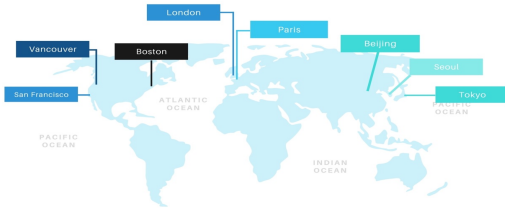


A Just Transition into the Green Economy: Healthy Indoor Environments and Housing Sustainability

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Introduction

This project provides a global overview of effective decarbonization and sustainability initiatives and their applicability to Los Angeles in alignment with the United Nations Sustainability Goals (UNSDGs) and the Green New Deal in collaboration with C-40 cities around the world. Research identifies programs that focus on the improvement of indoor air quality (IAQ) and energy efficiency, the development of sustainable housing, and the facilitation of decarbonization efforts at the city level to highlight policy trends and proffer effective and efficient solution to adapting them for use in municipal, commercial, and residential buildings.



Methodology

Through case study research of various C40 members, including Boston, Beijing, San Francisco, Vancouver, London, Paris, Tokyo, and Seoul, this project utilizes data on the return-on-investment of city-led programs and evaluates their impact on greenhouse gas emissions in comparison with the residential, commercial, and municipal settings of Los Angeles. Such methods provide effective policy recommendations, which necessitate IAQ monitoring and efficiency-specific regulations, incentive programs, equity-conscious financing schemes, and community outreach and engagement.

	Residential	Commercial	Municipal
Built Materials	Boston: E+ Building Projects (Boston Planning and Development Agency)	↓	
Indoor Cooking + Appliances	→	Beijing: Machinery and emissions standards for CO ₂ reduction in catering industry	↓
Monitoring		→	Paris: IAQ monitoring in public schools (partnership with Bloomberg Philanthropies)

(selected from the team's research database)

Case Findings & Highlights

- Electrifying Cooking**
 Tackling indoor air pollution resulting from coal and gas, **Beijing** implemented emissions standards on commercial and residential culinary machinery and established an information database about restaurant records of smoke emissions and machinery. Incentive programs to make the installments and upgrades of electric cooktops more affordable are essential to scale their broad-based adoption.
- Heating and Cooling**
 In **London**, the Better Boilers program provides free home efficiency and retrofit assessments for the public through the city's sliding payment scale for its boiler replacement scheme based on socioeconomic thresholds. Developing a payment system for rebate programs helps improve the accessibility of infrastructural benefits.
- Indoor Air Quality Monitoring**
 Enforcing national policy requiring IAQ-monitoring in municipal buildings hosting vulnerable populations, **Paris** worked with Bloomberg Philanthropies to fund monitoring and sensory devices in schools, raising detection accuracy.

Recommendations

- Regulations: Explore zero carbon building retrofit targets in the Green New Deal & expand L.A. Mandatory Retrofit Ordinance to include sustainability certification benchmarks.**
 - Boston & San Francisco:** Successful regulations have included both data collection and building decarbonization standards to determine and record the percentage breakdowns of greenhouse gas emissions and site energy use by fuel and set more informed city energy and decarbonization targets
- Incentive Programs: Cooperate with current commercial sector awards programs.**
 - Vancouver** reworked its energy efficiency incentivization policies through innovative pilot programs and actions as personalized energy audits and coaching have a positive impact on the commitment of landlords to retrofit. In **Tokyo**, the city's Cap-and-Trade Program and carbo record card scheme targets large facilities to make their buildings more energy-efficient. Meanwhile, **Seoul** has partnered with the "One Less Nuclear Powerplant" project, offering loans with low-interest rates and generous grace periods for further retrofitting incentivization.
- Community Outreach & Engagement: Partner with LAUSD and private contractors for IAQ monitoring & education in schools and communities.**

Conclusion

- Through in-depth case studies of various C40 members, this project concludes that the populations most at risk for IAQ-related instances of long-term health impacts are children, the elderly, and low-income communities whose perceptions and worries about environmental justice are often neglected in policy-making processes.
- Decarbonization policies that sufficiently integrate housing and sustainability in tackling the complexities of the built environment will address health problems as a result of unhealthy indoor environments while simultaneously aligning with the UNSDGs and Green New Deal to institute cost-efficient and equitable solutions needed concerning climate emergency.