Understanding the Housing Affordability Risk Posed by Building Performance Policies

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ABSTRACT

To meet ambitious climate goals, leading local and state governments are adopting ambitious energy efficiency policies that require building owners to make substantial capital investments in their properties. In affordable multifamily buildings, these costs could threaten the viability of owners' operations, result in financial burdens for low-income residents, and disproportionately impact communities of color, exacerbating economic and racial inequities. To avoid burdening these parties, jurisdictions could exempt affordable housing from energy performance policies; however, this approach leaves significant energy savings on the table and prevents low-income residents from enjoying the benefits of energy improvements, lower utility bills, enhanced comfort and improved air quality. This paper lays out a methodology for jurisdictions wishing to estimate the scale of the problem by quantifying the number of affordable multifamily buildings and units, segmented by affordable housing categories, which would be affected by different possible policies, using as examples three U.S. cities with different population sizes, building stocks, and climatic zones. This paper then assesses the potential costs of improving energy performance in multifamily affordable housing, over the different phases of a building's lifecycle, to provide rough cost estimates for compliance with building performance standard (BPS) policies. Finally, the paper identifies potential solutions for improving the development of a BPS and the other efforts that jurisdictions can make to facilitate the improved energy performance of affordable housing. This paper hopes to help jurisdictions design policies and budget for programs to enable affordable housing to benefit from building performance standards without increasing total cost of occupancy or undermining the viability of naturally occurring affordable housing (NOAH).

Introduction

U.S. cities are acting with increasing urgency to enact policies and programs that reduce energy use and greenhouse gas emissions from buildings. Buildings are typically responsible for the majority of greenhouse gas emissions in urban areas. The District of Columbia, New York City, St. Louis, and Washington state are at the vanguard of this movement, having adopted building performance standards (BPS) laws that set minimum requirements for how existing buildings perform in terms of greenhouse gas emissions (in the case of New York City) and energy consumption (in the other three cases). Buildings that perform below the minimum standards will be required to improve through operational improvements or capital investments.

The jurisdictions of Boston, Cambridge, Los Angeles, and Montgomery County, MD, are working to develop BPS laws of their own with more cities likely to follow suit.

At the same time that cities are mobilizing to reduce carbon emissions from buildings, they also face a crisis in the affordability of housing, particularly for low-income people and people of color. This crisis has only been exacerbated by the COVID-19 pandemic and the ensuing economic recession. By requiring energy improvements in multifamily buildings that house low-income people, jurisdictions risk exacerbating the housing affordability crisis and the current recession by imposing more costs on the buildings' owners. These costs could strain the economic viability of these buildings, which could result in higher rents for tenants, redevelopment of the properties, and increasing rates of displacement for low-income communities.

Given these complications, cities may decide to exempt affordable multifamily buildings from the requirements of their building performance standards; however, this decision may worsen another inequity. Low-income renters tend to bear a higher energy cost burden than more affluent people. This dynamic results not only from utility costs taking up a higher proportion of lower incomes, but also because from the fact that utility costs in low-income households are higher per square foot than the average (Ross, 2020). Energy efficiency could alleviate this energy burden and lower the total cost of housing for low-income residents; however, this outcome depends on how the costs and benefits of energy improvements are allocated between owner and tenant.

This paper identifies common types of affordable multifamily buildings and investigates the scale at which building performance standards could jeopardize their affordability. After establishing these risks, the authors attempt to isolate the scope of potential problems by analyzing building data from a number of jurisdictions to estimate how many affordable multifamily buildings would be affected by proposed or hypothetical building performance standards. The paper then describes an analysis, developed by a New York City nonprofit, that estimates potential costs and paybacks of implementing packages of energy conservation measures for multifamily buildings. This approach could be used by other jurisdictions to understand the general magnitude of costs that affordable multifamily buildings might incur in complying with BPS requirements. The need for such cost estimates is not theoretical. When Washington, DC adopted its BPS, it added a fee to customer utility bills and used some of the resulting revenue to budget $3 million per year to help owners of affordable housing and rent controlled buildings comply with the BPS. In the absence of an estimate of the investment required to bring these buildings into compliance, the $3 million figure was the product of a political compromise and is likely much less than will be needed.

The paper concludes with recommendations on how jurisdictions developing building performance standards could mitigate risks for affordable property owners and tenants alike while maximizing the potential benefits of improved energy performance in affordable housing.

Defining the Affordable Housing Landscape

At the highest level, there are two main categories of affordable multifamily housing: subsidized and unsubsidized (often referred to as "naturally occurring" affordable housing).

Subsidized Housing

Housing subsidies are mainly supported through a collection of programs overseen by the U.S. Department of Housing and Urban Development (HUD) that offer assistance to residents

with income below 80 percent of the Area Median Income (AMI). These programs can be sorted into two broad categories: those that support privately owned properties and those that support publicly owned ones.

Privately Owned Properties

HUD's Section 8 Housing Choice Voucher program issues vouchers to eligible families who then select a house or apartment where the owner agrees to participate in the program. Local public housing agencies (which administer the program on HUD's behalf) pay a housing subsidy directly to the property owner, and the family pays the difference between the full rent and the subsidy. By law, 75 percent of voucher recipients must have incomes no greater than 30 percent of AMI, and no recipient of the program can have an income greater than 50 percent of AMI.

Another privately owned program provides tax credits to private-sector property owners. The Low Income Housing Tax Credit (LIHTC) program distributes tax credits for "acquisition, rehabilitation, or new construction" of rental housing for low-income households. LIHTC properties must offer a rental fee to eligible renters (usually households making no more than 50 or 60 percent of AMI) that is lower than market rate for the area. Owners of LIHTC buildings must maintain rent and income requirements for 15–30 years or the tax credits are reclaimed (Tax Policy Center, n.d.).

Publicly Owned Properties

HUD sends federal aid to approximately 3,300 Public Housing Agencies that own and operate housing for low-income households. Federal law requires that public housing residents' rent and utility costs should not exceed 30 percent of the household's adjusted monthly income. In public housing buildings with individually metered units, PHAs offer utility allowances to cover residents' expected utility costs. Public housing, which is funded by appropriations from the U.S. Congress, faces a backlog of needed capital improvements greater than $45 billion (National Housing Law Project, n.d.).

Unsubsidized Housing

A multifamily property is considered "naturally occurring" affordable housing (NOAH) if it is affordable to low-income households. NOAH multifamily properties may house tenants with Section 8 Housing Choice Vouchers, but because these subsidies travel with the tenant, the building may not be considered subsidized. Because NOAH buildings tend to be older and in poorer condition than market-rate buildings, those covered by a building performance standard may be more likely to need expensive capital improvements to comply. This predisposition increases the likelihood that the costs for these improvements will be passed through to tenants in the form of higher rents, particularly when the tenants are paying the energy bills, since the landlord has minimal other ways of getting a benefit from her investment. Unless a jurisdiction has tenant protection laws that limit annual rent increases, BPS laws may present an especially high risk of leading to rent hikes and displacement of low-income tenants when applied to NOAH buildings.

For NOAH multifamily buildings, a BPS should be structured so that the total cost of housing for tenants remains the same or decreases. This means that if required building improvements cause a tenant to save more in out-of-pocket energy costs than she pays in increased rent, the policy was a success from a housing affordability perspective.

Implications for how BPS Requirements May Affect Each Type

In general, affordable housing buildings face two main challenges in complying with building performance standards: financial difficulties caused by low cash flow and a difficult lending environment, and lack of staff capacity to manage energy consumption in operations management and capital planning.

Financial Barriers

Affordable buildings typically generate low cash flow. This means that few of these buildings will be able to use cash reserves to cover the costs of energy improvements to comply with a performance standard. Even those buildings required by HUD rules to keep reserve funds (National Housing Trust, 2019), often do not have enough to pay for capital improvements. The problem is exacerbated by the fact that limited cash flows and restrictions on new debt imposed by holders of the mortgage make it difficult for these buildings to attract debt capital, especially in between the building's regular refinancing cycles.

Subsidized buildings that receive utility allowances based on the metered consumption of tenants are at another disadvantage in that an energy retrofit will result in a reduction of the utility allowance, eliminating the owner's opportunity to recoup the cost of the energy investment.

NOAH buildings bear the most risk of rent increases from the potential costs of complying with a building performance standard. Unlike subsidized buildings, NOAH buildings do not have any requirements to maintain a certain level of affordability, so they are likely to increase rents to cover the cost of retrofits if they are not master metered and directly receive the energy bill savings (National Housing Trust, 2019).

Limited Staff Capacity

Affordable multifamily housing properties are less likely to be able to bring on staff with expertise in energy-efficient operations. Competing priorities and a limited number of staff hours (especially outside of the infrequent windows when mortgages are refinanced and rental covenants are renewed), makes it difficult for the people managing affordable buildings to develop and execute a plan for improving their buildings' performance without disrupting operations. Owners of affordable buildings may also find it challenging to find and work with energy efficiency professionals and evaluate their options for developing and implementing retrofits or to access the financial incentives and other resources that exist to support building owners.

The complexity of executing a retrofit strategy in an apartment building without disturbing tenants is another formidable challenge for owners of affordable buildings. Owners and managers have to find ways to make improvements in common areas and tenant spaces alike, requiring a level of coordination and adaptability that is difficult to achieve even with an abundance of capital and staff resources.

Given the challenges described in this overview of the affordable multifamily housing sector, it is critical that policymakers considering adopting a BPS law should strive to understand in a nuanced way, the type of affordable units in their city's stock. A first step in understanding the risks is to estimate the number of affordable multifamily buildings that the law would cover in order to assess how best to support such buildings while they improve their energy performance as part of the policy design and implementation processes. In order to underline the importance of taking this step, the next section of this paper investigates the number of

affordable multifamily buildings that would be subject to proposed or hypothetical building performance standards in three sample U.S. jurisdictions to illustrate the scale of potential impacts.

Estimating the Potential Impact of BPS on Affordable Multifamily Housing

To assess the impact a BPS law might have on affordable housing, we first attempted to quantify how many buildings and how much square footage might be impacted by likely policy scenarios in three U.S. jurisdictions with different population sizes, building stocks, and climate zones[1], which will be referred to in this paper as Cities A, B, and C.[2] While these descriptive characteristics were not data points that impact the subsequent analysis, the characteristics were included to ensure that the analysis numbers are grounded in the context in which they were developed. The team decided to de-identify the cities as a means to prevent the use of this analysis to argue against ambitious policy adoption.

- City A is located in Climate Zone 4 (ASHRAE Climate Zones, 2011), which includes cities such as Louisville, KY: Nashville, TN; and Richmond, VA. The city has a population between 250,000 and 400,000 people (US Census Bureau QuickFacts, 2020), and its metro area has a per capita personal income of roughly $55,000.
- City B is located in Climate Zone 5 (ASHRAE Climate Zones, 2011), which includes cities such as Pittsburgh, PA; Salt Lake City, UT; and Spokane, WA. The city has a population between 650,000 and 800,000 people, and its metro area has a per capita personal income of roughly $65,000 (US Census Bureau QuickFacts, 2020)
- City C is located in Climate Zone 3 (ASHRAE Climate Zones, 2011), which includes cities such as Atlanta, GA; Dallas, TX; and San Diego, CA. The city has a population between 3.5 million and 5 million people, and its metro area has a per capita personal income of roughly $65,000 (US Census Bureau QuickFacts, 2020).

The following section outlines the methodology that we recommend city governments conduct, in the context of their own knowledge of their city's housing stock, in order to understand where a BPS could intersect with the affordable housing stock, and use the results to guide policy protections and the development of supportive resources.

Methodology

To estimate the number of multifamily affordable housing buildings that would be affected by a BPS law in these three example cities, we replicated a methodology for identifying

[1] The purpose of selecting different climate zones is to emphasize the diversity in these cities.
[2] While we have used real data sets from actual cities, we have been unable to validate these data sets with city officials or other third parties. As such, we prefer to keep the names of the cities anonymous. The challenges we faced in analyzing this data illustrate the paucity of reliable comprehensive data on this topic and the imperative need for cities considering BPS policies to undertake such analysis.

affordable housing properties developed by the National Housing Trust (NHT) for the District of Columbia government for the report, "Recommendations for Implementing the District's Building Energy Performance Standard in Affordable Multifamily Housing." NHT's report provides an excellent starting point for cities and this analysis builds directly on that foundation to show its replicability for other geographies.

To identify affordable properties, two separate datasets were used for subsidized and NOAH buildings: the National Housing Preservation Database (NHPD) and 2016 datasets from Costar Realty Information, Inc., respectively. According to Freddie Mac, "multifamily housing" are residential buildings with more than four living units (Freddie Mac, 2020). Therefore, we excluded all buildings with four or fewer units from this analysis.

We assume that subsidized housing includes Section 8, LIHTC, and Public Housing. Within the NHPD dataset, subsidies are marked as either "active," "inconclusive," or "inactive." Only buildings with "active" and "inconclusive" subsidies are included in this analysis. Unsubsidized buildings were assumed to fall into the NOAH segment. CoStar assigns a star rating from one to five for each recorded property, which corresponds to the number of amenities offered and the condition of the building. One- and two-star multifamily buildings were used as a proxy to identify NOAH, since, relative to the rest of a city's building stock, these properties are priced lower, due to their construction date, type, amenities offered, etc. (Pyati, 2016). Otherwise, there is no data source for tracking NOAH properties.

For each of the three cities, we assumed two different size thresholds for buildings that would potentially be covered by a BPS, based on precedent with the building performance policies in other jurisdictions: 25,000 square feet and 50,000 square feet. While 25,000 square feet and 50,000 square feet are common thresholds for building performance policies to date, it is important to keep in mind that cities may use different size thresholds for covered buildings if or when they ultimately establish their building performance standards, and this methodology could be used as a way to understand how that policy design decision may impact (positively or negatively) the affordable housing stock in the city. As BPS policy design is in a relatively early stage, with only a few enacted examples, there is room in the future for BPS policies to include more expansive policy goals than the current models. For the purposes of this analysis, we're envisioning risk in the context of this first generation of BPS policies and the subsequent analysis is intended to provide only an estimate of the relative magnitude of the potential impact such standards may have on affordable housing.

Analysis and Findings

Table numbers correlate to the following cities' multifamily affordable housing estimates: Tables 1–3 for City A; Table 4–6 for City B; and Tables 7–9 for City C. In all geographies, a BPS policy is likely to impact the majority of subsidized affordable housing.

Nearly all subsidized multifamily units in all cities (94–96 percent) will likely be eventually impacted by a BPS policy as the size threshold for square footage decreases. However, in cities B and C, which are relatively large cities, subsidized housing units comprise a fraction (33 percent and 14 percent, respectively) of the cities' total multifamily affordable housing. Without diminishing the importance of subsidized housing for providing resources and shelter to low-income populations, this emphasizes that unsubsidized/NOAH buildings provide a large proportion of the housing in these and other large metropolitan areas, and are therefore NOAH building owners and tenants are critical stakeholders to engage in policy design.

Of the three cities, City B's NOAH buildings will be the most affected by the passage of a BPS policy. Over half of the NOAH units will be affected by a size threshold of 50,000 square feet, and this will increase to three-quarters of NOAH units affected with the passage of a 25,000 square foot size threshold. Conversely, City A's NOAH stock will be the least-affected by the passage of a building performance standard, since it consists exclusively of buildings less than 25,000 square feet. Despite this, City A's overall multifamily affordable housing will be the most-affected overall by a BPS in both size threshold scenarios. Similarly, the vast majority (86 percent) of NOAH buildings in City C are smaller than 25,000 square feet, and would not be covered by a building performance standard in either scenario.

In City C, dropping the BPS size threshold to 25,000 square feet, increases the percentage of all buildings covered by the law by 20 percent. With the same change in threshold, cities A and B's affected building stocks will include an additional 10 percent and 16 percent of the totals, respectively.

Table 1: Cities A, B, and C: Multifamily Affordable Housing Estimates, total

City	Breakdown of Affordable Housing	Buildings	Units	Square Feet
City A	Total	**340**	**15,293**	**26,090,021**
	Section 8	22.1%	38.3%	22.5%
	LIHTC without Section 8	40.6%	39.3%	23.0%
	Public Housing, without LIHTC and Section 8	7.6%	15.9%	9.3%
	NOAH	29.7%	6.4%	3.8%
City B	Total	**1,944**	**51,558**	**51,558,372**
	Section 8	4.9%	12.3%	12.3%
	LIHTC without Section 8	7.0%	15.0%	15.0%
	Public Housing, without LIHTC and Section 8	0.9%	5.6%	5.6%
	NOAH	87.2%	67.1%	67.1%
City C	Total	**27,088**	**326,833**	**326,833,114**
	Section 8	0.9%	5.3%	5.3%
	LIHTC without Section 8	1.5%	7.3%	7.3%
	Public Housing, without LIHTC and Section 8	0.1%	1.9%	1.9%
	NOAH	97.5%	85.5%	85.5%

Sources: The National Housing Preservation Database, 2020. CoStar Realty, 2016.

Table 2: City A: Multifamily Affordable Housing Estimates, 50,000 Sq. Ft. and 25,000 thresholds, percentages of total counts

Housing Type	50,000 Sq. Ft. and over			25,000 Sq. Ft. and over		
	Buildings	Units	Sq. Ft.	Buildings	Units	Sq. Ft.
Section 8	14.1%	33.7%	19.8%	18.2%	37.0%	21.7%
LIHTC without Section 8	17.4%	30.1%	8.9%	24.7%	35.3%	20.7%

Public Housing, without LIHTC and Section 8	5.3%	13.9%	8.2%	7.4%	15.7%	9.2%
NOAH	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	36.8%	77.7%	45.5%	50.3%	88.0%	51.6%

Sources: The National Housing Preservation Database, 2020. CoStar Realty, 2016.

Table 3: City B: Multifamily Affordable Housing Estimates, 50,000 Sq. Ft. and 25,000 Sq. Ft. thresholds

Housing Type	50,000 Sq. Ft. and over			25,000 Sq. Ft. and over		
	Buildings	Units	SF	Buildings	Units	SF
Section 8	2.7%	10.5%	12.3%	3.4%	11.5%	11.5%
LIHTC without Section 8	4.9%	13.4%	15.0%	6.0%	14.4%	14.4%
Public Housing, without LIHTC and Section 8	0.6%	5.3%	5.6%	0.8%	5.5%	5.5%
NOAH	39.7%	36.9%	36.9%	56.9%	51.0%	51.0%
Total	47.9%	66.0%	66.0%	67.1%	82.5%	82.5%

Sources: The National Housing Preservation Database, 2020. CoStar Realty, 2016.

Table 4: City C: Multifamily Affordable Housing Estimates, 50,000 Sq. Ft. and 25,000 Sq. Ft. thresholds

Housing Type	50,000 Sq. Ft. and over			25,000 Sq. Ft. and over		
	Buildings	Units	Sq. Ft.	Buildings	Units	Sq. Ft.
Section 8	0.5%	4.4%	4.4%	0.7%	5.1%	5.1%
LIHTC without Section 8	0.8%	5.4%	5.4%	1.3%	7.0%	7.0%
Public Housing, without LIHTC and Section 8	0.0%	0.0%	0.0%	0.1%	1.9%	1.9%
NOAH	6.1%	36.7%	36.7%	13.4%	31.7%	31.7%
Total	7.4%	46.5%	46.5%	15.4%	45.6%	45.6%

Sources: The National Housing Preservation Database, 2020. CoStar Realty, 2016.

Using the approach outlined above, a jurisdiction can estimate how much of its affordable housing stock would be covered under a potential BPS policy. With this estimate, jurisdictions ideally would use data on the local multifamily building stock to develop a ballpark understanding of the costs of compliance for affected MFAH buildings. Because there are not many comprehensive and updated analyses in each city on the cost of compliance to comply with BPS policies, the following section describes a methodology of assessing energy retrofit costs developed by New York City nonprofit, The Building Energy Exchange, using data acquired from New York City's energy audit law. Jurisdictions with access to similar data could attempt to replicate this method if resources allow. Where such replication is not possible, jurisdictions

could pair the results of the New York City analysis with local benchmarking data to arrive at rough cost estimates for their local MFAH buildings, where such a comparison makes sense.

Estimating BPS Compliance Costs for Affordable Housing

For policymakers considering a performance standard, a primary concern is the cost that owners of affordable buildings will have to bear in improving performance up to the standard. A standard that demands large efficiency gains over a short period of time could be overwhelming to owners of affordable buildings; however, a policy that allows owners to make capital-intensive improvements at opportune moments in the building's financing lifecycle can reduce costs and help owners manage the financial burden.

There is limited publicly available data that includes breakdowns of the cost to implement energy efficiency upgrades specific to the stock considered for a BPS policy (of the precedent type). Since New York City has collected extensive data on its local building stock for the last 10 years, it has the most information on building performance and improvement potential. As such, we started our analysis with the data that has been compiled in New York City on this topic, recognizing that costs in New York City are generally higher than in most other cities in the country and that some of the retrofits identified in this analysis may be more relevant for the New York City climate. In its report "Turning Data Into Action: Retrofitting Affordability," the Building Energy Exchange (BE-Ex) used data from Local Law 87, New York City's energy audit and retro-commissioning law, to create packages of energy conservation measures (ECMs) appropriate for common "touchpoints" in a building's financing lifecycle (Building Energy Exchange, 2018). The three main packages are:[3]

- **Anytime/Anywhere ECMs:** These are easy and inexpensive ECMs with a short payback period that building owners can install at almost any time. BE-Ex estimates that in NYC, these ECMs cost less than $0.25/Sq. ft. and pay back in 2.5 years.
- **Mid-Cycle Retrofit ECMs:** These ECMs generally capture greater energy savings than Anytime/Anywhere ECMs and do not depend on any particular event in the building's operations or lifecycle. Most often, these ECMs require owners to arrange financing, a process that takes some time and effort to plan. BE-Ex estimates that in New York City, these ECMs cost $1.00/Sq. ft. or less and pay back in six years.
- **Refinance Retrofit:** Capital-intensive energy improvements, which offer the greatest energy savings, should occur when properties refinance, as this is generally the only time that affordable multifamily properties can access adequate capital. These ECMs cost more than $1.00/Sq. ft. in New York City and have pay back periods that often exceed 10 years.

Using data collected from mandated energy audits, BE-Ex profiled a number of common New York City multifamily building types, applying the three ECM packages to each one to estimate energy savings, costs, and payback periods. The authors of this paper selected four

[3] Note: BE-Ex also notes that events such as tenant turnover and replacement of major building systems and equipment are opportune times to implement some of the ECMs included in the three main packages.

building types from BE-Ex's analysis that we consider the closest analogues to building types common in many U.S. cities:

- Post-war (1947–1979) high-rise (8+ stories) with gas heating
- Pre-war (1947 or earlier) low-rise (< 8 stories) with gas heating
- Post-war (1947–1979) low-rise with gas heating
- All Electric

According to BE-Ex's analysis a 100,000-square-foot, 100-unit building representing each of these four types of multifamily buildings would have similar costs and payback periods if they were to implement any of the three ECM packages. BE-Ex estimated that the owner of such a building would need to spend roughly $14,000 to implement the Anytime/Anywhere package, which would payback in roughly 2.5 years and reduce energy consumption by five percent. For the Mid-Cycle retrofit, which reduces energy consumption by 10 percent, the cost would be about $70,000 with a payback period of 6–7 years. Finally, for the Refinance Retrofit, estimated to net 30 percent energy savings, would cost these building types about $400,000 and payback in 12–14 years.

These packages of ECMs, though specific to the multifamily building stock of New York City and local cost and payback estimates, present a useful way of understanding the general scale of costs that multifamily building owners in other jurisdictions may incur in achieving certain levels of energy savings. Because New York City is unique in so many respects, correlating the BE-Ex data with the data presented in Energy Efficiency for All' study titled Potential for Energy Savings in Affordable Multifamily Housing[4] study would be a useful next step to refine the understanding of the cost of a BPS within the affordable multifamily sector. In the interim, jurisdictions could also consider using R.S. Means construction cost scaling factors for NYC as a comparison point. Jurisdictions considering adopting performance standards for multifamily buildings should also use public benchmarking data, if available, to identify how their affordable multifamily buildings currently perform relative to the building performance standard they are considering. For buildings that are 15 percent or below the jurisdiction's proposed minimum energy standard, the jurisdiction will need to provide enough flexibility in the law to allow those buildings' owners to comply in line with refinancing, otherwise, the costs and capital requirements could be overwhelming and put the buildings financial viability in jeopardy. Jurisdictions that have the necessary resources should work with experts to create estimates of common ECM packages and their costs and paybacks that are specific to the local multifamily building stock in order to understand the scale of support needed.

Given that many affordable multifamily buildings will face significant costs in complying with performance standards, jurisdictions considering adoption of such laws should have strategies in place to help affordable housing owners manage costs without driving up the total cost of housing for residents. The analysis above estimating the potential amount of square footage represented by low income and affordable housing is intended to draw attention to the magnitude of this challenge and to provide a roadmap for how cities could tackle this analysis on their own.

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[4]Report can be accessed here: https://assets.ctfassets.net/ntcn17ss1ow9/43sFlEPlqHiP7pTAdcVvVX/25565f05fb3c3fba069e1f2a2244f27e/EEFA_Potential_Study.pdf

Potential Tools to Better Support Multifamily Affordable Housing

While building performance standards are an important tool for reducing the energy consumption in buildings and decreasing carbon emissions, the previous sections demonstrate that affordable housing will face numerous challenges complying with these policies until an appropriate infrastructure of support and resources is established. This challenge is particularly relevant for local governments in states with low levels of funding available to fund energy efficiency incentives as well as in expensive housing markets. This challenge is exacerbated by the ongoing COVID-19 pandemic and corollary economic crisis. In addition, while the naturally occurring affordable housing segment helps provide additional housing for low-income households, it is particularly challenging to support from a policy perspective, given that it is often dominated by individual owners who are difficult to identify and are likely to be less sophisticated about navigating government programs and accessing financing support. In light of these factors, we recommend several strategies in three categories of action that jurisdictions should use to address the specific and significant needs of affordable housing. Note that while some of these solutions address the design of BPS policy, others can be considered to be general best practices for improving the energy performance of affordable housing. Given how new BPS policies are, and the fact that no jurisdictions are yet implementing such policies, tangible lessons learned in BPS policy design and implementation will only be available in the coming years. In the meantime, the ideas outlined below are intended to provide policymakers with a starting point for how to proactively think about and support affordable housing under such mandates drawing from lessons learned in the energy efficiency program design space.

Affordable Housing Gap Assessment

First, we recommend jurisdictions develop a clear gap assessment regarding affordable housing. Policymakers need to have a detailed understanding of their affordable housing stock and its energy performance overall (ideally broken down by type of affordable housing and location in the city). This quantitative analysis should be supplemented with discussions with all relevant affordable housing stakeholders, including tenants, Housing Finance Authorities, Public Housing Authorities, and Community Development Financial Institutions (CFDIs). These discussions should focus on identifying the qualitative energy efficiency needs of affordable housing stakeholders, existing resources to support affordable housing, and specific obstacles that could prevent action.

In seeking sources of support for improving the performance of affordable multifamily buildings, policymakers should review resources such as utility programs, weatherization funds and programming, and Housing and Urban Development resources and programs. Utility programs and incentive funding for improved building energy performance can be leveraged as a way to decrease up-front costs for required capital investments to meet compliance standards. Federally funded weatherization funding could also be used in a similar manner, though these programs currently are already oversubscribed. While it is less likely that a city government can alter the requirements or design of federal programs, cities may be able to work collaboratively with their utilities to ensure that their programs are as effective as possible for supporting affordable housing to comply with a BPS. While documentation of the specific programming and annual funding offered is useful, it is crucial for housing providers, utilities, and other program

administrators to interact and share feedback on how programs and funding might be leveraged and coordinated to ensure maximum impact. During this discussion, it would also be useful to have stakeholders identify specific gaps and problems for the affordable housing segment.

These discussions will help flesh out a detailed gap assessment for improving the energy performance of local affordable housing, highlighting which housing types are likely to be most affected and providing quantitative estimates for how much funding is needed over time for different affordable housing segments to comply with a BPS.

Refining Building Performance Standards to Meet Needs of Affordable Housing

There are many opportunities within the BPS framework to build in flexibility and think creatively about how to best help affordable housing owners meet and benefit from building upgrades. Further, many of the recommendations in this section should be available to all buildings but will likely result in increased benefit to affordable housing. Preference should be given to strategies that principally rely on providing financial, staffing, and technical assistance to affordable housing owners and that provide BPS-compliance flexibility to owners only to the extent that the flexibility does not diminish carbon savings or energy cost savings to tenants. Only where there are insufficient resources to help affordable housing to comply with BPS on the same terms as other buildings, should jurisdictions consider granting additional flexibility that will reduce savings. There are several potential paths to increasing flexibility in a building performance standard to address the needs of affordable housing.[5]

First, it is critical that jurisdictions pursuing BPS adoption engage with local stakeholders in the affordable housing community during the policy design process. These stakeholders should include owners and tenants of multifamily affordable buildings, community lenders, and service providers that have insight into the needs of the local building stock. Gathering locally relevant priorities as well as barriers to investment in energy efficiency upgrades should inform the design of compliance paths and support resources.

A principal benefit of BPS is that they require that buildings achieve quantitative metrics of performance without specifying how buildings achieve it. Thus, they give owners flexibility to select the mix of capital and operational improvements that are best for the owners' circumstances accounting for the needs of tenants. BPS should also be designed with long-term standards while providing owners as much flexibility as practical regarding the timing of building improvements to allow owners to account for equipment life cycles, tenant turnover, staff capacity, and financing cycles when timing building improvements. This flexibility should be granted to all owners including owners of affordable housing. Only when this flexibility and resources to assist affordable owners are insufficient should jurisdictions consider adding more flexible compliance paths available only to affordable housing. In such cases, provisions like the following can help and should be balanced against potential reductions in carbon savings and utility bill savings to tenants:

- Allow affordable housing to comply, not only by reaching the standard, but also by narrowing by a specified percentage (e.g. 70 percent the gap between the building's baseline performance and the standard and/or,

[5] It is important to define the eligibility criteria of affordable housing to target resources and attention where they are most needed.

- Allow affordable housing that achieves a set performance level significantly better than a short-term standard to be in compliance for the entire duration of a mortgage on the building.[6]

An additional way to build in more flexibility for affordable housing is to allow for delays in compliance for specific, documented conditions. Examples might include:

- Allowing additional time (perhaps 12 months) to comply with the standard for buildings that have undergone a recent energy efficiency retrofit but haven't achieved targeted reductions yet;
- Granting a building additional time (two to three years, for example) to comply with the performance requirements such that the investments can be coordinated with mid-cycle capitalization; and/or
- Allowing a deferral if building reserves, net operating income, and subsidies are insufficient to cover cost of upgrades and the owner is unable to access debt. (This provision would require documentation from the building owner regarding the building's finances and its efforts to access financing and subsidies.) In some cases, a deferral should be granted to enable a building owner to refinance the property's mortgage on schedule and finance deep retrofits as part of the new mortgage.

In all of these cases, it would be important to document and track the reasons for delayed compliance and to prioritize these buildings for additional technical and/or financial assistance if possible. The St. Louis BPS[7] includes an innovative feature developed by the Buildings Division to provide an administrative structure for tailored technical assistance. The ordinance stipulates the creation of a board to oversee and approve alternative compliance plans for noncompliant buildings. This mechanism will allow buildings that have resource constraints to present alternative plans to achieve energy reductions that will be reviewed and approved on a case-by-case basis. The ordinance also specifies that out of nine total seats on the board, two must be filled by affordable housing representatives: one owner and one resident.

Another important policy mechanism for supporting affordable housing would be to tie the level of penalties to the appraised value of the home or buildings. This approach may help prevent penalties levied on affordable housing from becoming an overwhelming burden on the building owners and exacerbating an already challenging situation, and has the additional benefit of perceived fairness by building owners.

Policymakers should be aware that federal and state public housing rules may necessitate developing specific carve-outs and adjustments. While it is in theory possible to use the federal Department of Housing and Urban Development's (HUD) pay-for-performance program to fund investments in energy efficiency out of the resulting savings from lower energy costs, which reduce HUD's utility allowance payments, in reality it appears that this approach has not yet worked well. As such, we would recommend that the City engage HUD to work with affordable housing providers to develop and implement specific policy adjustments that could be helpful.

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[6] This could apply to new or existing mortgages as well as refinancing.

[7] For more information on St Louis's BPS: https://www.imt.org/st-louis-passes-first-building-performance-standard-in-the-midwest/

Identifying Possible Solutions and Resources for Affordable Housing

The third category of action is focused on identifying possible solutions and additional resources to meet the identified gap to help affordable housing owners comply with building performance standards. The first step is to tailor existing energy efficiency programing, funding, and regulation to meet the needs of affordable housing. For example, such programs should enable funding for investments aimed at saving all fuels, even if they are only funded from, for example, electricity utility sales. In addition, in developing cost-benefit analyses for affordable housing it is particularly important to count non-energy benefits (such as improving health outcomes, reducing the energy burden, and job training) and to focus on whole-building savings for instance, by following the National Standard Practice Manual for Assessing Cost-Effectiveness of Energy Efficiency Resources.[8] While this is the case in some jurisdictions, such as New York State, it is not the case in all states. These efforts are likely to entail utility decisions and/or regulatory changes, and as such, it will be important for policymakers to communicate with, educate, and work with utilities, as well as to educate state public utility commissioners and staff, about the state's specific mandates (and local BPS within the state), along with gaps in existing state-funded programs. Cities with their own municipal utilities may have an advantage here where they can request efficiency programs that specifically support their BPS policy.

In addition, policymakers need to think about how these programs target and engage with customers. The affordable housing segment generally requires enhanced outreach and education, and the segment particularly benefits from a one-stop shop approach (as illustrated by the success of the Elevate Energy approach in the Chicagoland area).[9] This approach could also be supplemented by city efforts to compile consumer friendly (i.e., simple, jargon-free) documentation about the most common cost-effective measures, a list of qualified vendors, common questions and answers, and contact information for additional questions.

Another way for cities to provide support to affordable housing is to create targeted programs for affordable housing compliance that provide technical and/or financial assistance to the highest need properties. Cities should investigate helping their local Community Development Financial Institutions (CDFIs) to establish loan programs coordinated with buildings' refinancing cycles and that accurately reflect local building energy performance requirements. Such programs should typically market to smaller properties, properties at the point of recapitalization, and naturally occurring affordable housing. Cities, lenders, or others could condition their financial assistance on the building owner putting in place tenant protection policies, such as rent increase restrictions; eviction protection; and conditions for sale. These protections should be backed up by monitoring and enforcement.

The LEAN Program in Massachusetts, which focuses on providing comprehensive energy efficiency services to multifamily housing, requires that for-profit owners of multifamily buildings sign a 5- to 10-year affordability agreement with LEAN to ensure that the benefits offered through the program accrue to low-income residents over the long term. Such programs can help meet the long-term capital investment needs of many affordable housing buildings over time. Building owner reluctance or inability to fund steps at the front end of the efficiency renovation process also significantly deter efficiency investments. This impediment can be

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[8] See for example: https://nationalefficiencyscreening.org/national-standard-practice-manual/

[9] See for example: https://archive.epa.gov/epa/sites/production/files/2016-03/documents/4_onestopshop_elevateenergy.pdf

addressed by subsidized audits, technical assistances and program management offered by cities, utilities or others—though finding such funding is a recurring challenge.

Technical support should include audits and recommendations for priority retrofits; the program should be set up as a one-stop shop providing "concierge" style support. For example, in New York City, the Retrofit Accelerator, which was launched by city government, uses city funds to provide free advisory services to help building owners streamline the processes of making building efficiency improvements, finding cash incentives and financing, finding qualified contractors, and training their building operation staff on how to run buildings efficiently. The Accelerator analyzes building energy performance using the city's benchmarking and audit data sets to prioritize buildings likely to save the most energy.

Finally, cities can provide additional support to affordable housing. A useful action, for example, would be to engage with and educate local lenders about building performance requirements and the likely financial impacts on affordable housing and potential liabilities to lenders, so that lenders can incorporate best practices into their underwriting standards to protect their borrowers and themselves from potential liability from non-compliance with building performance standards.[10] To the extent that a city and its partners are not able to stand up a technical support and/or financial assistance program, it should at a minimum conduct outreach and education about the building performance standards, especially to owners of smaller affordable housing buildings that are subject to the policy. Along with this outreach, cities can provide standardized documentation about programs and incentives and provide a helpline for building owners and managers to call with questions. Finally, cities and their partners can provide resources and support for tenant education on energy efficiency, both directly to tenants as well as to building owners and associations. Many cities partner with their local U.S. Green Building Council chapter, Building Owner and Manager Association chapter, and other real estate organizations.

Conclusion

Building performance standards, though a promising strategy for significantly reducing energy consumption and greenhouse gas emissions in buildings, present a difficult challenge for U.S. local governments seeking to address climate change without exacerbating the housing affordability crisis. While there are methodologies jurisdictions can use to estimate the scale of impacts for affordable housing and the likely costs, our research revealed that the data needed for these analyses is limited in its availability and that few jurisdictions have conducted such analysis to date. Nonetheless, jurisdictions with the resources can replicate the methods presented here to understand the scope of the potential intersection of a performance policy and the affordable housing stock in order to assess risk. Further, all jurisdictions can apply the ideas described in this paper to facilitate the thoughtful inclusion of affordable housing in BPS policies without endangering the existence of such properties.

[10] A good example is "Underwriting Efficiency: A Lender Handbook" by Community Preservation Corporation: http://communityp.com/resources/underwriting-energy-efficency-lender-handbook/

References

ASHRAE Climate Zones. (2011, March 9). Retrieved from OpenEI: openei.org/wiki/ASHRAE_Climate_Zones

Building Energy Exchange. (2018). *Evaluating New York City's Multifamily Building Energy Data for Savings Opportunities: Turning Data Into Action.* New York: be-exchange.org.

Freddie Mac. (2020). *The Difference Between Multifamily and Single-Family Businesses*. Retrieved from Freddie Mac Web Site: mf_freddiemac.com/about/multifamily-vs-single-family.html

National Housing Law Project. (n.d.). *Resource Center*. Retrieved from National Housing Law Project web site: https://www.nhlp.org/resource-center/public-housing/

National Housing Trust. (2019). *Recommendations for Implementing the District's Building Energy Performance Standard in Affordable Multifamily Housing.*

Pyati, A. (2016, October 24). New CoStar Data Reveal a vast National Inventory of Naturally Occurring Affordable Housing -- and an Untapped Opportunity. *UrbanLand*.

Ross, A. D. (2020). *Lifting the High Energy Burden in America's Largest Citie.* ACEEE.

Tax Policy Center. (n.d.). *What is the Low-Income Housing Tax Credit and how does it work?* Retrieved from Tax Policy Center Web Site: https://www.taxpolicycenter.org/briefing-book

US Census Bureau QuickFacts. (2020). Retrieved from US Census Bureau: www.census.gov/quickfacts/fact/table/US/PST045219