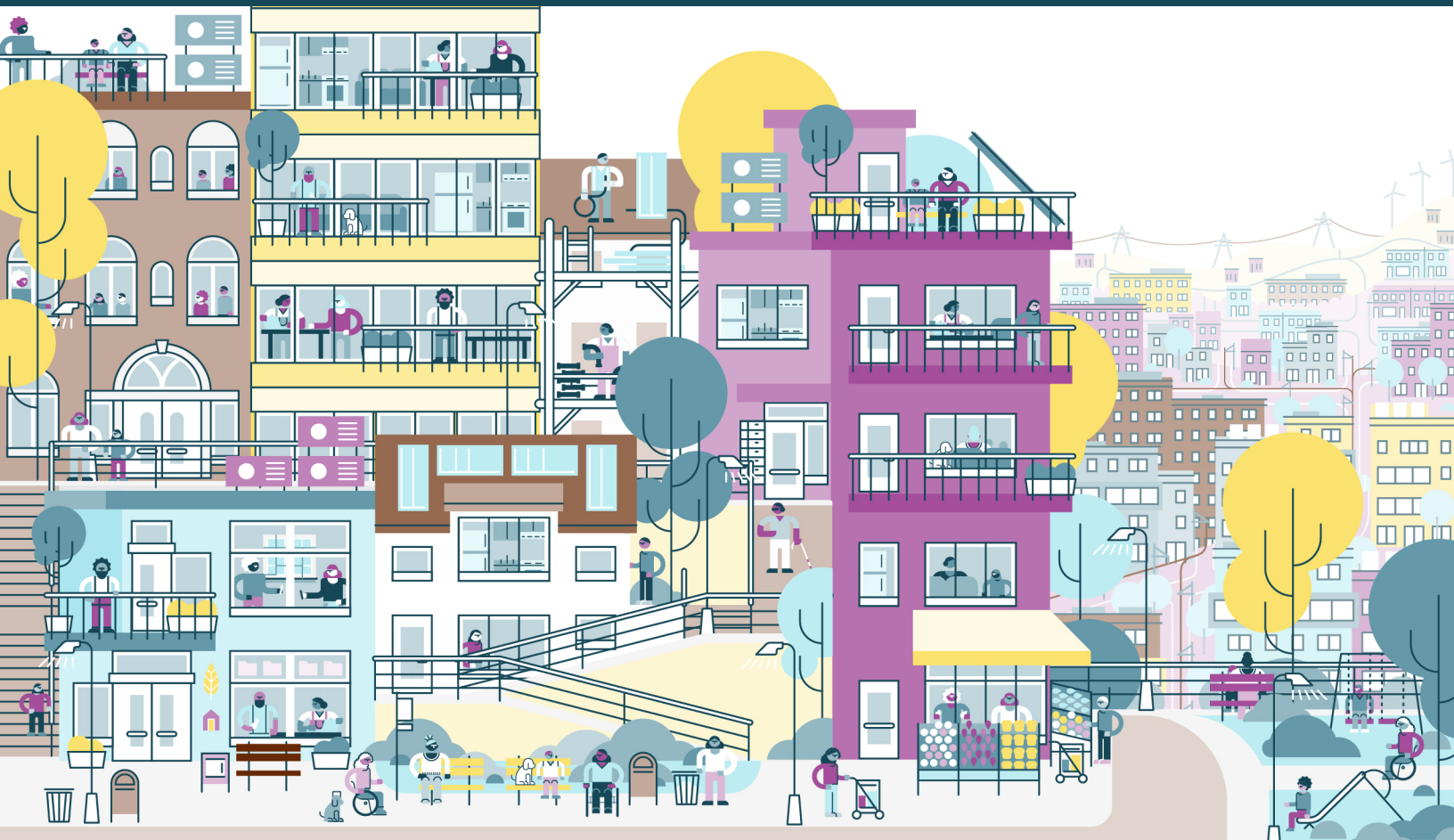


JUNE 2024

# Green Social Housing at Scale:

How a Federal Green  
Social Housing Development  
Authority Can Build, Repair,  
and Finance Homes for All



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Socio-Spatial  
Climate Collaborative **SC**<sup>2</sup>

JUNE 2024

# Green Social Housing at Scale:

## How a Federal Green Social Housing Development Authority Can Build, Repair, and Finance Homes for All

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The Climate and Community Project (CCP) is a progressive climate policy think tank developing research at the climate and inequality nexus. Learn more at [climateandcommunity.org](https://climateandcommunity.org).



The **Urban Democracy Lab** at NYU's Gallatin School of Individualized Study promotes critical, creative, just, and sustainable forms of urbanism through engaged scholarship, collaborative coursework, creative public programming, and active publication.



The Climate and Community Project's housing work is done in partnership with the Socio-Spatial Collaborative, or (SC)<sup>2</sup>, based at UC Berkeley. To learn more, visit [sc2.berkeley.edu](https://sc2.berkeley.edu).

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# Executive Summary

**Every day, millions of Americans struggle to find housing they can afford. Climate change makes finding stable housing even more precarious for low-income renters in the US.**<sup>1</sup>

The federal government's system of outsourcing rental housing to the private market — an industry driven by a desire to increase profits, too often at the expense of tenants — is not working. Meanwhile, homeownership is becoming increasingly harder for low- and middle-income families to obtain — and hold on to. Housing is also responsible for one-fifth of energy-related carbon pollution nationwide, but existing policies do not do a good job of reducing or eliminating carbon pollution from people's homes.

**The only way out of our housing and climate crises is through a massive investment in housing as a public good: by developing a national green social housing agenda.**

A groundswell of local organizing efforts are already working toward this vision.<sup>2</sup> From Kansas City to New York, organizers are demanding public funding that would dramatically expand and transform our housing stock into green social housing — housing that is forever affordable, outside of the private market, and environmentally resilient — providing residents with the stability and agency they deserve.<sup>3</sup>

**We propose the creation of a federal Green Social Housing Development Authority (Green SHDA) to build and preserve millions of homes outside of the predatory real estate market, allowing people to have a permanent roof over their heads,**

**to build roots in their communities, and to live safely in our changing climate.**

The Green SHDA will help ensure that people can stay in their communities without fearing rent hikes. It will foster housing stability for people who are unhoused or housing insecure, dramatically reducing the number of people forced to sleep on the street or in overcrowded apartments. It will build hundreds of thousands of new units each year in rural, urban, and suburban communities, creating new housing options for people who have been there for generations as well as those who have newly arrived in the US. The Green SHDA will deliver a wide range of healthy, climate-resilient, fossil fuel-free housing options to meet the unique needs of different geographies. And it will make it easier and more affordable to make homes across the country greener.

**The Green SHDA will create millions of new units of green social housing by empowering the government to purchase distressed real estate and properties where tenants are vulnerable to exploitation, rehabilitate them to be healthy and environmentally resilient places to live, and transfer them to the green social housing sector.**

The Green SHDA would also have the authority to construct new, climate-resilient housing options on vacant land to increase the supply of permanently affordable housing. A Green SHDA will create diverse options for both renting and ownership through models like limited equity cooperatives, resident-managed properties, and community land trusts. These housing options put residents in control of their own living conditions rather than at the whims of landlords

1 Joint Center for Housing Studies of Harvard University, *America's Rental Housing 2024* (Cambridge, MA: Joint Center for Housing Studies, 2024), [https://www.jchs.harvard.edu/sites/default/files/reports/files/Harvard\\_JCHS\\_Americas\\_Rental\\_Housing\\_2024.pdf](https://www.jchs.harvard.edu/sites/default/files/reports/files/Harvard_JCHS_Americas_Rental_Housing_2024.pdf).

2 Climate and Community Project et al., *Building the Future: Grassroots Reflections on Social Housing* (May 2024), <https://www.climateandcommunity.org/grassroots-reflections-social-housing>.

3 Roshan Abraham, "Housing in Brief: \$50 Million Housing Bond Approved in Kansas City," *Next City*, November 10, 2022, <https://nextcity.org/urbanist-news/housing-in-brief-50-million-housing-bond-approved-in-kansas-city>; Jackie Mitchell, "Voters in Seattle approve Initiative 135, creating the Social Housing Developer," *Ballotpedia*, February 23, 2023, <https://news.ballotpedia.org/2023/02/23/voters-in-seattle-approve-initiative-135-creating-the-social-housing-developer/>.

or banks. The Green SHDA would also fund technical assistance infrastructure to ensure that communities have access to the support needed to create green social housing and maintain it over time.

**Green SHDA units would serve a range of households, addressing the housing crisis for everyone from minimum wage workers and teachers, to people with no incomes or those experiencing chronic homelessness.** Recognizing that the most acute housing crisis is among extremely low-income renters, the Green SHDA would prioritize units that people with the lowest incomes can afford. Strong tenant protections at Green SHDA properties and permanent affordability will also stem displacement in communities most affected by racist, extractive market practices. In Green SHDA housing, no one would spend more than 25 percent of their income on rent. Furthermore, the Green SHDA would ensure that everyone — regardless of their immigration status — can live in green social housing.

**Green social housing is a climate justice solution. A Green SHDA will address the climate crisis by creating the beautiful, permanently and deeply affordable, carbon-free, environmentally safe, community-controlled housing that everyone deserves.** Through decarbonization efforts and healthy home investments, the Green SHDA will decrease exposure to environmental toxins in communities that have been neglected and improve the health of millions. Affordability provisions also ensure that the green investments in rental homes won't lead to displacement, and resident control means that tenants will have a clear and safe structure through which to voice needs for repairs and climate resilience upgrades. A Green SHDA will lower the costs of healthy green housing and accelerate a just transition through construction and retrofitting, training workers, and driving innovation to foster green housing.

**Our analysis shows that with an investment of \$30 billion annually — the same cost as the Mortgage Interest Deduction that the government**

**provides as a benefit to homeowners — and a revolving loan fund, the Green SHDA would be able to build and preserve between 1 million and 1.8 million units of green social housing over a 10-year period.** The Green SHDA would provide millions of new green social housing options for communities, and deploy innovative financing tools to help sustain a green social housing sector. By investing heavily in the production of new green social housing, the Green SHDA would also help alleviate the country's massive shortfall of housing supply. Our analysis shows the importance of including capital subsidy alongside revolving loan funds in order to serve extremely low-income renters. Depending on the balance of direct grants and loans, we estimate that this would create 405,000 to 818,000 units for residents with extremely or very low-incomes (0-50% AMI) in its first 10 years. Prioritizing resources for deeply affordable social housing units will better ensure the Green SHDA fulfills its mission of redressing racism in the housing market and leaving no one behind. Our analysis also shows the benefits of a new social housing authority over existing programs like the Low Income Housing Tax Credit (LIHTC). As a centralized authority, the Green SHDA cuts out a lot of profit-motivated intermediaries, and uses those savings to invest in creating jobs and energy efficiency.

**Our analysis shows that a Green SHDA would generate up to 615,000 jobs annually, including 232,000 direct well-paying union jobs in the building trades industries each year.** To ensure the Green SHDA is empowering the working class, it would abide by strong labor standards, such as the Davis-Bacon Act to ensure workers are paid prevailing wages, and would mandate Project Labor Agreements for large developments to enable building trades workers to negotiate strong protections and standards for themselves.

**The Green SHDA is the climate, environmental, economic, and housing policy needed to keep people housed amidst a climate crisis that is knocking on people's doors.**

# By The Numbers

The only way out of our housing and climate crises is through a massive investment in housing as a public good: developing a national green social housing agenda.

## THE PROBLEM

**12.1 million**

renters in the US pay over half their income in rent<sup>4</sup>

**43%** of renters

live in units with habitability issues, like broken windows, pests, and a lack of heating or cooling<sup>5</sup>

**16 million**

homes are vacant often as a result of high rents or poor conditions

In its first 10 years, a Green Social Housing Development Authority would:

## INVEST

**\$30 billion**

in our communities in annual appropriations, combined with a revolving loan fund to recoup and reinvest funds back into social housing

## GENERATE

up to

**615,000**

jobs annually, including

**232,000**

direct well-paying union jobs in the building trades industries each year

## BUILD AND PRESERVE

between

**1 million** and **1.8 million**

new social housing units for a range of households, prioritizing those who need it most, creating up to 818,000 units for extremely and very low-income households

<sup>4</sup> Joint Center for Housing Studies, *America's Rental Housing 2024*.

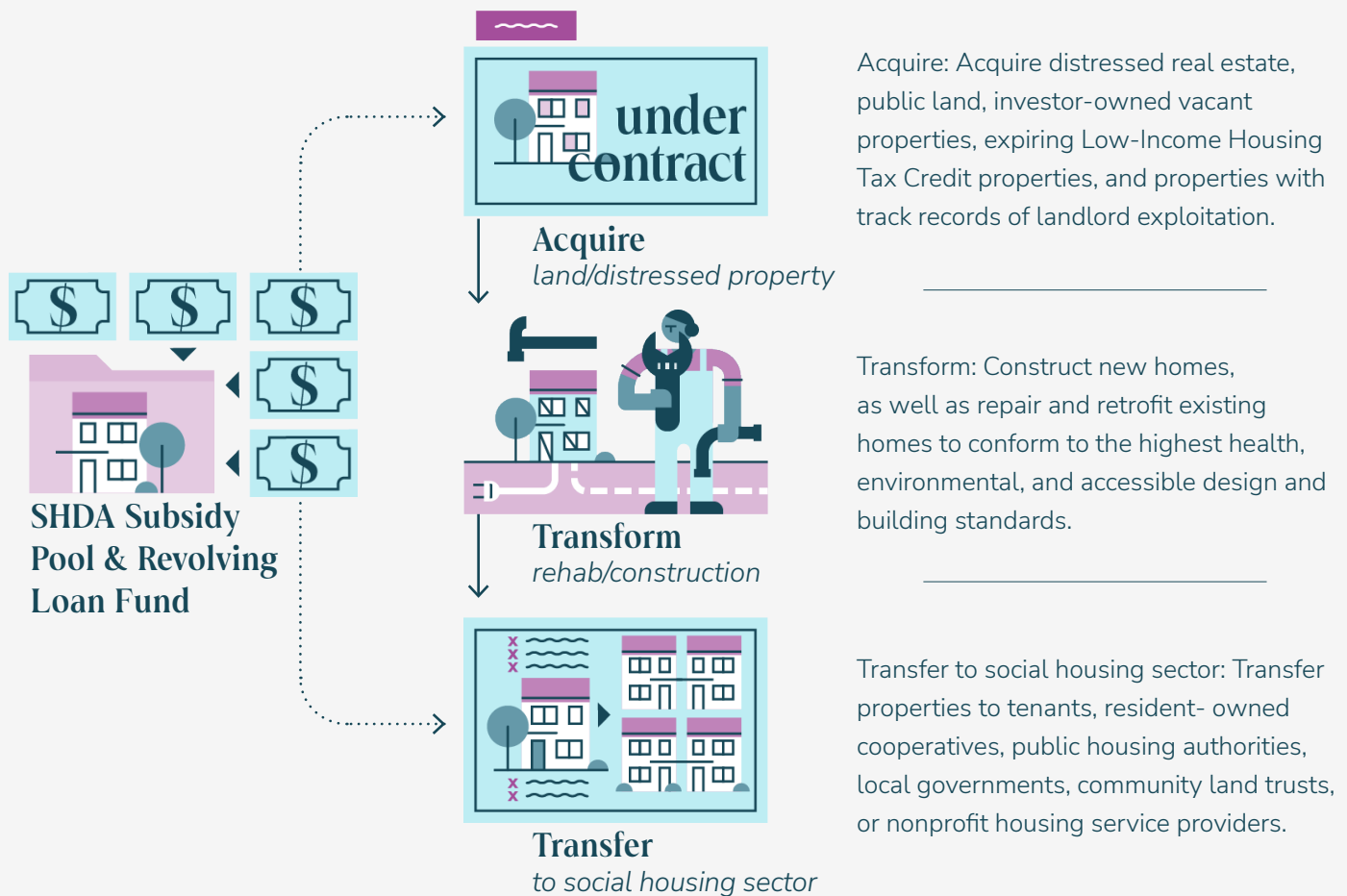
<sup>5</sup> United States Government Accountability Office, *Rental Housing: As More Households Rent, the Poorest Face Affordability and Housing Quality Challenges* (Washington, DC: US GAO, May 2020, <https://www.gao.gov/assets/gao-20-427.pdf>).

# GREEN SOCIAL HOUSING DEVELOPMENT AUTHORITY

## HOW A FEDERAL SHDA WORKS

### THE SOLUTION

A federal Green Social Housing Development Authority would empower the government to **purchase** distressed real estate, vacant land, and properties where tenants are vulnerable to being exploited; **transform** these places into healthy and environmentally resilient homes; and **transfer** them to the green social housing sector, which includes limited-profit cooperatives, community land trusts, nonprofits, and public housing.



The Green SHDA is a model built to scale, giving it the potential to transform the U.S. housing sector. It will improve the health and well-being of millions of families by providing housing stability, healthy living options, and climate-resilient communities. It will also put power in the hands of communities — rather than corporate actors — and redress the harms of the US’s racist housing market.

# Introduction

These days, it seems like almost no one can afford a place to live: Minimum wage workers cannot afford an apartment in any state,<sup>6</sup> and about one in four Black renters with young children face eviction every year.<sup>7</sup> Seniors are the fastest growing homeless population,<sup>8</sup> while a third of Gen-Z lives at home because they cannot afford to pay rent.<sup>9</sup> Migrants arriving in the US have few options other than sleeping in overcrowded shelters.<sup>10</sup> Thirty-nine percent of Americans have recently skipped meals to save money for housing payments.<sup>11</sup> The list of statistics could go on — and all paint the same stark picture: We are in the midst of a housing crisis of historic proportions, and our current system is not working. Only dramatic, structural change to the United States housing regime can reverse these trends.

**Behind many of these statistics is a common phenomenon: Private actors in the real estate sector are acquiring rental housing with the intention of making a steep return on that investment.** It's no secret that housing has long been understood as an investment vehicle in the US, meaning that those purchasing housing typically expect a profit. This has always caused problems for housing affordability, but this trend worsened during the pandemic, especially for tenants. Investors capitalized on rising rents and low interest rates to get short-term profits in the multifamily rental market.<sup>12</sup> The result is a historically hot market built

on egregious rent hikes, upfront fees, deferred maintenance, and rising homelessness for tenants.

**Relying on the private market to address housing needs also delays climate action.** The drive to profit off of rental housing disincentivizes landlords to do the deep retrofits necessary to address the climate crisis. And if landlords do decide to make these fixes, they could then choose to flip properties and attract higher-income tenants.<sup>13</sup> The web of private ownership of rental homes also makes it harder to deploy federal clean energy investments in rental housing as compared to in homes

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- 6 "How Much Do You Need to Earn to Afford a Modest Apartment in Your State?" Out of Reach: The High Cost of Housing, National Low Income Housing Coalition, 2024, <https://nlihc.org/oor>.
- 7 Nick Graetz et al., "A comprehensive demographic profile of the US evicted population," *Proceedings of the National Academy of Sciences of the United States of America* 120, no. 41 (October 2023), <https://doi.org/10.1073/pnas.2305860120>.
- 8 Kathryn A. Henderson et al., *Addressing Homelessness Among Older Adults: Final Report* (prepared by Westat for The Office of Behavioral Health, Disability, and Aging Policy; the Office of the Assistant Secretary for Planning and Evaluation; and the US Department of Health and Human Services, October 2023), <https://aspe.hhs.gov/sites/default/files/documents/9ac2d2a7e8c360b4e75932b96f59a20b/addressing-older-adult-homelessness.pdf>.
- 9 Alejandra O'Connell-Domenech, "Almost a third of Gen Z live with parents or family," *The Hill*, January 12, 2024, <https://thehill.com/changing-america/respect/poverty/4405595-almost-a-third-of-gen-z-live-with-parents-or-family/>.
- 10 Daniella Silva, "Migrants in Chicago are on edge as evictions from temporary shelters loom," *NBC News*, February 11, 2024, <https://www.nbcnews.com/news/us-news/migrants-housing-crisis-chicago-eviction-process-rcna135688>.
- 11 <https://listwithclever.com/research/stress-in-america-2023/>.
- 12 Neil Callanan and Immanuel John Milton, "Short Sellers See Distress Emerging in Apartments as Borrowing Costs Surge," *Bloomberg*, January 6, 2024, <https://www.bloomberg.com/news/articles/2024-01-06/the-big-real-estate-short-targets-apartments-as-distress-emerges-credit-weekly>.
- 13 Chelsea Kirk, *Decarbonizing California Equitably: A Guide to Tenant Protections in Building Upgrades/Retrofits Throughout the State* (Los Angeles, CA: Strategic Actions for a Just Economy, 2023), <https://www.saje.net/wp-content/uploads/2023/09/Decarbonizing-California-Equitably-Report-1.pdf>.



owned by those who live in them.<sup>14</sup> Meanwhile, low-income homeowners struggle just to make monthly payments, making it hard for them to take on the debt and logistical challenges that complex green retrofits would require.

**Low-income households disproportionately live in severely inadequate housing conditions.**<sup>15</sup> Extreme weather events — paired with deferred maintenance — further push these homes into disrepair. Approximately 40 percent of the country’s rental housing stock is in communities on the front lines of the climate crisis.<sup>16</sup> And a combination of poorly insulated homes and soaring energy prices are driving the highest utility debts ever seen in the US.<sup>17</sup>

**The converging climate and housing crises are exacerbating racial and class inequalities.** The majority of Black and brown households rent their homes, and disproportionately live on the front lines of the climate

crisis. Black and brown households face the highest utility debts, rent burdens, and rates of environmental pollution in and around their homes. About half of Black and Latino households are energy insecure.<sup>18</sup> To make matters worse, households experiencing energy insecurity pay 25 percent more per square foot of residential space on their energy bills.<sup>19</sup>

Recent reports show a multifamily market in immense distress,<sup>20</sup> historic rent burdens, a home insurance market that fails to support consumers,<sup>21</sup> deep levels of racial inequality, and a federal government hesitating to intervene. A Green Social Housing Development Authority would ensure that housing can be for the people and can withstand the impacts of climate change. In this report, we explain how a Green Social Housing Development Authority can help address these urgent crises and create publicly-backed housing options that enable housing stability, climate resilience, and job creation across the country.

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<sup>14</sup> Neel Dhanesha, “Climate Fixes Are All Aimed at Property Owners. What about Renters?” *Vox*, July 27, 2022, [www.vox.com/the-highlight/23198145/renters-climatechange-solutions](https://www.vox.com/the-highlight/23198145/renters-climatechange-solutions).

<sup>15</sup> US GAO, *Rental Housing*.

<sup>16</sup> Maya K. Buchanan et al., “Sea Level Rise and Coastal Flooding Threaten Affordable Housing,” *Environmental Research Letters* 15, no. 12 (December 2020): 124020, <https://iopscience.iop.org/article/10.1088/1748-9326/abb266>; National Housing Trust, “The Threat of Climate Change for Renters,” news release, September 26, 2022, <https://nationalhousingtrust.org/news/threat-climate-change-renters>.

<sup>17</sup> Tope Alake, “Residential Utility Debt Tops US Record as Energy Prices Climb,” *Bloomberg*, January 23, 2024, <https://www.bloomberg.com/news/articles/2024-01-23/residential-utility-debt-tops-us-record-as-energy-prices-climb>.

<sup>18</sup> US Energy Information Administration, “In 2020, 27% of U.S. households had difficulty meeting their energy needs,” April 11, 2022, <https://www.eia.gov/todayinenergy/detail.php?id=51979>.

<sup>19</sup> US Energy Information Administration, “U.S. energy insecure households were billed more for energy than other households,” May 30, 2023, <https://www.eia.gov/todayinenergy/detail.php?id=56640>.

<sup>20</sup> Callanan and Milton, “Short Sellers.”

<sup>21</sup> Sharon Cornelissen, Douglas Heller, and Michael DeLong, “Exposed: A Report on 1.6 Trillion Dollars of Uninsured American Homes,” March 12 2024, <https://consumerfed.org/wp-content/uploads/2024/03/Exposed-UninsuredHomes-1.pdf>.

# What is Green Social Housing?

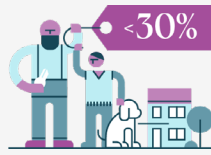
**SOCIAL HOUSING** refers to a diverse set of housing types that are sheltered from real estate speculation, have had some kind of public subsidy or support (even if not ongoing), and give residents significantly more say over their housing than renters in unregulated housing.

**GREEN SOCIAL HOUSING** means that this housing is built and maintained to the highest health and environmental standards and with the greenest and lowest-carbon building materials available, and that it is resilient to climate disasters, energy efficient, and not reliant on fossil fuels.

Definitions of social housing vary,<sup>22</sup> and there are generative debates within progressive movements for social housing about how to define and realize these transformative visions. The Alliance for Housing Justice, which includes a range of grassroots power-building, policy, and research organizations, defines green social housing as having eight core principles, all of which would be present in a Green Social Housing Development Authority:



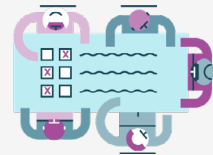
Socially Owned



Permanently Affordable  
& inclusive of extremely low-income housing



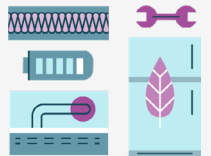
Permanently Decommodified



Under Community Control



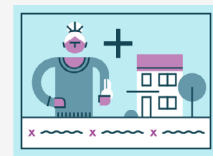
Anti-Racist & Equitable



Sustainable



High Quality & Accessible



With Tenant Security

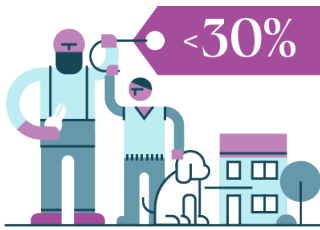
**Green social housing is a vision of housing people from all walks of life, with a special emphasis on leaving no one behind.** That means guaranteeing housing for those with the lowest incomes, people with disabilities, recently arrived migrants, and people suffering discrimination of any kind. It means providing housing that ensures clean water, clean air, and climate-resilient living for everyone.

**Green social housing denotes a variety of specific governance forms,** including public rental housing (often called “public housing”), community land trusts with both rental and ownership units, limited-equity cooperatives, and so on. In short, green social housing defines an ecology of housing forms that are sheltered from the market, ensure housing security for a wide range of residents, and are built to be climate-friendly.

<sup>22</sup> For examples of green social housing definitions, see the [Alliance for Housing Justice social housing principles](#), [The Center for Popular Democracy’s Housing for All report](#), the [NYU Urban Democracy report](#), and [The Case for Social Housing](#).

## WHAT IS GREEN SOCIAL HOUSING? CONTINUED

Many look to other countries such as Vienna and Uruguay for examples of green social housing at scale. There are also many forms of green social housing that already exist in the US. These include:



### SECTION 9 “PUBLIC HOUSING”

Government-run housing that is specifically for people with low incomes.

Residents pay

**30%**

of their income towards rent.



### COOPERATIVELY OWNED HOUSING

Tenants collectively own the developments in which they live, instead of having one property owner. Households buy a share of a housing corporation, which is then run by the residents themselves. *Limited-equity co-ops* allow tenants to purchase shares in a co-op below market prices and limit the amount the shares can be sold for when a resident decides to move to maintain long-term affordability.



### COMMUNITY LAND TRUSTS (CLTs)

Nonprofit entities (which could be governed by those living on CLT land) to retain ownership of the land underlying the buildings so the land use serves the community. The land can then be leased at a nominal price to lower-income homeowners or renters.



### CO-OP MANUFACTURED HOUSING or RESIDENT OWNED COOPERATIVE

Manufactured homeowners form a nonprofit to own and manage the land underneath their lots.

# How Did We Get Here?

## FROM FEDERALLY BACKED HOUSING TO A PROFIT-RELIANT STATUS QUO

**Today’s racially and economically unjust housing system highlights the urgency of the fight for green social housing in the United States — a fight that has spanned more than 100 years.** In response to a foreclosure and eviction crisis during the Great Depression, housing and labor activists worked together toward a vision of green social housing during the New Deal Era. Activists imagined healthy, green housing — “modern” units that fit into their surrounding environment and provided tenants with high-quality living. But real estate interests defeated this comprehensive vision of housing as a public good, lobbying the government to limit public housing to low-income households only, and capping spending to limit housing quality.<sup>23</sup>

**The result of this organizing was invaluable nonetheless: Our federal public housing system is a key pillar of US housing policy, and provides approximately 1.2 million low-income households with permanently affordable housing.** America’s public housing system is an example of green social housing, giving a roadmap for strengthening and expanding US housing policy to reach more people and provide better conditions.<sup>24</sup> However, the New Deal government also created a subsidized mortgage program that mainly helped white households — due in part to redlining. As historian Gail Radford points out, the US government thus created a two-tiered public housing system: subsidized public housing for the poor that wasn’t adequately supported,

and subsidized mortgages for the middle class and many working-class families, but with outsized benefits for white families.<sup>25</sup>

**The fate of publicly backed housing in the US took a sharp turn in the 1970s, when the government defunded public housing and created a piecemeal web of development incentives that fell short of delivering the scale, affordability, and resilience standards needed to address the housing crisis.**

Ever since this inflection point, we have seen the federal government opt for market-based solutions to the housing crisis, including tax incentives for housing development and federally backed loan assurances for borrowers. Meanwhile, government efforts to increase homeownership among Black families were half-hearted and often ensnared Black families in predatory debt.<sup>26</sup> Leading sociologists and environmental justice scholars have thus characterized the US housing system as a form of “American Apartheid.”<sup>27</sup>

**Over the last decade, the for-profit housing system has reached new levels of crisis.** The private housing market’s reliance on a profit motive has illustrated why we urgently need green social housing. Investors capitalized on the 2008 economic crisis and a suite of federal financing tools to expand their reach in the rental market. By 2016, 95 percent of the distressed mortgages held by Government Sponsored Enterprises were sold to investors.<sup>28</sup> Last year alone, investors purchased one in

<sup>23</sup> Catherine Bauer, *Modern Housing* (Minneapolis, MN: University of Minnesota Press, 2020).

<sup>24</sup> Ameer Chew, “Public Housing Is Social Housing,” *Jacobin*, April 6, 2024, <https://jacobin.com/2024/04/public-housing-green-new-deal-lihtc>; Alliance for Housing Justice, “Public Housing: A Central Pillar of Social Housing,” n.d., <https://www.allianceforhousingjustice.org/social-housing/public-housing>.

<sup>25</sup> Gail Radford, *Modern Housing in America* (University of Chicago Press: 1996).

<sup>26</sup> Keeanga-Yamahtta Taylor, *Race for Profit: How Banks and the Real Estate Industry Undermined Black Homeownership* (Chapel Hill, NC: University of North Carolina Press, 2020).

<sup>27</sup> Robert Bullard, “The Legacy of American Apartheid and Environmental Racism,” *Journal of Civil Rights and Economic Development* 9, no. 2 (May 2012), <https://scholarship.law.stjohns.edu/cgi/viewcontent.cgi?article=1460&context=jcred>; Douglas Massey and Nancy A. Denton, *American Apartheid: Segregation and the Making of the Underclass* (Cambridge, MA: Harvard University Press, 1993).

<sup>28</sup> Francesca Mari, “A \$60 Billion Housing Grab by Wall Street,” *New York Times Magazine*, March 4, 2020, <https://www.nytimes.com/2020/03/04/magazine/wall-street-landlords.html>.

four single-family homes, and 30 percent of homes sold in predominantly Black neighborhoods went to investors.<sup>29</sup> The increased financialization of the rental market has come with particularly steep costs for working-class, Black, Indigenous, and other people of color (BIPOC) tenants. Investors are entering the housing market in the hopes of making returns on their investment over a short period of time. In practice, this means overleveraging loans to acquire rental properties, and then hiking rents and deferring maintenance to generate returns.

**The federal government's reliance on the private sector to build and manage housing has aided and abetted housing discrimination.** While the Fair Housing Act outlawed many forms of housing discrimination, racism and other forms of discrimination in the housing market persist today. Landlords evict Black women at the highest rates, and often displace communities of color to flip properties and gentrify neighborhoods. As a result, levels of homelessness are disproportionately high among Black, brown, and Indigenous people.<sup>30</sup> BIPOC tenants also disproportionately live on the front lines of the climate crisis, in disaster-prone neighborhoods and unsafe conditions.<sup>31</sup> As organizers Tara Raghuvver and John Washington write, "In the past forty years, and especially in the decade since the last financial crisis, profiteers have focused on privatization and deregulation, further intensifying the trappings of racial capitalism that are intrinsic to the American housing system."<sup>32</sup>

29 Tim Henderson, "Investors Bought a Quarter of Homes Sold Last Year, Driving Up Rents," *Stateline*, July 22, 2022, <https://stateline.org/2022/07/22/investors-bought-a-quarter-of-homes-sold-last-year-driving-up-rents/>; Kevin Schaul and Jonathan O'Connell, "Investors bought a record share of homes in 2021. See where," *Washington Post*, February 16, 2022, <https://www.washingtonpost.com/business/interactive/2022/housing-market-investors/>.

30 National Alliance to End Homelessness, "Racial Inequalities in Homelessness, by the Numbers," June 1, 2020, <https://endhomelessness.org/resource/racial-inequalities-homelessness-numbers/>.

31 Brad Plumer and Nadja Popovich, "How Decades of Racist Housing Policy Left Neighborhoods Sweltering," *New York Times*, August 24, 2020, <https://www.nytimes.com/interactive/2020/08/24/climate/racism-redlining-cities-global-warming.html>.

32 Tara Raghuvver and John Washington, "The Case for the Tenant Union," *Poverty and Race Journal* 32, no. 1 (April 2023), <https://www.prrac.org/the-case-for-the-tenant-union-jan-mar-2023-p-r-issue/>.

33 Eileen Markey, "How Freddie Mac Helps Private Equity Profit from Tenant Misery," *The Nation*, June 13, 2023, <https://www.thenation.com/article/society/freddie-mac-private-equity-housing/>.

34 Michael Trujillo et al., "The Failure of For-Profit Affordable Housing — and How Tenants Are Organizing for Change," Urban Habitat and East Bay Community Law Center, March 2024, <https://urbanhabitat.org/resource/the-failure-of-for-profit-affordable-housing-and-how-tenants-are-organizing-for-change/>.

35 O'Regan, Katherine M., and Keren M. Horn. 2013. "What Can We Learn About the Low-Income Housing Tax Credit Program by Looking at the Tenants?" *Housing Policy Debate* 23 (3): 597–613. doi:10.1080/10511482.2013.772909.

**Private market actors use housing investments to squeeze tenants for a profit, and the federal government does little to intervene.** In fact, the federal government actually aids and abets the profit-driven rental market. Government-sponsored enterprises like Fannie Mae and Freddie Mac provide up to \$150 billion in financial backing to the multifamily market every year, including to corporate landlords, and this government backing comes with few conditions attached to ensure tenant safeguards.<sup>33</sup> The Low-Income Housing Tax Credit (LIHTC) program — which is the main existing federal affordable housing financing tool — primarily provides tax credits to for-profit entities.<sup>34</sup> What's more, this program alone does not typically create housing that is deeply affordable to those most in need, who are disproportionately BIPOC, extremely low-income, and elderly households.<sup>35</sup> In outsourcing housing development and management to the private sector, the federal government has relinquished the oversight and accountability needed to prevent racial discrimination, housing inequality, and climate degradation. The result is a housing market that provides a windfall for the rich while leaving the majority of the 44 million renters in America struggling to find and stay stably housed.

Over the last decade, the for-profit housing system has reached new levels of crisis. The private housing market's drive to generate profit at the expense of tenant well-being — and the government's lack of intervention — shows why we urgently need green social housing.

# THE STOCK OF AFFORDABLE HOUSING IS SHRINKING AND DETERIORATING IN OUR CHANGING CLIMATE

**The real estate market is not producing new homes that those who need them most can afford, and is hiking rents at rates leading to displacement.** Instead, we see vacant luxury apartments with high carbon footprints being built amidst rising homelessness.<sup>36</sup> What's more, the homes that are available for renters often come with serious habitability concerns, such as broken windows, mold, pests, and a lack of heating and cooling systems. There are approximately 16 million homes sitting vacant across the country due to high rents and poor conditions.<sup>37</sup>

**Our nation's housing stock is making people sick, and the path to healthy homes includes significant repairs and retrofits.** Low-income renters often live in rental housing units that have substantial quality issues, and the vast majority of these homes lack essential components such as cracked walls or a lack of safe drinking water.<sup>38</sup> In many communities, the only places that working-class tenants can afford are near highways, manufacturing plants, or other heavily polluted areas. As a result, Black and brown children have higher rates of asthma, exposure to pollutants, and lead poisoning.<sup>39</sup> What's more, 41 percent of occupied rentals nationwide are in areas that are at risk of serious weather- and climate-

related threats such as hurricanes and flooding. These homes are often some of the only affordable options.<sup>40</sup> Homeowners earning under \$50,000 per year are twice as likely to be without home insurance, making them especially financially vulnerable to disasters.<sup>41</sup>

**Extreme heat and growing air quality issues from climate change are putting new strains on homes that may not have needed air conditioning or purification systems before.** This is disproportionately impacting households with lower-income and elderly residents,<sup>42</sup> with devastating effects. Research shows that the absence of an air conditioner is directly related to the likelihood of death during a heat wave,<sup>43</sup> and a study in New York City showed that heat-related deaths stemming from a lack of air conditioners are particularly prevalent in predominantly Black neighborhoods.<sup>44</sup>

**From a decarbonization perspective, residential buildings are far behind what is needed to dramatically reduce emissions, with residential and commercial buildings responsible for approximately 31 percent of all energy-related carbon emissions nationwide.**<sup>45</sup> And the health impact is outstanding: indoor air pollution in the US is associated

36 Daniel Aldana Cohen, "A Green New Deal for Housing," *Jacobin*, February 8, 2019, <https://jacobin.com/2019/02/green-new-deal-housing-ocasio-cortez-climate>.

37 United Way of the National Capital Area, "Vacant Homes vs. Homelessness in Cities Around the U.S.," *United Way NCA* (blog), March 28, 2023, <https://unitedwaynca.org/blog/vacant-homes-vs-homelessness-by-city/>.

38 US GAO, Rental Housing.

39 NYC Health, "Disparities among Children with Asthma in New York City," *Epi Data Brief*, September 2021, <https://www.nyc.gov/assets/doh/downloads/pdf/epi/databrief126.pdf>; Robert Sampson and Alix Winter, "The Racial Ecology of Lead Poisoning," *Du Bois Review*, pp. 1-23, 2016.

40 Joint Center for Housing Studies, *America's Rental Housing 2024*.

41 Sharon Cornelissen, Douglas Heller, and Michael DeLong, "Exposed: A Report on 1.6 Trillion Dollars of Uninsured American Homes," March 12 2024, <https://consumerfed.org/wp-content/uploads/2024/03/Exposed-UninsuredHomes-1.pdf>.

42 Ruthy Gourevitch, *Decarbonization without Displacement* (Climate and Community Project, 2024), <https://www.climateandcommunity.org/decarbonization-without-displacement>; Chelsea Kirk, *Decarbonizing California Equitably: A Guide to Tenant Protections in Building Upgrades/Retrofits Throughout the State* (Los Angeles, CA: Strategic Actions for a Just Economy, 2023), <https://www.saje.net/wpcontent/uploads/2023/09/Decarbonizing-CaliforniaEquitably-Report-1.pdf>.

43 Sam Whillans, "Toward a Renter's Right to Heat-Safe Housing," *National Resource Defense Council* (blog), June 9, 2022, <https://www.nrdc.org/bio/sam-whillans/toward-renters-right-heat-safe-housing>.

44 Kazuhiko Ito, Kathryn Lane, and Carolyn Olson, "Equitable Access to Air Conditioning: A City Health Department's Perspective on Preventing Heat-related Deaths," *Epidemiology* 29, no. 6 (November 2018): 749-752, [https://journals.lww.com/epidem/fulltext/2018/11000/equitable\\_access\\_to\\_air\\_conditioning\\_\\_a\\_city.1.aspx](https://journals.lww.com/epidem/fulltext/2018/11000/equitable_access_to_air_conditioning__a_city.1.aspx).

45 "Inventory of U.S. Greenhouse Gas Emissions and Sinks," US Environmental Protection Agency, last updated April 11, 2024, <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>.

with up to 200,000 deaths annually.<sup>46</sup> In the US, the vast majority of homes are energy inefficient, leading to higher fossil fuel emissions and skyrocketing utility bills that leave households with high energy burdens. On average, Black households' energy burden – defined as the share of a household's income spent on utilities – is 43 percent higher than white households, while Latino households' energy burden is 20 percent higher than white households.<sup>47</sup> Decarbonizing homes will not be effective and equitable without addressing other underlying environmental justice and habitability issues in homes.<sup>48</sup>

**While the federal government does provide some funding for healthy housing retrofits and rehabilitation, these programs are not providing the holistic repair and retrofit investments that US housing stock needs.** The federal Inflation

Reduction Act (IRA), which has been touted as the largest investment in clean energy and climate mitigation in US history, has a limited focus on improving the rental housing stock.<sup>49</sup> This program largely focused on climate upgrades for homeowners — who can more easily make use of tax incentives — rather than tenants and people who are most housing insecure.<sup>50</sup> IRA funds are now flowing to states for implementation, but advocates on the ground have identified the lack of publicly owned housing as a barrier to leveraging funds for housing and climate justice. Other federal programs, like the Weatherization Assistance Program, reaches only about 35,000 homes annually (most of which are owner-occupied) — less than .0002 percent of the US housing stock.<sup>51</sup> Federal programs for weatherization and retrofits are also often limited in scope, which creates challenges to doing the necessary comprehensive habitability repairs and retrofits.

The housing and climate crises threaten the most fundamental parts of our lives: how to live safely. The problem is massive, which means the solution must be too. We need transformational public investments in the housing sector to make sure everyone has access to a permanently affordable, healthy, and environmentally resilient place to live.

<sup>46</sup> Sumil K. Thakrar et al., "Reducing Mortality from Air Pollution in the United States by Targeting Specific Emission Sources," June 17, 2024 <https://pubs.acs.org/doi/full/10.1021/acs.estlett.0c00424>.

<sup>47</sup> Ariel Dreihobl, Lauren Ross, and Roxana Ayala, *How High are Energy Burdens? An Assessment of National and Metropolitan Energy Burdens Across the U.S.* (Washington, DC: American Council for an Energy-Efficient Economy, September 2020), <https://www.aceee.org/research-report/u2006>.

<sup>48</sup> Gourevitch, Decarbonization without Displacement.

<sup>49</sup> Gourevitch, Decarbonization without Displacement.

<sup>50</sup> Gourevitch, Decarbonization without Displacement.

<sup>51</sup> "Weatherization Innovation," US Department of Energy, US Office of State and Community Energy Programs, accessed May 2024, <https://www.energy.gov/scep/wap/weatherization-assistance-program>.

# Proposal: A Federal Green Social Housing Development Authority

**We propose the creation of a federal Green Social Housing Development Authority (Green SHDA) to build and preserve millions of homes outside of the predatory real estate market; deliver permanently affordable, healthy housing for all; and address the climate crisis.** The Green SHDA will help ensure that people can put down roots in their communities without fearing rent hikes. It will foster housing stability for those who are unhoused or housing insecure, dramatically reducing the number of people forced to sleep on the street or in overcrowded apartments. It will build thousands of new units each year in rural, urban, and suburban communities, creating new housing options for both people who have been there for generations and people who have just arrived in the US. And it will deliver a wide range of healthy, climate-resilient, fossil fuel-free housing options to meet the unique needs of different geographies.

## In its first 10 years, the Green SHDA will:

- **Dramatically increase the availability of permanently affordable, safe housing across communities nationwide, producing between 1 million and 1.8 million units in its first 10 years;**
- **Redress the harms of our racist housing market by putting control in the hands of tenants and their neighbors, and delivering resources directly to communities on the front lines of the climate crisis, instead of to corporations;**
- **Generate up to 615,000 jobs annually, including 232,000 direct well-paying union jobs in the building trades industries each year.**
- **Deliver the safe and healthy living environments to help us mitigate and adapt to climate change by modernizing and retrofitting the housing stock.**

The fundamental goal of the Green SHDA is to improve the living conditions of millions of Americans in the next decade, and create a system that will strengthen communities in the decades that follow. A system that leads to housing insecurity for most while few profit is a political choice. But we can make another choice: building models of housing where people from all walks of life can live well side by side, in modern, climate-friendly, and healthy communities. Grandparents and children, doctors and lab technicians, carpenters and teachers, single moms and large families — all can thrive in this vision of housing. Where one project might feature mostly subsidized rentals, another may emphasize cooperative ownership. Some projects will consist of mid-rise towers, while others will be clusters of townhomes. Depending on the specifics of geography and community need, green social housing will come in all shapes and sizes — and it will be designed to help a wide range of households too.



# How the Green SHDA would work

The Green SHDA would be a new, independent agency within the US Department of Housing and Urban Development (HUD) with the mission of guaranteeing affordable, habitable, and environmentally sustainable housing to extremely low, very low, low-, and moderate-income households.<sup>52</sup> The Green SHDA would have the authority to use its funds to help construct new housing, rehabilitate preexisting housing, and operate housing. The Green SHDA would be tasked with acquiring distressed real estate, public land, investor-owned vacant properties, expiring Low-Income Housing Tax Credit properties, and properties with track records of landlord exploitation. The Green SHDA would rehabilitate properties as needed, and transfer these properties to the green social housing sector by providing the financing needed to allow other mission-driven public, nonprofit, or tenant-led entities to acquire the properties.

In its work, the Green SHDA would prioritize constructing, rehabilitating, and maintaining properties to conform to the highest health, environmental, and accessible design and building standards. Importantly, Green SHDA housing would be homes that people want to live in, built with architectural care and innovation. The Green SHDA would intentionally enable a wide range of housing options across communities, from permanent supportive housing to scattered site community land trusts and multifamily limited-equity cooperatives. These housing options would have amenities that speak to the diversity, needs, and wants of tenants, whether that be playrooms for kids, rooftop gardens, or guest apartments for extended family visits.

Once renovated properties are livable, the Green SHDA would then transfer these properties to tenants, resident-owned cooperatives, public housing authorities, local governments, community land trusts, or nonprofit housing service providers. These entities have been selected because of their distinct ability to provide housing outside

of the profit-driven private sector. The Green SHDA would provide key mechanisms to stabilize neighborhoods and ensure democratic control over housing through cooperative and land trust models. Importantly, all sales would be conditioned on a strong set of tenant protections and habitability standards.

In doing so, this housing program would also support a green industrial policy — public investments in green housing elements like heat pumps, solar panels, and insulation technologies would drive their costs down across the rest of the market, making green housing more affordable for everyone.<sup>53</sup> The Green SHDA would help drive innovation in the green building sector, and ensure that the benefits of these innovations go to those who are most vulnerable to the impacts of climate change. By setting green building standards in a growing stock of green social housing properties, the Green SHDA could have spillover effects on the broader construction industry.

<sup>52</sup> Extremely low income households are defined as households making less than 30% of the Area Median Income. Very low-income households making less than 50% of the Area Median Income. Low-income households make less than 80% of the Area Median Income. Moderate-income households are those making less than 120% of the Area Median Income.

<sup>53</sup> In our report *The Case for a Green New Deal for Public Housing*, we explain in more detail how green investments in affordable housing — in the case of the report, traditional public housing — can improve green technologies like window-mounted heat pumps, in the process lowering the costs for these amenities for all households across the whole economy. Kira McDonald, Daniel Aldana Cohen, and Ruthy Gourevitch, *The Case for a Green New Deal for Public Housing* (Climate and Community Project, March 2024), [https://www.climateandcommunity.org/files/ugd/6fc11a\\_f863d9c2a79145cf8a3f6f680d24ca28.pdf](https://www.climateandcommunity.org/files/ugd/6fc11a_f863d9c2a79145cf8a3f6f680d24ca28.pdf).

# FINANCING THE SHDA TO ENSURE DEEP AFFORDABILITY AND SUSTAINABILITY

The funding and financing mechanisms in green social housing legislation significantly impact who is served and the ability to sustain a green social housing sector over time. The financing terms also can distinguish green social housing from other affordable housing programs by enabling deeper levels and longer periods of affordability, as well as providing the reinvestments of funds needed to sustain these homes over time, even during periods of hostile political tides.

The severe shortage of habitable rental housing units in the US impacts people across classes, but it is hurting extremely low-income tenants the most. When considering how a program creates affordable housing, it is important to consider three facets.<sup>54</sup> The first is the *scale*, referring to the total number of units priced below market-rate. Multifamily housing production reached its highest peak in decades in 2022, but these are mostly market-rate units, and the share of low-cost housing is falling.<sup>55</sup> The massive gap of truly affordable rental housing in the United States calls for special attention to using government resources on low-income housing rehabilitation and construction. The second facet of affordability is the *depth*, indicating that units are available to households towards the bottom of the income distribution. Standard practice is to talk about eligibility as a percent of the Area Median Income (AMI).<sup>56</sup> Current federal affordable housing supply programs like LIHTC are not reaching those most in need, since it cannot on its own sustainably serve extremely low-income residents (below 30% of AMI) without layering additional subsidies alongside it, like Housing Choice Vouchers.<sup>57</sup> The last facet to consider is *duration*, reflecting when affordability requirements expire. LIHTC affordability rules expire after 30 years, and landlords are actively converting affordable

units to market rate units after affordability restrictions expire.<sup>58</sup> It is therefore crucial to have a green social housing sector that provides high-quality options to those who are most vulnerable to housing insecurity, while also working to address the crisis affecting people across classes and create a formidable political coalition to sustain green social housing investments over time.

With this in mind, the Green SHDA financing mechanisms are set up with two goals:

1. Ensuring that financing enables the prioritization of deeply affordable green social housing options to address the gap in low-income housing supply and ensure that those most harmed by our housing market and who have the fewest options can find stable and permanently affordable housing through the Green SHDA; and
2. Ensuring that the Green SHDA can sustain itself even through hostile political tides and continue operating healthy, environmentally friendly, and affordable housing in perpetuity.

## Our analysis shows that:

- Subsidy is justice. The more capital subsidy that is included in a Green SHDA, the deeper levels of affordability it can provide. Including a capital subsidy alongside a revolving loan fund would ensure that the Green SHDA can help people with no incomes or extremely low incomes. Larger subsidies enable more deeply affordable green social housing and reach more of the people who need it most. Globally, all green social housing systems have relied on some level of subsidy, particularly during their start.

<sup>54</sup> This is not an exhaustive list of important considerations for affordable housing development and preservation (which also includes considerations of housing location and quality).

<sup>55</sup> Joint Center for Housing Studies, *America's Rental Housing* 2024.

<sup>56</sup> Area Median Income (AMI) -based rents vary based on jurisdiction and household size. For more information on AMIs in your community, see <https://ami-lookup-tool.fanniemae.com/>.

<sup>57</sup> O'Regan, Katherine M., and Keren M. Horn. 2013. "What Can We Learn About the Low-Income Housing Tax Credit Program by Looking at the Tenants?" *Housing Policy Debate* 23 (3): 597–613. doi:10.1080/10511482.2013.772909.

<sup>58</sup> Will Parker, "Wave of Rental Resets to Further Deplete Affordable Housing," *Wall Street Journal*, <https://www.wsj.com/articles/wave-of-rental-resets-to-further-deplete-affordable-housing-62c8d063>.

- Combining capital subsidies and revolving loan fund financing will set up a sustainable financing stream that can withstand political downturns and keep buildings financially solvent over time. Through a hybrid subsidy and revolving loan fund model, the Green SHDA will be able to sustain itself over time and use upfront capital to create resilient, affordable homes. Longer loan payback terms and lower interest rates create more financial resilience to help fund building operations.
- A new federal agency social housing agency has benefits over existing programs like LIHTC. As a centralized agency, the Green SHDA cuts out a lot of profit-motivated intermediaries, and uses those savings to invest in creating jobs and energy efficiency.

## PUTTING PUBLIC DOLLARS TO USE THROUGH A COMBINATION OF SUBSIDIES AND LOANS

With an annual appropriation of \$30 billion – the same amount the government spends on the Mortgage Interest Deduction for homeowners annually – the Green SHDA would be able to ensure that at least 40 percent of green social housing units can serve people with no income or extremely low incomes, allowing them to live in green social housing that is built to the highest design and habitability standards, and ongoing funding will help ensure that this housing can be sustainably operated over time. The Green SHDA’s Congressional appropriations act as an upfront capital subsidy for social housing construction. This money is then leveraged to separately issue loans backed by the Treasury, essentially acting as a credit enhancement. This creates two pools - a capital subsidy pool and a loan pool - which are intended to cover 100 percent of the capital costs for new construction or acquisition and rehabilitation.

The Green SHDA would combine two financing tools:

1. **A revolving loan fund:** The Green SHDA will have an initial 10-year capitalization in the form of a capital account at the US Treasury, modeled after the US International Development Finance Corporation. From this capital pool, the Green SHDA will issue low-cost loans to green social housing projects. The capital pool will act as a revolving loan fund to finance projects while also recouping funds over time that it can

reinvest in the green social housing sector, including for new acquisition projects and operating assistance. This will help insulate the Green SHDA from financial markets that create the boom and bust real estate investment cycle that harms renters, homeowners, and the economy as a whole.<sup>59</sup>

2. **Capital subsidies:** The annual \$30 billion in congressional appropriations would primarily go toward direct subsidies for the capital costs in green social housing construction, acquisition, and renovation. By using subsidies to reduce the initial capital costs, green social housing projects do not need to take on big loans and thus have lower debt service obligations. This means that projects need to generate less rental income in order to be sustainable, thus allowing them to be more affordable without external operating support. These funds would also be used to pay for the credit subsidy required by federal loan programs.

For a given social housing project, the subsidy pool covers a certain percentage of the capital costs, with the remainder being paid for with a loan. The subsidy portion thus acts much like a “down payment,” in that a larger subsidy infusion means that a project can take out a smaller loan. Individual SHDA projects will have a loan-to-value ratio that could range from 0 to 100 percent, with the remainder coming from the subsidy pool.

<sup>59</sup> Patrick Clark and Prashant Gopal, “Apartment Landlords Bleeding Cash Imperil \$47 Billion of Loans,” *Bloomberg*, May 25, 2023, <https://www.bloomberg.com/news/articles/2023-05-25/apartment-landlords-bleeding-cash-imperil-47-billion-of-loans>.

The exact mix of capital subsidies versus loans for a given project would be decided by the Green SHDA, given the specific needs of a particular community. In general, more upfront capital subsidy translates to both *more total* affordable units as well as *more* deeply affordable units, at less than 30% of Area Median Income, to be available for those with the lowest incomes. In contrast, greater dependence on loans means that projects need to have sufficient rental income to pay for debt service on top of upkeep of the buildings. With a finite pool of subsidy dollars, the less that any given project relies on capital grants, the more that those funds can be used for other projects, thus expanding the overall portfolio of the Green SHDA. For example, a project that is 70 percent subsidy and 30 percent loan will have lower monthly debt service payments, and thus can support more affordability - but it draws heavily from the SHDA's limited subsidy pool. Conversely, a project that is 30 percent subsidy and 70 percent loan will need more rental income to cover the higher debt service, but the SHDA's subsidy pool is preserved so that it can support additional social housing projects elsewhere. In short, *more reliance on loans* generates projects that create *more total units*, whereas projects that require *more capital subsidy* will have *more deeply affordable units*.

In Tables 1 and 2, we model how a \$30 billion annual appropriation for 10 years – combined with different ratios of loan to subsidy capital – will enable different levels of affordability in an average Green SHDA multifamily property. We also include portfolio-wide unit creation estimates. As shown in these tables, higher subsidy amounts lead to more affordability. For example, a Green SHDA relying on 100 percent subsidy could lead to Green SHDA housing being 100 percent affordable for extremely low-income tenants. These tables also show the trade-off between the number of green social housing units created through the Green SHDA over a 10-year period and the level of affordability of each unit: the more affordable units the Green SHDA produces, the fewer social housing units can be created overall. Full details of the financing structure are described in the Methodological Appendix.

The Green SHDA will take advantage of the subsidy pool to ensure the provision of substantial housing for those in greatest need. Exact financing details will of course vary project by project, based on local needs determined

in partnership with civil society. The Green SHDA should maximize its use of subsidy to ensure deep affordability where the need is greatest. As shown in Table 2, prioritizing deep affordability can enable the Green SHDA to create up to approximately 818,000 units at 0-50% AMI (including approximately 476,000 units at 0-30% AMI and 342,000 units at 30-50% AMI).

These estimates reflect the power of the Green SHDA *on its own* to finance housing for a wide range of households and to prioritize those suffering most in today's housing crisis. This financial structure is designed to scale up easily, and it should be especially easy to scale up the loan pool. The loan pool is only limited by any maximum lending authority described in statute or by available funds needed to cover the "credit subsidy" required under the FCRA (for more detail, see methodology section).

Combining the Green SHDA with existing affordable housing programs could further expand its impact. The federal government also has other tools, like Housing Choice Vouchers, that can be layered onto Green SHDA financing to enable even deeper levels of affordability and operating assistance for extremely low-income households over time. Those financing combinations are not shown in the tables below, but are extremely common in affordable housing today and widely understood by the entities that would be implementing Green SHDA policy. Furthermore, through progressive taxes on the ultra wealthy, corporate landlords, or the fossil fuel industry, new revenue sources could be secured to layer onto this base of Green SHDA financing tools, enabling a scaling out of green social housing units, further prioritization of deep affordability, and/or deeper resilience standards.

Incorporating ongoing operating assistance into a Green SHDA would also allow for the creation of more units serving extremely low-income renters over time, letting the Green SHDA further fill the urgent and large gap in extremely low-income housing supply. The Green SHDA would be able to use its funding to provide operating assistance to its properties and collect surplus cash for the purposes of ongoing operating assistance. State-level green social housing bills have also proposed innovative forms of operating assistance to maintain buildings and provide deep affordability over time. In New York, for example, the Green SHDA includes an internal voucher program that provides

ongoing operating assistance for extremely low-income households living in green social housing units.<sup>60</sup>

**TABLE 1**

## Self-Sustaining Affordability Structures across a Green SHDA Portfolio<sup>61</sup>

Affordability structure	Subsidy and Loan Mix		
	50% LOAN / 50% SUBSIDY	30% LOAN / 70% SUBSIDY	HIGHER SUBSIDY RATIOS
<p><b>SCENARIO 1: Balanced affordability mix across units</b></p> <p><i>In this scenario, we assume an even split of units are affordable at 30%, 50%, and 80% of AMI.</i></p>	<ul style="list-style-type: none"> <li>• 15% of units at 30% of AMI</li> <li>• 15% of units at 50% of AMI</li> <li>• 15% of units at 80% of AMI</li> <li>• 55% of units for Moderate-income households</li> </ul>	<ul style="list-style-type: none"> <li>• 27% of units at 30% of AMI</li> <li>• 27% of units at 50% of AMI</li> <li>• 27% of units at 80% of AMI</li> <li>• 19% of units for Moderate-income households</li> </ul>	<p>With subsidy covering 81% of costs, the Green SHDA can get to 100% affordability of the portfolio, split evenly across 30% to 80% AMI.</p>
<p><b>SCENARIO 2: Deeper affordability mix across units</b></p> <p><i>In this scenario, we assume half of affordable units are available for extremely low-income households (30% AMI), and half of units are affordable at 80% AMI.</i></p>	<ul style="list-style-type: none"> <li>• 22.5% of units at 30% of AMI</li> <li>• 0% of units at 50% of AMI</li> <li>• 22.5% of units at 80% of AMI</li> <li>• 55% of units for Moderate-income households</li> </ul>	<ul style="list-style-type: none"> <li>• 41% of units at 30% of AMI</li> <li>• 0% of units at 50% of AMI</li> <li>• 41% of units at 80% of AMI</li> <li>• 18% of units for Moderate-income households</li> </ul>	<p>With 87% subsidy, Green SHDA can get to 100% affordability, with half of units at 30% AMI and the rest at 80% AMI.</p>
<p><b>SCENARIO 3: Prioritizing extremely low-income units across units</b></p> <p><i>In this scenario, we attempted to maximize units available below 30% AMI.</i></p>	<ul style="list-style-type: none"> <li>• 32% of units at 30% of AMI</li> <li>• 0% of units at 50% of AMI</li> <li>• 22.5% of units at 80% of AMI</li> <li>• 68% of units for Moderate-income households</li> </ul>	<ul style="list-style-type: none"> <li>• 58% of units at 30% of AMI</li> <li>• 0% of units at 50% of AMI</li> <li>• 0% of units at 80% of AMI</li> <li>• 42% of units for Moderate-income households</li> </ul>	<p>With subsidy covering 86% of costs, the Green SHDA can set 78% of total units at 30% AMI, with the remainder of units for moderate-income households.</p>

<sup>60</sup> New York State Assembly Bill A9088: <https://www.nysenate.gov/legislation/bills/2023/A9088>.

<sup>61</sup> This table models affordability scenarios across the Green SHDA portfolio. Deeming a unit “affordable” means no household has to pay more than 30% of their income on housing costs, and is eligible to those making no more than 120% of AMI.

**TABLE 2**

# Total Unit Creation Under Varying Subsidy and Affordability Structures

Affordability structure	Subsidy and Loan Mix		
	50% LOAN / 50% SUBSIDY	30% LOAN / 70% SUBSIDY	HIGHER SUBSIDY RATIOS
<p><b>SCENARIO 1: Balanced affordability mix across units</b></p> <ul style="list-style-type: none"> <li>• 270,327 units at 30% of AMI</li> <li>• 270,327 units at 50% of AMI</li> <li>• 270,327 units at 80% of AMI</li> <li>• 991,199 Moderate-income units</li> </ul> <p>Total: <b>1,802,180</b> Green SHDA units over 10 years</p>	<ul style="list-style-type: none"> <li>• 347,563 units at 30% of AMI</li> <li>• 347,563 units at 50% of AMI</li> <li>• 347,563 units at 80% of AMI</li> <li>• 244,582 Moderate-income units</li> </ul> <p>Total: <b>1,287,272</b> Green SHDA units over 10 years</p>	<ul style="list-style-type: none"> <li>• 376,111 units at 30% of AMI</li> <li>• 376,111 units at 50% of AMI</li> <li>• 376,111 units at 80% of AMI</li> <li>• 0 Moderate-income units</li> </ul> <p>Total: <b>1,112,457</b> Green SHDA units over 10yrs</p>	
<p><b>SCENARIO 2: Deeper affordability mix across units</b></p> <ul style="list-style-type: none"> <li>• 405,491 units at 30% of AMI</li> <li>• 0 units at 50% of AMI</li> <li>• 405,491 units at 80% of AMI</li> <li>• 991,199 Moderate-income units</li> </ul> <p>Total: <b>1,802,180</b> Green SHDA units over 10 years</p>	<ul style="list-style-type: none"> <li>• 527,781 units at 30% of AMI</li> <li>• 0 units at 50% of AMI</li> <li>• 527,781 units at 80% of AMI</li> <li>• 223,996 Moderate-income units</li> </ul> <p>Total: <b>1,287,272</b> Green SHDA units over 10 years</p>	<ul style="list-style-type: none"> <li>• 476,438 units at 30% of AMI</li> <li>• 341,793 units at 50% of AMI</li> <li>• 217,505 units at 80% of AMI</li> <li>• 0 Moderate-income units</li> </ul> <p>Total: <b>1,035,736</b> Green SHDA units over 10 years</p>	
<p><b>SCENARIO 3: Prioritizing extremely low-income units across units</b></p> <ul style="list-style-type: none"> <li>• 576,698 units at 30% of AMI</li> <li>• 0 units at 50% of AMI</li> <li>• 0 units at 80% of AMI</li> <li>• 1,184,702 Moderate-income units</li> </ul> <p>Total: <b>1,802,180</b> Green SHDA units over 10 years</p>	<ul style="list-style-type: none"> <li>• 746,618 units at 30% of AMI</li> <li>• 0 units at 50% of AMI</li> <li>• 0 units at 80% of AMI</li> <li>• 527,781 Moderate-income units</li> </ul> <p>Total: <b>1,287,272</b> Green SHDA units over 10 years</p>	<ul style="list-style-type: none"> <li>• 780,945 units at 30% of AMI</li> <li>• 0 units at 50% of AMI</li> <li>• 0 units at 80% of AMI</li> <li>• 220,226 Moderate-income units</li> </ul> <p>Total: <b>1,001,211</b> Green SHDA units over 10 years</p>	

The Green SHDA would mark a new era for federally backed housing, and provide a public option for affordable housing development and preservation that gets around the drawbacks of current federal programs. The Low-Income Housing Tax Credit (LIHTC) program — the primary tool for preserving and developing affordable housing today — has become increasingly hard to use in today’s housing market and is facing a wave of affordability expirations as the 30-year affordability mandates expire, which could lead to higher rent hikes for tenants.<sup>62</sup> What’s more, this program primarily outsources public dollars to for-profit developers rather than prioritizing mission-driven public and nonprofit entities that are accountable to community needs. Through providing deep subsidies, recouping funds through a revolving loan fund, centralizing and streamlining financing and underwriting, ensuring permanent affordability, and prioritizing mission-driven partners, the Green SHDA would usher in a new path for leveraging public dollars to pay for unionized construction, high building performance, and permanent affordability. Our financial analysis shows that a Green SHDA would enable comparable per-unit financing costs to what is possible in LIHTC deals, but can ensure these units remain affordable for longer, and that monies go to better social purposes than enticements to profit-motivated intermediaries.

Importantly, once at scale, the Green SHDA could also reduce the market power of bad-faith landlords and cool the market to bring down costs. Right now, landlords have hiked rents so high that federal subsidies like Housing Choice Vouchers have lost their purchasing power in many markets.<sup>63</sup> And increases in rental costs in a region are directly associated with increases in homelessness rates.<sup>64</sup> Over time, the Green SHDA’s interventions in the private housing market would have a chilling effect. This would reduce speculation and bring down costs, thereby enabling other federal forms of housing subsidy to go further for extremely low-income renters and limiting the extent of market power that landlords have to gouge tenant rents.

To bring down the cost of housing construction and preservation, the Green SHDA will work with other key federal agencies to support mass procurement processes — lowering insurance costs for housing providers and reducing bureaucratic hurdles to housing preservation that harm communities. Our forthcoming research on the home insurance crisis will specifically address how green social housing and home insurance policies can work in harmony to increase the availability of permanently affordable, disaster-safe housing.

62 Winton Pitcoff, *The next preservation challenge: expiring LIHTC properties*, Affordable Housing Finance, April 25 2024, [https://www.housingfinance.com/news/the-next-preservation-challenge-expiring-lihtc-properties\\_o](https://www.housingfinance.com/news/the-next-preservation-challenge-expiring-lihtc-properties_o).

63 Shelby R. King, “How to Make Universal Vouchers Actually Work,” *Shelterforce*, October 15, 2021. [https://shelterforce.org/2021/10/15/how-to-make-universal-vouchers-actually-work/?gad\\_source=1&gclid=Cj0KCQjwpNuyBhCuARIsANJqL9Ocnafc60FtqqxBTd5ojknJJP7rEwUZd3pUuzoEcMdyvzf\\_xo8UL4aAkg3EALw\\_wcB](https://shelterforce.org/2021/10/15/how-to-make-universal-vouchers-actually-work/?gad_source=1&gclid=Cj0KCQjwpNuyBhCuARIsANJqL9Ocnafc60FtqqxBTd5ojknJJP7rEwUZd3pUuzoEcMdyvzf_xo8UL4aAkg3EALw_wcB).

64 U.S. Government Accountability Office, “Homelessness: Better HUD Oversight of Data Collection Could Improve Estimates of Homeless Population,” July 14, 2020, <https://www.gao.gov/products/gao-20-433>.

# ENDING THE CAPITAL REPAIR BACKLOG IN PUBLIC HOUSING

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Recognizing the specific need to preserve our nation's public housing stock and address the backlog of maintenance, the Green SHDA would also include funds for HUD to work alongside the Green SHDA to preserve and improve

the public housing stock.<sup>65</sup> A Green SHDA must include sufficient funding to clear the HUD's public housing capital backlog, as well as legislative language ensuring that Public Housing Authorities can access funds.

## GOVERNING THE GREEN SHDA

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The Green SHDA would be governed by a board that includes a combination of federal government actors, tenants and residents of public and green social housing, environmental justice and climate experts, labor leaders, and other green social housing experts.

In addition to embedded democratic governance structures within the Green SHDA itself, this entity would provide technical assistance to local communities that want to establish democratic control of their own homes. Finances from the Green SHDA will also help eligible entities get projects off the ground by creating an infrastructure of technical assistance providers that can help tenant unions, groups of residents, and mission-driven nonprofits receive the technical assistance needed to finance and operate green social housing.

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<sup>65</sup> Daniel Aldana Cohen et al., "A Green New Deal for Public Housing to Deliver Racial, Economic, and Climate Justice," Climate and Community Project, April 19, 2021, <https://www.climateandcommunity.org/a-gnd-for-public-housing>.



## ADVANCING GREEN SOCIAL HOUSING MEANS COMMITTING TO

# Public Housing Preservation

### The SECTION 9 PUBLIC HOUSING

stock in the US provides permanently and deeply affordable housing to 1.7 million low-income Americans. In many places, public housing is one of the few options for affordable housing for which people do not have to pay more than 30 percent of their income on rent.

Our research shows that public housing is **RAPIDLY DECLINING**. Over the past decade, the US has lost one out of every four public housing units.<sup>66</sup> Time and time again, Congress has failed to provide the authorized funding necessary to preserve and maintain public housing. As a result, residents are forced to live in buildings with significant deferred maintenance needs, leading to health complications like asthma or hypothermia, and safety concerns like fire and flood risks. Policies favoring demolition, privatization, and the underfunding of public housing have also caused a rapid decline of units.

Federal investments in green social housing must include the preservation and expansion of Section 9 public housing units. The government cannot abandon these residents — the majority of whom are Black and brown with incomes below the poverty line. It is the government's duty to transform every public housing unit into a safe, healthy, and resilient place to live.

Our research shows that a Green New Deal for Public Housing would:

- **INVEST \$16.2 TO \$23.4 BILLION** a year for 10 years to preserve, upgrade, and expand public housing stock;
- **BENEFIT THE HEALTH OF RENTERS**, lowering asthma rates and improving cardiovascular health;
- **CREATE 280,000 HIGH-PAYING JOBS**, with preference to public housing residents; and
- **LOWER EMISSIONS** by 5.7 million metric tonnes of carbon, which is the equivalent of 1.26 million fewer cars on the road every year.

The Green New Deal for Public Housing and a Green Social Housing Development Authority are complementary pieces of legislation that should be passed together to bring housing and climate justice to renters across America.

To ensure that public housing residents are supported by a Green Social Housing Development Authority, the Green SHDA proposal would also:

- Ensure that public housing agencies are eligible recipients of Green SHDA funds to preserve and expand public housing;
- Authorize appropriations to clear the capital repair backlog in all public housing units; and
- Repeal the Faircloth Amendment, which currently caps the federal government's ability to build new public housing.

<sup>66</sup> McDonald, Cohen, and Gourevitch, *The Case for a Green New Deal for Public Housing*.

# would transform our homes in the face of the climate crisis

While the federal government fell short of authorizing housing development and rehabilitation funding needed to tackle the concurrent housing and climate crises in the Inflation Reduction Act, renters everywhere need these investments more than ever before. The Green SHDA will finally deliver healthy and beautiful homes, and prioritize support for frontline environmental justice communities in the process.

From California to Connecticut, campaigns for green social housing are uniting environmental and climate justice advocates, tenant and housing advocates, and labor coalitions around one umbrella vision for decommodified, community-controlled, resilient housing stock. Green social housing can be defined in many ways, and the definition of the “green” will depend in part on the geographic context, environmental injustices within that region, and the climate shocks and stressors that harm renters. But at a broader level, creating a federal Green SHDA is fundamentally a climate justice policy.

The Green SHDA will:

- **Transform our homes into comfortable, health-promoting, climate-friendly, and environmentally resilient places to live.**

Investments in induction stoves and ventilation systems will lower indoor air pollution, allowing people to enjoy meals with loved ones without the risk of developing chronic health conditions like asthma or heart diseases. Energy-efficient air conditioning units and heat pumps will lower utility bills and keep people safe from health issues like heat stroke during increasingly hot summers. Lead and mold remediation will give tenants toxin-free living options. These investments will create the healthy and affordable homes we all deserve, while also decarbonizing our residential building sector to help address the climate crisis.<sup>67</sup>

- **Support frontline environmental justice communities.**

Through deep decarbonization efforts and healthy home retrofits, the Green SHDA will decrease exposure to environmental toxins in communities on the frontlines of environmental injustice. The concept of a Green SHDA is a rejection of the racist and classist approach to urban planning in which low-income communities have little say over their neighborhoods. It will develop and rehabilitate housing with the full community in mind, ensuring residents are not segregated from key community infrastructure like grocery stores, childcare, or health care. Green social housing developments will also serve as resilience hubs, where communities can plan for natural disasters, respond in real time, and

<sup>67</sup> Benjamin Goldstein, Dimitrios Gounaridis, and Joshua P. Newell, “The carbon footprint of household energy use in the United States,” *Proceedings of the National Academy of Sciences of the United States of America* 117, no. 32 (July 2020): 19122–30. <https://www.pnas.org/doi/10.1073/pnas.1922205117>.

coordinate recovery. Recognizing the disproportionate siting of low-income housing in disaster-prone areas and the importance of self-determination, the Green SHDA will work alongside communities on the front lines of the climate crisis following disasters to ensure communities are able to live in places where they can thrive together.<sup>68</sup>

- **Ensure that investments from the Inflation Reduction Act benefit those hurt most by the housing crisis.** While the Inflation Reduction Act has the potential to electrify and revamp the building sector in important ways, the legislation does not provide guardrails to protect tenants from being displaced in the process. We need massive investments in green social housing, paired with rent regulations, to ensure that the Biden administration's efforts do not further entrench a system of exclusion or displacement of the environmental justice communities it aims to support.<sup>69</sup> The Green SHDA will prevent green gentrification by combining permanently affordable housing and strong climate and environmental standards with anti-displacement guardrails and opportunities for community ownership, allowing communities to

mitigate and adapt to climate threats without being displaced. Unlike historical examples of government investment in the housing sector (like those that led to redlining), the Green SHDA would be preserving and creating homes that are outside of the speculative housing market, eliminating the threat of speculation and investors preying on BIPOC communities to generate profit. Furthermore, the existence of the Green SHDA will help foster cross-agency collaboration between federal housing and energy agencies on the emergency building technologies needed to make sure everyone can live healthy lives.

- **Build public sector capacity to accelerate the use of green technologies throughout the buildings sector,** benefiting consumers and speeding up decarbonization beyond just social housing. Green social housing will create a new and direct mechanism for the state to invest in green retrofits and decarbonization. Eliminating carbon pollution from buildings is a monumental challenge, especially when they are privately owned. One of the major advantages of a large green social housing stock is that it allows governments to directly manage or regulate a huge swath of the building sector, via both retrofits and new construction.

<sup>68</sup> Chenyi Ma and Tony Smith, "Vulnerability of Renters and Low-Income Households to Storm Damage: Evidence From Hurricane Maria in Puerto Rico," *American Journal of Public Health* 110, no. 2 (February 2020): 196-202, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6951386/>; Dimuthu Ratnadiwakara and Buvaneshwaran Venugopal, "Do Areas Affected by Flood Disasters Attract Lower-Income and Less Creditworthy Homeowners?" *Journal of Housing Research* 29, no. sup1 (November 2020): S121-S143, <https://www.tandfonline.com/doi/full/10.1080/10527001.2020.1840246>.

<sup>69</sup> Daniel Aldana Cohen et al., "Securing Climate Justice Federally: A Political Economy Approach to Targeted Investments," *Environmental Justice* 16, no. 5 (November 2022), <https://www.liebertpub.com/doi/full/10.1089/env.2022.0047>.

**FIGURE 1**

<b>Elements of Green Social Housing Development Authority</b>	<b>Climate policy connection</b>
<p><i>Permanently off the private market (“decommodified”) and no one pays more than 25 percent of their income on rent</i></p>	<ul style="list-style-type: none"> <li>• Affordability provisions over long time periods ensure that green investments in communities with sensitive land markets don’t lead to further displacement of low- and moderate-income residents through green gentrification</li> <li>• Affordability means that everyone, regardless of income, can have access to beautiful and environmentally resilient housing</li> <li>• Necessary energy efficiency upgrades and retrofits can happen without increasing rents or passing costs on to tenants</li> <li>• Building enough new decommodified housing will ensure that migrants from other countries or other US regions (often displaced by climate impacts) can move to welcoming communities with adequate housing supply</li> </ul>
<p><i>Resident control and community participation</i></p>	<ul style="list-style-type: none"> <li>• Tenants are empowered and have a clear and safe structure to voice needs for repairs and climate resilience upgrades</li> <li>• Residents can make decisions about where funding goes for the ongoing maintenance of housing</li> <li>• Residents can work together to create green spaces, gardens, and other types of meaningful changes to their property site</li> </ul>
<p><i>Publicly owned or state-backed housing</i></p>	<ul style="list-style-type: none"> <li>• Enables the state to overcome challenges of decarbonization of private rental housing by directly managing or financing huge swaths of the residential building sector, which creates a more direct pathway for green retrofits and decarbonization of housing.</li> <li>• States can more easily leverage federal funding streams, reducing budgetary strain</li> <li>• Ability to co-locate community resilience centers and other resilience-oriented resources with housing</li> </ul>
<p><i>Strong tenant protections</i></p>	<ul style="list-style-type: none"> <li>• Tenants do not have to fear retaliation in the form of no-cause evictions for requesting repairs, enabling more communication around repair and greening needs</li> <li>• Good cause protections ensure landlords won’t be able to use green investments as an excuse to displace tenants</li> </ul>

# would create good green union jobs

Labor unions have been key to the green social housing movement in the United States during the last 100 years, from developing union-owned housing in New York in the 1970s to including affordable housing demands in collectively bargained contract campaigns. A massive expansion of green social housing nationwide — and commitment to the deep environmental and climate justice work needed to make it happen — will create thousands of high-road jobs in unionized sectors of the workforce. Too often, our workers are also renters who cannot afford housing, and this proposal charts a new path forward for affordability for the millions of working-class Americans who make our economy run.

The Green SHDA will:

- **Generate up to 615,000 jobs annually, including 232,000 direct well-paying union jobs in building trades industries.** This includes jobs in the construction industry (e.g., residential repair construction, roofing, contracting), maintenance jobs, jobs in the decarbonization and green landscaping sectors (such as HVAC installation and plumbing jobs), and indirect jobs across the social service sector. It will also create jobs in communities surrounding green social housing preservation and construction projects, boosting local economies and working-class communities around the country. Specifically, our analysis shows that in its initial ten-year start up period, the annual job growth of the Green SHDA would enable the creation of between 531,000 and 615,000 jobs each year, accounting for jobs for both new housing construction and preservation.
- **Comply with Davis-Bacon and prevailing wage laws** to ensure jobs are completed with unionized labor and that workers are paid fairly; and
- **Promote the right to organize** by requiring an explicit neutrality policy, and notifying all workers on Green SHDA projects of their right to organize under the National Labor Relations Act.

TABLE 3

## Job estimates (in job-years) generated by the Green SHDA in first 10 years<sup>70</sup>

Year <sup>71</sup>	DIRECT JOBS	INDIRECT JOBS	INDUCED JOBS	TOTAL JOBS
1	232,000	166,000	217,000	<b>615,000</b>
2	228,000	163,000	214,000	<b>605,000</b>
3	224,000	161,000	211,000	<b>596,000</b>
4	221,000	158,000	207,000	<b>586,000</b>
5	217,000	155,000	204,000	<b>576,000</b>
6	214,000	153,000	200,000	<b>567,000</b>
7	210,000	150,000	197,000	<b>557,000</b>
8	207,000	148,000	194,000	<b>549,000</b>
9	203,000	146,000	191,000	<b>540,000</b>
10	200,000	143,000	188,000	<b>531,000</b>
Average employment per year	216,000	154,000	202,000	572,000
<b>TOTAL</b>	<b>2,156,000</b>	<b>1,543,000</b>	<b>2,024,000</b>	<b>5,723,000</b>

Our state-level jobs estimates in California, New York, and Illinois illustrate the impact of Green SHDA jobs creation across the country (see Methodological Appendix). In its first year alone, the Green SHDA would generate an estimated 49,000 jobs in California; 23,000 jobs in New York State; and 17,000 jobs in Illinois.

<sup>70</sup> Note: These estimates assume that 50% of total SHDA building funds are spent on new construction and 50% are spent on rehabilitation/retrofitting.

<sup>71</sup> We use “job-years”, which means one job for one year. This means if a worker has the job for longer than a one-year period, it’s counted as a job generated by the Green SHDA in the second year as well.

# would usher in a new era of tenant protections

Tenant-led movements around the country – from the federal Homes Guarantee campaign to local tenant union chapters – have been leading the fight to decommodify housing. The Green SHDA embeds the core principles of tenant power in its mission and operations.

The Green SHDA will:

- **Ensure tenants have a right to organize.** The Green SHDA will support tenant organizing in two ways. First, it will create a pathway for organized tenants to acquire the properties in which they live through a “tenant opportunity to purchase” or a “community opportunity to purchase.” It will also work alongside tenant unions to support green social housing conversion campaigns, operating as an acquisition and financing source for these grassroots efforts. Second, authorizing legislation will enshrine the right to organize in all Green SHDA properties, ensuring tenants can exercise their agency and collective action as desired.
- **Protect tenants by conditioning property sales and transfers on a strong set of protections.** The Green SHDA will not sell properties to for-profit real estate developers or landlords. All property sales will ensure residents have just-cause eviction protections and democratic community management policies. This means people will be able to stay in their homes without fear of eviction or retaliation. Furthermore, Green SHDA-backed properties will have anti discrimination provisions that go beyond the Fair Housing Act, ensuring no one faces discrimination for using a voucher, gender identity, conviction or arrest record, credit scores, or immigration status.
- **Rents will be regulated at all Green SHDA properties.** The Green SHDA will ensure that rent increases do not exceed 3 percent or CPI (whichever is lower) in any given year. This means that tenants living in Green SHDA properties will be able to stay housed affordably for longer periods of time. Furthermore, rent regulations will help insulate Green SHDA properties from speculation in the market.
- **Stem displacement in Black and brown communities** by taking housing outside of the financial market and providing permanently affordable, community-controlled options as alternatives. Weeding out racial inequalities in the housing market requires removing the profit motive from housing altogether, as it has enabled private actors to discriminate against Black and brown households through mass evictions and displacement as a tool for generating profit. In prioritizing working with communities and public institutions directly, the Green SHDA would be a departure from federal policymaking that props up a national housing market built on racial capitalism. It will provide community stability for neighborhoods on the front lines of gentrification, and empower tenants to chart a path forward that works best for them and their neighbors.

# would offer pathways to resident control and ownership

A Green SHDA will:

- **Offer pathways to resident ownership by financing and supporting models like community land trusts and limited-equity cooperatives nationwide.** These models have proven to be successful in the United States; the largest limited equity cooperative, Co-op City in the Bronx, is the largest naturally occurring retirement community, showing the value of shared ownership for helping people age in place and experience stability and housing control over long periods of time. In these systems, owners will see some wealth building, but resale values are capped to ensure long-term affordability. For many people, this form of ownership is desirable because it is far more affordable than conventional ownership in our current market; it provides long-term housing security with solid protections against foreclosure, and it facilitates the development of stable, diverse communities in which people can stay as community members for as long as they want.
- **Empower tenants to take control of their own housing.** The Green SHDA will set up a federal structure to provide tenants the opportunity to buy the property where they live in the event their landlord wants to sell it on the private market. Known as a “tenant opportunity to purchase,” this has been a successful model for moving housing off the private market and into the hands of tenants in places like Washington, DC.<sup>72</sup>
- **Provide technical assistance to tenant organizers and tenants themselves who want to form cooperatives, land trusts, or other types of resident ownership collectives.** The current dearth of technical assistance partners nationally prevents tenants from being able to mobilize quickly to intervene in sales of their property from one speculative landlord to another. A federal investment in providing technical assistance for tenants at these critical junctures will allow for simpler and more efficient acquisition processes, and expand the reach of these shared ownership models.

<sup>72</sup> Wilfred Chan, “What if We Made It Easier for Renters to Buy Their Buildings?” *Curbed*, March 8, 2023, <https://www.curbed.com/2023/03/tenants-opportunity-purchase-act-buy-buildings-albany.html>; Julie Lawton, “Tenant Purchase as a Means of Creating and Preserving Affordable Homeownership,” *Georgetown Journal of Poverty Law Policy* XX, no. 1 (December 2012), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2202575](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2202575).



# would ensure that immigrant communities can access housing

The housing crisis is hitting immigrant communities especially hard. Immigrants are some of the lowest paid workers in the country, and discrimination often means they are forced to live in overcrowded, uninhabitable conditions. Immigrants living in the US are also disproportionately displaced from their neighborhoods following climate disasters, creating additional barriers to building roots, having economic stability, and maintaining essential cultural ties. Despite these unique challenges, immigrant households are too often excluded from federal housing programs they need.

Carbon emissions — disproportionately generated by the United States and China — are also fueling a mass displacement crisis that forces residential mobility across the globe.<sup>73</sup> Internal displacement within the US on the hyperlocal, regional, and federal scales is also changing the population densities of our communities and creating new housing needs in real time. Estimates show that by 2100, sea level rise in the US alone could result in 18 times the number of migrants.<sup>74</sup>

Rhetoric from local elected officials and news outlets over the last year has pitted the housing needs of newly arrived immigrants against the housing needs of low-income citizens, instead of underscoring the importance of increasing our supply of resilient housing to meet the needs of everyone. The Green SHDA would usher in a new approach to immigrant rights, one rooted in welcoming people into communities across the country to grow roots in a new place, live safely, and become economically mobile.

The Green SHDA will:

- **Dramatically increase the supply of housing to create more places for people to live.** A Green SHDA would enable the public sector to efficiently and equitably build, finance, and acquire hundreds of thousands of units of housing — taking advantage of distressed real estate, vacant city- and state-owned land, and more. This will create more housing options, moving communities away from a scarcity approach,

in which low-income households are competing for housing resources, and toward a housing system that provides options for all. The Green SHDA approach's concentration of resources in the public sector will also enable the government to take action on emerging crises — like the displacement of new immigrant and refugee communities — much faster and more equitably than the private sector.

<sup>73</sup> *Unbound Philanthropy, On the Frontlines of the Climate Emergency: Where Immigrants Meet Climate Change* (Unbound Philanthropy, December 2021), <https://unboundphilanthropy.org/wp-content/uploads/2021/12/On-the-Frontlines-of-the-Climate-Emergency-1.pdf>.

<sup>74</sup> Mathew E. Hauer, Sunshine A. Jacobs, and Scott A. Kulp, "Climate migration amplifies demographic change and population aging," *Proceedings of the National Academy of Sciences of the United States of America* 121, no. 3 (January 2024), <https://www.pnas.org/doi/10.1073/pnas.2206192119>.

- **Prohibit discrimination based on immigration status.** The Green SHDA will deliver beautiful, safe, and permanently affordable housing into the hands of people who need it most, regardless of their immigration status. This will reduce discrimination that is rampant in the private market.
- **Expand the stock of resilient housing that incorporates collective living.** When imagining green social housing in workshops, immigrant participants often reflect on green housing contexts in their home countries — homes with lush backyards, easy access to green space, fresh air, tin roofs that prevent flooding. The Green SHDA will create a housing stock that not only keeps immigrant communities on the front lines of the climate crisis safe during increasingly common disasters but also incorporates design elements that reflect the beautiful and resilient living conditions that some immigrants experienced before coming to the US.
- **End the era of speculation in frontline immigrant communities that has led to gentrification and displacement.** In the private real estate market, immigrant communities are often taken advantage of and squeezed for a profit, leading to displacement and gentrification pressures. Furthermore, private real estate actors are underproducing family-sized apartments in the hopes of squeezing more units into a building, leaving families with fewer options for intergenerational living. The Green SHDA will stabilize neighborhoods where costs are quickly rising by transferring properties into the green social housing sector, and will create permanent affordability models that meet immigrant families' needs and allow households to build roots.

# Envisioning Green Social Housing Communities

In this section we provide illustrative vignettes of the kinds of projects the Green SHDA could bring to life.

## NEW AFFORDABLE HOUSING IN SYRACUSE, NY



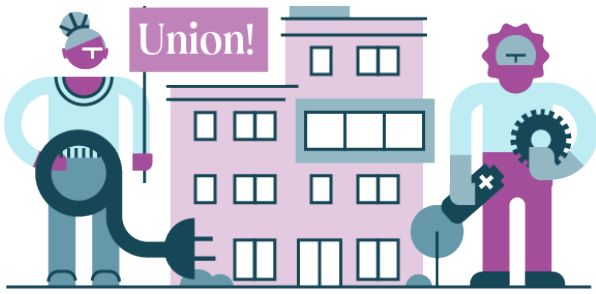
John was born and raised in Syracuse, NY. After his wife died, he had to start working more shifts as a painter so that he and his son could get by. Finding affordable housing became increasingly difficult with his annual salary of \$37,000. Last year, a mega-landlord who lives two states over bought his apartment building and hiked his rent \$150. And despite many calls to fix the heating, John found himself shivering at home through the cold winters and worrying about his son.

Thankfully, the city of Syracuse had recently transferred a vacant lot in his neighborhood to the Green SHDA, which transformed it into a 50-unit, deeply affordable building. The Green SHDA transferred the building to a local community land trust, which helps manage the property and includes many community leaders whom John has come to trust over his years here. The building is more energy efficient than anywhere John has lived, with extra insulation and triple pane windows. Most importantly, he and his son are warm through the winter.

### PRO FORMA FOR SYRACUSE

Basic Data	
Number of units	50
Bedroom size breakdown	9 Studios 24 One-bedrooms 22 Two-bedrooms 4 Three-bedrooms
% of units < 120% AMI	100%
Total development costs	\$28.0 million
Affordability Tiers	
50% AMI (\$33,200 annual salary for an individual)	50 units
Construction + Permanent Sources	
Green SHDA grant subsidy	\$28.0 million (100% of total development cost)
Uses	
Acquisition cost	\$0 (transfer from Syracuse Land Bank)
Construction cost	\$25.8 million
Soft costs	\$2.2 million

# TENANT COOPERATIVE IN KANSAS CITY, MISSOURI



Ahmed has been organizing a tenant union for six months in his building. He is on a fixed income and has a Section 8 Housing Choice Voucher. The conditions in his building were dire — mold, pests, broken doors — but he and the union were able to build power and win some urgent repairs. When the landlord sold the building, they feared what another speculative corporation might mean for their housing stability.

Ahmed and his tenant union reached out to a local technical assistance partner — funded by the Green SHDA — for help. Because of the Green SHDA, they were able to put in an offer to collectively purchase the building from the landlord directly, and secure the funding needed to substantially repair and retrofit their building. Every tenant was able to stay in the apartment, and many plan to grow old there. Tenants are repainting their apartments and building a community garden. In today’s market, Ahmed and his neighbors never thought they would be able to have control over their home, but the Green SHDA has changed that.

## PRO FORMA FOR KANSAS CITY

Basic Data	
<i>Number of units</i>	30
<i>Bedroom size breakdown</i>	5 One-bedrooms 19 Two-bedrooms 6 Three-bedrooms
<i>% of units &lt; 120% AMI</i>	100%
<i>Total development cost</i>	\$7.4 million
Affordability Tiers*	
<i>60% AMI (vouchers enable extremely low-income tenants to live in units)</i>	18 units
<i>70% AMI</i>	11 units
<i>Super's unit</i>	1
Construction + Permanent Sources	
<i>Green SHDA loan</i>	\$3.5 million (47% of total development cost)
<i>Green SHDA grant subsidy</i>	\$4.0 million (53% of total development cost)
Uses	
<i>Acquisition cost</i>	\$2.9 million (market purchase of distressed building)
<i>Construction cost</i>	\$3.8 million
<i>Soft costs</i>	\$0.7 million

\* Rents set at Fair Market Rent, AMI levels shown are AMI equivalent

# MULTIFAMILY BUILDING IN ATLANTA, GEORGIA



Sasha lives in Atlanta, GA. She is on a fixed income and lives with a medical disability. Her apartment doesn't have air conditioning, and the increasing heat waves in the summer are putting her at risk of heat exhaustion, motivating her to find a new place. But with three kids in a city with skyrocketing rents, finding a large apartment is becoming harder by the day. And now, her aging mother is needing more and more help and must move in.

The Green SHDA just financed a new, mixed-income, 260-unit property that includes three-bedroom apartments at 30 percent AMI. Finally, Sasha and her family have a home with central air, and Sasha's mom can grow old under a roof with her grandkids. The building is diverse, with teachers, nurses, carpenters, and people on disability, like Sasha, all living together. There are solar panels on the roof and a bike station out front that her kids use to get to their friends' houses.

## PRO FORMA FOR ATLANTA

Basic Data	
<i>Number of units</i>	260
<i>Bedroom size breakdown</i>	28 Studios 106 One-bedrooms 101 Two-bedrooms 24 Three-bedrooms
<i>% of units &lt; 120% AMI</i>	82%
<i>Total development costs</i>	\$125 million
Affordability Tiers	
<i>30% AMI</i>	70 units
<i>50% AMI</i>	70 units
<i>80% AMI</i>	70 units
<i>&gt; 80% AMI</i>	49 units
<i>Super's unit</i>	1 unit
Construction + Permanent Sources	
<i>Green SHDA loan</i>	\$37 Million (30% of total development cost)
<i>Green SHDA grant subsidy</i>	\$88 million (70% of total development cost)
Uses	
<i>Acquisition cost</i>	\$6.0 million (purchase of zoning-constrained site + substantial rezoning)
<i>Construction cost</i>	\$114.0 million
<i>Soft costs</i>	\$5.0 million

# Conclusion

The Green Social Housing Development Authority can mark a new chapter for housing in the United States, allowing people access to the homes they deserve and creating necessary safeguards to address our changing climate. In these early days of the Inflation Reduction Act implementation and amidst skyrocketing rents, it is more important than ever that we direct our federal funding and collective attention toward the types of housing development and preservation most needed to realize housing justice and empower communities facing the brunt of the housing and climate crises.

# Methodology

## PRO FORMAS FOR HYPOTHETICAL CASE STUDIES

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The case studies are underwritten as if they were real-world projects in the relevant geographies and with the desired characteristics. Assumptions made during this underwriting are detailed below.

### Project viability

- An SHDA model is considered viable if it generates the desired affordability, shows a debt service coverage ratio (DSCR) of at least 1.15 in the first year, and shows positive project cash flow for at least 30 years.

### Project and construction characteristics

- New construction buildings are assumed to have a parking ratio of 0.5 spaces per residential unit;
- New construction buildings are assumed to be fully electrified; and
- New construction buildings are assumed to have a floor-plate efficiency ratio of 85 percent.

### Sources

- Financing sources for each project consist solely of debt issued by the SHDA (terms shown below) and grant subsidy issued by the SHDA out of appropriated funds.

### Loan terms

- Loans from the SHDA are underwritten at the 30-year treasury rate as of Friday, May 3, 2024 (4.68 percent). Loan term is set at 50 years, and interest is amortized fully across the 50-year term. Interest payments from SHDA projects would begin at project occupancy; no interest would be due during the construction period.

### Costs

- Hard costs are derived from RSMeans, an industry-standard source of construction cost estimate, adjusted for geography and for anticipated project labor agreements and/or prevailing wage.
- Soft costs are included based on their relevance to a publicly constructed project. In addition to a standard soft cost contingency, significant allowance is made for unanticipated financing fees or other costs.
  - Soft costs reflected in development budgets include but are not limited to: architect's fees, geotechnical, title insurance, environmental testing, surveys, and marketing and lease-up.

- Typical real estate project soft costs excluded based on their irrelevance to an SHDA project include: developer’s fees, bond-related fees, construction interest, third-party construction monitoring, and replacement and operating reserves (reserves would be held centrally by the SHDA).

## Rents

- Rents are underwritten at the AMI level described for the relevant jurisdiction, net of the utility allowances for a fully electrified building in the relevant jurisdiction;
- Rent burden is assumed at 30 percent of gross income;
- Market rents are underwritten at 120 percent of AMI; and
- Existing unit rents (Kansas City Tenant Opportunity to Purchase example) are underwritten at the local Fair Market Rents.

## Operating costs

In the absence of clear data on operating costs nationwide for residential rental or cooperative units, operating costs are estimated based on cost-of-living trends across geographies and the relative building sizes of the examples. Maintenance and operating cost levels are shown below for the three examples:

- Atlanta, GA: \$7,200 per unit
- Syracuse, NY: \$7,200 per unit
- Kansas City, MO: \$8,800 per unit



# Estimating affordability: the “average SHDA unit”

Affordability options shown in Tables 1 and 2 were estimated by taking an “average SHDA unit,” which was based on “Model 3” — the mixed-income new construction project in Atlanta. New construction was chosen because acquisition/rehab projects involve an existing and unpredictable set of rents and tenant incomes, and would not allow the SHDA to target a particular affordability mix. Holding other key assumptions constant, various unit and affordability mixes were plugged into Model 3, all the while ensuring that all configurations met the conditions for “project viability” shown above. The results are detailed in the memo.

# Estimating potential national SHDA unit creation

To create national estimates of potential SHDA unit creation, we needed to 1) estimate average unit costs for both newly constructed housing as well as acquisition with rehab, and 2) simulate SHDA spending that combined subsidy with a revolving loan fund.

## HOUSING UNIT COSTS

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The SHDA would create new social housing supply via two sources: new construction and acquisition with rehabilitation. The methodologies to estimate unit costs for both are slightly different. Since the SHDA would be a national authority, we tried to identify national average estimates, acknowledging that costs will be higher in some markets than in others.

### New construction

To estimate new construction cost, we relied on RSMeans data, which is often used in housing construction budgeting.<sup>75</sup> The data provides estimated square unit costs for various building types, given different configurations of building materials and total square footage. We used available cost estimates for the 4- to 7-story apartments and 8- to 24-story apartments.

To estimate average per-unit building costs, we then rely on a variety of assumptions. We assume:

- **Unit size:** 1,000 square feet would represent a comfortably sized two-bedroom for a family
- **Livable space:** 85 percent of the total building square footage is livable space, reserving the other space for common areas, elevators, etc.
- **Soft costs:** 10 percent of construction costs added as soft costs
- **Acquisition costs:** 10 percent of construction costs added as acquisition cost
- **Union labor premium:** 20 percent of construction costs added as a union labor premium

The estimates range from \$299,000 to \$457,000. **The average per-unit cost for new apartment construction is \$363,801.** This is the number we use in our modeling.

### Acquisition & renovation

Next, we estimate costs for acquisition and renovation, another method the SHDA can use to expand social housing supply.

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<sup>75</sup> Doheny, Matt. 2022. "Square Foot Costs with RSMeans Data" Gordian Group: Greenville, South Carolina.

## Acquisition costs

*Analysis of distressed multifamily acquisition was conducted by Henry Gomory.*

To estimate average acquisition costs, we use data from CoreLogic, which provides various real-time data products about the housing market. We use transaction data, which includes the sale price of multifamily properties, and the condition of the sale. To identify “distressed” multifamily properties, we select transactions that were:

- Either short sales or Real Estate Owned (REO) sales after a foreclosure.
- Properties with five or more units.<sup>76</sup>

The CoreLogic data contains a high degree of missing values, which we assumed to be missing at random and used multiple imputation to boost sample size.

**The median sale price of a distressed multifamily building in 2022 was \$94,077 per unit.**

## Green retrofit and renovation costs

Next, we estimate the costs to retrofit and renovate the distressed properties to energy efficiency and livability standards. To do this, we relied on a [2020 report](#) by the New York State Energy Research and Development Authority (NYSERDA), which estimates retrofit costs for a set of New York multifamily properties, based on actual work on the properties carried out by a sample of contractors.

Using Table 8 (page 9) and Table 5 (page 4) of the report, we first estimate the per unit costs of the retrofitting. We then used RSMeans location factor adjustments to convert the local New York prices into national average prices. This produced an estimated average national rehab and retrofit cost of \$120,971 per unit. Since the work was carried out in 2020, we then applied an adjustment for inflation, which produced a national average cost of approximately \$140,000.

However, we know that “financial distress” does not always equate with physical distress, so many units may not need the kind of heavy gut renovation that is reflected in the NYSERDA report. **We thus estimate the range of retrofit costs to be between \$100,000 and \$140,000.** For our calculations below, we use a midpoint of \$120,000.

Therefore, with an acquisition cost of \$94,077 and a retrofit and renovation cost of \$120,000, **we estimate the total cost of acquisition and rehabilitation to be \$214,077.** We treat this as a cost estimate for 2022.

The SHDA would carry out new construction as well as acquisition and rehab — the exact mix of which would be up to the SHDA board. For our purposes, we assume a 50-50 split between new construction and acquisition with rehab. By averaging the unit costs for new construction (\$363,801) and acquisition with rehab (\$214,077), **we achieve a national SHDA unit cost estimate of \$288,939.**

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<sup>76</sup> Many of the property transfer records in the CoreLogic dataset indicate that the property type is multifamily but are missing the precise number of units, making it impossible to calculate the sale price per unit. However, many such cases have information for the square feet of living area or the number of bedrooms. We use the living area and bedrooms to impute the number of units, by assuming these properties have the national median square footage per unit (875) and bedroom (1.75) and calculating an imputed number of units.

# SHDA FUNDING STRUCTURE

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The SHDA would rely on two funding streams: 1) congressionally appropriated funds for subsidy grants and agency operations, and 2) a revolving loan fund. Each SHDA project may use different combinations of loan funding and upfront capital grants.

## Appropriated funds for subsidy

The SHDA would receive annual congressional appropriations — as an illustration for this report, we have assumed \$30 billion annually. That subsidy would be for four main purposes:

- 1. One-time upfront capital grants:** These would happen at the beginning of new SHDA projects (new construction or acquisition with rehab). Used in this way as capital subsidy, SHDA projects do not require ongoing operating subsidy in order to be sustainable (though they could add such subsidies for additional affordability). In our modeling, these are factored in as a percentage of total construction cost covered by loans versus subsidies (See Tables 1 and 2).
- 2. Credit subsidy:** As a government entity issuing loans, the SHDA would be subject to the Federal Credit Reform Act of 1990, and be obligated to pay credit subsidy. The Office of Management and Budget (OMB) has a credit subsidy calculator that we did not have available to us for this analysis. For the purpose of modeling, we attempted to produce a \$0 credit subsidy by making the interest rate on the loans equal the discount rate, both set at the 30-year Treasury rate. Were the OMB to estimate potential credit subsidy costs of the SHDA, it might arrive at different numbers. The effect would be to draw in more from the \$30 billion subsidy pool, which might lead to slightly lower total unit counts.
- 3. Centralized reserves:** Most affordable housing developments capitalize one or more reserve pools at the beginning of their operations to be used in case of unforeseen operating shortfalls or to cover minor repairs. The SHDA would instead centralize all reserves to maximize efficient allocation of resources across its portfolio. This approach is loosely based on examples like the Danish National Building Fund (Landsbyggefonden) and the Joint Ownership Entity among community development corporations in New York City. We estimate setting aside 5 percent annually of subsidies (\$1.5 billion) for the centralized reserve pool in an interest-bearing account.
- 4. Agency operations:** The SHDA would have its own staff and buildings within HUD. They would be paid out of the total appropriated funds. In our modeling, we estimated an initial annual operations cost of \$500 million, increasing by 10 percent each year.

## Revolving loan fund

The SHDA would also have a revolving loan fund at its disposal. It would be able to create a variety of loan products of different interest rates and terms to meet the need of SHDA developments across a variety of different contexts. Despite the variety of possibilities that could exist in the actual operations, we assume all properties are under 50-year loans with an interest rate at the 30-year Treasury rate (4.68 percent at the time of analysis).

We then estimate different permutations in the mix between loans and subsidies across the portfolio, all while assuming \$30 billion in total annual subsidy. As Tables 1 and 2 show, deeper affordability can be achieved by using capital subsidy to account for a larger percentage of total capital costs. Larger shares of capital subsidy mean that the project loans are smaller, resulting in lower debt service payments and thus lower ongoing operating costs. To illustrate, consider the following calculations:

For all projects:  $TotalCost = Loan + Subsidy$

For all models, we assume \$30B in subsidy, but allow the loan amounts to fluctuate, based on what share of total costs are covered by subsidy versus loans.

If 50% of total costs are accounted for by subsidy and we have \$30B in subsidy available, then:

$$\begin{aligned}Subsidy &= \$30B \\TotalCost * 0.5 &= \$30B \\TotalCost &= \$60B\end{aligned}$$

Therefore:

$$\begin{aligned}\$60B &= Loans + \$30B \\Loans &= \$30B\end{aligned}$$

In contrast, if 70% of total costs are account for by subsidy, then with the same \$30B in subsidy:

$$\begin{aligned}Subsidy &= \$30B \\TotalCost * 0.7 &= \$30B \\TotalCost &= \$42.9B\end{aligned}$$

Therefore:

$$\begin{aligned}\$42.9B &= Loans + \$30B \\Loans &= \$12.9B\end{aligned}$$

Under these assumptions, we estimate total SHDA capital investment by originating one giant loan for each of the first 10 years of the SHDA, and then amortizing those loans over a 50-year term at 4.68 percent interest. In year one, capital investment is just the new loans and the \$30 billion in subsidy. But in year two, the SHDA will have recovered some principal from the first round of loans. Principal is reinvested to support new unit construction. Table 4 shows funding levels and new unit construction over the first 10 years.

**TABLE 4**

# SHDA Construction Funds for First 10 years

YEAR	NEW SUBSIDIES	RESERVES SET ASIDE	SHDA OPERATIONS	AVAILABLE SUBSIDIES	NEW LOANS ISSUED	PRINCIPAL RECOVERED	OUTSTANDING BALANCE	OUTLAYS (PRINCIPAL ONLY)	TOTAL SHDA CONSTRUCTION SPENDING	TOTAL UNIT COST	LOAN-TO-VALUE RATIO	LOAN PER UNIT	UNITS PER YEAR
1	\$30,000,000,000	\$1,500,000,000	\$500,000,000	\$28,000,000,000	\$28,000,000,000	\$0	\$28,000,000,000	\$28,000,000,000	\$56,000,000,000	\$288,939	0.5	\$144,470	\$193,813
2	\$30,000,000,000	\$1,500,000,000	\$550,000,000	\$27,950,000,000	\$27,950,000,000	\$71,591,598	\$55,806,816,804	\$28,093,183,196	\$56,043,183,196	\$294,718	0.5	\$147,359	190,645
3	\$30,000,000,000	\$1,500,000,000	\$605,000,000	\$27,895,000,000	\$27,895,000,000	\$146,465,615	\$83,408,885,573	\$28,187,931,231	\$56,082,931,231	\$300,612	0.5	\$150,306	187,537
4	\$30,000,000,000	\$1,500,000,000	\$665,500,000	\$27,834,500,000	\$27,834,500,000	\$224,764,920	\$110,793,855,733	\$28,284,029,840	\$56,118,529,840	\$306,624	0.5	\$153,312	184,487
5	\$30,000,000,000	\$1,500,000,000	\$732,050,000	\$27,767,950,000	\$27,767,950,000	\$306,637,802	\$137,948,530,129	\$28,381,225,604	\$56,149,175,604	\$312,757	0.5	\$156,378	181,491
6	\$30,000,000,000	\$1,500,000,000	\$805,255,000	\$27,694,745,000	\$27,694,745,000	\$392,238,093	\$164,858,798,943	\$28,479,221,186	\$56,173,966,186	\$319,012	0.5	\$159,506	178,546
7	\$30,000,000,000	\$1,500,000,000	\$885,780,500	\$27,614,219,500	\$27,614,219,500	\$481,725,276	\$191,509,567,890	\$28,577,670,053	\$56,191,889,553	\$325,392	0.5	\$162,696	175,651
8	\$30,000,000,000	\$1,500,000,000	\$974,358,550	\$27,525,641,450	\$27,525,641,450	\$575,264,585	\$217,884,680,170	\$28,676,170,620	\$56,201,812,070	\$331,900	0.5	\$165,950	172,800
9	\$30,000,000,000	\$1,500,000,000	\$1,071,794,405	\$27,428,205,595	\$27,428,205,595	\$673,027,091	\$243,966,831,583	\$28,774,259,778	\$56,202,465,373	\$338,538	0.5	\$169,269	169,991
10	\$30,000,000,000	\$1,500,000,000	\$1,178,973,846	\$27,321,026,154	\$27,321,026,154	\$775,189,779	\$269,737,478,180	\$28,871,405,712	\$56,192,431,866	\$345,309	0.5	\$172,654	167,221
<b>TOTAL</b>												<b>1,802,180</b>	

# Jobs Modeling

Jobs modeling estimates were created using IMPLAN Economic Data and housing cost information developed by the authors (see “Housing Unit Costs” section of Methodological Appendix for detail). Housing costs per year included annual average rehab costs per year, times units per year, for a total state (or national) spending amount per year. Total costs per year for each state (or national total) were then multiplied by employment multipliers for that region. Employment multipliers were estimated using IMPLAN with 2022 data for California, Illinois, New York, and the U.S. National Total. Industries used in modeling the employment impacts of housing retrofits were based on previous projects by the analyst (Heidi Peltier) and IMPLAN weights are provided in the table below:

**TABLE 5**

## Employment Modeling Industry Categories Included for Housing Retrofits Jobs Analysis – New Construction

Industry	Weight
new single family residential construction	0.20
new multifamily residential construction	0.20
new other residential construction	0.20
engineering	0.07
roofing	0.03
insulation	0.03
other electrical	0.03
windows and doors	0.02
plumbing upgrades	0.04
cooling	0.04
heating	0.04
lighting	0.04
HVAC	0.06

TABLE 6

## Employment Modeling Industry Categories Included for Housing Retrofits Jobs Analysis – Rehabilitation of Housing

Industry	Weight
residential repair construction	0.40
engineering	0.10
roofing	0.05
insulation	0.05
other electrical	0.04
windows and doors	0.03
plumbing upgrades	0.06
cooling	0.06
heating	0.06
lighting	0.06
HVAC	0.09

Direct, Indirect, Induced, and Total employment impacts were generated by IMPLAN for each of the geographic regions chosen. National totals are higher than state totals since more indirect and induced employment is generated as the region size grows (supply chain jobs for CA industries may be located in neighboring states, for example, thus the indirect employment would be lower in CA than at the regional or national level). As spending grows, so does employment, reaching a peak in year 10 as spending is at its highest. The “total job years” is the sum of employment each year.

As shown in Tables 7, 8, and 9, our analysis also includes job estimates for California, New York, and Illinois to illustrate the impact of a Green SHDA on different economies across the country.



TABLE 7

## Estimated employment impacts of a Green SHDA in California (in job-years)

Year	DIRECT	INDIRECT	INDUCED	TOTAL
1	25,000	11,000	13,000	<b>49,000</b>
2	24,000	11,000	13,000	<b>48,000</b>
3	24,000	11,000	13,000	<b>47,000</b>
4	24,000	10,000	13,000	<b>46,000</b>
5	23,000	10,000	12,000	<b>46,000</b>
6	23,000	10,000	12,000	<b>45,000</b>
7	22,000	10,000	12,000	<b>44,000</b>
8	22,000	10,000	12,000	<b>43,000</b>
9	21,000	9,000	11,000	<b>42,000</b>
10	21,000	9,000	11,000	<b>41,000</b>
Average employment per year	<b>22,900</b>	<b>10,100</b>	<b>12,200</b>	<b>45,100</b>
<b>TOTAL</b>	<b>229,000</b>	<b>101,000</b>	<b>122,000</b>	<b>451,000</b>

Note: These estimates assume that 50% of total Green SHDA building funds are spent on new construction and 50% are spent on rehabilitation/retrofitting.

TABLE 8

## Estimated employment impacts of a Green SHDA in New York (in job-years)

Year	DIRECT	INDIRECT	INDUCED	TOTAL
1	13,000	5,000	5,000	23,000
2	13,000	4,000	5,000	23,000
3	13,000	4,000	5,000	22,000
4	12,000	4,000	5,000	22,000
5	12,000	4,000	5,000	21,000
6	12,000	4,000	5,000	21,000
7	12,000	4,000	5,000	20,000
8	11,000	4,000	5,000	20,000
9	11,000	4,000	5,000	20,000
10	11,000	4,000	5,000	19,000
Average employment per year	12,000	4,100	5,000	21,100
<b>TOTAL</b>	<b>120,000</b>	<b>41,000</b>	<b>50,000</b>	<b>211,000</b>

Note: These estimates assume that 50% of total Green SHDA building funds are spent on new construction and 50% are spent on rehabilitation/retrofitting.

TABLE 9

## Estimated employment impacts of a Green SHDA in Illinois (in job-years)

Year	DIRECT	INDIRECT	INDUCED	TOTAL
1	8,000	4,000	5,000	17,000
2	8,000	4,000	5,000	16,000
3	8,000	3,000	5,000	16,000
4	8,000	3,000	5,000	16,000
5	8,000	3,000	4,000	16,000
6	8,000	3,000	4,000	15,000
7	7,000	3,000	4,000	15,000
8	7,000	3,000	4,000	15,000
9	7,000	3,000	4,000	14,000
10	7,000	3,000	4,000	14,000
Average employment per year	7,600	3,200	4,400	15,400
<b>TOTAL</b>	<b>76,000</b>	<b>32,000</b>	<b>44,000</b>	<b>154,000</b>

Note: These estimates assume that 50% of total Green SHDA building funds are spent on new construction and 50% are spent on rehabilitation/retrofitting.