators. Stakeholders provide input through a series of public meetings. Once a year, the RGB issues a report detailing by how much rents are allowed to increase for the 1 million Rent Stabilized units⁴².

4. Key Governing Policies

Affordable housing in New York City is governed by incentives and regulations from the federal, state, and local levels. These policies include direct provision of housing, government subsidies to both families and landlords, tax credits to encourage housing development, and regulation of rental rates. See Figure 2 for a summary of the family income levels targeted by the key affordable housing policies in New York City.

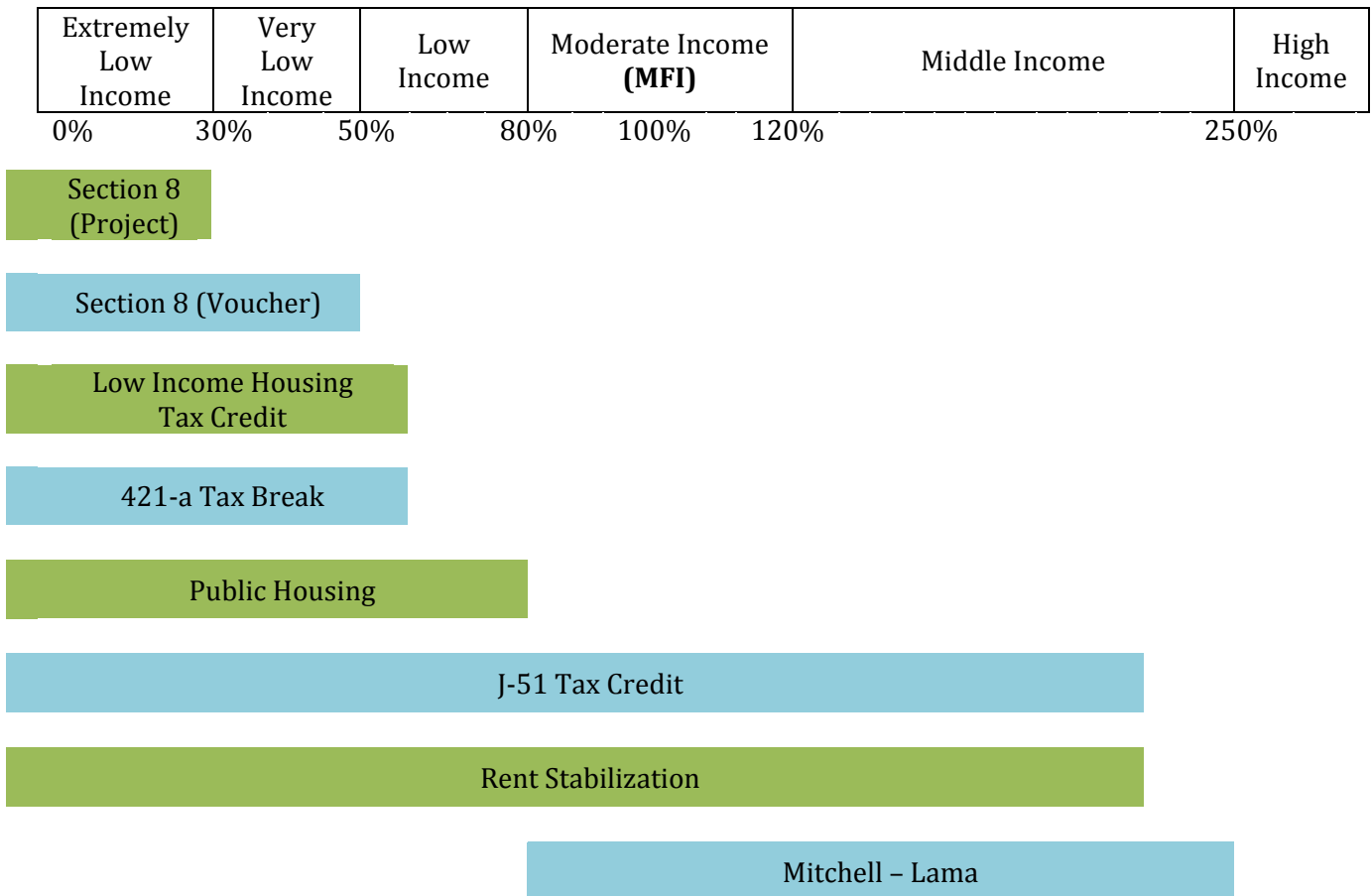


Figure 2. Eligible Income Levels for Major Affordable Housing Policies, as Percentage of Median Family Income

Direct Provision

Public Housing is owned and operated by a government entity for the purpose of providing affordable housing units for low-income residents. Public housing is also commonly referred to as a “project”. In 1935, New York City implemented the first public housing project in the United States⁴³. The program has subsequently grown to about 180,000 units; 1 in 20 New Yorkers currently live in public housing⁴⁴. These buildings are managed and maintained by NYCHA, with federal funds from HUD (See Figure 3)⁴⁵. Public housing units are permanently designated as affordable⁴⁶. However, no new public housing units can be constructed due to a 1974 federal moratorium⁴⁷. There is an 8 year waitlist to get into public housing⁴⁸.

To be eligible for public housing, families must earn 80% of MFI or less, and would therefore be categorized as low-income, very low-income, or extremely low-income⁴⁹. Half of the units in NYC are reserved for families at the higher end of that scale, and residents can remain in their units even if their earnings rise above 80% of MFI⁵⁰. Residents pay 30% of their income in rent to NYCHA⁵¹. NYC spends approximately \$1.9 billion annually on public housing, most of which comes from rents they collect from residents⁵². The remainder comes from HUD’s public housing budget, which totaled \$4.9 billion in 2012⁵³.



Figure 3. Public Housing Flowchart

Government Subsidies

Section 8

The Section 8 Housing Choice Voucher Program provides a subsidy to low-income families to help them pay the rent or mortgage. Unlike the Public Housing program, Section 8 vouchers allow families to select units in the private housing market. The HUD provides funding to local housing agencies who distribute vouchers to eligible families. The family then provides this voucher to their landlord. The family pays 30% of their income on rent to the landlord, and the landlord collects the remaining difference between the family’s payment and the market rent from HPD, HCR, or NYCHA (See Figure 4)⁵⁴. This difference is called the Housing Assistance Payment⁵⁵

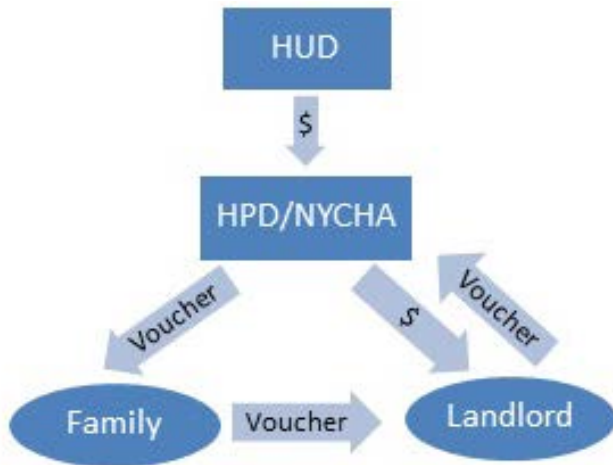


Figure 4. Section 8 Housing Choice Voucher Program Flowchart

New York City has the largest Section 8 program in the country, serving about 270,000 people⁵⁶. Approximately 130,000 families are currently on the waitlist, which is 8 years long⁵⁷. In order to be eligible for Section 8 vouchers, a family in New York City must have an income at or below 50% of MFI⁵⁸. They must also locate a landlord who is willing to accept Section 8 vouchers, and a unit that rents at or below the Fair Market Rent set by HUD for the New York City Metropolitan Area⁵⁹. Families can stay

in the program until 30% of their income covers the rent without the need for a Housing Assistant Payment. There is also a small amount of Section 8 funding available for homeownership payments through HPD⁶⁰. About \$900 million of federal Section 8 funds are allocated to New York City annually⁶¹.

The related Section 8 New Construction and Substantial Rehabilitation Program (also called Project-based Section 8) incentivizes developers to provide affordable housing units in their building for Section 8 families. Building owners who dedicated 40% of their units to those with incomes below 30% of MFI would receive a 20-40 year contract from HUD for the fair market rent for those units (See Figure 5). Founded in 1974, the program was eventually phased out in 1983 in favor of the voucher program, which allowed families more locational flexibility. However, a percentage of HPD/NYCHA's Section 8 Voucher funding can be allocated to project-based subsidies⁶². There are currently 90,000 Project-based Section 8 units in New York City and HUD spends \$500 million annually on existing contracts with building owners⁶³.

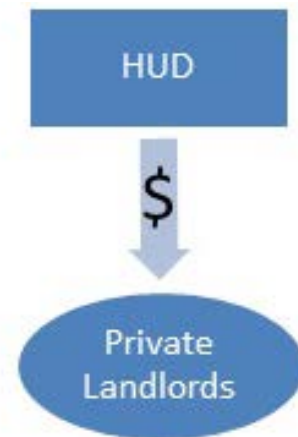


Figure 5. Section 8 New Construction and Substantial Rehabilitation Program Flowchart

Mitchell-Lama

Founded in 1955, the Mitchell-Lama program is a series of incentives provided by New York City and state to developers that build affordable housing units. Developers receive tax breaks, low-interest mortgages, and other subsidies in exchange for maintaining units with certain limits on rent, residents' income, and profits (See Figure 6). Mitchell-Lama developments are targeted to moderate and middle income families and are regulated by DHCR and HPD. Families qualify for Mitchell-Lama housing on a building by building basis, as rents vary. The building operators charge rent based on operating cost and an approved rate of return⁶⁴.

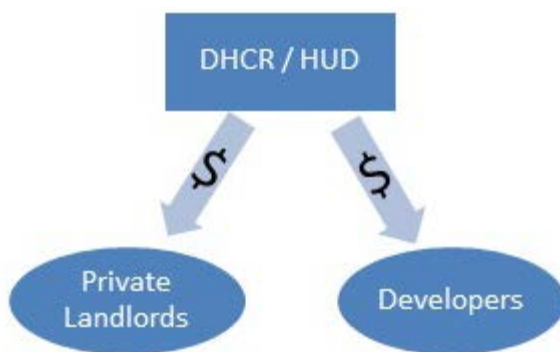


Figure 6. Mitchell-Lama Flowchart

Just over 100 developments participate in this program in New York City, accounting for 46,000 units. The waiting lists for these buildings are many years long. After 20 years, a developer can opt to pay off the mortgage and leave the program. If the building is pre-1974 it will transfer into the rent regulation program⁶⁵.

Tax Policies

Low-Income Housing Tax Credit

The LIHTC is a politically popular incentive for developers that is spurring affordable housing creation across the U.S⁶⁶. Since 1986, developers who set aside a portion of their building for low-income and very low-income families can receive a tax credit for a portion of their development costs⁶⁷. The federal program is administered by the IRS, which allocates tax credits to HCR at the state level, which in turn allocates them to HPD for New York City developments (See Figure 7)⁶⁸. Credits are available for nine percent or four percent of development costs. Developers are awarded nine percent credits through a competitive points system, while four percent credits are allocated according to the city's Qualified Allocation Plan⁶⁹. A developer can sell ("syndicate") their tax credit to a private investor if they do not have the tax liability to use it themselves, and use those funds towards the project⁷⁰.

In order to qualify for LIHTC in New York City, the developer can reserve 20% of their units for families making less than 50% of MFI (“very low-income”), 25% of the units for those making less than 60% of MFI, or 15% of the units for those making less than 40% of MFI. The rent is set at 30% of the family’s income. About 25,000 affordable units have been created in New York City using LIHTC, at a cost of \$13 million in tax breaks annually. The LIHTC funded units must remain affordable for 30 years⁷¹.

421-a Tax Incentive

Developers who construct new multi-family residential buildings in New York City qualify for a state and city property tax break (421-a)⁷². The city and state forgo the property tax increase that would normally occur during the construction phase and once the project is complete; the developer pays property taxes as if the lot were still vacant⁷³. Developers who build within defined “Geographic Exclusion Areas” must dedicate 20% of their units for families earning less than 60% of MFI (low-income) in order to qualify for the tax break⁷⁴. These exclusionary zones include the island of Manhattan, and parts of the other four boroughs⁷⁵. The tax incentive is financed by HFA and administered in New York City by HPD (See Figure 8)⁷⁶.

Families who qualify for the affordable units will pay 30% of their income on rent, and must enter a lottery for each building to secure a unit⁷⁷. Since the program began in the 1970’s, over 100,000 apartments have been created but less than 10% of those have been affordable⁷⁸. Those units must remain affordable for 35 years⁷⁹. The 421-a program costs New York City approximately \$300 million annually in lost taxes⁸⁰.

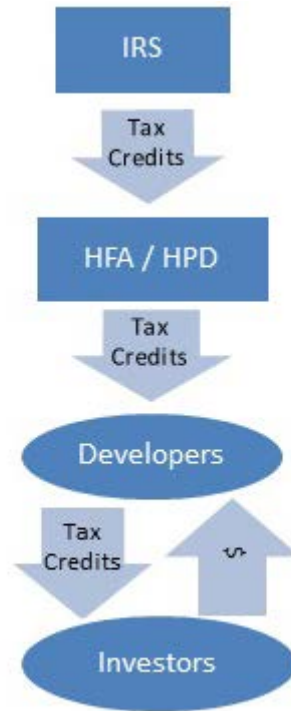


Figure 7. Low-Income Housing Tax Credit Flowchart

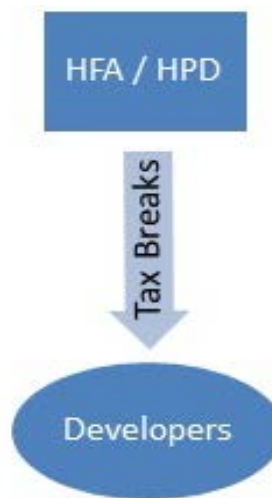


Figure 8. 421-a Tax Incentive Flowchart

J-51 Tax Incentive

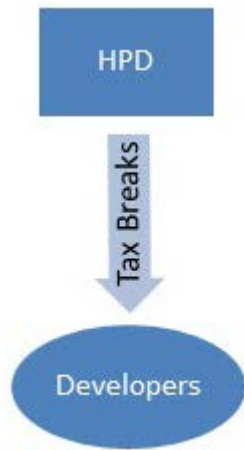


Figure 9. J-51 Tax Incentive Flowchart

The J-51 Tax Incentive program encourages rehabilitation and upgrading of multi-family housing and the conversion of non-residential buildings into multi-family housing. Developers of eligible projects receive a 34-year or 14-year exemption from the local real estate tax increases that they would have incurred as a result of the construction. They also receive an annual real estate tax abatement for 20 years equal to 8.3% or 12.5% of the project costs⁸¹.

In exchange for these tax benefits, the units automatically become subject to Rent Regulation (described below) and specific rental increase restrictions. The units may or may not exit the Rent Regulation program at the end of the benefit period⁸². Developers who rehabilitate or convert units to affordable housing typically qualify for the 34-year real estate tax exemption. This program is administered by the New York City HPD⁸³.

Market Regulation

Rent Regulation is the general term for two policies that govern rental rate setting in New York City – Rent Control and Rent Stabilization. Rent Control is the older of the two rent regulation laws and applies only to pre-1947 residential buildings⁸⁴. Few units still fall under this program (less than 50,000)⁸⁵.

Rent Stabilization was instituted in 1969 and applies to multi-family apartment buildings constructed between 1947 and 1974. Tenants who live in pre-1947 apartments that moved in since 1971 are also covered by the rent stabilization law. Some tax incentives or other subsidies for apartment building construction or renovation also require developers to participate in rent stabilization⁸⁶. Landlords of rent stabilized apartments are restricted in how much they can increase rents. In New York City, the Rent Guidelines Board collects data on costs for landlords and tenants and sets a maximum rental increase, typically 3% -5% annually (See Figure 9)⁸⁷. Utilities are included in the tenant's rent in 10% of rent regulated units⁸⁸.

Families must earn less than \$175,000 to qualify for rent stabilization (middle-income), however the actual rent they pay is not calculated based on income. In addition to rent increases being regulated by the RGB, the rent cannot exceed \$2,000. Once an apartment's rent increases above \$2,000 and the tenant moves out, it exits the rent stabilization program. Landlords are not permitted to evict tenants in order to charge higher rents, and are required to provide certain maintenance and services. They can recoup some renovation costs through rent increases. About half of all rental units in New York City are covered under the rent stabilization program – over a million units⁸⁹.

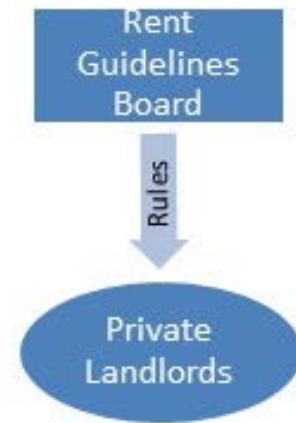


Figure 10. Rent Stabilization Flowchart

5. Conclusion

New York City has a long history of providing and incentivizing housing that is affordable for families. These policy mechanisms include government construction of affordable units, tax incentives for developers, and rental subsidies for tenants. Rules and funding for these policies typically originate at the federal level and flow from those agencies down to the state and ultimately local level where they are administered by a suite of New York City government and quasi-government agencies. Within the context of affordable housing policy, “affordable” units cost no more than 30% of a family’s income. Each affordable housing policy is targeted at a particular income segment of the population, which ranges from Extremely Low-Income to Middle Income.

Chapter 2: Assessment of Energy Efficiency in Affordable Housing Stock in New York City

1. Why is energy efficiency important?

Energy savings and Greenhouse Gas abatement

Energy efficiency has been called as the most effective measure in securing U.S. energy and Greenhouse Gas (GHG) emission reduction⁹⁰. Based on a McKinsey's report, the full potential of energy savings worth more than \$1.2 trillion and the upfront investment to achieve these savings is estimated to be \$520 billion through 2020, offering a substantive and low-cost energy resource for the U.S. economy⁹¹. With an end-use energy consumption reduction of 9.1 quadrillion BTUs by 2020, the greenhouse gases emission abatement is around 1.1 gigatons annually⁹². Among the reduction of 9.1 trillion BTUs of end-use energy 35% comes from residential sector and among that 35%, 19% comes from low-income home⁹³. (Figure 10). Therefore, addressing energy efficiency in affordable housing is essential to unlock the full potential energy savings and GHG emission abatement. And this is particularly true for New York City. As a city with high building density, buildings of all types contribute to 94% of NYC's electricity use and 75% of total greenhouse gases emissions which is almost twice the national average. Among the 75% of total greenhouse gases emissions, 34% of them came from residential buildings (Figure 12)⁹⁴. In addition, NYC is facing an overwhelming need for housing that low, moderate and middle income NYC residents can afford. New York City has an annual 80% growth rate of affordable housing, resulting in 15,526 new affordable housings units each year⁹⁵. If New York City wants to unlock its energy efficiency potential and to reduce its GHG emissions, it will have to concentrate on the buildings, especially affordable housing.

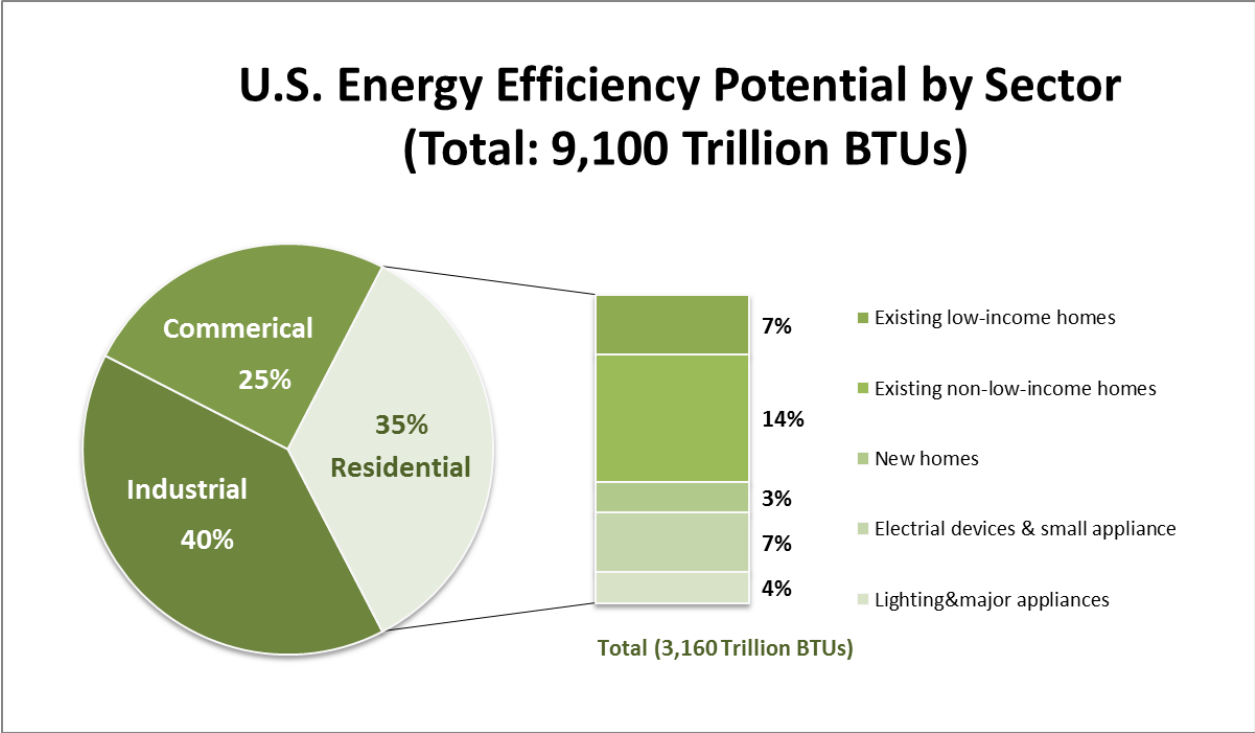


Figure 11. U.S. Energy Efficiency Potentials by Sectors (Total 9,100 Trillion BTUs)⁹⁶

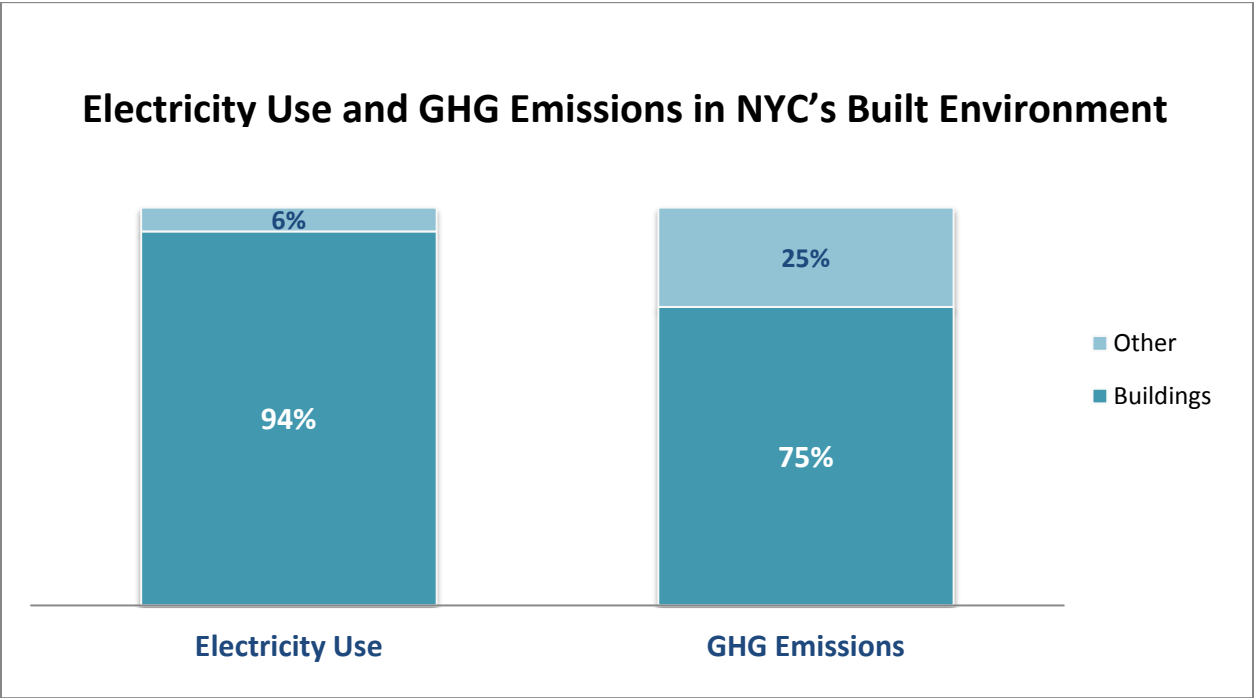


Figure 12. Electricity Use and GHG Emissions in NYC Built Environment⁹⁷

Ensure the affordability of housing

Energy costs contribute to a big portion of the overall financial burden of housing. According to HUD, for single, elderly, poor, and disabled persons who live on social security, 19% of their total annual income is spent on energy bills⁹⁸. Energy efficiency could lessen this financial burden and improve the affordability of the housing. According to the federal government's Partnership for Home Energy Efficiency (PHEE), improving energy efficiency could generate 20-30 % energy savings⁹⁹. HUD pays \$4 billion each year on energy- more than 10% of HUD's annual budget. Any savings from energy efficiency could generate significant cost savings to the Federal government, to the building owners and developers, and to the residents. For the federal government, those savings could in turn be used to generate additional financial support for energy efficiency programs in affordable housing and subsidy operation and maintenance costs in public housing¹⁰⁰.

Economic benefits from job creation and market development

Investing in energy efficiency can stimulate the economy by creating more jobs and encouraging development of energy efficiency service markets¹⁰¹. For example, the Weatherization Assistance Program has created an average of approximately 80,000 direct jobs every year¹⁰². Just in 2006, energy efficiency programs, technologies, and related services have created approximately 8.5 million jobs nationwide¹⁰³. Along with the increased job and developed market, the tax revenues increase¹⁰⁴.

Improve living quality

Energy efficiency also improves living quality on several dimensions:

1. *Indoor air quality.* Improving energy efficiency in affordable housing can indirectly improve indoor air quality. With upgraded ventilation systems, better indoor air quality with reduced dust, pollen and odor could be supplied¹⁰⁵.
2. *Increase comfort.* Improving energy efficiency in affordable housing can increase comfort for residents by diminishing damp basement, mold growth and cold floor and drafty rooms in the winter¹⁰⁶.

2. Current energy efficiency policy in New York City

Sustainable development plan

In realizing the challenges for New York City to keep thriving, the city established its 2030 Sustainable Development Plan in year 2007 to response to the growing population, aging infrastructure, changing climate, and evolving economy. Part of the plan addresses the issues in making housing affordable and sustainable and reducing the corresponding greenhouse gas emission and energy consumption. In the past 4 years, the plan created or preserved 110,000 units of affordable housing, enacted ambitious laws to make existing buildings more energy- efficient, and reduced greenhouse gas emissions by 13% compare to 2005 levels¹⁰⁷. In addition, NYC will continue in making substantial investments in affordable housing. It has a target of 165,000 units of affordable housing in total that is more energy efficient and affordable by 2014¹⁰⁸.

New York City's plan for sustainable growth through 2030 contains a number of policies and initiatives that address green buildings and energy efficiency. According to NYC's PlaNYC, more than 85% of NYC's 2030 building stock will be buildings that already exist today¹⁰⁹. This fact drives NYC to concentrate on improving energy efficiency in its existing buildings¹¹⁰. Since 2007, NYC has launched three major sets of energy efficiency policies and two of them cover part of affordable housing stock in NYC. As stated in its PlaNYC, the full potential of its energy efficiency policies would lead to a 24% GHG abatement by 2030. In order to show the whole structure of NYC's energy efficiency efforts, major energy efficiency policies and initiatives that govern affordable housing in NYC are listed below:

Energy efficiency policies:

Local Law 85 – NYC Energy Conservation Code (NYCECC)

This code covers all buildings in NYC and it is more stringent than state and federal level energy code. It requires new construction and existing buildings that have any renovation of alteration projects to meet the most current energy code. Unlike previous laws, there are no exemptions for renovations affecting less than half of the building system¹¹¹.

Local Law 84 – Benchmarking

This benchmarking policy requires large existing building owners to measure the building's energy and water consumption annually. According to Local Law 84, large existing buildings

here cover private sector single buildings that are over 50,000 square feet or multiple private sector buildings with a combined square footage over 100,000 square feet¹¹². This policy is intended to provide building energy and water performance data to building owners, researchers, policy makers and other decision makers to deepen their understanding of building performance and inspire future research and strategies for energy efficiency improvements¹¹³.

Local Law 87 – Energy Audits; Retro-commissioning

This policy requires large existing building to conduct an energy audit and retro-commissioning measures every 10 years and complete an electronic energy efficiency report. And this policy will enable building owners further understand the buildings' energy performance and eventually switch to more efficient buildings¹¹⁴.

NYC'S energy efficiency initiatives

New York City has launched over 100 initiatives to support its long term sustainable development goal¹¹⁵. Below is a selected list of initiatives that address the energy efficiency upgrades in affordable housing in NYC:

Housing and Neighborhoods Initiative 8- Increase the Sustainability of City-financed and Public Housing

This initiative requires that all major City-financed substantial rehabilitations and new construction certify with Enterprise Green Communities (EGC) which is a set of guidelines specifically for affordable housing sustainability. This initiative aims to provide 40 affordable housing EGS certifications and to fund more than 30,000 units in regard to energy efficiency by 2014¹¹⁶.

Energy Initiative 3- Improve Codes and Regulations to Increase the Sustainability of Buildings

The Urban Green Council (UGC) is the New York Chapter of the U.S. Green Building Council (USGBC)¹¹⁷. Under this initiative, UGC has assembled the New York City Green Codes Task Force to green NYC's city codes and find solutions to overcome the barriers that impeding green building practice. To date, the task force has developed 111 proposals and 22 of them have been incorporated into new law and regulations¹¹⁸.

Energy Initiative 5- Improve Energy Efficiency in Smaller Buildings

Half of NYC's buildings are small to medium sized buildings. This initiative encourages energy efficiency in these buildings, and provides public education campaign when the building ownership changes¹¹⁹.

Energy Initiative 7- Provide Energy Efficiency Financing and Information

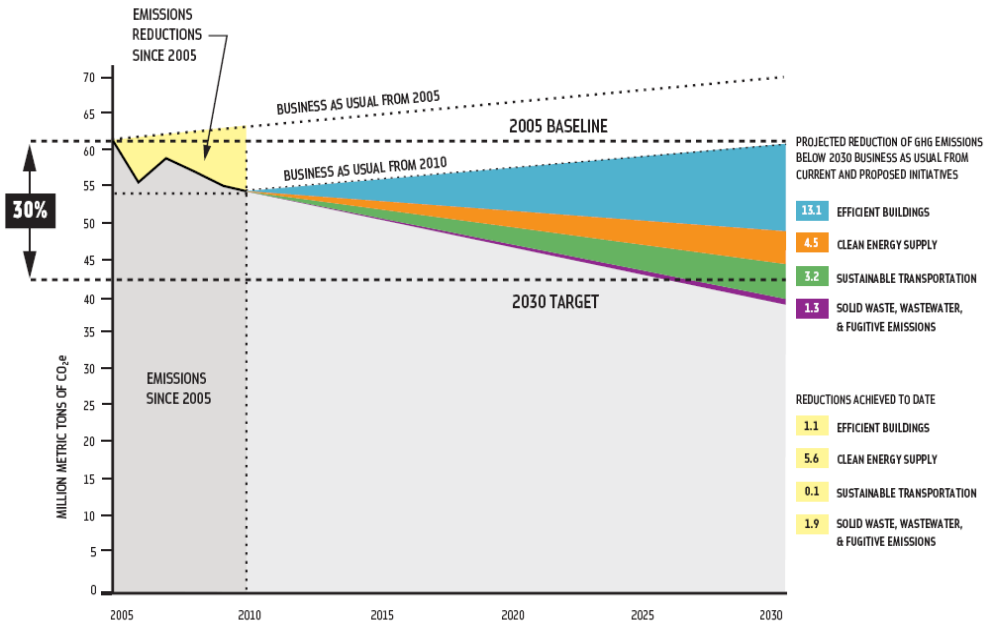
This initiative aims to overcome the obstacles that building owners face when they are trying to access related capital and information. NYC created the New York City Energy Efficiency Corporation (NYCEEC) with funding support from the American Recovery and Reinvestment Act (ARRA) to reduce energy efficiency financing risk and increase funding access¹²⁰.

Energy Initiative 9- Make New York City a knowledge center for energy efficiency and emerging energy strategies

This initiative creates a program in energy efficiency engineering and building science to train next generation of building energy efficiency specialists and identify the most cost-effective projects to improve energy efficiency in buildings by partner with universities and research institutes¹²¹.

In NYC, with an overall GHG emission reduction goal of 30% by 2030, building efficiency has a projected reduction of 13.1%¹²². With all the existing energy efficiency policies and initiatives, the reduction achieved to date is only 1.1%¹²³. The small accomplished percentage indicates the need of further research and solutions to unlock the building energy efficiency potentials in NYC (Figure 13). Next, we look beyond the local level to identify available state level and federal level resources that could provide financial and technical support to energy efficiency improvements in affordable housing.

Projected Impacts of our Greenhouse Gas Reduction Strategies



Source: NYC Mayor's Office and M.J. Beck Consulting, LLC

Figure 13. Projected Emission Reduction Strategies

3. Key Energy Efficiency Programs for Affordable Housing at the Federal and State Levels

Beyond the local level, federal and state agencies offer informational, financial and technical assistance for local governments, housing developers, and building owners to improve energy efficiency. New York City should utilize these energy efficiency programs to better plan and develop corresponding programs to incentivize energy efficiency in affordable housing stock. These key energy efficiency programs and initiatives are classified at the federal and state levels, and described below.

Federal

ARRA

The American Recovery and Reinvestment Act of 2009 (ARRA) primarily aimed at saving and creating more jobs and held a strong focus on a long-term greener and more energy efficient economy¹²⁵. The U.S government was estimated to spend approximately \$831 billion on ARRA's economic stimulus package between 2009 and 2019¹²⁶. It provided funding for energy efficiency programs administered mainly by the Department of Energy (DOE), the Department of Housing and Urban Development (HUD) and state HFAs¹²⁷. It unlocked new funding sources for energy efficiency programs that can be used to improve energy efficiency in affordable housing. Selected programs are described in greater details under different administrations.

HUD

In 2010, HUD launched the Office of Sustainable Housing and Communities with a commitment in supporting the construction and rehabilitation of green affordable housing¹²⁸. Within the Office of Sustainable Housing and Communities, HUD established the Sustainable Housing Initiative which focused on assisting the implementation of HUD's energy efficiency goal. HUD has developed several energy efficiency programs and has assisted to improve the energy efficiency of hundreds of thousands families¹²⁹. The key ones include:

HOME Investment Partnership Program

This program provides formula grants to states and local governments to fund a variety of affordable housing activities including rehabilitation¹³⁰. With approximately \$2 billion annual grant, this program is the largest Federal block grant that designed exclusively for affordable housing for low-income families¹³¹. Also, this program has received around \$1.5 billion grant from ARRA¹³².

Green Retrofit Program

HUD has received \$2.5 billion from ARRA for the Green Retrofit Program (GRP) for Section 202, Section 811, and Project Based Section 8 housing development. These funds are distributed by HUD as grants or loans of up to \$15,000 for each individual project. Those projects should include measures to promote energy efficiency and sustainability such as Energy Star appliances and products, insulation, energy efficient windows, etc. Funding

from ARRA for the Green Retrofit Program ran out in Fiscal Year 2012, whether this program still exists remains unknown. However, by the end of Fiscal Year 2012, HUD was estimated to fund approximately 20,000 energy and green retrofits¹³³.

Public Housing Capital Fund

The Public Housing Capital Fund is administered by Office of Capital Improvements under Deputy Assistant Secretary for Public Housing Investment (PHI)¹³⁴. And it funds PHAs annually for capital and management activities of public housing developments¹³⁵. In 2009, this Public Housing Capital Fund has received around 4 billion from ARRA¹³⁶.

Partnership for Advancing Technology in Housing (PATH)

This program provides funds and technologies information to promote energy efficiency improvements in affordable housings. It encourages creating a public/private partnership between homeowners, researchers, product manufacturers, and housing institutions tin developing and implementing technologies that improve new and existing affordable housing stock in energy performance, affordability and quality¹³⁷.

The Public Housing Energy Conservation Clearinghouse (PHECC)

This initiative aims at utilities' cost abatement. In reaching this goal, HUD has established an efficient collaboration relationship with local PHAs to release requirements and incentives to reduce energy consumption, to incentivize creative financing support vehicles, to reduce energy rates, to provide assistance in cost-effective energy conservation technology and to build evaluation system for energy-efficient practices¹³⁸.

Federal Housing Administration (FHA) Energy Efficient Mortgages (EEM)

This program focuses in assisting homebuyers or homeowners on utility bill reduction. The way this program works it to provide financial support to homebuyers and homeowners who adopt energy efficiency improvement. It finances the cost of those improvements as part of homeowners' or homebuyers' FHA insured home purchase or refinancing mortgage¹³⁹.

DOE

The Department of Energy (DOE) sponsors a wide variety of programs related to energy and energy efficiency. Several key initiatives are described below:

Rebuild America and Building America

Those two programs both focus on accelerating energy efficiency improvements in buildings. The Rebuild America focuses on existing multifamily residential buildings and the Building America focuses on new buildings. They both utilize private-public partnerships at the community level to retrofit older buildings with the latest technology or to provide energy solutions for new housing production¹⁴⁰.

Weatherization Assistance Program (WAP)

This WAP program is a key program that provides energy efficiency financial supports to low-income people by reducing their heating and cooling cost. It has been existed since 1976 and has weatherized more than 5 million homes¹⁴¹. It provides funds or other financial support to low-income families to weatherize their homes, to increase their homes' energy performance and to reduce their utility cost. The qualified families for WAP are families that have an income of 200% of the poverty level or less. In New York State, this program is administered by the New York State Homes and Community Renewal (HCR). In 2009, it has received around \$5 billion from ARRA¹⁴².

Energy Efficiency and Conservation Block Grant Program (EECBG)

This program funded a variety of improvements such as energy efficiency building retrofits, building code development and implementation, installation of renewable energy technologies, implementation of more efficient transportation systems, etc. It has received a total of \$3.2 billion from ARRA in 2009 and the future of this program is unclear¹⁴³.

EPA

The Environmental Protection Agency (EPA) supports a wide range of energy efficiency programs, and the most notable is the ENERGY STAR Program. It is a voluntary labeling program that identifies and promotes energy-efficient products and construction of energy efficient homes in the marketplace. And it also assisted with consumer education and information on ways to improve

existing homes and overall energy efficiency. In addition, it encourages and assists governments, schools, and businesses in ENERGY STAR labeled product procurement. ¹⁴⁴

State

NYSERDA¹⁴⁵

Under New York State Energy Research and Development Authority (NYSERDA), several programs provide cost-effective home improvements to low and moderate income household which including affordable housing. The selected programs are listed below:

Assisted Home Performance with ENERGY STAR®

This program with ENERGY STAR provides financial support to improve energy efficiency of New York State households. The eligible families for this financial support are those have a total income equal to or lower than 80% of the State or Area Median Income. The subsidy represents up to half of an approved energy efficiency project¹⁴⁶.

Assisted New York ENERGY STAR Homes

This program provides a \$500 cash incentive to eligible households that adopt energy efficiency features¹⁴⁷.

EmPower New YorkSM

This program is launched in 2004 and has provided more than 61,000 income-eligible New Yorkers with free insulation, draft reduction, high efficiency lighting, or appliance upgrades. It works closely with the WAP program in providing low-income families financial and informational support. In addition, this program promotes education activity among residents on energy savings methods¹⁴⁸.

Green Jobs-Green NY program¹⁴⁹

This program provides free energy audits to homeowners with an income up to 200 percent of their county's median income level and reduced price audits for household with an income up to 400 percent of their county's median income.¹⁵⁰

4. Conclusion

Increasingly, energy efficiency has been considered as one of the most effective tools in securing energy supply, reducing GHG emissions and stimulating economic growth. In the affordable housing sector, energy efficiency plays a crucial role in reducing the overall financial burden of tenants, maintaining housing affordability and improving housing quality. With a strong focus on sustainable growth and a high density of buildings, New York City has realized the importance of improving the energy efficiency of its massive building stock. In the past 4 years, New York City has established several energy efficiency and green building policies and a number of initiatives to take a progressive and systematic approach to encourage energy efficiency upgrades in its affordable housing stock. Together with all the other existing energy efficiency programs at the federal and state level, there is considerable momentum and opportunity to make affordable housing energy efficiency a prominent piece of New York City's overall sustainability plans. However, after a careful examination of the whole system of energy efficiency practices, there are still some barriers to improving energy efficiency in affordable housing. In the next chapter, we will discuss in detail the specific barriers and corresponding recommendations.

Chapter 3. Confounding factors that hinder equitable efficiency improvements

1. Confounding Factors for Achieving Energy Efficiency in NYC's Affordable Housing

According to the McKinsey report, even the most expensive energy efficiency opportunities show a positive net present value (NPV) over their lifetime (including program costs)¹⁵¹. The NPV of the full potential of energy efficiency investment in the U.S. is estimated at \$680 billion (not including program costs)¹⁵². McKinsey estimates that an investment of \$43 billion in energy efficiency in low-income housing could have a NPV of \$80 billion.¹⁵³ However, even with such an attractive economic value, the fundamental attributes of energy efficiency projects combined with multiple barriers impede the implementation of energy efficiency measures in the affordable housing stock in New York City. By its nature, energy efficiency requires substantial initial investment and the subsequent energy savings are highly fragmented and difficult to evaluate, measure and verify. The key barriers to achieving the full energy efficiency savings potential are discussed below.

Information barriers

Lack of affordable housing energy performance data – The first step to improve energy efficiency is to understand the energy performance of the building. However, most of the affordable building owners and managers do not fully understand whether their buildings are efficient or not; they have no tools with which to compare their own building's performance with others. New York City launched a program in 2009 to benchmark building energy performance. However, the focus is only on privately-owned large buildings which are only a portion of the overall affordable housing stock in New York City. Therefore, energy performance data is still unavailable for a large number of affordable housing buildings. For the benchmarking data that is available, there is no platform provided to building owners and managers to compare its own building performance and with other similar buildings. In addition, the data collected from building owners or managers hasn't been aggregated and analyzed to provide affordable housing decision-makers with a foundation for designing future energy efficiency strategies.

Information gap - A wide range of participants are involved in improving the energy efficiency in affordable housing. The lack of information communication channels between participants causes ignorance of cost effective energy efficiency programs and funding

sources and disconnects plan and implementation process. Various energy efficiency programs have existed for over a decade. However, there is misinformation and little awareness within the Public Housing and other affordable housing community about how those programs operate and their potential savings. This lack of information discourages making many energy efficiency improvements in affordable housing.¹⁵⁴

Varied rules and limits – The affordable housing market is a mix of different programs operated by various federal, state, and local agencies and government-sponsored enterprises. Each of them has its own sets of rules and income limits which creates a complex system for achieving energy improvements and designing effective energy efficiency incentives.

Energy efficiency education programs – Currently, most energy efficiency education programs are focused on changing tenants' behavior. There is a lack of training for building managers and owners on the latest energy efficiency technologies and available funding resources. Although behavioral change is an important measure in conserving energy, training focused on building owners and managers could drive energy efficiency design and retrofitting in affordable housings.

Policy Barriers

Alignment- The current affordable housing policy structure does not effectively incorporate energy efficiency considerations. For example, under Section 8, a family pays 30% of their income on rent to the landlord and the landlord receives the remaining difference between the payment and the market rent rate from housing authorities like NYCHA. The utility bill subsidies are paid to either the landlord or tenants, whoever pays the utility. The subsidy amount is set by the expected energy use in the area where the housing is located instead of the actual energy use. This provides no incentives for either the landlord or the tenants to conserve energy.

Coverage- The current energy efficiency policies in NYC are only focused on the existing private sector buildings that are larger than 50,000 square feet or on multiple private buildings on a single lot that are larger than 100,000 square feet. However, affordable housing spans all building types from single family detached to high-rise structures to mix use development. Furthermore, the gross square footage of affordable housing varies. The

percentage of affordable housing covered by these efficiency policies remains unknown. This impedes the performance evaluation of those energy efficiency policies.

Compliance- On a national scale, energy code compliance is fairly low. According to the McKinsey report, the nationwide compliance rate ranges from 40% to 60%¹⁵⁵. This low compliance rate is due to a lack of manpower investment and training. Among the four energy efficiency policies in NYC, only LL84, the benchmarking policy has tracked its compliance rate which is 75%. Even though the Energy Conservation Code has a compliance goal which is 90% by 2017, it is not clear how compliance can be improved to meet this goal¹⁵⁶.

Financial barriers

Substantial upfront investment – Energy efficient technologies are typically more expensive than less efficient alternatives. Although energy efficiency upgrades usually pay for themselves over their lifetime, many require a substantial upfront investment which poses financial challenges.¹⁵⁷ Building owners may not be willing or able to justify paying these large upfront sums.

Transaction costs – In addition to the large capital investment, energy efficiency projects also incur transaction costs, which can be substantial. Transaction costs include costs related to making the investment, administration, operation and maintenance, measurement and verification of project performance, and the time required to put the project together. While transaction costs will vary by project, they generally account for 10-30% of the total energy efficiency project cost¹⁵⁸.

Underfunding of existing programs – As we discussed in Chapter 2, New York City has a myriad of existing programs that could be leveraged to improve energy efficiency in affordable housing. However, funding for these efforts has not been sufficient to capture the full technical potential for energy savings. For example, NYCHA proposed a \$300 million Energy Performance Based Contracting program to HUD in 2009. The program would allow NYCHA to install efficient lighting, water heaters, and programmable thermostats and get reimbursed gradually through HUD's utility payments. A year later, based on HUD mandates NYCHA scaled back the plan to \$200 million. Negotiations stalled and NYCHA eventually abandoned the plan. They later developed a smaller plan totaling \$17 million with funding assistance from the local utility, ConEdison¹⁵⁹. This is just one example of how

these government programs must be properly funded to address the scale of energy efficiency opportunities in New York City.

Tenant-Landlord split incentive– Achieving energy efficiency upgrades in rental units is difficult when the landlord is responsible for the maintenance of the building and tenants are responsible for paying their utility bill. In this situation, the landlord has the ability to upgrade to more efficient systems, but would receive no financial benefit from doing so and could not recoup their investment. Conversely, the tenants are incentivized to reduce their energy use to lower their monthly bills, but are not able to make major changes to the building systems. It is therefore said that the incentives for energy efficiency are “split” between the landlord and utility-paying tenant, preventing investments in energy efficiency projects¹⁶⁰.

2. Solutions to Energy Efficiency in Affordable Housing

Solutions and opportunities are available to overcome these barriers and to achieve the full potential of energy savings. Solutions and opportunities existing can either apply to a national scale or be specific to local scale. The solutions can be categorized into following groups:

Communication

Due to the existing information gap, awareness of and knowledge about energy saving opportunities and the funding sources are essential to connect key participants in energy efficiency programs and enable tenants and affordable housing owners or developers to conserve energy. Ways to facilitate the communication could be providing public education campaign on information about Energy Star and accessible energy efficiency audits and assessment. In addition, a knowledge center that gives explicitly direction on existing energy efficiency incentives and their requirement could be extremely helpful. And instead of providing overwhelming information, this center can design suitable incentives package for specific participant to reduce the complexity and confusing barriers.

Incentives and financing

The substantial upfront investment needed to capture energy efficiency potential poses financial barrier for implementation of energy efficiency programs. End-user funding for energy efficiency by tenants and affordable housing developers or owners has proven difficult. A range of financing vehicles and incentives can reduce this financial barrier such as tax and cash incentives, tiered electricity pricing, and externality pricing¹⁶¹. For example, partial monetary incentives reduce initial upfront cost which increases direct funding by end-users. Energy Service Companies (ESCOs) also offer building owners a path to greater energy efficiency with guaranteed cost savings. The ESCO performs and sometimes arranges financing for the energy efficiency upgrade, and recoups their costs through a share of the building owner's monthly utility savings. The building owner is guaranteed a lower energy bill to recoup their investments. This business agreement is called a "performance contract"¹⁶².

Codes and standards

Affordable housing developers or owners generally have a low awareness or willingness to invest in energy efficiency. Expanding and enforcing mandated building codes, equipment standards and energy audits could ensure the greater capture of potential energy savings.

Engagement

Collaboration between key participants in energy efficiency programs has proven to be effective to address non-capital barriers. At the municipal level, those key participants include the Mayor or county executives, city or county councils, local and regional planning organizations, private developers and non-profit organizations, state energy offices and public utility commissions, government agency, ESCOs, utilities and other energy efficiency program administrators. Designing and executing a systematic approach to energy efficiency and fostering innovation in energy efficiency technologies require a great alignment among those key participants in energy efficiency programs. Specific strategies that ensuring the success of this significant collaboration need to address the following three aspects¹⁶³:

Utility regulation- It is a prerequisite to align utility regulation with the goal of greater energy efficiency. Because the primary goal for utilities is to meet the energy demand of their customers as well as provide a return for their shareholders, fully supporting energy efficiency efforts might not be in their best financial interest. Therefore, in order to mitigate the potential conflicts, utility regulation needs to be aligned with the goal of greater energy

efficiency; the utility's rate structure must allow them to meet their legal obligations and earn a return on investment while reducing the electricity demand of their customers.

Program evaluation – Due to the complex nature of tracking energy savings, stakeholders must develop procedures to measure and verify that the net energy savings of adopted programs and individual projects are achieving their anticipated savings. Options could be providing consistent, simple inputs and impact assurance to stakeholders.

3. Conclusion

In conclusion, achieving greater levels of energy efficiency in affordable housing buildings is a challenge because of informational, financial, and policy barriers. Building owners are not always aware of their potential energy savings and the government programs available to assist them with these projects. They also face high upfront capital costs which prevent investment in projects even when their net present value is positive. Energy efficiency upgrades are also complicated by the tenant-landlord dynamic, a particularly relevant issue because of the prevalence of rental units in New York City's affordable housing stock. Furthermore, there is a need to better align energy efficiency policies such as NYC's sustainability plan with affordable housing programs.

Overcoming these barriers will require increased communication to tenants and building owners about energy efficiency upgrade options, and expanded financing options through both government programs and ESCOs. Current government energy efficiency programs would benefit from greater industry collaboration as well as more rigorous evaluation and tracking of program impacts. Specific policy recommendations for the major affordable housing programs in New York City can be found in the Appendix.

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Appendix

- 421-a Tax Incentive
- J51 Tax Incentive
- Low Income Housing Tax Credit
- Major Capital Improvement Provision
- Submetering
- Public Housing
- Rent Regulation
- Mitchell-Lama
- Section 8

421-a TAX INCENTIVE



ABREVIATION

421-a

ADMINISTERED BY

New York City
Department of Housing
Preservation &
Development

ELIGIBLE PARTIES

For-Profit, Non-Profit
Developers

PROPERTY OCCUPANCY

Vacant

PROPERTY TYPE

Land

BUILDING TYPE

Multi-family

CONSTRUCTION TYPE

New Construction

OCCUPANT TENURE

Rental

OCCUPANT INCOME RESTRICTION

Very Low-Income to
Moderate-Income

PROGRAM BASICS

Developers who construct new multi-family residential buildings in New York City qualify for a state and city property tax break (421-a). The city and state forgo the property tax increase that would normally occur during the construction phase and once the project is complete; the developer pays property taxes as if the lot were still vacant. Developers who build within defined “Geographic Exclusion Areas” must dedicate 20% of their units for families earning less than 60% of MFI (low-income) in order to qualify for the tax break. These exclusionary zones include the island of Manhattan, and parts of the other four boroughs. The tax incentive is financed by the New York State Housing Finance Agency and administered in New York City by the Department of Housing Preservation and Development (HPD).

CONFOUNDING FACTORS

The 421-a tax incentive encourages the construction of affordable housing without consideration for the efficiency levels of those buildings. While this program does increase the supply of affordable rental units in New York City, it does not ensure that tenants will have affordable utility bills today or in the future.

POLICY RECOMMENDATIONS

To encourage construction of more energy efficient affordable housing units, eligibility for the 421-a tax incentive should be tied to the energy efficiency of the development. New York City’s Local Law 87 requires all new buildings larger than 50,000 square feet to comply with updated building codes, which include regularly updated efficiency standards. However, not all buildings remain in compliance with this law. We recommend that only buildings that comply with the most recent building codes should receive the 421-a tax credit each year. Linking the 421-a tax incentive and Local Law 87 can improve the energy performance of these buildings while providing a financial incentive to comply with the law.

For those buildings not covered under Local Law 87 (less than 50,000 square feet), annual receipt of the 421-a tax incentive should be contingent upon regular energy audits. These audits may be performed by private auditors or state/local agencies. Building owners will have to show proof of compliance to HPD.

If implemented, these recommendations will improve the efficiency of the entire building, including affordable and market rate rental units.

J-51 TAX INCENTIVE



ABREVIATION

J-51

ADMINISTERED BY

New York City
Department of Housing
Preservation and
Development

ELIGIBLE PARTIES

For-Profit, Non-Profit
Developers

BUILDING TYPE

Multi-family

CONSTRUCTION TYPE

Rehabilitation

OCCUPANT TENURE

Rental

OCCUPANT INCOME RESTRICTION

Varies

PROGRAM BASICS

The J-51 Tax Incentive program encourages rehabilitation and upgrading of multi-family housing and the conversion of non-residential buildings into multi-family housing. Developers of eligible projects receive a 34-year or 14-year exemption from the local real estate tax increases that they would have incurred as a result of the construction. They also receive an annual real estate tax abatement for 20 years equal to 8.3% or 12.5% of the project costs. Developers who rehabilitate or convert units to affordable housing typically qualify for the 34-year real estate tax exemption. This program is administered by the New York City Department of Housing Preservation and Development (HPD). In exchange for these tax benefits, the units automatically become subject to Rent Regulation.

CONFOUNDING FACTORS

The J-51 tax incentive encourages the rehabilitation and creation of affordable housing without consideration for the efficiency levels of those buildings. While this program does increase the supply of affordable rental units in New York City, it does not ensure that tenants will have affordable utility bills today or in the future.

POLICY RECOMMENDATIONS

To encourage improved energy efficiency of affordable housing units, eligibility for the J-51 tax incentive should be tied to the energy efficiency of the development. New York City's Local Law 87 requires all new buildings larger than 50,000 square feet to comply with updated building codes, which include regularly updated efficiency standards. However, not all buildings remain in compliance with this law. We recommend that only buildings that comply with the most recent building codes should receive the J-51 tax credit each year. Linking the J-51 tax incentive and Local Law 87 can improve the energy performance of these buildings while providing a financial incentive to comply with the law.

For those buildings not covered under Local Law 87 (less than 50,000 square feet), annual receipt of the J-51 tax incentive should be contingent upon regular energy audits. These audits may be performed by private auditors or state/local agencies. Building owners will have to show proof of compliance to HPD.

If implemented, these recommendations will improve the efficiency of the entire building, including affordable and market rate rental units. These requirements should not create unfair burdens on the tenants because the units will be rent regulated.

LOW-INCOME HOUSING TAX CREDIT



ABBREVIATION

LIHTC

ADMINISTERED BY

U.S. Internal Revenue Service

ELIGIBLE PARTIES

For-Profit, Non-Profit Developers

PROPERTY OCCUPANCY

Occupied, Vacant

PROPERTY TYPE

Land, Building

BUILDING TYPE

Multi-family

CONSTRUCTION TYPE

New Construction, Rehabilitation

OCCUPANT TENURE

Rental

OCCUPANT INCOME RESTRICTION

Very Low-Income to Low Income

PROGRAM BASICS

The Low-Income Housing Tax Credit (LIHTC) is a politically popular incentive for developers that is spurring affordable housing creation across the U.S. Since 1986, developers who set aside a portion of their building for low-income and very low-income families can receive a tax credit for a portion of their development costs. The federal program is administered by the IRS, which allocates tax credits to the Division of Housing and Community Renewal (DHCR) at the state level, which in turn allocates them to the Department of Housing Preservation & Development for New York City developments. In New York City, developers must set aside 20% of their units for low-income families. Credits are available for 9% or 4% of development costs. Developers are awarded 9% credits through a competitive points system, while 4% credits are allocated according to the city's Qualified Allocation Plan. A developer can sell ("syndicate") their tax credit to a private investor if they do not have the tax liability to use it themselves, and use those funds towards the project.

CONFOUNDING FACTORS

The federal LIHTC program encourages the construction of affordable housing without consideration for the efficiency levels of those buildings. While this program does increase the supply of affordable rental units across the U.S., it does not ensure that tenants will have affordable utility bills today or in the future.

New York City has addressed this issue by explicitly incorporating energy efficiency into its LIHTC allocation criteria. In order to be considered for the tax credit, a project in New York City must meet 10 Threshold Criteria, one of which is being certified as an Enterprise Green Community. This certification mandates, among other things, that developers meet certain energy efficiency standards. Developers can also earn bonus points for additional energy use reduction, installing submeters, and designing to interface with the smart grid. If a project meets the Threshold Criteria it moves on to the Competitive points-based process with separate criteria.

POLICY RECOMMENDATIONS

DHCR has taken an important step in promoting energy efficiency by requiring the Enterprise Green Community certification in order for a project to be eligible for the competitive process. However, the LIHTC Competitive Criteria themselves do not reward energy efficiency; exceeding the minimum certification mandates does not provide a competitive advantage. BBNY should encourage DHCR to award Competitive Criteria points for those projects that exceeded the minimum Enterprise Green Community certification requirements.

MAJOR CAPITAL IMPROVEMENT PROVISION



PROGRAM BASICS

ABBREVIATION
MCI

The Major Capital Improvement (MCI) provision is contained within the Rent Regulation law, which is administered by the New York State Division of Housing and Community Renewal (DHCR).

ADMINISTERED BY
New York State
Department of Homes
and Community
Renewable

The MCI enables building owners to increase the rents of tenants when improvements or installations are made to a rent-regulated or rent-controlled building subject to approval by the DHCR. The increased rents are based on actual, verified cost of improvement or installation including boilers, windows, electrical rewiring, plumbing and roofs.

ELIGIBLE PARTIES

For-Profit
Non-Profit

CONFOUNDING FACTORS

PROPERTY OCCUPANCY
Occupied

Applying the MCI provision to energy efficiency projects can lead to an inequitable distribution of costs and benefits. In the case where the landlord pays the electricity bill, tenants pay a fixed electricity fee set by the Rent Guidelines Board, which is included in their rent. After an energy efficiency project has been installed, the landlord benefits from lower electricity bills. The tenants are then burdened by higher rents according to the MCI process, but see no reduction in energy bills. The landlords receive the benefits of energy savings and recovering project costs. The MCI provision does not take into account whether financial benefits are accruing to the landlord from the capital project.

PROPERTY TYPE
Rent regulation
buildings

POLICY RECOMMENDATIONS

BUILDING TYPE
Multifamily

The application process for an MCI approval should be modified in order to quantify potential energy savings from the proposed project. Landlords are already required to deduct certain funding streams from their eligible recoverable costs. For example, credits applied against a cooperative reserve fund or government grants must be subtracted from project costs before the rent increase can be calculated.

CONSTRUCTION TYPE
Rehabilitation

OCCUPANT TENURE
Rental

For energy efficiency related improvements, expected energy savings from the MCI should be included as an additional deduction from claimed MCI costs. Landlords should be required to quantify the energy savings that will accrue to them over the following 7 years (to remain consistent with the current calculation method). If the project has a payback period of less than 7 years, there will be no eligible costs remaining to warrant a rent increase. For projects with longer payback periods, the building owners will be able to recover some of the project costs, but the burden on the tenants will be reduced.

OCCUPANT INCOME
RESTRICTION
None

SUBMETERING



APPROVED BY

New York State
Department of Homes
and Community
Renewal

PROPERTY OCCUPANCY

Occupied

PROPERTY TYPE

Rent Regulated
Buildings

BUILDING TYPE

Multi-family

OCCUPANT TENURE

Rental

OCCUPANT INCOME RESTRICTION

Varies

PROGRAM BASICS

Submetering is an electricity monitoring configuration that allows consumption to be measured at the individual apartment level. Some rent-regulated buildings are master-metered. This means that the electricity consumption for the entire building is measured in aggregate through one meter, and the building owner receives one bill, typically at the utility's commercial rate. Tenants receive a uniform energy charge included in their rent, which does not reflect their individual consumption.

In a submetering configuration, the building owner installs and owns meters on each unit. The owner still receives one utility bill, but is able to apportion electricity charges to tenants based on actual usage. This creates incentives for tenants to conserve electricity and is shown to reduce building-wide consumption by 10-26%.

CONFOUNDING FACTORS

Switching from master-metering to submetering may increase costs for tenants. The uniform energy charge will be replaced with a consumption based charge, which may be higher or lower. While building owners continue to pay the utility's commercial rate, they are permitted to charge tenants an amount higher than the commercial rate, but not to exceed the utility's retail rate. Without the ability to charge higher rates, owners could not recover their initial investment in submetering and would be unlikely to pursue that option.

In order to switch to submetering, a building owner must receive approval from the Department of Housing and Community Renewal (DHCR) through an "Owner's Application for Termination of Rent Inclusion of Electric Current". For the first year after submeters are installed (Stage 1), rents are reduced based on a schedule set by the DHCR. These reductions levels have been criticized as insufficient. After one year, rents are permanently reduced to pass along the owner's savings to tenants (Stage 2).

POLICY RECOMMENDATIONS

BBNY should pursue policy options that encourage submetering in rent regulated buildings while mitigating costs to tenants.

- Newly submetered tenants should be provided with educational materials on energy conservation strategies to reduce their utility costs.
- DHCR appears to be revising its Stage 1 rent reduction schedule. BBNY should engage with DHCR in this process to ensure tenants' concerns are being considered.
- NYSERDA currently offers a cash incentive for 50% of advanced meter costs. New York City should develop a complementary grant or low-interest loan program to further subsidize meters.

PUBLIC HOUSING



PROGRAM SIZE

180,000 units

ADMINISTERED BY

New York City
Housing Authority

PROPERTY OCCUPANCY

Occupied
Vacant

PROPERTY TYPE

Land
Building

BUILDING TYPE

Multi-family

CONSTRUCTION TYPE

Rehabilitation
New Construction

OCCUPANT TENURE

Rental

OCCUPANT INCOME RESTRICTION

Very Low-Income
Low-Income
Middle-Income

PROGRAM BASICS

Public Housing is owned and operated by a government entity for the purpose of providing affordable housing units for low-income residents. Public housing is also commonly referred to as a “project”. In 1935, New York City implemented the first public housing project in the United States. The program has subsequently grown to about 180,000 units; 1 in 20 New Yorkers currently live in public housing. These buildings are managed and maintained by the New York City Housing Authority (NYCHA), with federal funds from the Department of Housing and Urban Development (HUD). Public housing units are permanently designated as affordable. However, no new public housing units can be constructed due to a 1974 federal moratorium. There is an 8 year waitlist to get into public housing.

NYCHA is fully committed to providing safe, affordable housing for more than 400,000 residents in a cost efficient and environmentally conscious manner and aims to become a leader among landlords when it comes to advancing PlaNYC. Twenty-five NYCHA buildings participate in a pilot residential energy tracking program called Municipal Entrepreneurial Testing System to monitor energy and water usage in June 2012.

CONFOUNDING FACTORS

The majority of publicly own housing units do not have submeters. Therefore, NYCHA has limited options to incentivize energy conservation since tenants do not pay utility bills based on their energy usage. NYCHA also lacks proper data on the energy efficiency levels of their public housing building stock. Their “Green Agenda” does not currently include benchmarking of public housing energy consumption or set goals for energy use reduction.

NYCHA also lacks sufficient funding to capture all of the energy efficiency improvement potential in public housing. Upgrade plans have not been fully funded by HUD. It need to corporate more with ESCOs and expanding its funds sources.

RECOMMENDATIONS

BBNY should encourage NYCHA to:

- Expand pilot energy tracking program to all public housing buildings.
- Set long term and intermediate goals for the energy and GHG emission reduction in public housing.
- Install submetering to give NYCHA operational control in monitoring and encouraging tenants’ energy conservation behaviors.
- Pursue more partnerships with Energy Service Companies (ESCOs) to expand their funding sources for energy efficiency upgrades in public housing.

RENT REGULATION



ALTERNATIVE NAMES

Rent Control
Rent Stabilization

ADMINISTERED BY

New York State
Department of Homes
and Community
Renewal

ELIGIBLE PARTIES

For-Profit
Non-Profit

PROPERTY OCCUPANCY

Occupied

PROPERTY TYPE

Building

BUILDING TYPE

Multi-family

OCCUPANT TENURE

Rental

OCCUPANT INCOME RESTRICTION

Varies

PROGRAM BASICS

Rent Regulation is the general term for two policies that govern rental rate setting in New York City – Rent Control and Rent Stabilization. Rent Control is the older of the two rent regulation laws and applies only to pre-1947 residential buildings. Few units still fall under this program (less than 50,000). Rent Stabilization was instituted in 1969 and applies to multi-family apartment buildings constructed between 1947 and 1974. Tenants who live in pre-1947 apartments that moved in since 1971 are also covered by the rent stabilization law. J-51 and 421-a tax benefits or other subsidies for apartment building construction or renovation also require developers to participate in rent stabilization. Landlords of rent stabilized apartments are restricted in how much they can increase rents. In New York City, the Rent Guidelines Board collects data on costs for landlords and tenants and sets a maximum rental increase, typically 3% -5% annually. In addition to that, rent stabilization protects tenants in required service access, one or two years lease renew and eviction protection.

CONFOUNDING FACTORS

Both Rent Control and Rent Stabilization leave limited space to incentive landlords make energy efficiency improvements. With consideration of the large upfront capital cost and relatively long pay-back period of most energy efficiency practices, the 3%-5% increase for rent stabilization program and up to 7.5% increase for rent control program limit the amount of money landlords can get from rent increase and the financial burden might be distributed unevenly between landlords and tenants. Also, as the income of tenants covered by Rent Regulation varied from low-income to middle income, the range of rent change is too narrow. In addition, this program provides no collaboration with other energy efficiency programs and has not integrated energy efficiency into its current calculation of rent changes.

POLICY RECOMMENDATIONS

Energy performance data should be integrated into the calculation of rental rate increases for Rent Regulated units. BBNY should collaborate with the Rent Guidelines Board in upgrading the rent increase calculation system. See the Major Capital Improvement Provision factsheet for an example of incorporating energy efficiency savings into rent regulation calculations.

MITCHELL-LAMA

APARTMENT UNITS
105,000

ADMINISTERED BY
New York State
Department of Homes
and Community
Renewal (DHCR)

ELIGIBLE PARTIES

For-Profit
Non-Profit

PROPERTY OCCUPANCY
Occupied

PROPERTY TYPE
Building

BUILDING TYPE
Multi-family

CONSTRUCTION TYPE
Rehabilitation
New Construction

OCCUPANT TENURE
Rental
Homeownership

OCCUPANT INCOME
RESTRICTION
Moderate-Income

PROGRAM BASICS

Founded in 1955, the Mitchell-Lama program is a series of incentives provided by New York City and state to developers that build affordable housing units. Developers receive tax breaks, low-interest mortgages, and other subsidies in exchange for maintaining units with certain limits on rent, residents' income, and profits. Mitchell-Lama developments are targeted to moderate and middle income families and are regulated by the state Department of Homes and Community Renewal (DHCR) and New York City Department of Housing Preservation and Development (HPD). Families qualify for Mitchell-Lama housing on a building by building basis, as rents vary. The building operators charge rent based on operating cost and an approved rate of return.

CONFOUNDING FACTORS

The Mitchell-Lama program provides developers with tax breaks, low-interest mortgages and other subsidies without any energy efficiency upgrade requirements. The main focus of the program is the preservation of affordable housing, with limited consideration for regulating further energy efficiency upgrades in Mitchell-Lama housing. Additionally, the refinancing loan provided by the Empire Housing Fund Program (EHF) and the Project Improvement Program does not incorporate any incentives for energy efficiency improvements in these developments.

Owners of Mitchell-Lama developments who want to make building improvements, including energy efficiency upgrades, can apply for a loan through the New York State Housing Finance Agency's (HFA) Mitchell-Lama Rehabilitation and Preservation (RAP) Program. Recipients are required to keep rents affordable for an additional 40 years. As most Mitchell-Lama developments are becoming eligible for buyout, this extended affordability provision may not be an attractive option to building owners and would limit participation in the program. For those building owners who do participate in the program, its effectiveness in encouraging energy efficiency improvements is not measured.

The Mitchell-Lama program also does not provide any incentives for tenants to conserve energy.

POLICY RECOMMENDATIONS

- BBNY should reach out to HFA to evaluate the effectiveness of RAP in attracting Mitchell-Lama owners and improving energy efficiency.
- For the refinancing no-interest loans, prioritized positions should be given to Mitchell-Lama program developers who make energy efficiency upgrade commitments.
- Given the 8-year long waitlist for Mitchell-Lama programs for applicants, the administration can bundle the application process with energy efficiency behavioral change education programs. Applicants should get a prioritized queue on the waitlist if they attend energy efficiency education programs.

SECTION 8 HOUSING CHOICE VOUCHERS



ABREVIATION

HCV

UNITS

270,000 families

ADMINISTERED BY

US Department of Housing and Urban Development

HPD, HCR, NYCHA

ELIGIBLE PARTIES

For-Profit

Non-Profit

PROPERTY OCCUPANCY

Occupied

PROPERTY TYPE

Building

BUILDING TYPE

Multi-family, One- to Four-family

OCCUPANT TENURE

Rental

OCCUPANT INCOME RESTRICTION

Low-Income

PROGRAM BASICS

The Section 8 Housing Choice Voucher (HCV) Program provides a subsidy to low-income families to help them pay the rent or mortgage. Unlike the Public Housing program, Section 8 vouchers allow families to select units in the private housing market. The Department of Housing and Urban Development (HUD) provides funding to local housing agencies who distribute vouchers to eligible families. The family then provides this voucher to their landlord. The family pays 30% of their income on rent to the landlord, and the landlord collects the remaining difference between the family's payment and the market rent from the Department of Housing Preservation and Development (HPD), The Department of Housing and Community Renewal (HCR), or the New York City Housing Authority (NYCHA). This difference is called the Housing Assistance Payment.

CONFOUNDING FACTORS

Since 1974, Section 8 has worked effectively to provide affordable housing for over 270,000 families. However, it has fallen short in meeting the need for energy efficiency improvements in affordable housing. In terms of energy efficiency upgrades, the current Section 8 HCV program provides no incentives for families or landlords. In the private housing market, the energy bill may or may not be bundled with the rent, but in either condition, Section 8 HCV program contributes little to encourage adoption of energy efficiency upgrades. In addition, the Section 8 HCV program does not coordinate with other energy efficiency program like energy efficiency education.

POLICY RECOMMENDATIONS

The Section 8 HCV program could develop a subordinate rental bonus program that provides 1-5% extra bonus to a family or landlord who pays for an energy efficiency upgrade. If the family pays for an energy efficiency upgrade, then they can save 1-5% of their income (pay 25%-29% of their income) on rent to landlord, and HCV will pay for the extra rent difference. If the landlord pays for the energy efficiency upgrades, then the family still pays 30% of their income on rent to landlord, but HCV will pay extra money that equal to 1-5% of the family's income to the landlord as a bonus.

In addition, a mandatory education program can be bundled to this bonus program. A family or landlord who benefits from this bonus program has to participate in existing public education programs for energy efficiency and conservation.

The Section 8 program has a long waitlist of applicants. To incentivize behavioral energy efficiency changes in tenants, families who participate in energy efficiency education programs should receive a prioritized queue position on the waitlist.