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A Just Transition for New York: Achieving Clean and Renewable Energy Equity for Environmental Justice Communities

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Introduction

In October 2018, the Intergovernmental Panel on Climate Change (IPCC) issued its latest report, cautioning that the world may have as little as 12 years to transform the global economic system to limit global warming to 1.5°C. The report estimates that to reach this target and avoid the worst of climate change impacts, global carbon emissions must drop 45% by 2030, and reach net-zero emissions by 2050.[1] This will require rapid system transitions in energy, land, urban infrastructure, and industrial systems.[2]

In light of the U.S. federal government's current denial of climate science, city and state governments have responded to grassroots movements by beginning to take the lead on addressing climate change. While New York City and New York State have made commitments to reduce carbon emissions and increase investments in climate resiliency, progress so far has been slow to reach low-income communities and communities of color, who historically have dealt with disproportionate environmental burdens and are at most risk from negative climate impacts. Electricity generation contributes close to 4,000 deaths in New York State annually, of which more than half occur in New York City alone.[3] These communities also face many obstacles to participating in the clean energy economy. The massive transformations required to stave off dangerous climate change impacts require a consideration of the unique vulnerabilities facing environmental justice communities.

"Climate justice" is based on the principle that "frontline communities" are most vulnerable to climate change and, therefore, must play an integral role in planning for climate resiliency. These are communities where climate vulnerabilities intersect with historical patterns of environmental burdens that disproportionately affect low-income communities and communities of color.[4]

[1] INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC), GLOBAL WARMING OF 1.5°C: SUMMARY FOR POLICYMAKERS, 4 (Oct. 2018), http://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf.

[2] IPCC, *supra* note 1, at 21.

[3] Fabio Caiazzo et al., *Air Pollution and Early Deaths in the United States. Part I: Quantifying the Impact of Major Sectors in 2005*, 79 ATMOS. ENV'T 198 (Nov. 2013).

[4] N.Y.C. ENVTL. JUSTICE ALLIANCE (NYC-EJA), NYC CLIMATE JUSTICE AGENDA: STRENGTHENING THE MAYOR'S ONENYC PLAN, http://www.nyc-eja.org/wp-content/uploads/2017/10/CJA_041916.pdf.

As climate change advances, leadership from people of color and low-to-moderate income people on the frontlines of the crisis becomes increasingly important to shape City and State policies, to ensure the radical transformation of our energy and economic systems does not leave historically marginalized people behind.

This article assesses the shortfalls of City and State energy policies and programs in addressing key barriers to equity and environmental justice relief in New York's energy sector. It builds on the New York City Environmental Justice Alliance's (NYC-EJA's) *NYC Climate Justice Agenda 2018 - Midway to 2030: Building Resiliency and Equity for a Just Transition*, which seeks to develop local visions for Just Transitions across four key areas of intervention—mitigating extreme heat and fostering community preparedness, improving air quality through innovations in public transportation and waste management, expanding green infrastructure and nature-based solutions, and catalyzing equitable access to renewable energy and energy efficiency, the latter being the focus of this article.

The renewable energy and energy efficiency priorities covered in this article include pathways to affordable and equitably distributed renewable energy, public investment in resilient infrastructure projects such as microgrids, equitable energy efficiency, and greater community control over energy assets and the energy planning process. Ultimately, our Just Transition vision aims to dismantle environmentally and economically extractive processes, while creating transformative programs and projects for communities disproportionately impacted by polluting infrastructure and for workers who must transition out of polluting industries. To reach—and ideally exceed—City and State climate goals, policies must reduce barriers for environmental justice communities to participate and lead in the renewable energy economy, and prioritize disadvantaged communities for investments in distributed, equitable clean and renewable energy resources via increased public and private investment.

Low-to-Moderate Income Communities and Communities of Color Have Been Left Out of Many of City and State Opportunities for Clean Energy and Energy Efficiency

Low-to-moderate income (LMI) and environmental justice communities encounter numerous obstacles to accessing renewable energy and energy efficiency, yet represent a critical segment of energy customers necessary for New York to reach our climate goals. LMI residents comprise 40% of New York State's energy customers.[5] Across the U.S., solar photovoltaic (PV) installations have seen the most growth in the residential rooftop segment concentrated in middle- and upper-income households, which now contributes to a multi-gigawatt market.[6] One of the biggest barriers low-income communities face is lack of access to affordable financing, a critical factor in the disproportionate rise of rooftop solar PV and energy efficiency investments in higher-income communities.[7] Low-income communities are also increasingly vulnerable to the impacts of climate change that may disrupt access to power, such as heat waves, flooding, and storm surge, and stand to benefit most from renewable and resilient energy systems. As of April 2018, New York State's LMI energy efficiency programs have only reached 12% of eligible households over the last 12 years; at this rate, it would take nearly a century for all eligible LMI New Yorkers to access State energy efficiency opportunities.[8] Another obstacle impeding uptake of renewable energy in LMI communities is historical disinvestment in buildings, resulting in roofs that are either too old or not suitable for solar development.

Extreme Heat Exacerbates Energy Inequities

Low-income communities and communities of color also face disproportionate climate risks, many of which could be ameliorated through equitable energy policy and strategic investment. For example, New York City's 12 most heat-vulnerable neighborhoods are predominantly high-poverty areas where residents are majority people of color. This assessment is based on the NYC Heat Vulnerability Index (HVI), which summarizes factors associated with adverse health effects and identifies neighborhoods with a higher risk for heat-related deaths and consists of environmental metrics, poverty rates, and race demographics proven to be strong indicators of heat risk.[9] Furthermore, heat-vulnerable and high-poverty areas also face additional overlapping vulnerabilities. For example, in Central Brooklyn—one of New York City's most heat-vulnerable areas—Con Edison has projected an energy shortfall necessitating demand reductions through its Brooklyn Queens Demand Management (BQDM) program. While Con Edison is expected to reach and exceed its energy

[5] APPRISE INC., N.Y. STATE ENERGY RESEARCH & DEV. AUTH. (NYSERDA), LOW- TO MODERATE-INCOME MARKET CHARACTERIZATION REPORT: EXECUTIVE SUMMARY (Feb. 2017), https://www.nyserda.ny.gov/-/media/Files/Publications/PPSER/Program-Evaluation/2017ContractorReports/LMI-Market-Characterization-Study—ExSum.pdf.

[6] Rocky Mountain Inst, Community-Scale Solar: Why Developers and Buyers Should Focus on this High-Potential Market Segment (Mar. 2016), https://d231jw5ce53gcq.cloudfront.net/wp-content/uploads/2017/04/RMI-Shine-Report-CommunityScaleSolarMarketPotential-2016.pdf.

[7] Melanie Santiago-Mosier, *Unlocking Clean Energy in Low-Income Communities*, FUTURESTRUCTURE (May 24, 2017), http://www.govtech.com/fs/unlocking-clean-energy-in-low-income-communities.html.

[8] NYSERDA & N.Y. DEPT. OF PUB. SERV., NEW EFFICIENCY: NEW YORK (Apr. 2018), https://www.nyserda.ny.gov/-/media/Files/Publications/New-Efficiency-New-York.pdf.

[9] Jaime Madrigano et al., *A Case-Only Study of Vulnerability to Heat Wave–Related Mortality in New York City (2000–2011)*, 123 ENVTL. HEALTH PERSPECTIVES 672 (July 2015), https://www.ncbi.nlm.nih.gov/pubmed/25782056; *see also* N.Y.C. MAYOR'S OFFICE OF RECOVERY & RESILIENCY, COOL NEIGHBORHOODS NYC: A COMPREHENSIVE APPROACH TO KEEP NEIGHBORHOODS SAFE IN EXTREME HEAT (2017), https://www1.nyc.gov/assets/orr/pdf/Cool_Neighborhoods_NYC_Report_FINAL.pdf.

demand reduction targets with a renewed commitment of $200 million ratepayer funds for demand reduction measures, the BQDM program only provided limited energy efficiency opportunities to residents. Despite residents making up 60% of customers in the BQDM area, residential programming so far has been limited mainly to light bulb replacements.

Furthermore, tenants of public and affordable housing face unique challenges related to heat vulnerability. Residents of the New York City Housing Authority (NYCHA) are particularly vulnerable to the risks of heat. Based on NYC-EJA's analysis, more than half of NYCHA residents live in the City's most heat-vulnerable neighborhoods (see Figure 1, below).[10] Elderly residents are particularly at risk from the negative health effects of extreme heat, and 61,500 of NYCHA's approximately 400,000 residents are over the age of 65.[11] Furthermore, in high-rise buildings, which are characteristic of many NYCHA developments, indoor temperatures can be much higher than outdoor temperatures. Although air-conditioning can alleviate hot indoor temperatures, NYCHA residents face significant barriers to installing air-conditioning, including approval from NYCHA, paying an annual fee per air-conditioning unit, and paying the costs for professional installation, as well as the additional cost to remove bars from windows.[12] These challenges will necessitate community preparedness and extreme heat strategies specifically targeted to NYCHA tenants.

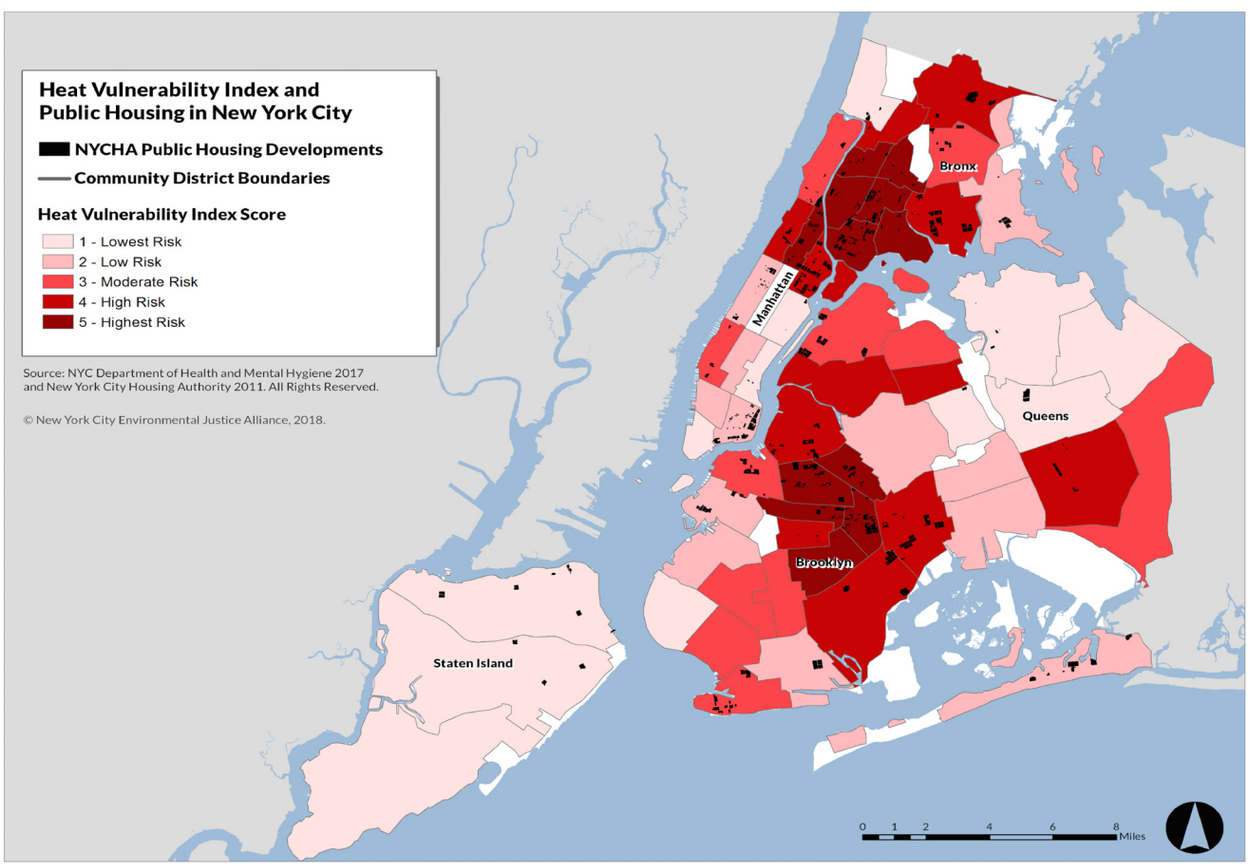

Figure 1: Heat Vulnerability Index and Public Housing in New York City[13]

[10] NYC-EJA, NYC CLIMATE JUSTICE AGENDA: MIDWAY TO 2030 – BUILDING RESILIENCY AND EQUITY FOR A JUST TRANSITION 12 (Apr. 2018) [hereinafter MIDWAY TO 2030], http://www.nyc-eja.org/wp-content/uploads/2018/04/NYC-Climate-Justice-Agenda-Final-042018-1.pdf.

[11] N.Y.C. HOUSING AUTH. ET AL., HEALTH OF OLDER ADULTS IN NEW YORK CITY PUBLIC HOUSING: FINDINGS FROM THE NEW YORK CITY HOUSING AUTHORITY SENIOR SURVEY 3 (May 2011), https://www1.nyc.gov/assets/nycha/downloads/pdf/senior-report-nycha.pdf; Colleen Reid et al., *Mapping Community Determinants of Heat Vulnerability*, 117 ENVTL. HEALTH PERSPECTIVES 1730 (Nov. 2009), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2801183/.

[12] Sarah Gonzalez, *Without AC, Public Housing Residents Swelter Through the Summer*, WNYC (July 28, 2016), https://www.wnyc.org/story/life-new-york-public-housing-no-air-conditioning.

[13] Reprinted with permission from New York City Environmental Justice Alliance.

The confluence of extreme heat and lack of access to energy-efficient buildings is a quiet threat facing low-income people, people of color, and the elderly. In New York City, 36% of LMI households are energy burdened, spending a much higher proportion of their income on energy costs.[14] During heat waves, citywide use of air-conditioning strains the grid, increasing the likelihood of blackouts and brownouts. For heat-vulnerable residents living in energy-inefficient homes, lack of power during a heat wave increases risks of dangerous heat exposure.

Energy Systems Are Vulnerable

New York City's electricity generation and distribution infrastructure is highly vulnerable to storm surge, flooding, and extreme heat. Risks associated with flooding are assessed using the Federal Emergency Management Agency's definition of a 100-year floodplain, which is estimated to have a 1% chance of flooding annually.[15] However, the 100-year floodplain may underestimate the energy system's vulnerability, as in some areas of New York City where Superstorm Sandy caused flooding that exceeded the floodplain estimates.[16] Additionally, 88% of the city's steam-generating capacity, 53% of in-city electric generation capacity, 37% of transmission substation capacity, and 12% of large distribution substation capacity lie within the 100-year floodplain. As climate change progresses, sea level rise projections show that these numbers could grow to 97% of in-city electric generation capacity, 63% of transmission substation capacity, and 18% of large distribution substation capacity.[17] These climate risks may severely limit New York's ability to serve energy customers during and following an emergency—further endangering vulnerable populations who may not have the resources required to evacuate.

Our Priorities

The climate justice movement's energy equity and Just Transition priorities encourage climate solutions that embody place-based principles and that build economic and political power to shift from an extractive economy to a regenerative economy.[18] These priorities include greater community control over energy assets and the energy planning process, public investment in resilient infrastructure projects such as microgrids, equitable energy efficiency, and pathways to affordable and equitably distributed renewable energy.

Cede Control of Renewable Energy Assets and the Energy Planning Process to Communities

Community-based organizations in New York State have been spearheading community energy planning efforts to bring community-owned renewable energy projects to environmental justice communities. By prioritizing community ownership of renewable energy assets, we can collectively work to establish an energy system that is more democratized, diverse, and distributed. Community ownership should be supported through State and City interventions informed by the experiences of grassroots organizations working to create community-owned projects.

For example, since 2016, NYC-EJA has facilitated a collaboration called "REVitalize" with PUSH Buffalo, THE POINT CDC, and UPROSE to address the opportunities and challenges associated with community energy planning/ownership efforts. As part of this process, REVitalize seeks to create replicable planning models where local grassroots organizations carry out baseline research to identify their community's energy needs, articulate goals and objectives to address them, and identify resources for implementation. Through our work with the REVitalize partnership, we advocate for communities to directly and democratically own clean energy assets, and for all energy planning to identify opportunities for resilient, renewable, affordable, and environmentally just forms of energy generation.

Recent victories by PUSH Buffalo and UPROSE have affirmed this approach. In July 2018, PUSH Buffalo installed New York State's first community-owned 100% affordable community solar project on the roof of School 77—also home to 30 senior affordable units that will receive the solar credits in their homes.[19] In November 2018, UPROSE along with their partners announced New York City's first cooperatively owned solar garden at the historic Brooklyn Army Terminal. The project aims to connect Sunset Park residents and industrial businesses to the economic and environmental benefits of the project.[20]

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[14] APPRISE INC., NYSERDA, NYSERDA LOW- TO MODERATE-INCOME MARKET CHARACTERIZATION STUDY: SPECIAL TOPIC REPORT – HOUSEHOLD ENERGY BURDEN (2016), https://www.nyserda.ny.gov/-/media/Files/Publications/PPSER/Program-Evaluation/2017ContractorReports/LMI-Special-Topic-Rpt—Energy-Burden.pdf.

[15] *About FEMA Flood Maps*, NYC FLOOD MAPS, https://www1.nyc.gov/site/floodmaps/about/about-flood-maps.page (last visited Nov. 30, 2018).

[16] *Utilities*, *in* N.Y.C. OFFICE OF THE MAYOR, NYC SPECIAL INITIATIVE FOR REBUILDING AND RESILIENCY 120 (2012), https://www1.nyc.gov/assets/sirr/downloads/pdf/Ch_6_Utilities_FINAL_singles.pdf.

[17] N.Y.C. OFFICE OF THE MAYOR, *supra* note 16, at 120.

[18] *Just Transition: A Framework for Change*, CLIMATE JUSTICE ALLIANCE, https://climatejusticealliance.org/just-transition/ (last visited Nov. 15, 2018).

[19] Press Release. Governor Andrew M. Cuomo, Governor Cuomo Announces Opening of $14.8 Million Housing and Community Hub at Former Public School 77 in Buffalo (July 17 2018), https://www.governor.ny.gov/news/governor-cuomo-announces-opening-148-million-housing-and-community-hub-former-public-school-77.

[20] Press Release, N.Y.C. Econ. Dev. Corp., First Cooperatively-Owned Solar Garden in New York State Coming to the Brooklyn Army Terminal (Nov. 8, 2018), https://www.nycedc.com/press-release/first-cooperatively-owned-solar-garden-new-york-state-coming-brooklyn-army-terminal.

Expand Solar Deployment on Public Roofs—Specifically for Low-Income Subscribers

The City and State should work with local grassroots organizations to establish clean energy projects that optimize the economic and environmental co-benefits of clean energy development. For example, NYC-EJA and THE POINT CDC, as stakeholders in the Hunts Point Resiliency process, have long advocated for Hunts Point Food Distribution Center rooftops to be utilized for community co-owned solar-plus-storage, addressing local climate resiliency needs and optimizing economic co-benefits without adding to existing environmental burdens. NYC-EJA recommends the City and State identify larger solar-ready public properties such as bus depots, parking lots, and wastewater treatment plants suitable for community shared solar, complementing the City's public solar program, which is limited to consumption behind the meter. Many of the City's environmental justice communities, such as areas in and around designated Significant Maritime and Industrial Areas, are designated for large-scale manufacturing, industrial uses, and polluting infrastructure. Assessing the solar-readiness of these sites would support existing community efforts, such as those led by our members UPROSE, PUSH Buffalo and THE POINT CDC, as well as the broader REVitalize partnership, to accelerate installations of community co-owned renewable and resilient energy systems in vulnerable areas. This can also provide local economic opportunities for residents often facing displacement pressures from gentrification.

Different City and State properties should pilot various strategies for increasing low-income solar access and optimizing environmental justice impacts. Some sites should host community solar projects that mandate at least 70% of LMI subscribers with the aim of lowering utility bills. Other sites should offer no-cost leases for community-based organizations to explore new business models for clean energy projects that maximize low-income community ownership and participation. All sites should have local hiring requirements for solicitations, with strong preference given to proposals that commit to utilizing union labor and local hiring.

Invest in Resilient Infrastructure Projects

Climate-vulnerable communities stand to benefit most from clean, resilient, and renewable energy systems on public infrastructure that can provide backup power during emergencies and low-cost energy year round. In response to NYC-EJA and our allies' advocacy, the New York City Department of Citywide Administrative Services (DCAS) launched an Environmental Justice Working Group, which will work to increase equity and resiliency in DCAS's strategy for installing solar on public buildings. Based on the working group's recommendations, the next round of solar installations on public buildings will be targeted in environmental justice communities.[21] Moreover, energy resiliency strategies such as battery storage are another critical community preparedness strategy elevated by the working group.[22] Solar-plus-storage—also called Resilient Solar—can have extensive environmental and health benefits, particularly for communities vulnerable to extreme weather events and other hazards. Resilient Solar can provide power during emergencies, blackout periods, and peak demand, especially to vital facilities such as emergency shelters, hospitals, and schools. This technology has the strong potential to displace generation from inefficient and polluting peaking plants, thus significantly reducing air pollution in environmental justice communities that have been historically exposed to noxious pollutants generated from traditional energy infrastructure. In response to our advocacy, the City has committed to a Resilient Solar Track which would install solar-plus-storage on critical facilities in hurricane evacuation zones.[23]

Provide Equitable Energy Efficiency Financing

Energy efficiency retrofits can help alleviate the many burdens associated with living in poverty by providing relief from the energy burden and reducing environmental health hazards.[24] They can also help mitigate climate risks in the long term, by making buildings and residents better able to withstand extremes in temperature. Widespread energy efficiency is also an essential component of any climate mitigation strategy. However, low-income customers, renters, and energy customers with poor credit are unable to participate in most debt-based energy efficiency and clean energy financing programs. The City and State should work with utilities to create programs that benefit New Yorkers who have thus far been excluded from the clean energy economy. Such programs should target low-income communities, communities of color, and renters who have historically faced both the disproportionate health impacts of fossil fuel-based infrastructure, and stand to benefit most from strategic investment in energy efficiency and clean energy. We recommend that NYSERDA direct funds to innovative financing for clean energy and carbon abatement, working with grassroots advocates such as the Brooklyn Movement Center, El Puente, and Chhaya CDC, as well as utility companies, to develop a business model that would be fully inclusive of LMI customers in environmental justice communities. This commitment could help stimulate entrepreneurship, employment, and growth in the local clean energy market.

[21] DCAS Environmental Justice Working Group Meeting, New York City (Jan. 18, 2018).

[22] ANNEL HERNANDEZ ET AL., CLIMATE WORKS FOR ALL, RESTART SOLAR: ENERGIZING ENVIRONMENTAL JUSTICE COMMUNITIES (2017), http://dev.nyc-eja.org/wp-content/uploads/2017/05/CW4A-Solar-EJ-Report_May-2017.pdf.

[23] NY SOLAR MAP, https://nysolarmap.com/solarplusstorage/map-critical-facility-solarplus-evaluator/ (last visited Nov. 15, 2018).

[24] ENVTL. & CLIMATE JUSTICE PROGRAM, NAT'L ASS'N FOR THE ADVANCEMENT OF COLORED PEOPLE (NAACP), LIGHTS OUT IN THE COLD: REFORMING UTILITY SHUT-OFF POLICIES AS IF HUMAN RIGHTS MATTER (2017), http://www.naacp.org/wp-content/uploads/2017/04/Lights-Out-in-the-Cold_NAACP-ECJP-4.pdf.

One strong model for equitable energy efficiency financing is called Pay As You Save (PAYS). PAYS allows customers to purchase and install cost-effective upgrades through a voluntary on-bill tariff. Due to the energy efficiency improvements, the customer's overall energy bill is lowered, even when the tariff is added to their monthly bill. This model is more inclusive than debt-based programs because PAYS programs are open to customers regardless of income, credit score, or renter status. PAYS has been highlighted by the National Association for the Advancement of Colored People (NAACP) as a mechanism to alleviate energy burden for low-income communities of color.[25]

Create Protections from Rent Increases Associated with Energy Efficiency Investments

Low-income New Yorkers should be able to access the benefits of clean and renewable energy without the threat of gentrification and displacement. Although improved energy efficiency can potentially reduce the energy burden and increase affordability for low-income tenants, property owners of rent-stabilized units can use major renovations and investments, i.e., Individual Apartment Improvements (IAIs) and Major Capital Improvements (MCIs), to justify increasing rents and displacing long-time tenants. Inclusive financing and other incentives may help provide widespread energy retrofits in larger, multifamily buildings without incurring costs to building owners, thus precluding rent increases due to energy efficiency upgrades. Still, tenants require further protections. Both the City and State should adopt model rules for protecting rent-regulated tenants from rent increases and evictions, preventing the deregulation of apartments, and restricting property resale in connection with investments in residential and commercial energy efficiency.[26]

Pass Statewide Commitments to Environmental Justice and a Just Transition

New York State has the opportunity to lead in a Just Transition to a renewable energy economy. NY Renews is a statewide coalition of over 140 labor, community, environmental, and environmental justice organizations, united to pass ambitious climate legislation that moves New York State to a renewable energy economy that creates new jobs, protects workers, and ensures true environmental justice. Our proposed New York State Climate and Community Protection Act (CCPA) makes our state climate pollution reduction and clean energy commitments legally binding across all sectors of the economy, including energy, buildings, and transportation, setting us on a path to 100% renewable energy by 2050. The CCPA also creates a process to ensure that at least 40% of State energy funds are allocated towards vulnerable, impacted, historically disadvantaged, and frontline communities.

Additionally, our proposed New York State Climate and Community Investment Act (CCIA) puts a price on greenhouse gas emissions and co-pollutants, requiring that the fossil fuel industry pay for their damage to our health and our climate. Research shows that a modest polluter fee—for example, one that begins at $35 per ton of emissions and increases gradually—would generate about $7 billion in revenue every year over the first 10 years. CCIA revenue could be invested in a just transition to renewable energy, growing New York's local economies, and uplifting communities throughout the state, from Brooklyn to Buffalo. With this policy, New York has a chance to be the first in the country to pass an equitable polluter fee.

Conclusion

Given the most recent, urgent call from the IPCC for swift action, cities and states need to reimagine energy systems with equity at the core. Addressing structural inequality in the generation and distribution of energy has the potential not only to bring us closer to climate mitigation goals, but also to bring concrete economic benefits to historically overburdened communities. Time is running out for action on climate change—an urgency that demands we implement aspirational solutions that can rise to meet the unprecedented challenges we face. Most importantly, these solutions must prioritize communities that are hit first and worst by climate change, ensuring broad-ranging protections while dismantling legacies of environmental and economic burden.

It is essential that City and State government engage with community leadership to build power for policy changes needed to dismantle environmentally and economically extractive processes. Together, these strategic interventions can move us toward a Just Transition away from fossil fuels, by building transformative infrastructure and programs for communities disproportionately impacted by polluting infrastructure, creating new economic opportunities for New Yorkers, and bringing environmental justice and climate justice leaders to the table.[27]

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[25] NAACP, *supra* note 24.
[26] *See* MIDWAY TO 2030, *supra* note 10.
[27] *See* MIDWAY TO 2030, *supra* note 10.