Report on Equitable Building Decarbonization

Equity Focused Policy Recommendations for the City of Los Angeles

Prepared for the Climate Emergency Mobilization Commission and the Climate Emergency Mobilization Office

FINAL REPORT

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CLIMATE EMERGENCY MOBILIZATION OFFICE

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HONORING THE LAND, AIR, AND WATER THROUGH ITS ORIGINAL STEWARDS

The City of Los Angeles acknowledges the original indigenous residents of this land. Los Angeles was founded on unceded land of the Tongva, Chumash, and Tataviam Nations. By drawing on indigenous knowledge and the wisdom of Los Angeles' diverse cultures and experiences, we seek to create an equitable decision making approach to achieving climate solutions for present and future residents of Los Angeles, while paying proper respect to the history of this land and its original stewards. The City will seek to build reciprocity with local indigenous communities, while addressing local climate change impacts, building frontline community resilience, and inspiring Angelenos today and tomorrow to respect the land, water, nature, and air that we share in order to live, play, pray, and work.

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Esperanza Community Housing
GRID Alternatives, Greater Los Angeles
Asian Pacific Environmental Network (APEN)
UCLA Center for Healthy Climate Solutions
Betony Jones, Founder of Inclusive Economics

Leap LA Coalition Report on Building Decarbonization

In the Spring and Summer of 2022, the Leap LA Coalition commissioned a series of listening sessions with environmental justice and indigenous communities to learn more about their perspectives on building decarbonization. A preliminary summary of the findings from these sessions was shared with the CEMO to inform the development of this report. The final report was submitted to the CEMC as part of public comments regarding the CEMO's Draft Equitable Building Decarbonization Policy Report. This report should be used to help inform the development of equitable building decarbonization policies in Los Angeles.

The CEMO will request that the Leap LA report be presented to the Climate Emergency Mobilization Commission in the near future. The CEMC, as an advisory Commission to the Los Angeles City Council, can then facilitate the transmittal of this report's recommendations to be heard by the City Council.

Foreword from CEMO Director

This report focuses on the findings of the community voices who participated in the Building Decarbonization sessions in the inaugural Climate Equity LA (CELA) Series, hosted by the City of Los Angeles and the Climate Emergency Mobilization Office. It offers recommendations from the community on the first of 3 policy areas covered by the CELA Series. The equity-based solutions that the community identified highlight the need for the City to approach climate action holistically. Rather than just a call for emission reductions, it is an opportunity to improve public health, increase housing security, lower utility bills, build habitable and healthy homes and neighborhoods, and create opportunities for well-paying, high-road jobs in the green energy industry.

This report is the result of a stakeholder engagement process that was co-designed with community-based organizations representing the most pollution-burdened areas of Los Angeles to offer climate policy recommendations with equity as a throughline. These historically disinvested areas of Los Angeles suffer disproportionately from health disparities, air pollution, climate change, housing insecurity, and unemployment. Their voices were key to the creation of these recommendations to help advise our City leadership on equitable building decarbonization practices and policies.

More broadly, this work is the result of decades of advocacy by environmental justice organizations in Los Angeles who pushed for the creation of an Office and Commission to represent their values and prioritize their engagement in the decision-making process. It is also the direct result of the work of the organizations that co-designed the CELA Series, the CEMO's Building Decarbonization Curriculum Engagement Design Team, the City Council, and our Mayor, who made this work possible due to a shared belief that equity is the centerpiece of effective climate policy. The City of Los Angeles partnered with some of the nation's most transformative environmental and social justice organizations to design virtual engagement sessions and focus groups that would lead to the rich data for this report. In the CEMO's inaugural year, the Office has sought to model meaningful stakeholder engagement that respects the recommendations and wisdom of these frontline communities, and help the City to create equitable climate policies that result in healthy, thriving communities for all.

Cities like Los Angeles must invest more of their budgets in their frontline and historically disinvested areas. If we fail to align with Federal and State efforts to advance environmental and climate justice through Justice40 and other initiatives, we will fall short of our climate goals. It is time for all major cities to understand that if we prioritize climate, infrastructure, and housing investments in our frontline communities, all boats will rise, and we will see the light at the end of both the climate change and economic recovery tunnel. Centering equity is not an act of charity, it is necessary for leaving a habitable, not an earth-scorched City, for future generations and for our collective survival as a species on this precious planet. Los Angeles can lead the way to operationalize the Biden Administration's direction to equitably and wisely invest our recovery and infrastructure dollars, while also healing its darkest historical wounds, and creating an economic and climate recovery for all.

Marta Segura

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Key Terms and Acronyms

Term	Definition
Building decarbonization	Building decarbonization involves policies that improve the living conditions and health of impacted communities while eliminating harmful and polluting fuels. This is typically done by decarbonizing the electricity sector, increasing building energy efficiency, and electrifying buildings.
Building electrification	Building electrification refers to the process of converting building systems and appliances to operate fully off of electricity rather than from other energy sources such as natural gas.
CAMR	Comprehensive Affordable Multifamily Retrofits Program
CBE	Communities for a Better Environment
CBO	Community-based organization
CEC	California Energy Commission
CEMC	Climate Emergency Mobilization Commission
CEMO	Climate Emergency Mobilization Office
Climate adaptation	Climate adaptation refers to actions that seek to support individual, community, or system-level functioning in the context of a changing climate.
Climate justice	Climate justice "focuses on the root causes of [the] climate crisis through an intersectional lens of racism, classism, capitalism, economic injustice, and environmental harm. Climate justice supports a Just Transition for communities and workers away from a fossil fuel economy and focuses on making the necessary systemic changes to address unequal burdens to our communities and to realign our economy with our natural systems. As a form of environmental justice, climate justice means that all species have the right to access and obtain the resources needed to have an equal chance of survival and freedom from discrimination. As a movement, climate justice advocates are working from the grassroots up to create real solutions for climate mitigation and adaptation that ensure the right of all people to live, learn, work, play and pray in safe, healthy, and clean environments." (Source: Climate Justice Alliance)
Climate mitigation	Climate mitigation refers to actions that seek to curb climate change by reducing greenhouse gas emissions.
Climate vulnerability	Climate vulnerability refers to an individual, community, or system's exposure, sensitivity and ability to respond to a climate hazard or combination of hazards.

Corporate landlord	A landlord employing a specifically corporate business entity as an investment vehicle. Includes limited liability entities including partnerships, corporations, and other forms eligible to elicit taxation or pass through entities.
CPUC	California Public Utilities Commission
DAC	The State of California defines “disadvantaged communities” (DACs) as those that are economically disadvantaged and exposed to multiple sources of pollution. DACs are identified using the State’s CalEnviroScreen based on a set of demographic and environmental characteristics.
Decolonization	Decolonization refers to a process of undoing the beliefs and practices of social domination over native people and ecosystems established through colonization.
Deep democracy	Unlike “classical” democracy, which focuses on majority rule, Deep Democracy suggests that all voices, states of awareness, and frameworks of reality are important. Deep Democracy also suggests that the information carried within these voices, awarenesses, and frameworks are all needed to understand the complete process of the system. The meaning of this information appears, when the various frameworks and voices are relating to each other. Deep Democracy is a process of relationship, not a state-oriented still picture, or a set of policies. (Source: IAPOP)
Direct emissions	(In the case of buildings) Emissions produced from on-site fuel combustion (e.g. gas used on site for cooking, water heating, and/or space heating) and refrigerant leaks.
Distributive justice	Distributive justice refers to the idea that resources should be distributed equitable based on need and capability.
EBEWE	Existing Building Energy and Water Efficiency Program
Embodied emissions	Embodied emissions refer to GHG emissions that are produced during the extraction, installation, manufacturing, transportation, and maintenance of goods.
Energy justice	Energy justice refers to the idea that everyone should have access to affordable, safe, clean energy, and should be involved in decisions related to energy.
Environmental justice	Environmental justice “embraces the principle that all people and communities have a right to equal protection and equal enforcement of environmental laws and regulations, including human health. Environmental justice recognizes that, due to racism and class discrimination, communities of color, low-income neighborhoods, and Indigenous nations and communities are the most likely to be disproportionately harmed by toxic chemicals, exposures, economic injustices and negative land uses, and the least likely to benefit from efforts to improve the environment.” (Source: Climate Justice Alliance)

ESJ community	Environmental and social justice community
Frontline community	Frontline communities are those that have experienced systemic economic, social, or environmental disparities, and that are disproportionately vulnerable to environmental and climate hazards.
Health justice	Health justice refers to the idea that everyone has the right to live and work in a healthy environment, and to be able to access affordable healthcare.
HEIP	Home Energy Improvement Program
Housing justice	Housing justice refers to the idea that housing is a human right, and everyone deserves access to safe, affordable housing that meets their needs.
IIJA	Infrastructure Investment and Jobs Act
LAANE	Los Angeles Alliance for a New Economy
LADBS	Los Angeles Department of Building and Safety
LADWP	Los Angeles Department of Water and Power
LAHD	Los Angeles Housing Department
Leap LA Coalition	A coalition of community-based organizations in Los Angeles including, Physicians for Social Responsibility-Los Angeles, Esperanza Community Housing, Strategic Concepts in Organizing and Policy Education, Communities for a Better Environment, Sacred Places Institute for Indigenous Peoples, and Pacoima Beautiful.
Just transition	Just transition is a “framework for a vision-led, unifying and place-based set of principles, processes, and practices that build economic and political power to shift from an extractive economy to a Regenerative Economy. This means approaching production and consumption cycles holistically and waste free. The transition itself must be just and equitable, redressing past harms and creating new relationships of power for the future through reparations. If the process of transition is not just, the outcome will never be. Just Transition describes both where we are going and how we get there. The Just Transition framework focuses on stopping the bad to build the new by divesting from the exploitation of labor and extraction of resources and investing in cooperative labor and regeneration. Just Transition challenges the dominant worldview of colonialism, consumerism, and the concentration of power governed through violent force and advances a worldview of sacredness and care, as well as ecological and social well-being governed through deep democracy.” (Source: Climate Justice Alliance)
Maladaptation	Maladaptation refers to efforts to address and respond to climate change that intentionally or unintentionally reproduces inequitable outcomes related to climate vulnerability.

Passive cooling	Passive cooling refers to a building design approach that employs natural techniques for dissipating and modulating heat without the use of energy.
Procedural justice	Procedural justice refers to the idea that all individuals should have a say in decisions that affect their lives.
PSR-LA	Physicians for Social Responsibility-Los Angeles
Regenerative economy	A regenerative economy is "based on ecological restoration, community protection, equitable partnerships, justice, and full and fair participatory processes. Rather than extract from the land and each other, this approach is consistent with the Rights of Nature, valuing the health and well-being of Mother Earth by producing, consuming, and redistributing resources in harmony with the planet. A Regenerative Economy values the dignity of work and humanity and prioritizes community governance and ownership of work and resources, instead of oppressive systems that devalue people and their labor through violent hoarding by a few. Rather than limit peoples' ability to fully shape democracy and decisions that impact our communities, a Regenerative Economy supports collective and inclusive participatory governance. It requires a re-localization and democratization of how we produce and consume goods, and ensures all have full access to healthy food, renewable energy, clean air and water, good jobs, and healthy living environments. A Regenerative Economy requires an explicit anti-racist, anti-poverty, feminist, and living approach that is intersectional and eschews top-down, patriarchal, classist, xenophobic, and racist ideology." (Source: Climate Justice Alliance)
RSO	Rent Stabilization Ordinance
SAJE	Strategic Actions for a Just Economy
SCOPE	Strategic Concepts in Organizing and Policy Education
Small landlord	A small landlord is defined by the Los Angeles Housing Department as a landlord owning four or fewer units and one primary residence.
SPI	Sacred Places Institute for Indigenous Peoples
Split incentive	Split incentives refer to circumstances in which the flow of investments and benefits are not properly distributed among those involved in a transaction, thereby impacting investment decisions. In the case of energy efficiency, the split incentive has substantially hampered uptake of programs and limited investments.
TAHO	Tenant Anti-Harassment Ordinance
Tenant harassment	Tenant harassment is when a landlord knowingly takes actions that cause harm to a tenant and serve no lawful purpose – including repeated acts that substantially interfere with the comfort, peace or quiet enjoyment of a tenant's rental unit. (Source: Los Angeles Tenant Anti-Harassment Ordinance)

Executive Summary

The City of Los Angeles is taking bold steps to mitigate greenhouse gas (GHG) emissions and support Angelenos as they adapt to the impacts of climate change. Building decarbonization is one of several approaches that the City is pursuing to curb emissions, while also improving indoor air quality, safety, and habitability of buildings. Building decarbonization is an opportunity for the City to actively advance environmental and climate justice and to support a just transition away from fossil fuels. Fully decarbonizing our buildings will require simultaneously shifting to clean energy sources (i.e. decarbonizing electricity), increasing energy efficiency in existing buildings, and electrifying new and existing buildings. These system level changes will require transparent, community-centered interdepartmental coordination and cross-sector collaboration.

Environmental and climate justice ideals demand that policymakers pay close attention to both the outcomes of policies and the processes by which they are developed, implemented and evaluated in order to avoid unintended negative consequences from well-intended policies. By centering the experiences and voices of frontline communities and by working closely with the many justice-oriented, community-based organizations (CBOs) in Los Angeles, the City has the chance to lead the way in developing an equitable building decarbonization agenda that prioritizes people and the planet over pollution and profit. The Climate Emergency Mobilization Office (CEMO) is helping to design and facilitate more equitable climate policy making processes and outcomes in Los Angeles by engaging with impacted communities through the inaugural Climate Equity LA (CELA) Series and through direct representation of frontline communities on the newly formed Climate Emergency Mobilization Commission (CEMC).

This report was developed in response to a series of motions introduced and adopted by the Los Angeles City Council between December 2021 and May 2022 calling for the development of a plan for building decarbonization in Los Angeles. The first of these motions explicitly called for the creation of policies and goals that align with energy and housing justice principles. Per the directives in that motion, the CEMO compiled this report to summarize the findings from the CELA Series, targeted focus groups, and expert interviews, and to provide recommendations to the City as it moves toward developing equitable decarbonization policies and programs for new and existing buildings (see Table 1).

Summary of Key Findings

Based on the data collected during the CELA Series, targeted focus groups, and interviews, Los Angeles residents are generally supportive of the idea of the City transitioning to clean energy buildings due to the tangible benefits this transition promises to have for their own health and the broader environment. Residents expressed a strong desire for building decarbonization policies to approach unit-, building-, and grid-level upgrades holistically as an opportunity to improve habitability and resilience of homes and communities.

A number of concerns were raised about the potential for building decarbonization to disproportionately burden communities that are already economically and environmentally vulnerable (e.g. low-income tenants, blue-collar workers, and the working poor). Below are the key concerns identified by residents during the CEMO's engagement process. If considered and integrated into the policy making process, these findings could help the City avoid potential unintended negative consequences of implementing building decarbonization. All of these concerns are relevant to the decarbonization of existing buildings and some may also be relevant to new buildings (E=relevant to existing buildings; N=relevant to new buildings). When it comes to building electrification and energy efficiency, existing buildings pose the greatest

challenge, since they are already built and represent the vast majority of the building stock. The City legislators should integrate these concerns into their decision making, while developing criteria for revised building codes and developing new policies and programs.

1. Need for continuous meaningful engagement with frontline communities at the grassroots level (N, E)
2. Need to avoid increased rent and utility costs for tenants, as well as harassment, displacement due to construction, and other illegal eviction procedures (E)
3. Need for financial support for small landlords and affordable housing providers (N, E)
4. Need for equitable distribution of environmental and economic benefits of decarbonization (N, E)
5. Need for expansive outreach and enrollment in available incentive programs that prioritize low income areas (E)
6. Need for increased capacity of building electrical systems and electrical grid, including more solar and storage (N, E)

Summary of Recommendations

City leaders in Los Angeles have emphasized the importance of making sure this transition is just and equitable and have an opportunity to learn from other cities' experiences. However, given the lack of a sustainable financing model for decarbonizing the city's building stock, it is all the more challenging to develop a policy that will adequately address the varied social, technical and financial barriers facing equitable building decarbonization advocates in Los Angeles. Without an equitable financing solution, the City risks exacerbating rent burdens and displacement, both of which will be felt most in our frontline communities. As pilot programs and policies are developed and implemented, tracking, sharing, and evaluating impacts will be vital for ensuring that these policies are equitable in practice. This can also be called ground truthing. Los Angeles has been a leader in piloting climate policies, and it is critical that the City also lead the way in developing a framework for ground truthing policies before their implementation to avoid maladaptations.

The recommendations in this report strongly urge the CEMC and City Council to acknowledge and coordinate the needed sustainable financial models, resources and policies to avoid the potential unintended negative consequences that could stem from implementing a building decarbonization policy without a clear plan for how retrofits will be financed. The full range of projected costs and a plan for multi-phased implementation are needed to achieve equitable building decarbonization. By actively including and prioritizing the needs of communities that have been systematically disenfranchised and burdened by the highest levels of pollution, the City has the chance to creating a building decarbonization agenda that has the potential to reduce health, environmental, and economic disparities, while increasing energy efficiency and reducing greenhouse gas emissions in the Los Angeles. As decarbonization policies are developed for new and existing buildings, the following high-level recommendations should be considered:

1	Include frontline communities in the design, implementation, and evaluation of all building decarbonization policies and programs
2	Leverage building decarbonization to improve public health and habitability
3	Embed tenant protections into building decarbonization policies and programs
4	Embed affordable housing protections into building decarbonization policies and programs
5	Embed worker protections and new job opportunities for frontline communities into building decarbonization policies and programs
6	Prioritize public funding for decarbonization of existing residential buildings in frontline communities
7	Expand education, outreach, and technical assistance related to building decarbonization
8	Leverage existing decarbonization efforts to gather data on the technical and financial requirements of building decarbonization
9	Design a flexible, equity-centered, multi-phased approach to building decarbonization
10	Identify all new and existing possible sources of public, private, and philanthropic funding to support equitable building decarbonization

Table 1. CEMO mandate per Council File 21-1463 (Koretz – Krekorian – Raman – Martinez)

The Climate Emergency Mobilization Office (CEMO), which was established to incorporate the voices of vulnerable communities into policy decisions, will ensure that outreach to and input from vulnerable and frontline communities is adequate to design equitable policies. The CEMO is preparing to host a series of Community Assemblies in early 2022 to discuss technical and regulatory strategies to decarbonize buildings and to collect community feedback and recommendations on setting and achieving aggressive citywide building decarbonization goals, in alignment with energy justice and housing justice principles.

I THEREFORE MOVE that the City Council instruct the Climate Emergency Mobilization Office to:

- Incorporate findings from its Community assemblies and report back within 120 days with recommendations for the implementation of all carbon emission elimination strategies in new and existing buildings in the City of LA in accordance with the energy and housing justice principles listed above; and,
- Work with the Climate Emergency Commission and other stakeholders as articulated above to identify equity metrics and goals for measuring community benefits and burdens and provide policy recommendations for distributing the benefits and burdens of the building transition equitably.

Introduction

Advancing equitable climate change mitigation and adaptation and a clean energy transition through building decarbonization will involve massive infrastructural, financial and social system level changes coordinated with a multi-departmental and whole of government approach. The City of Los Angeles is working to align itself with the State of California's climate plans and goals including its efforts to advance building decarbonization throughout the state. The City's Departments of Building and Safety, Planning, and Housing will need to work in close partnership with the Department of Water and Power and the CEMO, if the City is to achieve equitable systems change. In order to maximize the impacts of our policies and resources for equitable building decarbonization, the City must align its new efforts with the network of existing plans and policies including the Strategic Long-Term Resource Plan (SLTRP), LADWP's grid capacity by neighborhood, the LA100 Equity Strategies, and LA's Green New Deal. Our Mayor, Commissioners, City Council, City staff, and the general public should approach building decarbonization systemically and collaboratively with the tripart goals of advancing social and environmental justice and addressing climate change.

While it is critically important to set clear goals and project costs, it is also necessary to approach building decarbonization as an evolving challenge. By learning more about the impacts of building decarbonization in other cities and by analyzing pilot projects here in Los Angeles, the City can develop a more nuanced understanding of the barriers to equitable building decarbonization and work to better align our emerging policies with our goals and with the needs of our diverse community. The City must recognize that the cost of retrofitting existing buildings is one of our major challenges in the arena of building decarbonization, and that this effort will require massive, new revenue streams in order to meet both equity and climate goals. This is not easy work and requires new ways of approaching policy making and innovative governance with the guidance and support of the CEMO. The CEMC will then advise Council and the Mayor on how to shape our clean energy built environment through ongoing engagement with community voices, in addition to more targeted focus groups and surveys of the grassroots voices of our community.

The information presented in this report is based on data gathered from the CEMO's CELA Series, targeted focus groups with frontline communities, formal and informal semi-structured interviews with local community advocates and subject experts, and a review of gray and academic literature on equitable building decarbonization. Part 1 describes the policy context in which the City is developing its building decarbonization agenda, including a summary of relevant existing policies and programs affecting building electrification, energy efficiency, and clean energy production in Los Angeles. Part 2 connects building decarbonization to health energy, housing, and worker justice, highlighting the transformative potential of the clean building transition. Part 3 outlines the methods used to engage with different communities around the topic of building decarbonization. Part 4 summarizes the equity concerns raised by community members and Part 5 presents a series of recommendations for how the City can proactively address these concerns and advance an equitable building decarbonization agenda in Los Angeles.

While the City of Los Angeles is making notable efforts to equitably decarbonize, and has created the CEMO and the CEMC to more deeply engage with community voices to shape this policy, local strategies are not enough for Los Angeles to achieve its goals. Additional approaches involve:

- Aligning and coordinating between local, county, state, and federal governments.
- Building metro-scale coalitions of cities that are adjacent to the the City of Los Angeles as well as Los Angeles County to share resources and best practices.

- Applying lessons learned and best practices from other cities who have begun to decarbonize their building stock.

Policy Context

The building sector accounts for a significant portion of urban greenhouse gas (GHG) emissions. Building sector emissions include direct emissions produced on-site due to basic building operations (e.g. burning gas when cooking, water heating, space heating) and embodied (or indirect) emissions arising from off-site combustion of fossil fuels (e.g. emissions from manufacturing, processing, and transporting of building materials, appliances, and energy).[1] In 2019, CO_2 emissions from the operation of buildings alone accounted for 28% of energy-related CO_2 emissions globally.[2] In Los Angeles, combined direct and indirect building emissions account for 43% of the city's total GHG emissions.[3] Direct emissions are not evenly distributed throughout the city. Buildings over 7,500 square feet in Los Angeles account for just 5% of buildings, but almost 40% of citywide building energy use.[4]

Building decarbonization refers to efforts to improve the living conditions and health of impacted communities while eliminating harmful and polluting fuels, rather than merely carbon emissions reduction programs. Building decarbonization aims to reduce and ultimately eliminate all direct and some indirect emissions from the building sector through 1) decarbonizing the electricity sector, 2) increasing building energy efficiency, and 3) electrification of appliances and building systems (Figure 1). Common energy efficiency measures include improving insulation, installing LED lights, installing water recycling systems and passive cooling systems. Common building appliances that will need to be replaced with electric versions include stoves, water heaters, and furnaces. Passive cooling and heat pumps are increasingly common approaches to reducing building GHG emissions and can also offer cost savings for tenants, owners, and developers. Passive cooling refers to a building design approach that employs natural techniques for dissipating and modulating heat without the use of energy. Passive cooling systems can be a useful climate adaptation tool that help reduce dependency on energy-intensive air conditioning. Heat pumps can be deployed to replace AC systems and natural gas furnaces and have the added benefit of being able to provide both heating and cooling to a home. There are many structural approaches to reducing heat for buildings and these should be considered by the Department of Building and Safety when considering Building Performance Standards and other building policies.

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[1] A recent study found that building life cycle GHG emissions (including both direct and embodied emissions) are decreasing due to energy efficiency improvements, while embodied GHG emissions are increasing and are now dominating the life cycle. Determining the embodied carbon of new buildings would involve a life cycle analysis of materials production and construction of the building, which we are not addressing in this report. Röck, M., Saade, M. R. M., Balouktsi, M., Rasmussen, F. N., Birgisdottir, H., Frischknecht, R., Habert, G., Lützkendorf, T., & Passer, A. (2020). Embodied GHG emissions of buildings – The hidden challenge for effective climate change mitigation. *Applied Energy*, *258*, 114107. https://doi.org/10.1016/j.apenergy.2019.114107

[2] United Nations Environment Programme. (2020). *2020 Global Status Report for Buildings and Construction: Towards a Zero-emission, Efficient and Resilient Buildings and Construction Sector*. United Nations Environment Programme. https://globalabc.org/sites/default/files/inline-files/2020%20Buildings%20GSR_FULL%20REPORT.pdf

[3] City of Los Angeles. (2019). *LA's Green New Deal*. https://plan.lamayor.org/

[4] Building Electrification Institute graphs shared with the CEMO by the Los Angeles Department of Building and Safety.

Figure 1. The three components of building decarbonization

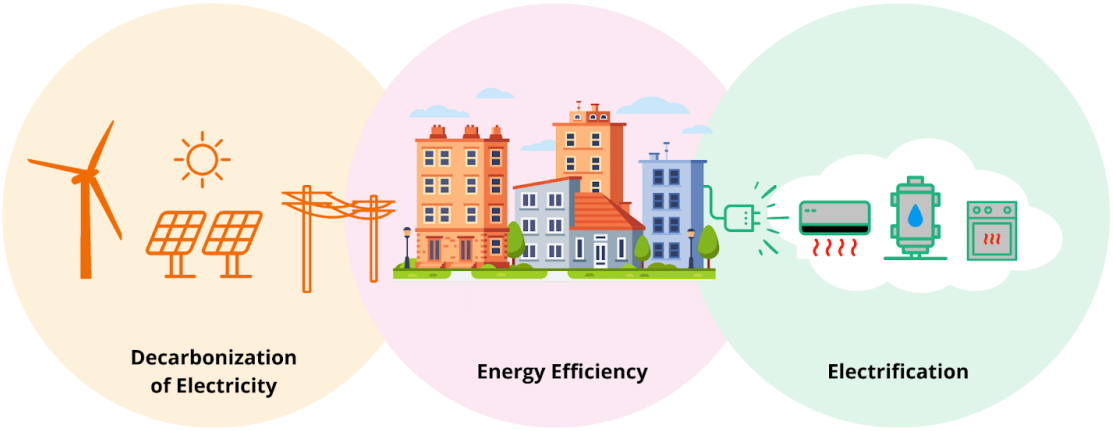

Image by Rebekah Guerra Day (2022). City of Los Angeles Climate Emergency Mobilization Office. Adapted from Arup. (2021). *Los Angeles Affordable Housing Decarbonization Study Phase 2*.

In addition to helping to mitigate GHG emissions, decarbonizing buildings can have a number of co-benefits including improved indoor air quality and public health and creation of well-paid, green jobs.[5] Building decarbonization also has the potential to have unintended negative consequences, including social and economic displacement of tenants and small businesses, and a reduction in affordable housing due to the expansion of corporate ownership of LA's housing stock.[6]

The City of Los Angeles is already taking bold steps to reduce its emissions and decarbonize its building stock. As part of the City's strategy to become carbon neutral by 2050, LA plans for all new buildings to be net zero carbon by 2030 and 100% of buildings to be net zero carbon by 2050.[7] While no policies have been developed yet, the City has passed several motions to help move toward those targets.

Council File 21-1463

In December 2021, the Los Angeles City Council introduced CF 21-1463, instructing the City to develop building decarbonization policies and goals that align with energy and housing justice principles identified by community advocates.[8] According to the motion, the City's building decarbonization policy should:

- Not lead to evictions, rent burden, energy burden, harassing conduct against tenants, or displacement; thereby exacerbating our homelessness crisis;
- Not replace carbon-based infrastructure with technologies that create other local air, environmental, or climate pollutants (e.g. hydrogen);
- Equitably distribute the benefits and burdens of the transition;

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[5] Lamm, T., & Elkind, E. N. (2021). *Building Toward Decarbonization: Policy Solutions to Accelerate Building Electrification in High-Priority Communities* [Policy Report]. Berkeley Center for Law, Energy & the Environment; UCLA Emmett Institute on Climate Change and the Environment. https://www.law.berkeley.edu/wp-content/uploads/2021/01/Building-toward-Decarbonization-January-2021.pdf

[6] Kirk, C. (2021). *Los Angeles Building Decarbonization: Tenant Impact and Recommendations*. SAJE. https://www.saje.net/wp-content/uploads/2021/12/LA-Building-Decarb_Tenant-Impact-and-Recommendations_SAJE_December-2021-1.pdf

[7] City of Los Angeles. (2019). *LA's Green New Deal*. https://plan.lamayor.org/

[8] *CF 21-1463*, Los Angeles City Council (2021). https://clkrep.lacity.org/onlinedocs/2021/21-1463_misc_12-8-21.pdf

- Ensure that decarbonization technologies and information will be accessible and affordable for all, and will ensure that the communities with the worst pollution and climate burdens reap the full benefits;
- Be informed and shaped by the needs and priorities of local communities and experts, leveraging local networks and expertise to ensure equitable and effective adoption;
- Create jobs that are well-paid and unionized, where targeted local hiring will ensure a just transition for workers from impacted industries and historically excluded communities;
- Ensure that energy efficiency improvements decrease energy burdens in historically-excluded communities and provide real bill savings at no additional cost.

CF 21-1463 instructed the CEMO to provide the Council with a report summarizing the findings of their public workshop series and recommending a set of equity metrics for evaluating building decarbonization efforts moving forward. The Los Angeles Department of Building and Safety (LADBS) was instructed to attend the CEMO workshops, to conduct parallel engagement with technical experts and key stakeholders, and to provide Council with recommendations for how to revise the City's Existing Building Energy and Water Efficiency (EBEWE) Program and how to offset any unintended negative consequences of building decarbonization for workers. LAHD was instructed to attend the CEMO workshops, conduct parallel engagement with multifamily housing stakeholders, and identify federal, state and local laws and regulations governing affordable housing with recommendations on how to best protect tenants. The Los Angeles Department of Water and Power (LADWP) was directed to attend the CEMO workshops and come up with recommendations for incentive programs that could support the housing and energy justice goals.

Council File 22-0151 (Raman – O'Farrell – Martinez – Harris-Dawson – Koretz – Blumenfield)
In February 2022, the Los Angeles City Council adopted a motion requiring all new residential and commercial buildings "to be built so that they will achieve zero carbon emissions."[9] The motion instructs LADBS, the CEMO, and all relevant City Departments to report back to the City Council with a plan for the implementation, including a timeline, consideration of possible equity issues, and recommended strategies for avoiding unintended negative consequences, particularly for low-income tenants, affordable housing, and workers.

Council File 22-0532 (O'Farrell – Krekorian)
In May 2022, the Los Angeles City Council adopted a motion requiring that all municipal buildings be decarbonized.[10] The motion directs the City Administrative Officer, General Services Department, Department of Recreation and Parks, LA Public Library Department, and the Bureau of Engineering, with support from LADWP and all other necessary City Departments, to report with a plan and timeline to end all gas powered vehicle, building appliance, and equipment usage and purchases.

While the City of Los Angeles does not yet have a comprehensive policy for advancing building decarbonization, these recent motions set the stage for the development of policies for new and existing buildings. The sections below outline the local, state and federal policies and programs currently in place that, intentionally or not, support one or more of the components of building decarbonization–building electrification, building energy efficiency, and energy decarbonization.

[9] *CF 22-0151*, Los Angeles City Council (2022). https://clkrep.lacity.org/onlinedocs/2022/22-0151_misc_2-9-22.pdf
[10] *CF 22-0532,* Los Angeles City Council (2022). https://clkrep.lacity.org/onlinedocs/2022/22-0532_misc_5-6-22.pdf

Building Electrification

The movement to create a clear agenda and plan for building decarbonization has been spurred in part by policy movement at the state level, as well as similar efforts in other cities around the country. In December 2021, the California Energy Commission (CEC) adopted a new energy building code that encourages building electrification. Per the new code, builders will still technically be allowed to use gas appliances in new buildings, however, they will be required to offset the higher emissions with more efficiency measures. Additionally, all new buildings must be "all-electric ready," which will help owners avoid costly upgrades down the line as the state transitions to fully-electric buildings. The State of California has also prioritized the need for this transition to support distributive justice, piloting two incentive programs targeting low-income, underserved communities (see Table 2).

Table 2. Existing Building Electrification Policies and Programs

Name	Type	Administrator	Description
California's Building Energy Efficiency Standards (Energy Code)[11]	Mandatory	California Energy Commission	The State's 2022 Energy Code encourages efficient electric heat pumps, establishes electric-ready requirements for new homes, expands solar photovoltaic and battery storage standards, strengthens ventilation standards, and more. The new code applies to all new buildings, additions, or alterations beginning on January 1, 2023.
Building Initiative for Low Emissions Development (BUILD)[12]	Incentive	California Energy Commission	BUILD is designed to provide technical assistance and incentives for new all-electric low-income residential buildings that reduce GHG emissions.
TECH Clean California[13]	Incentive	California Energy Commission	TECH Clean California provides matched funding to add upon clean heating incentives for utility, initiative administrator, and third-party funder incentives. At least 40% of TECH benefits are directed towards low-income and historically disadvantaged communities.

[11] California Energy Commission. (2022). *2022 Building Energy Efficiency Standards*. California Energy Commission. https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency

[12] Commission. (2021). *Building Initiative for Low-Emissions Development Program*. California Energy Commission. Retrieved August 11, 2022, from https://www.energy.ca.gov/programs-and-topics/programs/building-initiative-low-emissions-development-program

[13] California Energy Commission. (2021). *TECH Clean California*. Energy Solutions. Retrieved August 11, 2022, from https://energy-solution.com/tech/

Building Energy Efficiency

The City of Los Angeles has a number of policies and incentive programs in place to increase building energy efficiency and help reach its goals of reducing building energy use per square feet for all building types 22% by 2025; 34% by 2035; and 44% by 2050 (see Table 3).[14] To support compliance with the State's Energy Code, in 2017 the City launched the Existing Building Energy and Water Efficiency Program requiring all commercial and private buildings over 20,000 square feet and municipal buildings over 7,500 square feet to benchmark and report their energy and water usage. The City also has as number of voluntary incentive programs such as the Home Energy Improvement Program (HEIP), the recently launched Comprehensive Affordable Multifamily Residential (CAMR) Program, and the GoGreen Energy Financing Program, which is co-managed by LADWP and SoCalGas. Additionally, the City has several rebate programs aimed at increasing energy and water efficiency, and a direct install program that replaces qualified older refrigerators with more efficient newer models. Some Los Angeles residents are also eligible for SoCalGas's Energy Savings Assistance Program (ESAP), which provides free home energy and water efficiency improvements for qualified low-income households. There are also opportunities in these incentive programs to promote passive cooling systems, not just traditional AC, which adds GHG emissions to the atmosphere.

Table 3. Existing Building Energy Efficiency Policies and Programs

Name	Type	Administrator	Description
California's Building Energy Efficiency Standards (Energy Code)[15]	Mandatory	California Energy Commission	The Energy Code contains energy and water efficiency requirements (and indoor air quality requirements) for newly constructed buildings, additions to existing buildings, and alterations to existing buildings.
Los Angeles Existing Building Energy and Water Efficiency (EBEWE)[16]	Mandatory	LADBS	EBEWE requires certain building categories to benchmark their energy and water consumption. Buildings falling below a certain threshold are required to conduct retrofits to improve energy and water efficiency. Building owners that do not comply are charged a fine.
Home Energy Improvement Program (HEIP)[17]	Voluntary	LADWP	HEIP provides free energy and water audits to eligible single family homes, condominiums, multi-family properties with 2-4 units.

[14] City of Los Angeles. (2019). *LA's Green New Deal*. https://plan.lamayor.org/
[15] California Energy Commission. (2022). *2022 Building Energy Efficiency Standards*. California Energy Commission. https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency
[16] LADBS. (2017). *Existing Buildings Energy & Water Efficiency Program | LADBS*. https://www.ladbs.org/ebewe
[17] LADWP. (2016). *Home Energy Improvement Program*. Retrieved August 11, 2022, from https://ladwp.com/heip

Comprehensive Affordable Multifamily Retrofits (CAMR)[18]	Incentive	LADWP	CAMR provides free energy assessments and financial incentives for retrofits in low-income multifamily dwellings of between 5 and 64 units.
GoGreen Home Energy Financing[19]	Incentive	LADWP; SoCalGas	GoGreen offers financing that can be used toward energy efficient heat pumps, windows/window film, HVAC systems, LEDs, pool pumps, cool roofs, insulation, clothes washers, water heaters, and more.
LADWP Efficient Product Marketplace (EPM)[20]	Rebate	LADWP	The LADWP Efficient Product Marketplace (EPM) is an online marketplace that allows customers to shop a selection of popular energy efficient brands available at numerous stores and online retailers with pricing and available rebate information.
SoCal WaterSmart Rebate Program[21]	Rebate	LADWP; Metropolitan Water District	WaterSmart encourages residential, multi-family owners, commercial, and industrial customers to conserve water by providing rebates for eligible products.
Refrigerator Exchange Program[22]	Direct Install; Exchange	LADWP	LADWP's Refrigerator Exchange Program provides new energy-saving, ENERGY STAR® rated refrigerators in exchange for qualified older model refrigerators for income-qualified, single, multifamily, or non-profit commercial customers.
Energy Savings Assistance Program (ESAP)[23]	Direct Install	SoCalGas	ESAP provides free home energy and water efficiency improvements for households that are enrolled in public assistance programs or that fall below a certain income threshold.

[18] LADWP. (2021). *Comprehensive Affordable Multifamily Retrofits*. Retrieved August 11, 2022, from https://ladwpcamr.com/
[19] State of California. (n.d.). *GoGreen Financing*. GoGreen Financing. Retrieved August 11, 2022, from https://gogreenfinancing.com/
[20] LADWP. (n.d.). *Efficient Product Marketplace*. LADWP. Retrieved August 11, 2022, from https://ladwp.com/epm
[21] Metropolitan Water District of Southern California. (n.d.). *SoCal WaterSmart*. Retrieved August 11, 2022, from https://socalwatersmart.com/en/residential/
[22] LADWP. (n.d.). *Refrigerator Recycling Program*. Retrieved August 11, 2022, from https://ladwp.com/retire
[23] SoCalGas. (n.d.). *Energy Savings Assistance Program*. Retrieved August 11, 2022, from https://www.socalgas.com/save-money-and-energy/assistance-programs/energy-savings-assistance-program

Decarbonizing Energy Production

The City has also taken a number of steps to decarbonize the energy used within the city limits (Table 4). As of 2018, approximately 32% of the city's power was generated by renewable resources, including wind (11%) solar (13%), geothermal (7%), and small-scale hydroelectric power (2%). LADWP has committed to providing 80% of its energy by renewable sources by 2030 and 100% by 2035.[24] The vast majority of this energy is produced outside of Los Angeles and transported to the City. While distributed residential rooftop solar plays an important role in the City's plan to become carbon neutral by 2050, there are currently no local policies or programs in place to incentivize adoption of solar or other renewables within the City. Residents interested in installing solar may qualify for a Federal Renewable Energy Tax Credit, however this program will sunset next year if not extended by Congress. The California Public Utilities Commission (CPUC) provides rebates for energy storage technology installation through the Self-Generation Incentive Program (SGIP).

Table 4. Existing Clean Energy Policies and Programs

Name	Type	Administrator	Description
Federal Solar Investment Tax Credit[25]	Incentive	United States Department of Energy	In December 2020, the U.S. Congress passed an extension of the Solar Investment Tax Credit (ITC), which provides a 26% tax credit for solar systems installed on single family, primary residences in 2020-2022, and 22% for systems installed in 2023.
Self-Generation Incentive Program (SGIP)[26]	Incentive	CPUC	SGIP offers rebates for installing energy storage technology at both households and non-residential facilities. These storage technologies include battery storage systems that can function in the event of a power outage.

As the previous sections highlight, there is a notable lack of policies and programs in place to support widespread, equitable building decarbonization in Los Angeles, particularly in the areas of building electrification and decarbonizing energy production. While comparably more programs exist related to building energy efficiency, there are significant gaps in the types of buildings these programs support and the accessibility of incentives. Many rebate programs, for example, fail to reach their intended target demographics due to the inability of these households to cover the upfront costs. This highlights the need for any building decarbonization policies to be supported by sustainable and accessible financing to ensure that they reach those most impacted by climate change, localized pollution, and other hazards.

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[24] Garcetti, E. (2021, April). *State of the City 2021*. Office of Los Angeles Mayor Eric Garcetti. https://lamayor.org/SOTC2021

[25] U.S. Department of Energy. (n.d.). *Federal Solar Investment Tax Credit*. Energy.Gov. Retrieved August 11, 2022, from https://www.energy.gov/eere/solar/homeowners-guide-federal-tax-credit-solar-photovoltaics

[26] California Public Utilities Commission. (n.d.). *Self-Generation Incentive Program*. Retrieved August 11, 2022, from https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/demand-side-management/self-generation-incentive-program

Equity and Justice Context

When developing policies to mandate or encourage building decarbonization, the City needs to fully understand the broader intended and unintended consequences. While a well-designed decarbonization policy could help to address existing environmental, economic and social disparities, a poorly-designed policy could exacerbate these persistent inequities. This section draws upon grey and academic literature to connect building decarbonization to broader issues of health, energy, housing, and worker justice. A more in depth understanding of the interconnectedness of these overlapping issues is vital for developing a decarbonization agenda that not only avoids creating unintended negative consequences, but actively catalyzes the community's vision of climate justice in practice on the ground.

Building Decarbonization and Health Justice

Recent research has revealed the harmful indoor air pollution emitted by gas appliances, such as stoves and water heaters. The use of these appliances result in increased levels of harmful air pollutants including nitrogen dioxide (NO_2), carbon monoxide (CO), and particulate matter ($PM_{2.5}$).[27, 28] In some cases, indoor air pollution levels have been found to exceed outdoor air pollution thresholds.[29] Indoor air pollution disproportionately burdens low income households, racial minorities, women, and children, and has been linked to asthma and other respiratory illnesses.[30, 31, 32] Indoor air pollution exposure compounds the negative health impacts of outdoor air quality, exacerbating health disparities that disproportionately burden communities of color and low income communities.[33, 34] By replacing gas appliances and systems with electric ones, building decarbonization has the potential to mitigate both indoor and outdoor air pollution thereby improving public health. If building decarbonization is implemented first in communities that experience higher levels of outdoor and indoor air pollution, this measure could help to reduce long standing health disparities.

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[27] Tran, V. V., Park, D., & Lee, Y.-C. (2020). Indoor Air Pollution, Related Human Diseases, and Recent Trends in the Control and Improvement of Indoor Air Quality. *International Journal of Environmental Research and Public Health*, *17*(8), 2927. https://doi.org/10.3390/ijerph17082927

[28] Seals, B., & Krasner, A. (2020). *Health Effects from Gas Stove Pollution*. Rocky Mountain Institute, Physicians for Social Responsibility, Mothers Out Front, Sierra Club. https://rmi.org/insight/gas-stoves-pollution-health/

[29] Zhao, H., Chan, W. R., Cohn, S., Delp, W. W., Walker, I. S., & Singer, B. C. (2021). Indoor air quality in new and renovated low-income apartments with mechanical ventilation and natural gas cooking in California. *Indoor Air*, *31*(3), 717–729. https://doi.org/10.1111/ina.12764

[30] U.S. EPA. (2016). *Integrated Science Assessment (ISA) for Oxides of Nitrogen – Health Criteria (Final Report, Jan 2016)* [Reports & Assessments]. United State Environmental Protection Agency. https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=310879

[31] Guruswamy, L. (2019). Sustainable Development: Energy, Justice, and Women. *Wisconsin International Law Journal*. https://scholar.law.colorado.edu/articles/1250

[32] Seals, B., & Krasner, A. (2020). *Health Effects from Gas Stove Pollution*. Rocky Mountain Institute, Physicians for Social Responsibility, Mothers Out Front, Sierra Club. https://rmi.org/insight/gas-stoves-pollution-health/

[33] Katz, C. (2012). People in Poor Neighborhoods Breathe More Hazardous Particles. *Scientific American*. https://www.scientificamerican.com/article/people-poor-neighborhoods-breate-more-hazardous-particles/

[34] Wilhelm, M., Qian, L., & Ritz, B. (2009). Outdoor air pollution, family and neighborhood environment, and asthma in LA FANS children. *Health & Place*, *15*(1), 25–36. https://doi.org/10.1016/j.healthplace.2008.02.002

Building Decarbonization and Energy Justice

Energy demand is projected to increase significantly due to climate change, with projected changes varying by region, building type, and vintage.[35, 36] If pursued holistically and equitably, building decarbonization can reduce energy consumption and utility costs. A recent study that modeled the impacts of building decarbonization in Los Angeles, found that energy consumption decreased for both older and newer vintages of multifamily housing. The report, however, also found that the upfront costs of electrification exceeded routine end-of-life equipment replacement and that, if passed onto tenants, these upfront costs would exceed operational savings from efficiency, resulting in a net cost increase for tenants.[37]

According to the U.S. Energy Information Administration (EIA), in 2020 approximately 7.25 million housing units (53% of housing units) in California used natural gas for heating, 9.9 million (75%) used natural gas for water heating, and 460 thousand (3%) used propane for heating.[38] Building decarbonization will require these housing units to switch to electric heat pumps and water heaters. While the cost of electricity is higher than the cost of gas, electric appliances are generally more efficient, leading, on average, to lower energy bills for households that switch from gas to electric water and space heating. For homes that do not already have air conditioning or other cooling features such as heat pumps, however, utility costs may rise with the addition of a heat pump or systems that provide both heating and cooling. Cooling systems are a habitability and climate adaptation tool for the homes in Los Angeles that don't already have them. Approximately 63% of California households use ceiling fans for cooling, 53% use central air conditioning equipment, such as central heat pumps, for primary or secondary cooling purposes, and 23% use individual air conditioning units, such as ductless heat pumps, wall or window units, or portable units.

According to the U.S. Bureau of Labor Statistics, the average prices for electricity and piped gas in Los Angeles are higher than the national average and have increased consistently for at least the last four years. Between January and July 2022, the price of electricity per kWh in Los Angeles ranged from 0.244 (in July) to 0.258 (in March) and the price of gas per therm ranged from 1.642 (in February) and 2.284 (in June).[39] Low income communities and communities of color are disproportionately energy burdened, meaning that families are more likely to pay more than 30% of their income on energy bills.[40, 41] Compared to non-Hispanic white households,

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[35] van Ruijven, B. J., De Cian, E., & Sue Wing, I. (2019). Amplification of future energy demand growth due to climate change. *Nature Communications*, *10*(1), 2762. https://doi.org/10.1038/s41467-019-10399-3

[36] Dirks, J. A., Gorrissen, W. J., Hathaway, J. H., Skorski, D. C., Scott, M. J., Pulsipher, T. C., Huang, M., Liu, Y., & Rice, J. S. (2015). Impacts of climate change on energy consumption and peak demand in buildings: A detailed regional approach. *Energy*, *79*, 20–32. https://doi.org/10.1016/j.energy.2014.08.081

[37] Arup. (2021). *Los Angeles Affordable Housing Decarbonization Study Phase 2*. Arup. https://www.nrdc.org/sites/default/files/la-affordable-housing-decarbonization-study-phase2-20211108.pdf

[38] U.S. Energy Information Administration. (n.d.). *Residential Energy Consumption Survey (RECS)* [Governmental]. U.S. Energy Information Administration. Retrieved August 11, 2022, from https://www.eia.gov/consumption/residential/data/2020/index.php?view=characteristics

[39] U.S. Bureau of Labor Statistics. (2022, September 14). Average Energy Prices, Los Angeles-Long Beach-Anaheim – August 2022: Western Information Office: U.S. Bureau of Labor Statistics [Governmental]. U.S. Bureau of Labor Statistics. https://www.bls.gov/regions/west/news-release/averageenergyprices_losangeles.htm

[40] Chen, C., Nelson, H., Xu, X., Bonilla, G., & Jones, N. (2021). Beyond technology adoption: Examining home energy management systems, energy burdens and climate change perceptions during COVID-19 pandemic. *Renewable and Sustainable Energy Reviews*, *145*, 111066. https://doi.org/10.1016/j.rser.2021.111066

[41] Drehobl, A., Ross, L., & Ayala, R. (2020). *How High are Household Energy Burdens: An Assessment of National and Metropolitan Energy Burden across the United States* (p. 80). American Council for an Energy-Efficient Economy.

Black households spend 43% more of their income on energy costs, Hispanic households spend 20% more, and Native American households spend 45% more.[42] Residents of manufactured homes have 71% higher energy burdens than average households and low-income households in multifamily residences have burdens 81% higher than average.[43] As in many places, the energy burden across Los Angeles is disproportionately concentrated in Black, Latinx.[44] While energy burden was experienced widely in Los Angeles before the COVID-19 pandemic, more families have been brought into utility debt due to the pandemic.[45] Moreover, recent research into the energy equity gap has found that income-based energy poverty metrics miss the people's behavior (e.g. limiting energy consumption due to financial stress or insecurity) and therefore undercount energy poverty.[46]

Existing programs and initiatives aimed at helping low-income households pay utility bills, weatherize their homes, and upgrade home appliances are not sufficient to adequately support all eligible households.[47] Programs to improve the quality or energy performance of residential buildings are largely targeted to market rate or single-family housing.[48] Benefits therefore often do not reach households that are low-income, renters, or in multifamily buildings.[49] President Biden's $1.9 trillion rescue aid package includes $5 billion for utility bill assistance, which will be distributed through the low-income Home Energy Assistance Program (HEAP) program. However, the National Energy Assistance Directors Association estimates that this falls short of the $27 billion in past-due balances of U.S. households.[50]

Existing research on energy insecurity does not sufficiently consider the fact that vulnerable communities often experience energy burdens alongside other hardships, as well as the potential for climate change to exacerbate these hardships.[51] As temperatures rise and Los Angeles experiences longer, more severe heat waves, ensuring that people can stay cool in their homes will be essential. This means ensuring that they have both the physical infrastructure and the necessary financial resources. If building decarbonization investments are not distributed equitably, with financial support prioritizing those who are rent and energy burdened, and those who are disproportionately vulnerable to environmental and climate hazards, frontline communities could be left behind and end up paying to maintain the legacy

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[42] Ibid.
[43] Ibid.
[44] González, S. R., Ong, P. M., Pierce, G., & Hernandez, A. (2021). *Keeping the Lights and Water On: COVID-19 and Utility Debt in Los Angeles' Communities of Color* (p. 14). UCLA Center for Neighborhood Knowledge, UCLA Luskin Center for Innovation. https://innovation.luskin.ucla.edu/wp-content/uploads/2021/04/Keeping-the-Lights-and-Water-On.pdf
[45] Arup. (2021). *Los Angeles Affordable Housing Decarbonization Study Phase 2*. Arup. https://www.nrdc.org/sites/default/files/la-affordable-housing-decarbonization-study-phase2-20211108.pdf
[46] Cong, S., Nock, D., Qiu, Y. (Lucy), & Xing, B. (2021). The Energy Equity Gap: Unveiling Hidden Energy Poverty. *Nature Communications*. https://doi.org/10.21203/rs.3.rs-712945/v1
[47] Raimi, D., Barone, A., Carley, S., Foster, D., Grubert, E., Higdon, J., Kearney, M., Konisky, D., Michael, J., Michaud, G., Nabahe, S., Peluso, N., Robertson, M., & Reames, T. (2021). *Policy Options to Enable an Equitable Energy Transition* (p. 63). Resources for the Future.
[48] Arup. (2021). *Los Angeles Affordable Housing Decarbonization Study Phase 2*. Arup. https://www.nrdc.org/sites/default/files/la-affordable-housing-decarbonization-study-phase2-20211108.pdf
[49] Ibid.
[50] Liedtke, M., & Bussewitz, C. (2021, March 24). Damage from coronavirus: Utility bills overwhelm nearly a third of U.S. households. *Los Angeles Times*. https://www.latimes.com/world-nation/story/2021-03-23/damage-from-virus-utility-bills-overwhelm-some-households
[51] Jessel, S., Sawyer, S., & Hernández, D. (2019). Energy, Poverty, and Health in Climate Change: A Comprehensive Review of an Emerging Literature. *Frontiers in Public Health*, *7*. https://www.frontiersin.org/articles/10.3389/fpubh.2019.00357

gas systems, while receiving none of the benefits of the transition.[52] By targeting investments toward energy burdened households that lack cooling infrastructure, the City could save lives and support energy justice. Energy justice simultaneously requires that the City 1) shift away from the extraction and use of fossil fuels, 2) work directly with frontline communities to identify and address any unforeseeable issues that may arise during the transition, 3) mitigate social and ecological harm caused by the production of renewable energy, including job loss, and 4) ensure reliable access to affordable energy.

Building Decarbonization and Housing Justice

A gap analysis from California Housing Partnership highlighted that, as of 2018, the county's housing market fell short of the need for affordable housing by about half a million homes.[53] Rents have been rising faster than wages for years, reducing affordability of much of the existing housing stock. According to 2019 US Census data, nearly half a million households in LA are rent-burdened, meaning they spend 30% or more of their household income on rent.[54] Even before the COVID-19 pandemic, the discrepancy between growth in rent prices and income levels was compounding, positioning an increasing share of renters to be rent-burdened.[55] COVID-19 has left many low-income households with drastically reduced income due to illness, job loss, or death of a household's wage earner.[56] The threats associated with displacement and further marginalization must be addressed as hazards through a resilience lens.[57]

Research has found that rent-burdened households have higher rates of eviction compared to other renters and homeowners.[58],[59] Eviction can lead to long-lasting physical and mental health effects for families, increased economic and social instability, and houselessness.[60] Tracking evictions in Los Angeles is difficult because the formal eviction data is court-protected information and most evictions occur through informal or illegal means. One study found that for every formal eviction filed in Los Angeles there are six informal evictions.[61] Informal evictions

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[52] Elkind, E. N., Zelen, R., & Segal, K. (2022). *Hot, Cold & Clean: Policy Solutions to Promote Equitable and Affordable Adoption of Heat Pump Retrofits in Existing Buildings* [Policy Report]. UC Berkeley Center for Law, Energy and the Environment; UCLA Emmett Institute on Climate Change and the Environment. https://www.law.berkeley.edu/wp-content/uploads/2022/07/Hot-Cold-Clean-Heat-Pump-Retrofit-Report-2.pdf

[53] CHP. (2020). *2020 Los Angeles County Affordable Housing Outcomes Report*. California Housing Partnership. https://1p08d91kd0c03rlxhmhtydpr-wpengine.netdna-ssl.com/wp-content/uploads/2020/07/2020-Los-Angeles-County-Affordable-Housing-Outcomes-Report.pdf

[54] CHP. (2020). *2020 Los Angeles County Affordable Housing Outcomes Report*. California Housing Partnership. https://1p08d91kd0c03rlxhmhtydpr-wpengine.netdna-ssl.com/wp-content/uploads/2020/07/2020-Los-Angeles-County-Affordable-Housing-Outcomes-Report.pdf

[55] Ibid.

[56] Arup. (2021). *Los Angeles Affordable Housing Decarbonization Study Phase 2*. Arup. https://www.nrdc.org/sites/default/files/la-affordable-housing-decarbonization-study-phase2-20211108.pdf

[57] Ibid.

[58] Pew Charitable Trusts. (2018). American Families Face a Growing Rent Burden: High housing costs threaten financial security and put homeownership out of reach for many. Pew Charitable Trusts. https://www.pewtrusts.org/-/media/assets/2018/04/rent-burden_report_v2.pdf

[59] Lens, M. C., Nelson, K., Gromis, A., & Kuai, Y. (2020). The Neighborhood Context of Eviction in Southern California. City & Community, 19(4), 912–932. https://doi.org/10.1111/cico.12487

[60] Desmond, M. (2017). Evicted: Poverty and Profit in the American City. Crown.

[61] Montano, J. (2020). Piercing the Corporate Veil of LLC Landlordism: A Predatory Landlord's Eviction Machine of Black and Brown Bodies in Los Angeles' Working-Class Neighborhoods, 1996-2019 [Master's Thesis, University of California, Los Angeles]. https://ucla.app.box.com/s/8gsq0kpvj3h53kz31kr2a5lxh1k6eam6

are often the result of landlord harassment of tenants, which can include direct verbal or written harassment, shutting off utilities, removing doors or windows, illegally changing locks, and displacing tenants without due notice or for longer than is needed to perform renovations.

Current rent control laws are insufficient to protect many vulnerable tenants. LA's Rent Stabilization Ordinance (RSO), for example, caps rent increases to 3% per year, but does not cover tenants living in buildings after 1978, which represent a significant portion of tenants in Los Angeles. California's Tenant Protection Act (AB1482) limits annual rental increases to 5% + local CPI (CPI = inflation rate), or 10% whichever is lower, but only applied to units that are older than 15 years. Tenants living in buildings built within the last 15 years have no rent control. Both LA's RSO and AB1482 allow landlords to pass through a portion of building upgrade costs to tenants (increasing rent as much as 10% annually) and include loopholes that allow eviction of tenants for certain types of renovation. Increasing awareness of the prevalence of tenant harassment in Los Angeles led to the adoption of the City's Tenant Anti-Harassment Ordinance (TAHO) in June of 2021. The TAHO, which took effect on August 6, 2021, prohibits landlords from harassing tenants by actions such as removing housing services, withholding repairs or refusing to accept rent payments. In a motion adopted in February of 2022, City Council requested that LAHD provide a report on the effectiveness of TAHO a year into implementation and to report on a recommended tenant anti-harassment program for the city, including the necessary resources to create permanent city staff positions tasked with monitoring and enforcing the ordinance.

Given the substantial upfront and ongoing maintenance costs of building decarbonization, this transition has the potential to exacerbate the ongoing housing crisis facing Los Angeles. Housing justice is a critical component of climate and energy justice.[62] If only those who can afford higher rents are able to stay in their homes and neighborhoods, the local benefits of building decarbonization will not be shared equally. To accomplish an equitable transition, policies and programs must be designed to pair building decarbonization with housing affordability and preservation. Housing justice requires that housing be seen as a basic human right and that cities adopt policies that maintain and expand affordability and create opportunities for alternative ownership models.

Building Decarbonization and Worker Justice

The practical task of decarbonizing and maintaining fully-electric buildings is a monumental endeavor. The transition will require skilled workers to perform energy efficiency upgrades in existing buildings, replace gas with electrical systems in buildings, and replace gas infrastructure at the street and grid levels. Additionally, workers will be needed to build and maintain electrical equipment, and to build and operate renewable energy production and distribution systems. The shift to fully-electric buildings will result in the loss of some gas related jobs, but it will also require the creation of new and more jobs to install and maintain electrical systems. Throughout the state, building decarbonization is expected to create 100,000 full-time construction jobs and 4,900 full-time manufacturing jobs.[63] A recent report by Inclusive Economics estimates that implementing deep efficiency and electrification in existing buildings in Los Angeles could produce between 36,000 and 59,000 thousand new jobs.[64] The needs and

[62] Cohen, D. A. (2018). *Climate Justice and the Right to the City* (Current Research on Sustainable Urban Development). Penn Institute for Urban Research. https://penniur.upenn.edu/uploads/media/Cohen.pdf
[63] Jones, B., Karpman, J., Chlebnikow, M., & Goggans, A. (2019). *California Building Decarbonization: Workforce Needs and Recommendations*. UCLA Luskin Center for Innovation, Inclusive Economics. https://innovation.luskin.ucla.edu/wp-content/uploads/2019/11/California_Building_Decarbonization.pdf
[64] Jones, B. (2021). *Los Angeles Building Decarbonization: Community Concerns, Employment Impacts, Opportunities*. Inclusive Economics.

wellbeing of existing and future workers must be taken into consideration at the outset, throughout and after the transition to decarbonized buildings. It is critical that these jobs provide fair wages and opportunities for development and career growth to ensure that the workers who help to build and maintain this city can afford to live here. Recent research has found that the pandemic has significantly impacted the construction industry globally; it's estimated that construction activities dropped between 10 and 25% between 2019 and 2020.[65] As the City develops building decarbonization policies, those involved need a deeper understanding of the impacts of the pandemic on jobs and workers in the building and related industries.

Advancing a Just Transition

Communities are responding to climate change in the context of legacies of harm from historical redlining and the placement of polluting facilities and freeways near working class and working poor homes, where the pollution burdens are the greatest. The urgency of climate change has been used by some to push through actions that maintain and exacerbate inequalities and injustices.[66,67] Recent research has found that climate plans and policies that do not actively center the voices and needs of frontline communities can actually exacerbate existing social, economic, and environmental injustices, leading to what is called maladaptation. The International Panel on Climate Change (IPCC) defines maladaptation as "an intended adaptation that instead increases risk of climate-related damages, increases vulnerability to climate change, or diminishes welfare, now or in the future."[68] A common example of maladaptation is green gentrification, which occurs when market-rate "green" development drives up property values and displaces local residents.[69] The only way to avoid maladaptation is by simultaneously addressing underlying the root causes of social vulnerability as a central component of climate action.[70]

Growing awareness of this potential for unintended negative consequences has intensified calls at all scales for climate justice and a just transition. Just transition is a "vision-led, unifying and place-based set of principles, processes, and practices that build economic and political power to shift from an extractive [fossil fuel-based] economy to a regenerative economy.[…] The transition itself must be just and equitable; redressing past harms and creating new relationships of power for the future through reparations. If the process of transition is not just, the outcome will never be."[71] Transformative climate action requires empowered and

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https://www.nrdc.org/sites/default/files/los-angeles-building-decarbonization-jobs-impacts-report-20211208.pdf

[65] UNEP. (2020). *2020 Global Status Report for Buildings and Construction: Towards a Zero-emission, Efficient and Resilient Buildings and Construction Sector*. United Nations Environment Programme. https://globalabc.org/sites/default/files/inline-files/2020%20Buildings%20GSR_FULL%20REPORT.pdf

[66] Long, J., & Rice, J. L. (2019). From sustainable urbanism to climate urbanism. *Urban Studies*, *56*(5), 992–1008. https://doi.org/10.1177/0042098018770846

[67] Wamsler, C., & Osberg, G. (2022). Transformative Climate Policy Mainstreaming—Engaging the Political and the Personal. *Global Sustainability*, 1–21. https://doi.org/10.1017/sus.2022.11

[68] UNEP. (2019). *Frontiers: Emerging Issues of Environmental Concern*. United Nations Environment Programme. https://wedocs.unep.org/bitstream/handle/20.500.11822/27545/Frontiers1819_ch5.pdf

[69] Anguelovski, I., Connolly, J. J. T., Pearsall, H., Shokry, G., Checker, M., Maantay, J., Gould, K., Lewis, T., Maroko, A., & Roberts, J. T. (2019). Opinion: Why green "climate gentrification" threatens poor and vulnerable populations. *Proceedings of the National Academy of Sciences*, *116*(52), 26139–26143. https://doi.org/10.1073/pnas.192049011

[70] Thomas, K., Hardy, R. D., Lazrus, H., Mendez, M., Orlove, B., Rivera-Collazo, I., Roberts, J. T., Rockman, M., Warner, B. P., & Winthrop, R. (2018). Explaining differential vulnerability to climate change: A social science review. *Wiley Interdisciplinary Reviews: Climate Change*, *0*(0), e565. https://doi.org/10.1002/wcc.565

[71] Climate Justice Alliance. (2019). Just Transition: A Framework for Change. *Climate Justice Alliance: Communities United for a Just Transition*. https://climatejusticealliance.org/just-transition/

deliberative decision making practices that are transparent, accessible, and involve power sharing.[72] Research has found that direct engagement with frontline communities is necessary for understanding priority issues and the complex impacts of policy decisions.[73] Partnership with citizens and community groups can increase the effectiveness of government climate adaptation programs.[74,75] Fostering civic political agency in climate decision making requires addressing structural capacity factors, perceptions of possible influence, and trust related issues.[76] In order to advance an equitable building decarbonization agenda the City must integrate equity, inclusion and justice into the design of institutional arrangements, participatory processes, policy integration, and strategic implementation.[77]

Methodology

This section describes the methods used by the CEMO in collecting community feedback and developing the equity-centered, community-driven recommendations included in this report. These methods include: 1) a series of three virtual public workshops, 2) targeted focus groups, and 3) semi-structured individual and group interviews with local community advocates and subject experts. The CEMO's mission, exemplified by the Office's Innovative Governance Model (Figure 2) is to center the voices of frontline communities in the design, implementation, and evaluation of climate policies in Los Angeles. This combination of methods was developed in order to create multiple opportunities for engaging with and learning from the broad range of diverse neighborhoods and communities in LA, with particular attention to tenants, affordable housing providers, building trade workers, indigenous communities, and environmental justice communities.

[72] Shi, L., & Moser, S. (2021). Transformative climate adaptation in the United States: Trends and prospects. *Science*. https://doi.org/10.1126/science.abc8054

[73] Fernandez-Bou, A. S., Ortiz-Partida, J. P., Classen-Rodriguez, L. M., Pells, C., Dobbin, K. B., Espinoza, V., Rodríguez-Flores, J. M., Thao, C., Hammond Wagner, C. R., Fencl, A., Flores-Landeros, H., Maskey, M. L., Cole, S. A., Azamian, S., Gamiño, E., Guzman, A., Alvarado, A. G. F., Campos-Martínez, M. S., Weintraub, C., … Medellín-Azuara, J. (2021). 3 Challenges, 3 Errors, and 3 Solutions to Integrate Frontline Communities in Climate Change Policy and Research: Lessons From California. *Frontiers in Climate*, *3*. https://www.frontiersin.org/article/10.3389/fclim.2021.717554

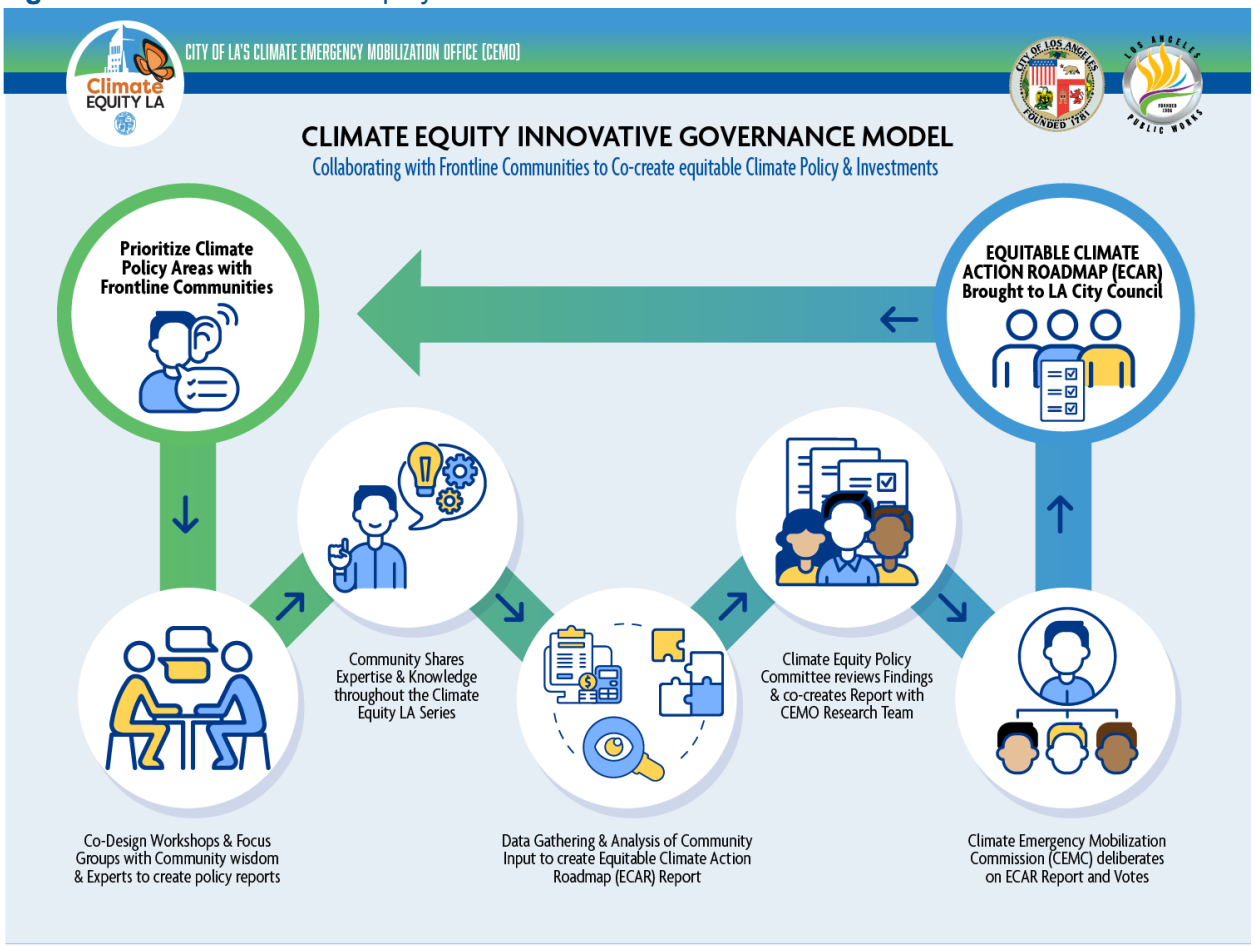
[74] Iftikhar, M. N., Ali, S., & Sarzynski, A. (2018). Community–Government Partnership for Metered Clean Drinking Water: A Case Study of Bhalwal, Pakistan. In S. Hughes, E. K. Chu, & S. G. Mason (Eds.), *Climate Change in Cities: Innovations in Multi-Level Governance* (pp. 163–179). Springer International Publishing. https://doi.org/10.1007/978-3-319-65003-6_9

[75] Sari, A. D., & Prayoga, N. (2018). Enhancing Citizen Engagement in the Face of Climate Change Risks: A Case Study of the Flood Early Warning System and Health Information System in Semarang City, Indonesia. In S. Hughes, E. K. Chu, & S. G. Mason (Eds.), *Climate Change in Cities: Innovations in Multi-Level Governance* (pp. 121–137). Springer International Publishing. https://doi.org/10.1007/978-3-319-65003-6_7

[76] Wamsler, C., Mundaca, L., & Osberg, G. (2022). Rethinking political agency: The role of individuals' engagement, perceptions and trust in transitioning to a low-carbon transport system. *Journal of Cleaner Production*, 132197. https://doi.org/10.1016/j.jclepro.2022.132197

[77] Chu, E. K., & Cannon, C. E. (2021). Equity, inclusion, and justice as criteria for decision-making on climate adaptation in cities. *Current Opinion in Environmental Sustainability*, *51*, 85–94. https://doi.org/10.1016/j.cosust.2021.02.009

Figure 2. CEMO's Climate Equity Innovative Governance Model



Overall, the CEMO has engaged with over 250 individuals from all over the city. Table 5 provides a summary of the estimated number of people and the target populations for each method used to gather community perspectives and input on equitable building decarbonization. The sections below provide more detailed information about each engagement method.

Table 5. Data Collection and Community Engagement Methods

Method	Total Number Engaged	Target Population(s)

Public Workshops	March 10: 139
	March 17: 113
	March 24: 100
		• General public
		• City staff & leadership
		• County Sustainability staff
		• CBOs and CBO members
		  ○ Frontline-serving CBOs
		  ○ EJ, Social Justice, and Tenant Rights Organizations
		• Neighborhood Council leaders & Members
		• Environmental and Social service Nonprofit Organizations

Focus Groups and Listening Sessions	58+[78]	• Low-income tenants • Indigenous communities • Environmental justice communities
Individual and Group Interviews	21	• Local subject and policy experts • Affordable housing providers • Environmental justice advocates • Labor organizations

CELA Equitable Building Decarbonization Series

In March 2022 the CEMO, in partnership with the Liberty Hill Foundation, co-hosted a series of three workshops on Equitable Building Decarbonization as part of the inaugural Climate Equity LA (CELA) Series.[79] The workshops were designed collaboratively by a Curriculum Design Team that included community organizers, researchers, educators, and policymakers with expertise in the series focus areas. The members of the curriculum design team included:

- **Agustin Cabrera**, Policy Director, SCOPE
- **Alex Jasset**, Nuclear Threats & Energy Justice Program Manager, PSR-LA
- **Araceli Amezquita**, Director of Outreach and Education, SAJE
- **Blanca de la Cruz**, Sustainable Housing Program Director, CHP
- **Chelsea Kirk**, Assistant Director of Building Equity and Transit, SAJE
- **Craig Tranby**, Environmental Supervisor, LADWP
- **Cynthia Strathmann**, Executive Director, SAJE
- **Eric Fournier**, Institute of the Environment and Sustainability, UCLA
- **Felicia Federico**, Institute of the Environment and Sustainability, UCLA
- **Kaitlyn Quackenbush**, Director of Policy and Research for Tenant Rights, SAJE
- **Kameron Hurt**, RePower Community Organizer, LAANE
- **Karen Penera**, Chief of Resource Management Bureau, LADBS
- **Kristen Torres Pawling**, Sustainability Program Manager, LA County
- **Laura Gracia**, Climate Adaptation Resiliency Enhancement Coordinator, CBE
- **Marisol Romero**, Housing Planning and Economic Analyst, LAHD
- **Megan Ross**, Climate Advisor, Mayor's Office of Sustainability
- **Michele Hasson**, California Policy Manager, Energy Efficiency for All, Healthy People & Thriving Communities Program, NRDC
- **Stephanie Pincetl**, Institute of the Environment and Sustainability, UCLA

The first workshop, held on March 10 provided an introduction to the topic and an overview of the broad opportunities and challenges associated with building decarbonization (see workshop recording here). The second, held a week later on March 17, focused on the implications of building decarbonization for tenants and housing justice (see workshop recording here). The third, on March 24, highlighted the potential impacts of the transition to clean building for workforce development and economic justice (see workshop recording here). Over 330 people from across the city participated in the three workshops.

During the workshops, community and policy experts presented on the social, economic and environmental benefits and challenges associated with electrifying the city's building stock. Small breakout room discussions were facilitated in English and Spanish during each workshop

[78] This number includes the SAJE and NHHA focus group participants, but does not include the Leap LA/Pueblo Planning listening session participants.

[79] To learn more about the entire CELA Series, see the CELA Process Report prepared by Liberty Hill Foundation.

to provide participants with an opportunity to ask follow-up questions, share thoughts and concerns, and collectively envision ways of ensuring that the transition to clean energy buildings is inclusive and equitable. Notes from the breakout room discussions were inductively coded to identify key themes related to perceived benefits and costs of building decarbonization, as well as ways of making the transition equitable. The most commonly mentioned perceived benefits were improvements in public health, job creation, and energy cost savings. The most commonly mentioned perceived challenges were increased costs for tenants, worsening social inequity, and financing and implementation. When asked what the City should do to ensure the decarbonizing of existing buildings is equitable, the most common suggestions included targeted implementation and financing, increased workforce development and education, and ongoing community engagement.

Targeted Focus Groups and Listening Sessions

In February and April 2022, Strategic Actions for a Just Economy (SAJE) and NoHo Home Alliance (NHHA) were contracted by Liberty Hill on behalf of the CEMO to host a series of five focus groups with low-income tenants throughout the city of Los Angeles. The purpose of these focus groups was to learn more about low-income tenants' perceptions of and feelings toward building decarbonization and to gather input about how the City can make this transition accessible and affordable for these residents. Summary reports from these focus groups were submitted to the CEMO to inform the development of the recommendations included in this report.

In addition to the focus groups, a series of listening sessions were organized by the Leap LA Coalition and facilitated by Pueblo Planning between May and July 2022. Working with SPI and other Leap LA Coalition members, Pueblo Planning engaged members of the indigenous community and environmental justice communities throughout Los Angeles on the topic of building decarbonization. A preliminary report summarizing the findings from these listening sessions was shared with the CEMO in late July to inform the development of the recommendations in this report. The final report was submitted to the CEMC on September 2, 2022 as part of the Coalition's public comments regarding the first draft of this report.

Expert Interviews and Group Discussions

Individual and group interviews were conducted with community advocates and subject experts to gain further insights into the range of possible strategies needed to advance an equitable path to building decarbonization. In Fall 2021, the CEMO and Liberty Hill Foundation staff conducted informational interviews with Curriculum Design Team members in order to gain insights into early perceptions and concerns (see full list of design team members above). Additional conversations were carried out in Summer 2022 during the drafting of this report. These conversations were intended to discuss in greater depth relevant equity concerns raised by community members, to help the CEMO team gain a more nuanced understanding of the existing programs and policy structures affecting building decarbonization, and to explore possible strategies for addressing equity concerns. The following individuals were interviewed by CEMO staff:

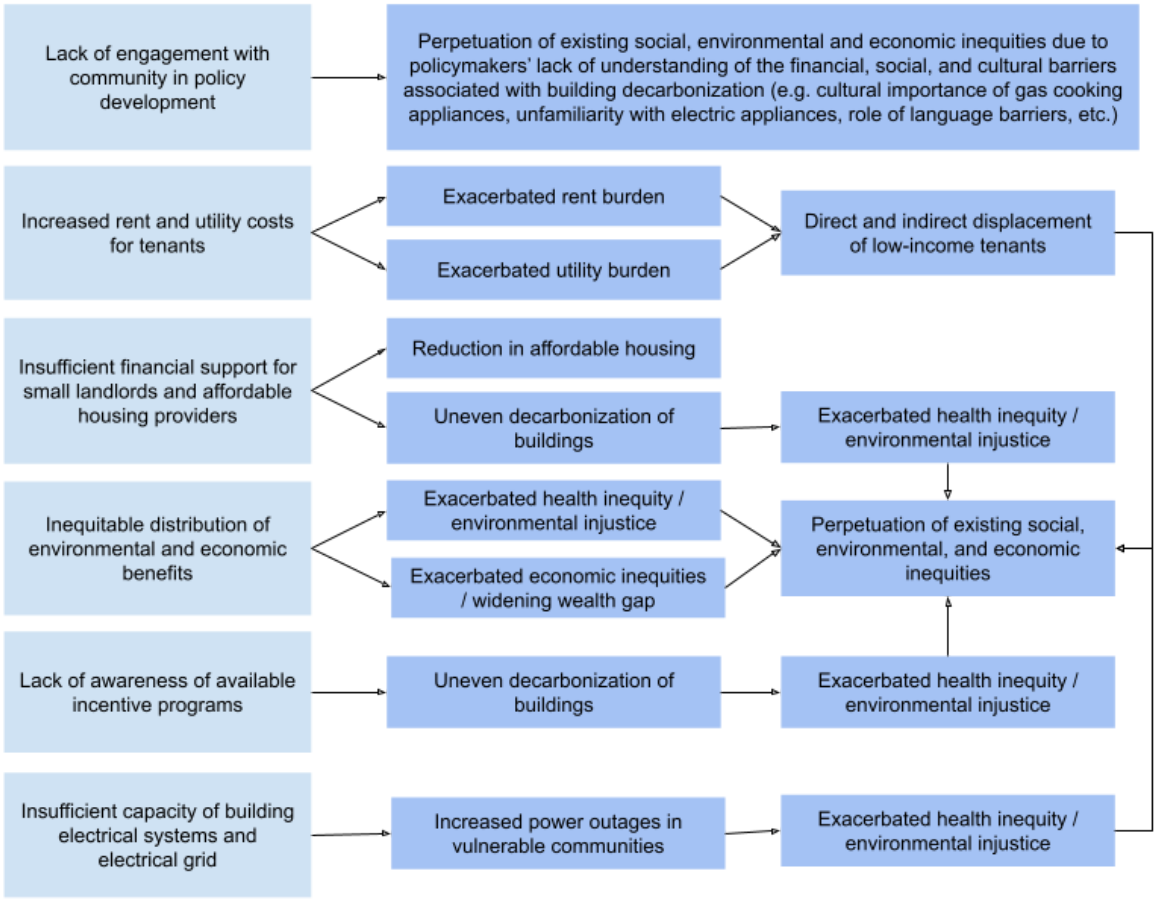
- Tiffany Wong, SCOPE (group discussion via Zoom)
- Justin Bogda, CBE (interview question responses submitted in written form)
- Chelsea Kirk, SAJE (group discussion via Zoom)
- Nancy Ibrahim, Esperanza Community Housing (group discussion via Zoom)
- Larry Katata, Little Tokyo Service Center (group discussion via Zoom)
- Estuardo Mazariegos, LAANE (group discussion via Zoom)
- Alicia Morales Perez, LAANE (group discussion via Zoom)
- Melisa Walk, Pacoima Beautiful (group discussion via Zoom)
- Jasmin Vargas, Food and Water Watch (group discussion via Zoom)

- Heather Rosenberg, Arup (individual interview via Zoom)
- Michele Hasson, NRDC (individual interview via Zoom)
- Megan Ross (individual interview via Zoom)
- Dave Hodgins, LABBC (individual interview via Zoom)
- Ann Sewill, LAHD (group discussion via Zoom)
- Jackie Cornejo, LAHD (group discussion via Zoom)
- Nancy Twum-Akwaboah, LAHD (group discussion via Zoom)

Findings

The CEMO Climate Equity LA Series workshop participants expressed enthusiasm about the potential benefits of building decarbonization. The most commonly perceived benefits mentioned by participants included 1) improvements in public health through a reduction in indoor and outdoor air pollution and increased access to cooling systems that would provide comfort during extreme heat and inclement weather in LA, and 2) improvements in housing quality and habitability through holistic retrofits that make homes safe, healthy, and resilient. While generally supportive of the idea of building decarbonization as explained in the workshops and focus groups, participants raised concerns related to potential unintended negative consequences stemming from decarbonizing existing buildings in Los Angeles in low income areas where displacement or increased rent could occur without equitable implementation or sustainable financing models. Figure 3 summarizes concerns raised by community members during the CELA Series and targeted focus groups. The left side lists the concerns directly related to building decarbonization, while the right side describes how each concern can have cascading effects on existing social, environmental and economic justice issues more broadly

Figure 3. Overarching Community Concerns Related to Building Decarbonization



1. Need for continuous meaningful engagement with frontline communities at the grassroots level

One concern raised by community members was the historical lack of adequate engagement with LA's diverse community in the development of environmental and climate policies. Community members expressed their appreciation for the opportunity to engage in these building decarbonization discussions through the CEMO workshop series and shared a strong desire to be meaningfully included in the crafting of specific policies in the coming months and years. Many Environmental and Social Justice (ESJ) organizations recruited participants who had not heard about building decarbonization and had little to no previous knowledge of the topic prior to the March 2022 workshops. Community members expressed a desire to be more actively engaged in ongoing discussions and design of building decarbonization policies and plans.

While the public workshops convened a wide range of stakeholders from across the city, CBOs raised concerns about lack of adequate inclusion of residents from frontline communities, who simultaneously suffer disproportionately from various environmental hazards and are most vulnerable to the impacts of climate change. *Lack of adequate targeted engagement with frontline communities has the potential to perpetuate and exacerbate existing social, environmental, and economic inequities due to lack of understanding of the financial, social, and cultural barriers associated with building decarbonization.* For example, residents raised concerns about the high cost of replacing cooking appliances (e.g. electric stove friendly pots and pans), which is typically left out of the unit and building electrification cost calculations. Residents and community representatives also shared the fear that this policy could be used by landlords to harass and evict residents from their homes.

When engaging with frontline communities, the City needs to recognize and address the numerous barriers to inclusion that exist, including engagement fatigue, lack of transportation access, lack of child care, lack of time, etc. As much as possible, the City should meet these communities where they are in order to learn from them about the expected and actual impacts of these and other climate policies. The CEMO incorporated small-scale Focus Groups hosted by SAJE and NHHA with low-income tenants as part of its stakeholder engagement, and recommends that this approach be used more extensively in the future.

2. Need to avoid increased rent and utility costs for tenants, as well as harassment, displacement due to construction, and other illegal eviction procedures

The most common concern voiced by residents throughout the city is the potential for building decarbonization to lead to increased housing costs for tenants, thereby exacerbating rent and energy burdens and potentially leading to displacement and houselessness. In most cases, building decarbonization will require building owners to upgrade base building electrical systems, increase energy efficiency, replace shared gas appliances (such as shared laundry and water heaters), and eventually replace gas appliances within individual units. In many cases tenants will then have to purchase new cooking appliances that work on an electric stove. Residents cited these additional costs as potentially prohibitive.

Per current state and local laws, tenants living in buildings built within the last 15 years have no rent control, and, for those that do, landlords still have the ability to raise rent up to 10% per year in order to cover the costs of a number of building renovations and upgrades. For tenants who are already rent burdened, this rent increase may force them to choose between basic

necessities, such as food and electricity. If tenants are forced to choose between these basic necessities and staying housed, they become even more vulnerable to climate change, especially in the context of intensifying heatwaves, which will require additional electricity use to keep homes sufficiently cool. If the tenants are unable to pay higher rent, this can lead to direct displacement via eviction. Tenants with an eviction record often find it much more difficult to secure new rental housing, potentially trapping them in a cycle of houselessness and poverty.

Currently law also allows landlords to displace tenants for up to a year in order to renovate their buildings, however, in practice this is sometimes used as a means of permanently displacing residents in order to increase rent. This form of displacement can similarly lead to increased social and climate vulnerability.

Lastly, there is a concern among many energy burdened tenants that the switch from gas to electric will increase their utility bills overall due to the higher cost of electricity compared to gas. While some studies have found that electrification leads to utility savings, others have found that utilities can actually go up for units that did not previously have an AC unit. This has the potential to exacerbate energy burden, which in combination with increased rent and other rising costs can lead to displacement.

These pressures in combination with stagnating wages, high unemployment, and food and energy shortages exacerbated by the COVID-19 pandemic, have already sparked widespread social harm and insecurity. It is critical that the City examine all possible impacts of building decarbonization efforts so as not to worsen existing crises.

3. Need for financial support for small landlords and affordable housing providers

Concerns about the potential for tenants to be shouldered with the costs of decarbonization were closely connected to questions raised about the financial and logistical feasibility of the transition. Residents recognized that the reason many landlords would try to pass through the costs of these renovations to their tenants is due to the fact that they themselves may be financially strapped and may not be able to afford the upfront capital expenditures that the transition requires. *In particular, community members raised concerns about the impacts of building decarbonization on small mom-and-pop and nonprofit landlords, and mission-driven affordable housing providers.* Residents expressed the fear that the high cost of decarbonization could force these mission-driven and smaller landlords to sell to larger, corporate housing developers, resulting in a decline in naturally occurring affordable housing (NOAH). Workshop participants expressed the need for expanded regulation of corporate landlords, protections for tenants, and transfer of ownership of housing to the community.

4. Need for equitable distribution of environmental and economic benefits of decarbonization

There was broad consensus among community members that building decarbonization has the potential to provide a number of benefits to individuals and their communities. Those benefits include improved indoor and outdoor air quality, improved public health, mitigation of climate change if coupled with fossil-fuel free energy production, reduced utility costs for units with AC units, and creation of skilled jobs in the emerging green economy. Recognizing these substantial potential benefits, the vast majority of residents surveyed after attending one of the CEMO public workshops agreed that the City should invest in building decarbonization and retrofits in the city's most pollution-burdened neighborhoods. However, given the uncertainty about how this transition will be financed and who will ultimately be burdened with the cost (see concerns 2

and 3 above), *concerns were raised about the potential for frontline, low-income, communities of color to be excluded from this transition.* If decarbonization only happens in wealthier neighborhoods where individual homeowners and large corporate landlords can afford to pay the upfront costs of retrofits, frontline communities that have been historically burdened by environmental hazards (e.g. pollution, gas flares, toxic waste disposal, etc.) and substandard housing will be excluded from many of the benefits of decarbonization, thereby exacerbating environmental, health, and economic disparities.

5. Need for expansive outreach and enrollment in available incentive programs that prioritize low income areas

In discussions about how the City could help make this transition accessible to all Angelenos, many questions arose about the scope and availability of incentives and other programs. *Residents felt that there is insufficient outreach around existing programs and that this has historically led to those with more financial resources disproportionately benefiting from these incentives. Workshop participants noted the value of the City partnering with trusted CBOs to support ongoing, funded engagement with frontline communities and low-income communities of color.* In addition to expanding outreach and enrollment in these programs, the City should improve individual case follow-up to ensure that households are receiving the full range of benefits from these programs.

6. Need for increased capacity of building electrical systems and electrical grid

Lastly, residents raised concerns about the reliability of the electrical grid in the context of increased energy demand due to building decarbonization. Community members shared personal stories of power outages, describing in detail the impacts that these events can have on their lives and how they are often compounded by things like extreme heat and the COVID-19 pandemic. These conversations also raised concerns about affordability and accessibility of distributed renewable energy systems, such as rooftop solar. Many community members expressed interest in investing in rooftop solar, but felt that it was not affordable or that it was inaccessible to them as tenants.

Recommendations

Equitable policies are needed to ensure that historically marginalized and low-income households both benefit from and are not negatively impacted by building decarbonization efforts. Concerns must first be acknowledged then addressed throughout the cyclical policy process. One challenge is not being able to easily measure and define social equity. These recommendations seek to provide a framework for how policymakers within the City should be thinking about building decarbonization as an opportunity to increase tenant and worker rights, expand affordable housing, and actualize procedural justice and deep democracy. These recommendations are intended to help the City operationalize climate, energy, and housing justice values in the context of developing, implementing and evaluating building decarbonization policies. Indeed, post-pandemic the housing crisis is much worse, and the respective challenges of creating healthy, green, decarbonized, affordable housing can't be uncoupled. These goals must be advanced simultaneously if we are to achieve an economic recovery for all.

1 Include frontline communities in the design, implementation, and evaluation of all building decarbonization policies and programs

Acknowledging and understanding the experiences of frontline communities is necessary in order to avoid unintended negative consequences of any climate policy. To facilitate this understanding, residents living in frontline communities must be included early on, and on an ongoing basis, through the design, implementation, and evaluation of building decarbonization policies.[80] There is a wealth of local expertise within Los Angeles that can help policymakers and City staff navigate the many uncertainties and barriers that may arise when designing and implementing the City's building decarbonization policy agenda. Elected officials and City staff should actively seek out the perspectives of housing, environmental, climate, and labor justice organizations within Los Angeles continually to inform building decarbonization efforts. This engagement must involve two-way communication between the City and community members and leaders.

In order to ensure that frontline communities are involved in the development, implementation, and evaluation of building decarbonization policies and programs, the City should:

- Work collaboratively with the CEMO and community coalitions, including the Leap LA and RePower coalitions, in crafting decarbonization ordinances for new and existing buildings.
- Provide sustained funding to CBOs for outreach and engagement with frontline communities.
- Any future funding, policies, and programs related to building decarbonization should be brought to CEMO and/or evaluated by CEMC. This includes transparency and community-led decision-making on decarbonization initiatives funded by the Climate Equity Fund, such as the LA Building Jobs Pilot.

[80] USDN. (2021). *Equity and Buildings Framework: Principles of Practice*. Urban Sustainability Directors Network. https://www.usdn.org/uploads/cms/documents/usdn_equity_and_buildings_framework_-_june_2021_-_principles.pdf

- Create a Building Decarbonization Community Advisory Committee that includes low-income tenants, environmental justice communities, workers, Indigenous community representatives, and affordable housing providers.
  - Require LADWP, LADBS, and LAHD to report regularly to the Advisory Committee on progress and new data available regarding building decarbonization.
  - Request that the Advisory Committee work with CBOs and the CEMO to develop a set of equity metrics and conduct regular Equity Impact Assessments to evaluate ongoing building decarbonization efforts.[81] Example equity metrics might include:
    - Building-level characteristics of decarbonized buildings (e.g. new or existing, age, building type, owner type, size, affordability status)
    - Spatial distribution of decarbonized buildings (new and existing)
    - Changes in the extent and spatial distribution of rent burden throughout the city
    - Changes in the extent and spatial distribution of energy burden throughout the city
    - Changes in the proportion of affordable housing within the city
    - Changes in the spatial distribution of affordable housing throughout the city
    - Changes in the affordability of housing that has undergone decarbonization (pre vs. post decarbonization)
    - Number of residents temporarily displaced due to building decarbonization
    - Number of residents permanently displaced due to building decarbonization
    - Changes in median household income throughout the city
    - Changes in median rent throughout the city
    - Changes in the total number and proportion of jobs supporting building decarbonization that are unionized
    - Changes in the total number and proportion of jobs supporting building decarbonization that are local hires
    - Changes in the total number and proportion of jobs supporting building decarbonization that are taken by individuals that historically face barriers to employment
    - Changes in the extent and spatial distribution of environmental disparities within the city (e.g. air pollution, oil wells, etc.)
    - Changes in the extent and spatial distribution of environmental health disparities within the city (e.g. asthma cases, lead poisoning, etc.)
    - Changes in the extent and spatial distribution of community-level environmental and climate vulnerability within the city (e.g. CalEnviroScreen score)
    - Changes in the amount of housing managed by Community Land Trusts
    - Number of RSO violations reported by LAHD
    - Changes in gas and electricity rates
    - Indoor air pollution at the building scale
    - Job training metrics (e.g. number of trainees, placement rate)
    - Average total, upfront, and/or offset costs of building decarbonization
    - Level of awareness or enrollment rate of building decarbonization programs
  - Require that these equity metrics be published on the City's website in a manner accessible to the general public.

[81] For more details about relevant equitable building decarbonization metrics see: The Greenlining Institute. (2019). *Equitable Building Electrification: A Framework for Powering Resilient Communities*. https://greenlining.org/publications/reports/2019/equitable-building-electrification-a-framework-for-powering-resilient-communities/

2 Leverage building decarbonization to improve public health and habitability

Buildings are where many people live, work, and play. Many of the city's older buildings are in need of significant upgrades and maintenance, irrespective of building decarbonization. These upgrades, such as mold remediation, window and door replacement, and seismic retrofitting, are necessary to ensure the health and safety of residents. In order to avoid exacerbating existing public health disparities, building decarbonization policies and programs for both new and existing buildings must be embedded with public health standards and supports, to ensure that buildings are safe and resilient, as well as clean and efficient. Building decarbonization funding should be prioritized for residential buildings requiring additional health improvements and should incorporate the full range of costs needed to make these buildings safe and healthful and to ensure that the costs do not deter these building owners from decarbonizing.

Current building energy efficiency programs in Los Angeles, such as the Existing Building Energy and Water Efficiency Program (EBEWE), do not include requirements for assessing possible public health concerns, nor do they require that such issues be addressed if and when they are identified during an audit. Amendments to existing building policies and programs could be an opportunity to embed these considerations into existing systems and processes. This is a critical step for ensuring the transition to decarbonized buildings helps to advance environmental and health justice.

In order to ensure that building decarbonization supports public health and advances environmental justice, the City should:

- Prioritize federal, state, and local decarbonization funding for residential buildings with documented deferred maintenance needs and require that decarbonization be undertaken holistically to ensure housing is safe and healthful.
- Require building owners undergoing building decarbonization to conduct a public health assessment[82] (including air quality testing and monitoring) and address public health habitability concerns (e.g. mold, asbestos, or corroded lead pipes) in order to qualify for public decarbonization subsidies and loans.
- Amend EBEWE to require applicable building owners to conduct a public health assessment (including air quality testing and monitoring) and address public health habitability concerns (e.g. mold, asbestos, or corroded lead pipes) in order to qualify for public decarbonization subsidies and loans.
- Amend the Comprehensive Affordable Multifamily Retrofit program (CAMR) to require applicants conduct a public health assessment (including air quality testing and monitoring) and address public health habitability concerns (e.g. mold, asbestos, or corroded lead pipes) in order to qualify for public decarbonization subsidies and loans.
- Require that landlords provide cooling systems in all rental units (either through passive cooling or heat pumps).
- Integrate traditional ecological knowledge into the City's building code to inform engineering, design, and materials used for residential and commercial buildings to be more energy-efficient and less carbon-intensive by using materials that do not require as much energy to process or transport.

[82] Any public health assessment should be conducted by a neutral third party or government body, and the results of the assessment should not lead to punitive measures against vulnerable populations.

EXAMPLES

- Indigenous Design Studio + Architecture (IDS+A) is a Native, women-owned firm that provides sustainable and innovative designs for communities throughout the United States, with an emphasis on working with Native American Tribes.[83]
- California Earth Domes: Cal-Earth develops and educates the public in environmentally sustainable building designs. Their Superdome building system integrates traditional earth architecture with contemporary global safety requirements, and has passed severe earthquake code tests in California.[84]

3 Embed tenant protections into building decarbonization policies and programs[85]

In order to avoid exacerbating economic disparities and displacing low-income tenants due to increased rent and utility burden, building decarbonization policies and programs for both new and existing buildings must be embedded with comprehensive tenant protections that prevent costs from being passed down and ensure that these communities are able to transition to clean energy buildings. The City of Los Angeles should lead the way in advancing strong tenant protections and demonstrating the need for, and benefits of, an inclusive transition to decarbonized buildings.

In order to ensure that building decarbonization supports tenant rights and advances housing justice, the City should:

- Ban pass-through costs for decarbonization retrofits to rent-stabilized (RSO)[86] tenants, tenants in covenanted affordable units, and low-income tenants in non-RSO units.
- Prevent landlords from passing down building decarbonization and retrofit costs to tenants in affordable housing units and categorize building decarbonization as “ineligible” under the City’s Primary Renovation Program to prevent landlords from side-stepping the bans.
- Improve the City’s Tenant Habitability Plan to close existing loopholes that lead to the displacement and harm of tenants. Require a Tenant Habitability Plan (THP) be developed and approved by the tenant for existing building decarbonization retrofits and projects. Require landlords to limit the scope of work so that relocation is not possible, to reduce harm and disruption to tenants.
- Amend the City’s Tenant Anti-Harassment Ordinance (TAHO)[87] to include language about harassment related to work performed on a building in compliance with the City’s

[83] IDS+A. (n.d.). *Indigenous Design Studio + Architecture*. Retrieved August 11, 2022, from https://www.ids-a.com/
[84] California Institute of Earth Architecture. (n.d.). *CalEarth*. Retrieved August 11, 2022, from https://www.calearth.org
[85] For more details see: Kirk, C. (2021). *Los Angeles Building Decarbonization: Tenant Impact and Recommendations*. SAJE.
[86] Rent Stabilization Ordinance, no. 195151, Los Angeles City Council (1979). https://codelibrary.amlegal.com/codes/los_angeles/latest/lamc/0-0-0-195151
[87] Anti-Harassment of Tenants Ordinance, no. 187109, Los Angeles City Council (2021). https://clkrep.lacity.org/onlinedocs/2014/14-0268-S13_ord_187109_8-6-21.pdf

decarbonization ordinance; and to recognize illegal construction–construction without permits–as a form of harassment defined under TAHO.
- Amend LAHD's formula for calculating the financial compensation the City provides to permanently displaced tenants under the Ellis Act and Cash for Keys to include current market conditions, out of pocket moving expenses, and duration of tenancy.
- Dissolve rent and utility debt for permanently displaced tenants under the Ellis Act and Cash for Keys program.
- Extend the Ellis Act Eviction Moratorium for at least 10 years.
- Continue the COVID-19 Emergency eviction moratorium.
- Extend the moratorium on shutoffs due to non-payment for all customers and, at minimum, stop shutoffs as a practice for low-income customers who face high rent/utility burden and arrears.
- Expand the City's Utility Debt Relief Program for low-income households with debt accumulated before and during the pandemic.
- Explore opportunities to create a more robust utility assistance fund through the City/CEMO that will not trigger Prop 26 or 218 violations.
- Explore sustainable financing mechanisms for increasing enforcement of TAHO and providing tenant legal support to prevent harassment and illegal evictions.
- Enact utility rate reform that protects low-income residents from increasing energy costs.
- Amend the Comprehensive Affordable Multifamily Retrofit program (CAMR) to include protections for tenants living in participating buildings, and include enforcement of said protections, which CAMR does not currently have. Consider screening private sector property owners that participate in CAMR to ensure they have not violated the RSO or other tenant laws.
- Create a Los Angeles Rent Registry and Beneficial Disclosure requirement that would make it so LLCs have to disclose beneficial ownership for the purposes of regulation and oversight.
- Request that LAHD annually collect, analyze, and share data on tenant harassment claims and evictions.

4 Embed affordable housing protections into building decarbonization policies and programs[88]

The substantial upfront costs of decarbonizing existing buildings has the potential to force smaller landlords and affordable housing providers out of the market, which could result in the loss of affordable units and increased corporate ownership of housing in Los Angeles. Mission-based affordable housing providers serving the most vulnerable populations in the city are most at risk of being overburdened by the costs of building decarbonization if action is not taken to provide them with adequate financial support. Ideally, building decarbonization will present an opportunity to expand individual and community-owned, affordable housing through land trusts and other alternative housing tenure models. This is also a chance for the City to recognize that it is located on unceded Indigenous land and to begin to imagine what decolonization, repatriation and co-management of land could look like in Los Angeles.

[88] For more details see: Arup. (2021). *Los Angeles Affordable Housing Decarbonization Study Phase 2*. Arup. https://www.nrdc.org/sites/default/files/la-affordable-housing-decarbonization-study-phase2-20211108.pdf

In order to ensure that building decarbonization advances housing justice, the City should:

- Prioritize federal, state and local funding for building decarbonization for mission-driven affordable housing, non-profit affordable housing providers, and Community Land Trusts (CLTs).
- Advance inclusionary zoning and enact strong parameters for new buildings that would increase access to low-income tenants.
- Offer landlords of market rate housing loans to help meet decarbonization mandates in exchange for adoption or extension of affordability covenants on units.
- Adopt a Tenant Opportunity to Purchase Act (TOPA) to support tenant wealth building.
- Convey acquired, surplus, abandoned, and tax-foreclosed properties to local CLTs.
- Work with local Indigenous groups to develop a plan for expanding legal land rights to Indigenous communities.
- Create mechanisms for community land trusts to acquire buildings that landlords decide to sell due to decarbonization.

EXAMPLES

- T.R.U.S.T. South LA is a community-led effort to stabilize neighborhoods south of Downtown LA and to "build community control over land, to preserve and promote opportunities for working-class people to remain in their community." Permanent assets within its control are preserved and governed by members, who are restricted to low-income people who live or work in the land trust area.[89]
- Tenant Opportunity to Purchase is a policy that provides tenants with the Right of First Refusal when a building owner decides to sell a unit or building. The first Tenant Opportunity to Purchase Act (TOPA) was adopted in Washington D.C. in 1980. Between 2002 and 2018, the law helped preserve more than 3,500 units for tenants.[90]

5 Embed worker protections and new job opportunities for frontline communities into building decarbonization policies and programs[91,92]

Decarbonizing our buildings and maintaining the expanded grid and new electricity systems will require a large number of skilled workers. In order to ensure that historically economically disadvantaged and climate-impacted communities benefit from and are included in the growing green economy and specifically, building decarbonization, policies must be strengthened to

[89] T.R.U.S.T. South LA. (n.d.). *T.R.U.S.T. South LA*. Retrieved August 11, 2022, from https://trustsouthla.org/

[90] Shankute, H., & Rupani, S. (2020, October 26). The affordable housing crisis is about to get worse; here's a policy that will help renters. *CalMatters*. http://calmatters.org/commentary/my-turn/2020/10/the-affordable-housing-crisis-is-about-to-get-worse-heres-a-policy-that-will-help-renters/

[91] For more information see: Jones, B., Karpman, J., Chlebnikow, M., & Goggans, A. (2019). *California Building Decarbonization: Workforce Needs and Recommendations*. UCLA Luskin Center for Innovation, Inclusive Economics. https://innovation.luskin.ucla.edu/wp-content/uploads/2019/11/California_Building_Decarbonization.pdf

[92] For more information see: Jones, B. (2021). *Los Angeles Building Decarbonization: Community Concerns, Employment Impacts, Opportunities*. Inclusive Economics. https://www.nrdc.org/sites/default/files/los-angeles-building-decarbonization-jobs-impacts-report-20211208.pdf

ensure local hire, worker protections, and living wages throughout the building decarbonization transition are a priority. As oil well and gas jobs are phased out in Los Angeles, new positions with equitable pay and work should be created. The City must ensure that workers being phased out of the Oil & Gas Well jobs have access to training and job opportunities that offer equal pay in the green economy. It is crucial to advance enforceable labor standards to the greatest extent possible to ensure fair wages and opportunities. These standards should include, to the extent feasible, wage and benefit standards, project labor agreements, training and apprenticeship standards, and targeted and local hiring requirements to ensure jobs are accessible by workers living near projects who have faced employment barriers. In order to support a just transition and avoid exacerbating existing economic disparities, building decarbonization policies and programs for both new and existing buildings must be embedded with job training and worker protections to ensure that the benefits of this transition are felt by all, and that these jobs are an opportunity for workers in frontline communities and those being phased out of oil and gas well jobs in Los Angeles. The City of Los Angeles should also look to the State of California for legislation being created to protect oil and gas workers from the phasing out of oil wells.

In order to ensure that all workers have access to high-quality green jobs in building decarbonization, the City should:

- Require contractors to advance a high standard for workers by encouraging the use of Project Labor Agreements (PLAs) and setting prevailing wage, skilled and trained workforce, and targeted and local hiring requirements for decarbonization projects, as widely as is feasible.
- Reduce barriers to public sector employment, and increase opportunities for public sector hiring for building decarbonization projects. An example is LADWP's Home Energy Improvement Program (HEIP), which provides energy efficiency installation services.
- Expand existing and create new public and private job training programs aimed at providing green jobs training to those who have traditionally faced barriers to employment, in alignment with Los Angeles County and the State of California.
- Support the creation of a State- or County-wide fund for worker transition assistance to support oil and gas well workers transitioning to the green economy.
- Make provisions for undocumented and permanent residents to attain access to training and jobs at equal pay.

EXAMPLES

- IBEW's Utility Pre-Craft Trainee (UPCT) program was launched in 2011 as a partnership between IBEW Local 18 and the Los Angeles Department of Water and Power.[93]
- GRID Alternatives' SolarCorps Fellowship program offers 11-month long, paid positions in construction, client outreach, and volunteer engagement, and includes a stipend and healthcare.[94]
- TECH Clean California, in addition to providing building electrification incentives, will offer workforce education and training through a centralized hub that can stand alone or be coordinated with existing programs.[95]

[93] LADWP. (n.d.). *The Utility Pre-Craft Trainee Program*. Retrieved August 11, 2022, from https://www.cityofangelsschool.org/apps/news/article/1104588
[94] GRID Alternatives. (n.d.). *SolarCorps Fellowship Program*. Retrieved August 11, 2022, from https://gridalternatives.org/what-we-do/workforce-development/solarcorps-fellowships
[95] California Energy Commission. (2021). *TECH Clean California*. Energy Solutions. Retrieved August 11, 2022, from https://energy-solution.com/tech/

6 Prioritize public funding for decarbonization of existing residential buildings in frontline communities

Federal and state funding for building decarbonization has been allocated and will be making its way down to the local level in the coming months and years. In order to begin to address persistent racial, environmental, and economic injustices, the City must ensure that this funding is directed to frontline communities that are at the greatest risk of experiencing unintended negative consequences from decarbonization and who already face unsafe housing conditions. This funding should be distributed in a way that minimizes the burden placed on low-income tenants and under-resourced affordable housing providers to ensure that it is accessible. Direct install programs should be created to help replace gas appliances at the unit and building level in frontline and Indigenous communities. Mission-based and nonprofit affordable housing providers and mom-and-pop landlords with affordability covenants should be prioritized for subsidies and loans.

In order to ensure that frontline communities are not left behind as the City decarbonizes its building stock, the City should:

- Require that at least 40% of the Inflation Reduction Act and other relevant federal, state, and local funds are directed to disadvantaged frontline and Indigenous communities, and an additional 10% to be allocated for projects that provide direct benefits of affordable housing.[96]
- Prioritize subsidies for residential buildings located in top CalEnviroScreen communities.
- Create a Healthy Building Transition Fund to collect funding for building decarbonization, which can be directly distributed to frontline communities. The Fund can be modeled off of the City's Housing Trust Fund, which provided construction and permanent financing for the development and preservation of affordable rental housing with a combination of local and federal dollars.[97] General budget funds, local parcel taxes, noncompliance fees for building efficiency programs, green bonds, and savings stemming from the decarbonization of municipal buildings should be used to initiate the Just Transition Fund.

EXAMPLES

- Transformative Climate Communities (TCC) Program supports holistic, community-led climate mitigation and adaptation projects in neighborhoods throughout California. Funded by the State's Greenhouse Gas Fund (GGF), 100% of TCC dollars are allocated to low-income communities that are exposed to multiple sources of pollution, also referred to as disadvantaged communities (DACs).[98]
- Justice40 is a Federal initiative that aims to direct 40% of certain types of federal investments into communities that have been historically disadvantaged and burdened by

[96] This recommendation closely reflects the Biden Administration's Justice40 Initiative and the proposed California State Assembly Bill 2419.
[97] National Low Income Housing Coalition. (2014, April 8). *Los Angeles Affordable Housing Trust Fund*. National Low Income Housing Coalition. Retrieved August 11, 2022, from https://reports.nlihc.org/rental-programs/catalog/los-angeles-affordable-housing-trust-fund
[98] California Strategic Growth Council. (2017). *Transformative Climate Communities (TCC)*. Retrieved August 11, 2022, from https://sgc.ca.gov/programs/tcc/

pollution.[99] Investment categories include: climate change, clean energy and energy efficiency, clean transit, affordable and sustainable housing, training and workforce development, remediation and reduction of legacy pollution, and the development of critical clean water and wastewater infrastructure. In February 2022 California State Assemblymember Isaac Bryan introduced the California Justice40 Act (AB 2419), which would have required at least 40% of federal climate and infrastructure funding coming into California goes to low-income, Indigenous, and rural communities and communities of color. The Bill did not move forward for this legislative session.[100] Nonetheless, this is the policy direction that should be emulated at the local level.

- Enterprise's Equitable Path Forward is an example of a targeted initiative to drive investment into affordable housing by working with Black, Indigenous, and People of Color (BIPOC) and other historically marginalized housing providers.[101] The program seeks to "dismantle the deeply-rooted legacy of racism in housing" by offering entity-level lending and grants as well as project-level equity and debt. This investment is supported by developer advisory services and leadership development for BIPOC people in real estate. In Los Angeles, Enterprise has made a $6 million financing commitment to the Coalition for Responsible Community Development to support housing in East and South LA. This includes a $1.5 million line of credit for general organizational expenses as well as a $4.5 million loan to finance the development of new housing.
- Efficiency Vermont Case Study is a portfolio-based program geared toward low-income families. The program resulted in the creation of the nation's first public energy efficiency utility, which offered free replacement of old equipment and addressed the split incentive barrier.[102]

7 Expand education, outreach, and technical assistance related to building decarbonization

Making sure frontline communities have easy access to information and resources related to building decarbonization is critical for ensuring that this transition is inclusive. In order to support equitable building decarbonization in Los Angeles, the City must expand education, outreach, and technical assistance related to building decarbonization and the increasing costs of energy. Through the CEMO's evolving engagement approach, the City is meeting communities where they are and respecting cultural and language differences through the support of the CBOs that most represent them and through listening sessions and focus groups that are co-design with the CBOs. These engagement efforts should include educating tenants, workers, and building owners about the steps involved and the effects of this transition on their health, economic viability, and daily lives. It also involves conducting community co-designed targeted outreach to share resources about available incentives, financing, and other programs offered in Los

[99] The White House. (2022). *Justice40 Initiative*. The White House. Retrieved August 11, 2022, from https://www.whitehouse.gov/environmentaljustice/justice40/

[100] Environmental justice: Federal Infrastructure Investment and Jobs Act: Justice40 Advisory Committee., no. AB-2419, California State Legislature (2022). Retrieved August 11, 2022, from https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220AB2419

[101] Enterprise Community Partners. (n.d.). *Equitable Path Forward*. Retrieved August 11, 2022, from https://www.enterprisecommunity.org/impact-areas/racial-equity/equitable-path-forward

[102] Efficiency Vermont. (n.d.). *Efficiency Vermont*. Retrieved August 11, 2022, from https://www.efficiencyvermont.com

Angeles. Lastly, it will be essential for the City to provide or facilitate provision of technical assistance to building owners and landlords in order to support compliance with any mandates.

In order to ensure that frontline communities are able to benefit from the transition to clean energy buildings, the City should:

- Continue funding CBOs working in frontline communities in Los Angeles to design and conduct education and outreach with their members around building decarbonization policies and programs.
- Expand LAHD's Gateway-to-Green Program[103] to include building decarbonization incentive programs and prioritize outreach in frontline communities.
- Expand USGBC-LA's Green Affordable Housing Program (GAHP) to include other historically underserved and frontline communities in the city.
- Expand and prioritize LADWP's Community Partnership Grant Program for CBOs working on building decarbonization in frontline communities, including increasing grant amounts and options for longer term funding and improving connectivity between City and CBBOs to support outreach, enable follow-up, and incorporate CBO and community feedback into policy/program improvements.
- Establish a LADWP promotoras program that hires residents from impacted communities to become outreach specialists on building decarbonization.

EXAMPLES

- Rent Escrow Account Program (REAP): The City of LA currently contracts Strategic Actions for a Just Economy (SAJE), a non-profit, community-based, tenant advocacy organization, to coordinate outreach for REAP. In this role, SAJE staff serve as case managers and educate tenants on their rights related to REAP, keep them informed throughout the process, and liaise between landlord and tenant.[104]
- Clean Power Alliance (CPA): CPA is a Community Choice Aggregator (CCA) bringing renewable energy to 32 communities across Los Angeles and Ventura Counties. CPA is the 5th largest electricity provider in California and the largest supplier of 100% renewable energy in the nation.[105]
- New York Retrofit Accelerator, established in 2006, provides a one-stop-shop for energy and water retrofits. The program coordinates across city departments to prioritize retrofit projects and provide direct technical guidance to affordable housing decision-makers on energy projects and compliance.[106]
- Energy Savers Retrofits is a collaboration between the nonprofit Elevate Energy and Community Investment Corporation (CIC), a community development financial institution based in Chicago. The program provides a one-stop-shop for technical support, financial information, and underwriting for retrofit projects. The program combines public, private, and philanthropic dollars with the goal of preserving affordable housing.[107]

[103] LAHD's Gateway-to-Green (G2G) program helps multifamily rental property owners save money, water, and energy, by providing information during routine inspections.
[104] SAJE. (n.d.). *Weekly Tenant Action Clinic*. Retrieved August 11, 2022, from https://www.saje.net/what-we-do/tenant-action-clinic/
[105] Clean Power Alliance. (n.d.). *Clean Power Alliance*. Retrieved August 11, 2022, from https://cleanpoweralliance.org/
[106] City of New York. (2006). *NYC Accelerator*. Retrieved August 11, 2022, from https://accelerator.nyc/
[107] Community Investment Corporation, & Elevate Energy. (n.d.). *Energy Savers*. Retrieved August 11, 2022, from https://www.cicchicago.com/programs/energy-savers/

8 Leverage existing decarbonization efforts to gather data on the technical and financial requirements of building decarbonization

There is a clear need for more nuanced data on the wide range of costs and logistical challenges associated with building decarbonization, most of which are of particular concern for tenants, affordable housing providers, and small landlords. Existing studies of the costs of decarbonization in Los Angeles focus exclusively on buildings larger than 20,000 square feet. More information is needed about the costs of this transition for smaller buildings, especially small affordable housing units that have deferred maintenance and other additional upgrades that would need to be made at the same time. According to LAHD, the majority of the 620,000+ units in Los Angeles covered by the Rent Stabilization Ordinance (RSO) are small properties (5 units or fewer), which means that they are exempt from EBEWE and also do not qualify for assistance through incentive programs like CAMR.[108] The affordable housing sector is particularly complex and therefore requires special attention when considering how to support decarbonization of these buildings without putting undue strain on this critical social infrastructure. More information is also needed about how LADWP is going to implement neighborhood and grid level upgrades and what measures they can and should put into place to ensure that it's done equitably.

In order to ensure that building decarbonization policies and programs are based on accurate estimates of the full costs, the City should:

- Request that LADWP, LADBS, and LAHD systematically collect, analyze and share data from pilot decarbonization projects to develop a more detailed understanding of the full range of up-front and operating costs, as well as other barriers, and evaluate existing programs to identify gaps, barriers, opportunities (e.g. dollars invested, capacity, target building type, accessibility, labor reps, tenant protections).

EXAMPLE PILOT PROJECTS

- USGBC-LA Green Affordable Housing Program: The US Green Building Council-LA's Green Affordable Housing Program (GAHP) is piloting tenant education and efficiency/electrification retrofits in a select set of affordable multifamily buildings in LA's Eastern San Fernando Valley, which may yield useful project case studies and insights.[109]
- San Joaquin Valley (SJV) Affordable Energy Pilot: The SJV Affordable Energy Pilot provides free electrification measures to customers in 11 small, underserved communities in the SJV. Measures include advanced electric appliances for space and water heating, cooking and clothes drying, as well as panel upgrades and up to $5,000 per household for other building remediation measures needed to enable electrification, and an additional 20% electric rate reduction on top of the CARE discount.[110]
- DOE's Advanced Building Construction Initiative: The U.S. Department of Energy's (DOE's) Building Technologies Office (BTO) is carrying out R&D and market transformation efforts to

[108] Interview with LAHD staff on July 11, 2022.
[109] US Green Building Challenge LA. (n.d.). *Green Affordable Housing Program*. USGBC-LA. Retrieved August 11, 2022, from https://usgbc-la.org/programs/green-affordable-housing-program/
[110] Shields, D. (2021, September 21). Lessons Learned (So Far) in Targeted Building Electrification. *Gridworks*. https://gridworks.org/2021/09/lessons-learned-so-far-in-targeted-building-electrification/

integrate energy efficiency solutions into an evolving U.S. construction industry to deliver affordable, appealing, high-performance, low-carbon new buildings and retrofits at scale.[111]

- New and municipal buildings in Los Angeles: The City Council adopted a motion in Council File 22-0151 that directs LADBS, with assistance from City Attorney, the CEMO and other relevant departments, to provide well documented research and recommendations for the revision of our building codes to decarbonize and fully electrify new buildings. In addition, the City approved CF 22-0532 to begin decarbonizing its own municipal building stock. This presents multiple opportunities for data gathering about the true costs of decarbonizing different types of buildings. The City should maximize the potential learning from these efforts and encourage sharing of best practices between City Departments and across sectors.

9 Design a flexible, equity-centered, multi-phased approach to building decarbonization

Building decarbonization will not happen in one fell swoop. Decarbonizing all of Los Angeles' buildings will happen over years with sustained financing models and technical and political support among various City Departments and with the support of the State and Federal Government. While a mix of strategies (e.g. energy use or emissions caps, building performance standards, efficiency incentives, etc.) will be needed to achieve widespread building decarbonization, it is important that any new policies or programs be flexible enough to avoid unintended negative consequences given ongoing uncertainty about the full range of possible costs. Building decarbonization policies must be guided by a holistic vision of healthy homes and communities that are socially and economically resilient.

In order to design and implement equitable building decarbonization policies and programs, the City could apply some best practices that have been applied in other Cities, such as:

- Provide extended or flexible compliance deadlines for buildings and units with affordability covenants and for low-income homeowners.
- Require efficiency upgrades and electrification of all single family homes and ADUs at point of sale.
- Require replacement of electrical appliances in all residential buildings when old appliances naturally expire. Ensure that these costs are covered by building owners and are not passed down to tenants (see recommendations for tenant protections above).
- Exemptions for restaurants that allow them to keep their gas stoves, as in the case of the City of Santa Monica.
- Develop different decarbonization policies and programs for different building types. For example:
  - For all new construction, create reach codes requiring use of passive cooling design features and all-electric appliances and building systems for all residential buildings and for most commercial/industrial building types, with the fewest possible exemptions. For all exemptions, require that they be constructed electric-ready.

[111] U.S. Office of Energy Efficiency and Renewable Energy. (2021). *What is the Advanced Building Construction Initiative?* [Governmental]. Energy.Gov. https://www.energy.gov/eere/buildings/what-advanced-building-construction-initiative

  - For well-resourced existing buildings (e.g. medium/large commercial buildings, most medium/large residential buildings constructed post-1978), create performance-based pathways, guiding buildings to meet carbon emissions intensity targets and energy efficiency intensity targets over time.
- For under-resourced existing buildings (e.g. smaller buildings, residential buildings constructed pre-1978, buildings serving low-income or otherwise vulnerable populations), provide performance incentives focused on operational cost reductions and health improvements. Incentives should include low-interest or no-interest financing programs, cost-share grant funding, and/or a revolving loan fund. Eligible uses of incentives should include health and habitability needs, efficiency upgrades, fuel switching, and tenant support during retrofits.

EXAMPLE POLICY

- New York City Local Law 97: In 2019 New York City adopted one of the most ambitious building emission reduction laws in the world. Local Law 97 caps carbon emissions for roughly 50,000 residential and commercial properties across NYC (all larger than 25,000 square feet). These caps start in 2024 and will become more stringent over time, eventually reducing emissions 80 percent by 2050. The law includes a maximum annual penalty for non-compliance, which is the difference between a building's annual emissions limit and its actual emissions multiplied by $268.[112]

10 Identify all new and existing possible sources of public, private, and philanthropic funding to support equitable building decarbonization

Equitable building decarbonization is going to require a monumental investment of financial resources to achieve carbon reduction without displacement. This will mean the identification of new revenue streams. In order to ensure that some communities are not left out of this transition, the City should work closely with nonprofit affordable housing developers and CBOs working in impacted communities to explore all potential sources and strategies of funding, including private, philanthropic, and local, state, and federal funding for building electrification, energy efficiency, and renewable energy production. The City should monitor costs and funding sources, and prepare a future report on the possible funding opportunities within a multi-phased approach.

EXAMPLE

- LA Better Buildings Challenge Retrofit Accelerator: The Los Angeles Better Buildings Challenge (LABBC) is currently working with LADWP to launch the LA Retrofit Accelerator (LARA) program, which is designed to aggregate private, public, and philanthropic funding and technical support, provide contractor training and spur implementation of new pilot projects.[113] LABBC will work with 12 affordable housing providers in the city to plan and implement building decarbonization for a portion of their portfolios. These affordability-focused pilots will help us understand the full range of potential costs of decarbonizing existing affordable housing. This model supports the City's goal to understand the various available and future funding sources that can be combined for a

[112] City of New York. (2019). *Local Law 97*. https://www1.nyc.gov/site/sustainablebuildings/ll97/local-law-97.page
[113] LABBC. (n.d.). *Retrofit Accelerator*. Los Angeles Better Buildings Challenge. Retrieved August 11, 2022, from https://www.la-bbc.com/retrofit-accelerator

long term and sustainable strategy of decarbonizing existing buildings via a multi-phased approach.

POSSIBLE FUNDING SOURCES

- Federal Infrastructure Investment and Jobs Act (IIJA)[114] and Inflation Reduction Act (IRA) Funds[115]
  - Weatherization Assistance Program ($3.5 billion): This competitive grant program administered by the DOE aims to reduce household energy costs by providing funding to states for the purposes of resilience, energy efficiency, renewable energy, and grid improvements.
  - Smart Grid Investment Matching Grant Program ($3 billion): First established under the Energy Security and Independence Act of 2007, the program requires that eligible investments must provide flexibility and help quickly rebalance the electrical system; facilitate the aggregation or integration of distributed energy resources; provide energy storage to meet fluctuation; provide voltage support; integrate intermittent generation sources; increase the network's operational transfer capacity; and anticipate and mitigate impacts of extreme weather events or natural disasters on grid resilience.
  - Building Resilient Infrastructure and Communities (BRIC) Program ($1 billion): The BRIC program provides funding for community-level hazard mitigation projects to improve resilience to extreme weather events. These competitive grants are available for state, local, and tribal governments to apply for funding to support pre-disaster mitigation projects.
  - Energy Efficiency and Conservation Block Grants ($550 million): The Federal Infrastructure Investment and Jobs Act amended previous legislation to allow funding to be used for financing energy efficiency and clean energy investments, projects, loan programs, and performance contracting programs.
- California Greenhouse Gas Reduction Fund (GGRF): Proceeds from the State's Cap-and-Trade Program facilitate comprehensive and coordinated investments throughout California that further the State's climate goals. The State's portion of the Cap-and-Trade auction proceeds are deposited in the GGRF, and used to further the objectives of the California Global Warming Solutions Act of 2006. To date, over $18 billion dollars have been appropriated by the Legislature to State agencies implementing GHG emissions reduction programs and projects.[116]
- Los Angeles Unified School District (LAUSD) Measure RR is a bond approved in LA in 2020, which allocated $3 billion to building retrofits and upgrades.[117]
- Green Bonds: A green bond is a fixed income debt instrument in which an issuer (typically a corporation, government, or financial institution) borrows a large sum of money from investors for use in sustainability-focused projects. The green bond market has

[114] U.S. Federal Government. (2022, August 9). *Infrastructure Investment and Jobs Act (IIJA) | Federal Funds Information for States*. https://ffis.org/iija

[115] The White House. (2022, August 17). *FACT SHEET: Inflation Reduction Act Advances Environmental Justice* [Governmental]. The White House. https://www.whitehouse.gov/briefing-room/statements-releases/2022/08/17/fact-sheet-inflation-reduction-act-advances-environmental-justice/

[116] State of California. (n.d.). About California Climate Investments [Governmental]. California Climate Investments. Retrieved August 5, 2022, from https://www.caclimateinvestments.ca.gov/about-cci

[117] LA Unified School District. (2020, September 3). *Measure RR Fact Sheet*. LAUSD. https://achieve.lausd.net/cms/lib/CA01000043/Centricity/Domain/1265/Measure%20RR%20Fact%20Sheet%20FINAL%209.30.2020.pdf

experienced significant growth in the last several years, with positive year-over-year growth every year since 2011.[118]

- Renewables Advancing Community Energy Resilience (RACER): This funding is being issued by the U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) Solar Energy Technologies Office (SETO) to invest in locally appropriate energy resilience planning at the community level, including the development and integration of new and existing metrics and preparedness and response plans, via robust multi-stakeholder participation and collaboration. Where appropriate, opportunities will be identified for solar plus storage deployment in those locations that can best support increased resilience.[119]
- Noncompliance Fees: The City should consider amending EBEWE's fee structure to increase the amount building owners pay for non-compliance and then use these noncompliance fees to support the Just Transition Fund (see Recommendation #6 above).
- Parcel tax: The City should consider proposing a new parcel tax to fund equitable decarbonization.

Conclusion

Building decarbonization will inevitably play an important role in Los Angeles' efforts to eliminate GHG emissions and other air pollutants over the next two decades. The climate crisis is inextricably connected to persistent social, economic, and environmental inequities that disproportionately burden Black, Latinx, Indigenous and poor communities. The City of Los Angeles must align its building decarbonization efforts in tandem with lowering cumulative air pollution and affordable housing preservation and development. Building decarbonization policies, plans, and programs must be coupled with tenant, worker, affordable housing, and small business protections, to ensure that everyone is able to participate in and benefit from the transition to clean, electrified buildings. Building decarbonization will require substantial upgrades to public and private infrastructure, and therefore presents a unique opportunity to improve the quality of homes, offices, schools, and community spaces in Los Angeles. The importance of this opportunity is emphasized by the successful passing of the Biden Administration's Inflation Reduction Act, which allocates $370 billion for greenhouse gas reductions, including climate infrastructure investments for cities such as Los Angeles.

This report presents a range of community and expert perspectives on how to equitably advance building decarbonization, while also identifying the root causes of health and economic disparities. Only by taking a holistic approach will the City arrive at climate solutions for all Angelenos. This report highlights the need to design and implement holistic, equitable climate policies that achieve climate goals, and prioritize the wellbeing and inclusion of historically disinvested frontline communities. The City's collective understanding of how to achieve equitable building decarbonization is evolving rapidly, which reinforces the need for ongoing collaboration and communication with impacted communities and professionals and the need for innovative governance approaches in decision making towards more equitable climate

[118] U.S. Department of Energy. (n.d.). *Green Bonds | Better Buildings Initiative*. Better Buildings Solution Center. Retrieved July 15, 2022, from https://betterbuildingssolutioncenter.energy.gov/financing-navigator/option/green-bonds

[119] U.S. Office of Efficiency & Renewable Energy. (2022, April 12). *Funding Notice: Renewables Advancing Community Energy Resilience (RACER)*. Energy.Gov. https://www.energy.gov/eere/solar/articles/funding-notice-renewables-advancing-community-energy-resilience-racer

policies. In order for this building and renewable energy transition to be just, frontline communities must be included in the design, implementation, and evaluation of all building decarbonization policies. Given the complexity of building decarbonization as a tool to create healthier homes and a climate-friendly Los Angeles, additional information is needed to understand the full costs of the transition, particularly for the affordable housing sector, to avoid unintended consequences. There are numerous examples of existing maladaptations that have resulted from past climate investments. The CEMO strongly urges the CEMC and the City Council to continue to explore the economic, worker, health, and housing costs and implications of building decarbonization from a variety of perspectives, and with a focus on equity and justice. If approached thoughtfully, building decarbonization can simultaneously help reduce local GHG emissions while creating a healthier Los Angeles for all Angelenos.