Urban Land Institute

Greenprint

Decarbonizing the Built Environment

10 Principles for Climate Mitigation Policies

ABOUT ULI

The Urban Land Institute is a global, member-driven organization comprising more than 45,000 real estate and urban development professionals dedicated to advancing the Institute's mission of providing leadership in the responsible use of land and in creating and sustaining thriving communities worldwide.

ULI's interdisciplinary membership represents all aspects of the industry, including developers, property owners, investors, architects, urban planners, public officials, real estate brokers, appraisers, attorneys, engineers, financiers, and academics. Established in 1936, the Institute has a presence in the Americas, Europe, and Asia Pacific regions, with members in 80 countries.

About the ULI Greenprint Center for Building Performance

The ULI Greenprint Center for Building Performance is a worldwide alliance of leading real estate owners, investors, and strategic partners committed to improving the environmental performance of the global real estate industry. Through measurement, benchmarking, knowledge sharing, and implementation of best practices, Greenprint and its members strive to reduce greenhouse gas emissions by 50 percent by 2030. On an ongoing basis, Greenprint also endeavors to demonstrate the correlation between environmental performance and enhanced property value. Learn more at uli.org/greenprint.

ABOUT THE URBAN SUSTAINABILITY DIRECTORS NETWORK

The Urban Sustainability Directors Network (USDN) was founded by and for local government sustainability professionals in 2008 to help each other advance progress. More than 1,300 local government professionals from 215 cities and counties participate in USDN in the United States and in Canada. Members connect, learn from each other, and collaborate to develop innovations and scale practices to help their communities take action on climate and sustainability and to thrive despite a changing climate and other local challenges. Learn more at www.usdn.org.

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ABOUT THIS REPORT

With leading cities refining their climate action plans and hundreds of more cities preparing to develop plans, the public and private sectors can unite around a set of principles to help accelerate progress toward these shared climate action goals. This report serves as a starting point for cities interested in engaging real estate leaders during the shaping of climate mitigation policies, and for real estate organizations to increase their understanding of the potential impact of these policies—providing useful tools to help city officials and those in the real estate industry engage with each other in a meaningful and ongoing way.

Each of the principles identified in this report is a distillation of recommendations identified during the Urban Land Institute's City and Real Estate Sustainability workshops, in which more than 60 public and private sector leaders participated. The goal of those workshops was to identify key aspects of policy strategies and tools that get cities on track to hit their climate goals, in a way that accelerates real estate investment in energy efficiency and climate mitigation. (ULI recognizes that states, counties, cities, and other forms of local government set climate mitigation policies. For simplicity, this report refers to any level of local government undergoing a climate mitigation policy as a "city.") The principles identified in this report are grounded in the context of specific communities and best practices from their collaboration with the real estate sector to create building-level climate mitigation policy.

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MESSAGE FROM THE PROJECT CHAIR

We as a planet and species are facing a climate emergency of unprecedented magnitude. To prevent the worst consequences of climate change, we need to rapidly decarbonize our global economy and society. In developed countries around the world, doing our part means accomplishing net carbon neutrality by midcentury. With the buildings sector responsible for upwards of 40 percent of global emissions, our industry must lead the way.

Success will mean buildings in 2050 that are more energy efficient than they are today and that meet their energy needs from zero carbon sources. The buildings sector will need to be effectively net carbon neutral, with the vast majority of buildings and systems being fully electrified and powered by a clean grid. The next 30 years will be more transformational in how buildings are designed, constructed, rehabilitated, and operated when compared with any other period in living memory. With more than 100 million existing buildings in the United States alone needing significant energy efficiency and electrification work, the buildings sector retrofit work necessary to decarbonize our economy will present massive economic development and social equity improvement opportunities.

Given the scale of this challenge and of this opportunity, it is imperative that city officials and real estate leaders work collaboratively to most effectively achieve buildings sector net carbon neutrality within the next three decades. During this time period, under normal building capital investment and system replacement cycles, the vast majority of critical energy-using systems and infrastructure will need refurbishment or replacement—it is critical that every system replacement opportunity aligns with a pathway to carbon neutrality. Everyone will need to work together to create the right policy and economic structures to accomplish this massive transformational change to our built environment while simultaneously enhancing the sustainability and social equity of the cities and communities in which we live, work, and play.

Recognizing the monumental task at hand, ULI, in partnership with USDN, sought to increase the dialogue and engagement between sustainability leaders at major real estate firms and city officials developing built environment climate policies and programs. Together, we were able to learn from recent efforts and to identify a set of principles that can serve as a foundation for more effective city–private-sector partnership in developing, establishing, and implementing policies to drive building-sector decarbonization for the next 30 years.

We hope this report is a valuable resource for real estate and city leaders alike as they move forward on this journey, but more important, we hope to motivate and encourage a step change in collaboration to achieve a net carbon neutral built environment. The barriers to this success are not so much technical as they are political and economic. Thus, collaboration between municipal officials and real estate leaders is imperative, as failure is not an option. This generation of public- and private-sector leaders knows what needs to be done and we will be held accountable by future generations for doing so. I am proud that ULI has chosen to be at the vanguard in organizing and leading this charge for our industry.

Brian Swett
Boston Office Leader, Arup

INTRODUCTION

In order for real estate to play its part in achieving Paris Climate Agreement targets, buildings will need to have a net-zero carbon footprint by 2050. Because the buildings sector currently contributes nearly 40 percent of carbon emissions globally and upwards of 70 percent in many urban areas, leading cities are passing game-changing climate action plans with policies specifically addressing both new and existing buildings. Yet many in the real estate industry are just now beginning to think seriously about how to achieve those new targets.

The wide range of policies being implemented to achieve these aggressive emission-reduction targets include stricter energy codes, mandatory energy and emissions benchmarking, building ratings, mandated compliance with emissions targets, all-electric building ordinances, and mandatory renewable energy targets. As emissions requirements continue to proliferate, the real estate industry will need to make significant capital investments to meet them or else risk being fined. Although incentives and financing are often available to help meet capital costs, the industry will no longer be able to conduct business as usual.

"Climate change has become a defining factor in companies' long-term prospects. Last September, when millions of people took to the streets to demand action on climate change, many of them emphasized the significant and lasting impact that it will have on economic growth and prosperity—a risk that markets to date have been slower to reflect. But awareness is rapidly changing, and I believe we are on the edge of a fundamental reshaping of finance."

—Larry Fink, chairman and CEO, BlackRock,
in annual letter to CEOs, January 2020
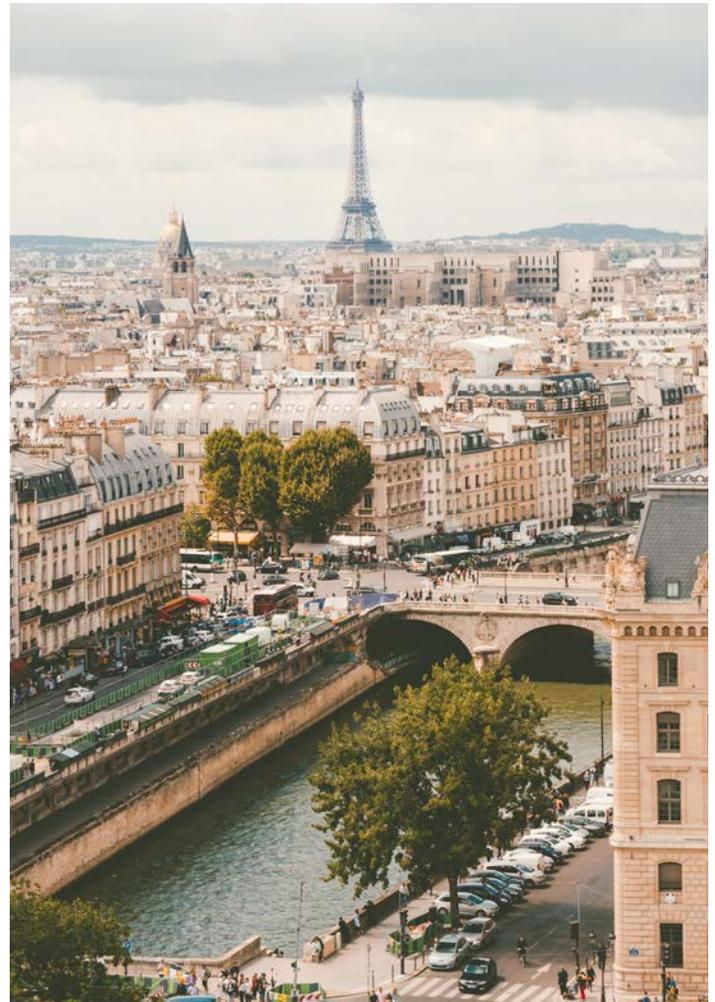
Paris Climate Accord

In 2015, at the United Nations Framework Convention on Climate Change's 21st Conference of Parties, the Paris Agreement was adopted by 195 nations to address climate change, with a goal of keeping global temperatures within 2 degrees Celsius above preindustrial levels while also pursuing efforts to limit the increase to 1.5 degrees Celsius. To help reach these goals, a framework was created with transparent monitoring and reporting, with each signatory nation committing to reduce its emissions and developed nations pledging to assist developing nations.

The Policy Landscape

In the United States, 31 cities (and counting) have set energy benchmarking policies for buildings, with 15 cities requiring that structures meet performance targets or undertake additional actions such as energy audits. More than 70 cities have pledged carbon neutrality by 2050, and policies addressing energy use and emissions in buildings are being considered in most major cities across the United States and the world. Specifically, 287 U.S. cities and counties signed on to the "We Are Still In" pledge to remain committed to the Paris Climate Accords; more than 400 U.S. mayors signed on to the Climate Mayors, a bipartisan, peer-to-peer network of U.S. mayors working together on climate change and on building political will for effective federal and global policy action; and, 1,066 U.S mayors signed on to the U.S. Conference of Mayors' Climate Protection Agreement.

In addition, the following policies addressing energy use in buildings have been implemented (with more to come):

• In Philadelphia and Seattle, Building Tune-Up policies require large commercial buildings to assess operational and maintenance improvements for energy efficiency and to implement them.

• In Washington, D.C., the 2019 Clean Energy Omnibus Act requires that buildings falling below median energy performance levels in 2021 and 2026 improve their energy performance by 20 percent and follow a prescriptive improvement plan over five years, or pay an undetermined fine.

• In New York City, the 2019 Climate Mobilization Act sets carbon emissions limits for buildings: by 2024 and 2030 deadlines, buildings must reduce their emissions below limits set by property type; failure to comply will result in fines of $268 per ton over the limit.

Action to recognize the cities' goals, engage early, and align motivations provides benefits for the real estate industry and sets up the private and public sectors to be partners in reducing emissions globally. It also ensures that the real estate community is aware of and has bought in to these local policies in real time to bring about maximum participation and private-sector support.

> **"As a manager operating in hundreds of cities globally, it can be challenging to negotiate the myriad climate mitigation policies. Standardization across cities allows managers to better scale sustainability programming and helps consolidate cities and the industry around best practices."**
>
> —Jessica Elengical, head of ESG strategy, alternatives, DWS Group

Role for Real Estate

Buildings contribute nearly 40 percent of global emissions; therefore, to keep global warming below 1.5 degrees Celsius, buildings will need to reduce emissions by 50 percent by 2030 and essentially be carbon neutral by 2050. In the United States, there are an estimated 113 million buildings, and more than half (70 million) of them burn natural gas or other fossil fuels for heat or cooking purposes—to reach carbon neutrality will require substantial investment in energy efficiency, electrification, and renewable energy.

"Essentially, every building we touch over the next ten years, and we likely need to touch about 5 million buildings per year in the United States, needs to be brought to zero emissions in a way that is both cost-effective and supports decarbonization of the grid."

—Rocky Mountain Institute,
"Making Our Existing Buildings Zero Carbon:
A Three-Pronged Approach," December 4, 2019

In order for cities to reach carbon neutrality by 2050, real estate will need to be an active partner. For the purposes of this report, the real estate sector is defined as building developers, owners, and managers and the use of "cities" refers to the public-sector departments within a municipality (city, township, county, etc.) that are responsible for passing and implementing climate mitigation policies for their jurisdiction. Although other building stakeholders and service providers also play an important role in policy development and implementation, the business case and opportunities for involvement and influence differ for each

group. Real estate developers, owners, and managers are the ones financing any required data collection, audits, or energy and emissions performance improvements, and therefore, they are the target "real estate" audience for the 10 principles for climate action plans in this report.

Many real estate owners have already embraced the strong business case for sustainability because reductions in energy use, carbon emissions, water consumption, and waste production can lead to lower utility costs, lower maintenance costs, healthier buildings, more satisfied tenants, and because, ultimately, it improves the overall value of an asset. Although some real estate owners have seen the value of investing in energy efficiency and climate mitigation strategies, others have not, and therefore, they have made little or no progress in reducing their energy consumption or emissions.

No matter the stage of a city's progress, from policy proposal to implementation and compliance, real estate has a role to play. Each principle in this report includes a "role for real estate" that outlines how the real estate sector can get involved, whether through providing policy input, preparing capital budgets for sustainability investments, or educating internal staff on energy-efficient technologies. The greater the engagement, the greater the overall value a building can gain from a new policy.

10 PRINCIPLES FOR BUILDING CLIMATE MITIGATION POLICIES

Designing and implementing policies to achieve ambitious climate mitigation goals requires collaboration and partnership between cities and the real estate sector. Cities and real estate leaders have many opportunities to partner and engage throughout the process, from the first steps in formulating a climate action plan, to the development of policies and regulations, to ultimately ensuring performance and building compliance. The following 10 principles are the core of building successful climate mitigation policies at the local level, with an emphasis on what the city and real estate sector can do to better collaborate.

PROCESS

1 CALCULATE A BASELINE, THEN SET INTERIM AND ASPIRATIONAL GOALS

Setting ambitious and meaningful data-backed targets with clear definitions and metrics ensures clarity and puts everyone on the same page.

Role for real estate: Track portfolio energy and greenhouse gas performance, set a baseline, and benchmark over time against defined company-wide energy goals.

2 INVOLVE STAKEHOLDERS EARLY AND CONTINUOUSLY

Engaging stakeholders early and often can provide meaningful input to ensure compliance is achievable, while building awareness and potential support for future policies.

Role for real estate: Participate in working groups and work with industry colleagues to provide feedback on the impact of potential policies.

3 UNDERSTAND THE BUSINESS OF REAL ESTATE

Calculating the impact that policies can have on day-to-day operations and capital decisions helps real estate integrate policy requirements into its business plan.

Role for real estate: Determine and share the economic impacts of potential draft city policies, but also understand the potential benefits, including benefits to building owners and tenants.

4 ALIGN WITH THE LARGER POLICY ECOSYSTEM

Directing all policies toward the same goal ensures consistency, resulting in city policies that build off of state policies.

Role for real estate: Think ahead by incorporating sustainability in building design and operations to lower the future costs of compliance and educate building-level stakeholders as new policies pass.

POLICY

5 CONNECT TO A CITY'S OTHER SOCIAL AND ECONOMIC GOALS

Leveraging the opportunities to address public health, workforce development, social equity, and transportation in achieving energy efficiency and climate mitigation creates policies that achieve more benefits for the community.

Role for real estate: Measure the benefits of climate action efforts and communicate the triple-bottom line benefits of projects to explain investment decisions.

6 BE COMPREHENSIVE

Subjecting all buildings—public and private—in a city to a new ordinance supports collaboration and impact and can potentially cross-subsidize capital improvements across building types such as energy efficiency in affordable housing.

Role for real estate: Learn from energy efficiency and electrification strategies used in public buildings and collaborate to share lessons learned with all building owners in the city.

7 PRIORITIZE EXISTING BUILDINGS

Recognizing that every market is different, include more than policies for new construction; tailoring incentives and regulations to existing buildings has a greater overall impact.

Role for real estate: Work energy efficiency into the entire portfolio, by taking lessons learned from one retrofit into other buildings.

PERFORMANCE

8 BE FLEXIBLE IN ACHIEVING GOALS

Simplifying requirements enough for everyone in the industry to understand and providing multiple pathways to compliance improves participation.

Role for real estate: Work the cost of compliance into the building's capital plan and participate in pilots or incentive programs wherever possible to lower costs.

9 FOSTER A MARKETPLACE OF SUPPORT

Convening resources in one location supports education, technical assistance, financing, and training to identify opportunities for improvement and innovation.

Role for real estate: Take advantage of all city-provided support, share best practices with the market, and take projects beyond basic compliance if possible.

10 ENSURE COMPLIANCE, REWARD SUCCESS, AND ACCELERATE TRANSFORMATION

Implementing meaningful but scaled penalties for noncompliance while also recognizing and rewarding achievements can help drive desired performance.

Role for real estate: Understand the costs of noncompliance but work to comply with new climate regulations to demonstrate commitment, avoid penalties, and achieve recognition.

Developing a city policy requires an understanding as well as strong input and engagement from a variety of stakeholders. The following four principles outline important aspects of the process of forming a successful and market transformational policy.

1 CALCULATE A BASELINE, THEN SET INTERIM AND ASPIRATIONAL GOALS

Setting ambitious and meaningful data-backed targets with clear definitions and metrics ensures clarity and puts everyone on the same page.

Understand the Baseline

A common saying across the sustainability industry is that you cannot manage what you do not measure. With that idea in mind, by 2019 at least 31 cities had passed energy benchmarking ordinances that require buildings over a certain size (usually 25,000 or 50,000 square feet) to collect and submit annual energy data. This data is then analyzed to assess performance over time and often (although not always) made public, either through an annual city report, website, or at the point of sale or lease of a building, to increase transparency and to provide tenants and/or future owners more information on a potential space.

U.S. City, County, and State Policies for Existing Buildings: Benchmarking, Transparency, and Beyond

● Requirements of achieving performance targets or completing additional actions

● Benchmarking policy for public, commercial, and multifamily buildings adopted

● Benchmarking policy for public and commercial buildings adopted
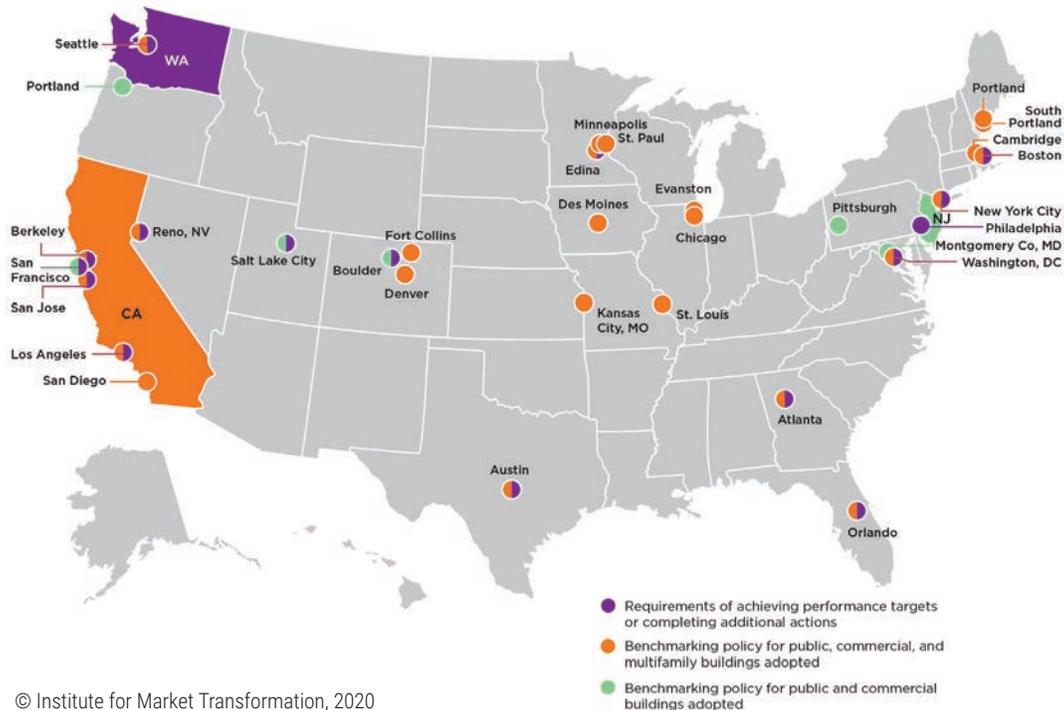
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These benchmarking ordinances are often the first step for cities looking to make energy and emissions reductions because they provide a baseline of performance and are often used as an important resource for cities looking to identify underperforming buildings. Benchmarking analysis can also support effective policy formation, delivery, and tracking of continuous progress. Benchmarking ordinances are not the only way to set a baseline: other cities understand the performance baselines of their building stock through greenhouse gas (GHG) inventories or other citywide estimate analyses.

Set Targets

After setting the baseline, cities can then set realistic targets and timelines for reducing building emissions, from short-term interim goals to long-term aspirational ones. Creating positive momentum is key to long-term success. When it comes to setting goals at the company or city level, it can be easier to get stakeholders behind big ideas like net-zero carbon. To ensure that everyone gets there and set an example for the private sector, cities can lead the way by setting and achieving ambitious public-sector goals first, and by testing new strategies and technologies that private-sector real estate can learn from.

Example City Climate Interim and Aspirational Goals

Austin

Goal: Reduce energy consumption in buildings 5 percent each year through 2020.

Benchmarking ordinance passed in 2008.

Boston

Goal: Reduce municipal energy use 20 percent by 2023, from a 2010 baseline. Citywide, reduce GHG emissions 50 percent by 2030 and 100 percent by 2050, from 2005 levels.

Benchmarking ordinance passed in 2013.

Aspen, Colorado

Goal: Reduce GHG emissions 30 percent by 2020 and 80 percent by 2050, from 2007 levels.

Atlanta

Goal: Reduce municipal energy use 20 percent by 2020, from a 2009 baseline. Citywide, reduce GHG emissions 20 percent by 2020 and 40 percent by 2030, from 2009 levels.

Benchmarking ordinance passed in 2015.

Cleveland

Goal: Reduce building energy use 50 percent by 2030 using a 2010 baseline. Reduce GHG emissions 16 percent by 2020, 40 percent by 2030, and 80 percent by 2050.

Kansas City, Missouri

Goal: Reduce municipal energy use 50 percent by 2050, from a 2009 baseline, and achieve Energy Star certification for 90 percent of municipal buildings over 25,000 square feet. Citywide, reduce GHG emissions 30 percent by 2020 and 80 percent by 2050, with 2000 levels as the baseline.

Benchmarking ordinance passed in 2015.

Los Angeles

Goal: Reduce municipal energy use annually by 5 percent, up to 25 percent by 2035, from a 2013 baseline. Reduce GHG emissions 50 percent below 1990 levels by 2025, 73 percent by 2035, and carbon neutral by 2050.

Benchmarking ordinance passed in 2016.

Define Metrics

Policies should carefully select and define metrics to measure against. Cities that want to achieve carbon emissions reductions should track their progress in carbon emissions, not energy efficiency metrics. And although many policies use similar language, the ultimate meaning and implications for real estate can vary by city. For example, "net zero" is a term commonly used in new city goals and policies; however, there is a difference between a net-zero-energy building, which requires any energy used at a building to be offset by on-site renewables, and a net-zero-carbon building, which requires the building to be fully powered by on- or off-site renewable energy.

For cities aiming to reduce carbon emissions, there are multiple considerations that can influence the calculations tracking progress, including total energy reductions, when energy is used because power plant emissions per kilowatt-hour used are not static, and the use of on- or off-site renewables. There is also the potential that a future net-zero policy could also require net-zero embodied carbon in addition to the typical operations focus. Clarity of terminology in policies is key to helping real estate understand what investments are required to achieve new goals.

Role for Real Estate

• **Collect data:** Benchmark building performance as a best practice and work with cities to help them understand the challenges to data collection (especially when tenants/residents pay their own utility bills directly).

• **Prepare internal goals:** For national or global real estate portfolios, although internal goals will likely not match the disparate city goals spanning the portfolio geography, they will prepare buildings for improved performance and reduced carbon emissions across the board. Align portfolio-wide sustainability goals with leading city policies on climate mitigation and efficiency. This step will help "future proof" buildings for emerging climate targets and regulations. After tracking progress internally, consider setting public goals for emissions reductions.

Policy Examples

• **Setting goals over time** (Minneapolis). In 2012, Minneapolis set a citywide greenhouse gas emission reduction target of 15 percent by 2015 and 30 percent by 2025. Large commercial buildings in the city represent nearly 50 percent of community energy use. The city passed a benchmarking ordinance in 2013 requiring commercial buildings more than 50,000 square feet, and municipal buildings more than 25,000 square feet, to measure and disclose energy and water use to the city. And by 2014, a new goal was added to reduce emissions 80 percent by 2030. In early 2019, the City Council voted unanimously to expand on the success of the first ordinance and include multifamily buildings over 50,000 square feet. In addition, as planned in the city's 2013 Climate Action Plan, the expanded ordinance was paired with time-of-sale and time-of-lease energy use disclosure ordinances, which notify potential buyers and renters of energy efficiency levels, to further incentivize energy upgrades. Building on the momentum created by earlier, less stringent initiatives is a strong way to advance climate goals without surprising stakeholders with new and difficult requirements.

• **Using benchmarking data to model energy reductions** (Washington, D.C.). Clean Energy DC, the city's energy and climate action plan, outlines the necessary actions to achieve the District's goal of reducing annual greenhouse gas emissions 50 percent by 2032. This plan leans on eight years of citywide benchmarking data to understand the market's building stock and to set building sector energy use intensity (EUI) projections. According to the District, this plan is the first energy plan in the country to use city benchmarking data to inform its modeling and recommendations. These recommendations include the necessary energy and EUI reductions for individual property types.

• **Ensuring accurate baselines** (St. Louis). In 2017, St. Louis passed a benchmarking ordinance for all municipal, institutional, commercial, and multifamily residential buildings more than 50,000 square feet. After two rounds of reporting deadlines passed in 2018 and 2019, the city determined that more than half of covered buildings had missed the deadline. To help ensure that the city can set accurate baselines, in late 2019 it began assessing small fines (less than $1,000 per year) and will withhold occupancy permits until all covered buildings participate in reporting. Ensuring that the right data is available by gently nudging those who may have "missed the memo" on compliance is a thoughtful means of meeting the necessary initial goals.

2 INVOLVE STAKEHOLDERS EARLY AND CONTINUOUSLY

Engaging stakeholders early and often can provide meaningful input to ensure compliance is achievable, while building awareness and potential support for future policies.

Engage Real Estate

After setting a goal, and before prescribing policies, stakeholders help cities understand the most efficient method of reaching the goal. For many cities, the biggest lesson learned during policy creation and passage is to identify key real estate community leaders and engage them early and continuously, either one-on-one or through policy working groups. To do this, cities should identify the relevant real estate stakeholders, determine whether they have public sustainability goals and commitments already set, and then engage to receive input, and ideally, support. Engaging proactive local developers and owners that specialize in sustainable projects can also help, by introducing examples for other local developers interested in how to get started. While this is a good starting point, all types of real estate stakeholders should be engaged, including small-building owners and local institutions such as hospitals and universities because they make up a significant portion of a city's building stock and they need different levels of support to participate and meet any citywide goals.

Pull In the Broader Buildings Community

Additional stakeholders to consider besides real estate developers, owners, and managers include tenants, the building workforce, and service providers. Because tenants can account for up to 80 percent of a building's energy use, including major tenants in the process to craft and support the policy helps ensure owners can deliver on items such as collecting whole-building energy data as well as implementing performance improvements. Unions that represent building staff (for example, janitors, security officers, engineers, and other building maintenance staff) should also be engaged because new policies often have implications for those workers.

Organizations That Can Help Connect Cities with the Real Estate Community

Several organizations regularly convene members of the real estate community and can support engagement between city policymakers and real estate.

• 2030 Districts Network

• Building Owners and Managers Association (BOMA) International

• Commercial Real Estate Development Association (NAIOP)

• CoreNet Global

• Institute of Real Estate Management (IREM)

• International Council of Shopping Centers (ICSC)

• Green Business Engagement National Network (GBENN)

• National Apartment Associate (NAA)

• National Multifamily Housing Council (NMHC)

• Urban Land Institute (ULI)

• U.S. Green Building Council (USGBC)

Set the Table

Although soliciting input from a significant number of stakeholder groups can be difficult to manage, the goal should be to include all major impacted sectors, with special attention to politically important constituents that can make or break the bill, such as affordable housing or major local institutions. Individuals from these organizations do not always need to be sustainability-focused—for organizations without sustainability leads, asset or development managers can also provide useful feedback. Utilities also play a significant role in the discussions because achieving net-zero carbon goals requires that buildings become more efficient and that the grid becomes cleaner. Utility energy efficiency incentives are a powerful driver of market uptake and can help real estate finance necessary building-level improvements.

Form a Working Group

Once all of the relevant stakeholders are at the table, cities can work to remove barriers to support by understanding stakeholder perspectives and what might be making compliance more difficult on their end. Testing ideas with a working group can also help potentially unsupportive industry actors be neutral on (instead of opposed to) the final policy. The process becomes one of consensus building, with the city incorporating stakeholder input to strengthen a policy. Ultimately, this process should both improve the resulting policies and get participants on board, who are then able to get their company (and industry colleagues) on board.

"It is critical for the real estate community to engage with local governments across the country to help shape sustainability agendas at the local level. By engaging with cities, we ensure that cities are well informed about the unique aspects of the real estate sector and how they can play a positive role in addressing climate change and environmental issues."

—Jonathan Flaherty, senior director of sustainability and utilities for Tishman Speyer

Organizing a Successful Stakeholder Engagement Meeting: Best Practices

- Set meetings during business hours when possible to support attendance from senior leadership.

- Move meetings around and meet people in their offices, not at city offices.

- Be prepared with a desired outcome of each meeting and ensure that there are not too many meetings on one topic, causing stakeholder fatigue.

- Provide takeaway materials so that those attending the meeting have the information they need to educate other members of their organization.

- Consider how the group could transition to continue to support and inform climate action beyond the current policy process (see the Boston Green Ribbon Commission example).

Role for Real Estate

- **Pay attention:** Participate in working groups or stakeholder meetings to provide feedback and provide input about the policies' potential impact on real estate and pass information along to colleagues to ensure peers are educated on the potential policy. Bring solutions to the table that achieve the same emissions performance aims but may do so in a more economically efficient manner.

- **Find collaborators and share solutions:** There is likely someone in the area that already has experience with benchmarking or implementing new technologies or renewables. Working together can boost local demand for low-carbon strategies and policies, lowering costs and strengthening the workforce. Be sure to share any personal successes in building decarbonization with the city and peers as well.

- **Be represented:** Share your feedback on proposed policies with local industry organizations that you participate with to be sure that they accurately understand and represent your perspective to the city.

Policy Examples

A coalition of leaders (Boston). The Boston Green Ribbon Commission (GRC) was founded in 2010 to support and drive climate action in the city; it was funded by a coalition of 10 local foundations, and the vast majority of its first participants were not climate leaders but business executives—including commercial real estate chief executive officers—with a vested interest in Boston's long-term success. Chaired by the mayor of Boston and the cofounder of the Barr Foundation, this executive group meets twice a year to discuss the bigger picture with technical working groups that meet regularly throughout the year to discuss policy details and best practices on topics such as health care and commercial real estate. The GRC has continued its work through the years as a permanent stakeholder group that transcends political change in the city.

For members of the private sector, participation in this group showcases their leadership, provides exposure to city and utility leaders, and educates them on climate risks to the city and their businesses. On the city government side, policymakers have access to an established stakeholder group to provide feedback on upcoming policies, creating momentum for their acceptance when they are released.

This partnership has been pivotal in the city's climate action planning since its founding, and recently it informed and provided strategic direction to two key policy initiatives, Climate Ready Boston, addressing resilience planning, and Carbon Free Boston, which sets Boston on the path toward its 2050 climate targets and creates a cleaner, greener city that attracts top talent for the business community.

> **"What is unique about the Green Ribbon Commission is that it is a totally voluntary network of 36 leaders representing the key sectors of the Boston economy—commercial real estate, health care, higher education, cultural institutions, utilities, finance, government, and philanthropy—and focused directly on climate action. The commission has become a place where civic and business leaders can discuss the long-term implications of climate adaptation and emissions reduction and how successful action on both fronts will reshape the city over the coming decades."**

—John Cleveland, executive director of the Boston Green Ribbon Commission
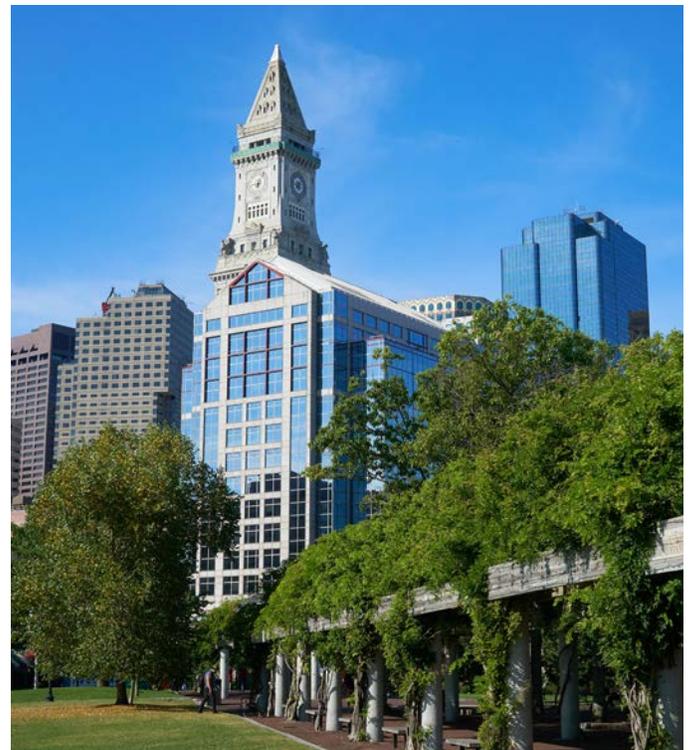
Zero emission building task force (San Francisco). In early 2019, San Francisco announced that the city would convene a public/private zero-emission building task force, a collaboration of real estate and other diverse stakeholders, to develop a roadmap of policies and programs to eliminate fossil fuel use in buildings by 2050. The task force's activities include a mixture of public workshops and working group meetings, broken out by focus for new construction and existing municipal, commercial, and residential buildings, respectively. An extensive engagement process of this type can help ensure that bold new policies have support from the groups whose buy-in is essential for success.

This task force and its goal build on an ambitious new piece of legislation introduced simultaneously, which requires commercial buildings that are 50,000 square feet and larger to transition to 100 percent clean energy, the first legislation of its type in the country. These combined steps contribute to San Francisco's national leadership in progressive city energy and climate policy.

Net-zero action plan engagement (Cambridge, Massachusetts). Engagement for Cambridge's Net-Zero Action Plan began in 2013, when citizens submitted a zoning petition for all newly constructed buildings to achieve net-zero emissions. To get stakeholder input and buy-in, the city appointed a task force that included real estate sector representation. From plan to passage, stakeholder engagement lasted almost two years, with passage in 2015 targeting new municipal buildings be net-zero emissions by 2020 and large commercial and residential buildings be net-zero emissions by 2025 (2030 for labs), along with a set of actions for existing buildings and the transition to renewable energy supply. A recent interim set of green building zoning amendments gives developers the option to design to LEED Gold, Passive House, or Enterprise Green Communities performance standards. Engagement with the real estate sector led the city to maintain a tiered approach to the LEED performance pathway (requiring LEED Silver for buildings 25,000 to 50,000 square feet) and to streamline the verification and review process.

The Net-Zero Action Plan builds on previous policies such as an energy disclosure ordinance for existing buildings. The benchmarking ordinance data has shown energy reductions averaging approximately 1 percent per year, with the city providing building owner support through a help service desk and the local utility providing whole-building energy consumption data. The ordinance will also serve as a framework for future performance standards informed by stakeholder coalitions such as the Cambridge Compact for Sustainable Future. Key principles identified by city officials for future policy development include regular and continuous stakeholder engagement, balancing requirements with voluntary programs and incentives, and transparency on specific policy planning and implementation timelines.

"Continuous stakeholder engagement underlies the success of the Net-Zero Action Plan. Stakeholder action led to the plan's formation and the effort spent ensuring initial stakeholder buy-in has allowed Cambridge to move forward with its implementation in a collaborative and impactful manner."

—Seth Federspiel, net-zero energy planner, Cambridge Community Development Department

3 UNDERSTAND THE BUSINESS OF REAL ESTATE

Calculating the impact that policies can have on day-to-day operations and capital decisions helps real estate integrate policy requirements into its business plan.

Financing

Many well-meaning city policies and programs create unintended negative consequences for building owners, which creates the potential for costs to be passed on to tenants and exacerbates affordability issues. The most successful policies align with key levers in the real estate process and build from the tactical knowledge of how projects come together (both new developments and comprehensive retrofits) and how timelines are set, and project deadlines. For example, a real estate investment trust's tax structure can prevent it from taking advantage of certain tax incentives, but any type of developer can benefit from incentives such as density bonuses or expedited permitting.

Tenants

The leasing structure of a property potentially can be a roadblock to complying with policy because the landlord pays the utility bills in full-service leases, but the tenant pays all utility bills in a triple-net lease (especially frequent in retail and industrial buildings, for example). Under benchmarking legislation that requires whole-building data reporting, landlords with triple-net leases who do not see the utility bills have a challenge in collecting the information directly. However, the challenge is more than data collection: even in full-service multitenant buildings, where for example 80 percent of the utility use is tenant controlled and 20 percent is owner-controlled (the tenant controlling the majority of the space), cities put the responsibility of whole-building EUI performance on the owner.

Building owners are also responsible for the capital costs of building improvements, however, depending on the lease type, tenants may be the primary benefactor of these savings, resulting in a less motivated owner. This split incentive can be overcome through green leases, which align owner and tenant by balancing the costs and savings of energy efficiency projects. It can also support data sharing between the two groups and outline what fines or fees can be passed on to tenants due to new legislation. However, building owners may simply prefer regulations be passed, so that tenants are required to comply without negotiation or updating a lease.

Helping Real Estate Overcome the Barrier of Collecting Whole-Building Data: Example City Policies

Los Angeles: Compliance is the responsibility of the meter owner, which helps overcome landlord barriers to data collection. For multitenant buildings, local utilities provide whole-building data to owners of commercial buildings with three or more active utility accounts or residential buildings with five or more active utility accounts upon request.

Washington, D.C.: The local utility provides aggregate whole-building data for buildings with more than five utility meters. For the rest, buildings can request the data from tenants, but if tenants do not provide the data within 30 days, the city fines them directly (up to $100 per day).

Budgets

Real estate owners typically forecast expenses five to 10 years into the future, so that they can finance investments as part of new construction or a long-term capital plan. Setting long-term goals with a clear, quantifiable financial incentive for compliance (and/or penalty for noncompliance) will help owners plan for the investments they will need to make to achieve compliance targets.

Ensuring that fines are easily calculated and have a clear timeline also helps future buyers factor the cost of compliance or the fine into a building's overall purchase price. This incentivizes the current owner to either make improvements in advance of a sale or the future owner to build retrofit investments into the capital plan during acquisition.

Role for Real Estate

- **Determine and share the economic impacts of potential draft city policies:** Helping policymakers understand the most cost-effective policy aligns private-sector and city goals.

- **Understand the benefits:** Strategic investments in efficiency can pay back through reduced utility expenses, lower maintenance costs, and happier tenants.

- **Implement green leasing:** Including green leasing provisions in new tenant leases can help align owners and tenants and help ensure that whole-building data can be collected.

- **Engage stakeholders**: Educate tenants and other building-level stakeholders on the impacts of new policies as soon as they pass, not just when the compliance period comes around. Additional materials on how these stakeholders can support building decarbonization through sustainable tenant fit outs or sustainable building operations ensures that they can support the building in meeting all goals.

- **Plan for the future**: Start incorporating decarbonization capital investments in long-term underwriting and budget planning today.
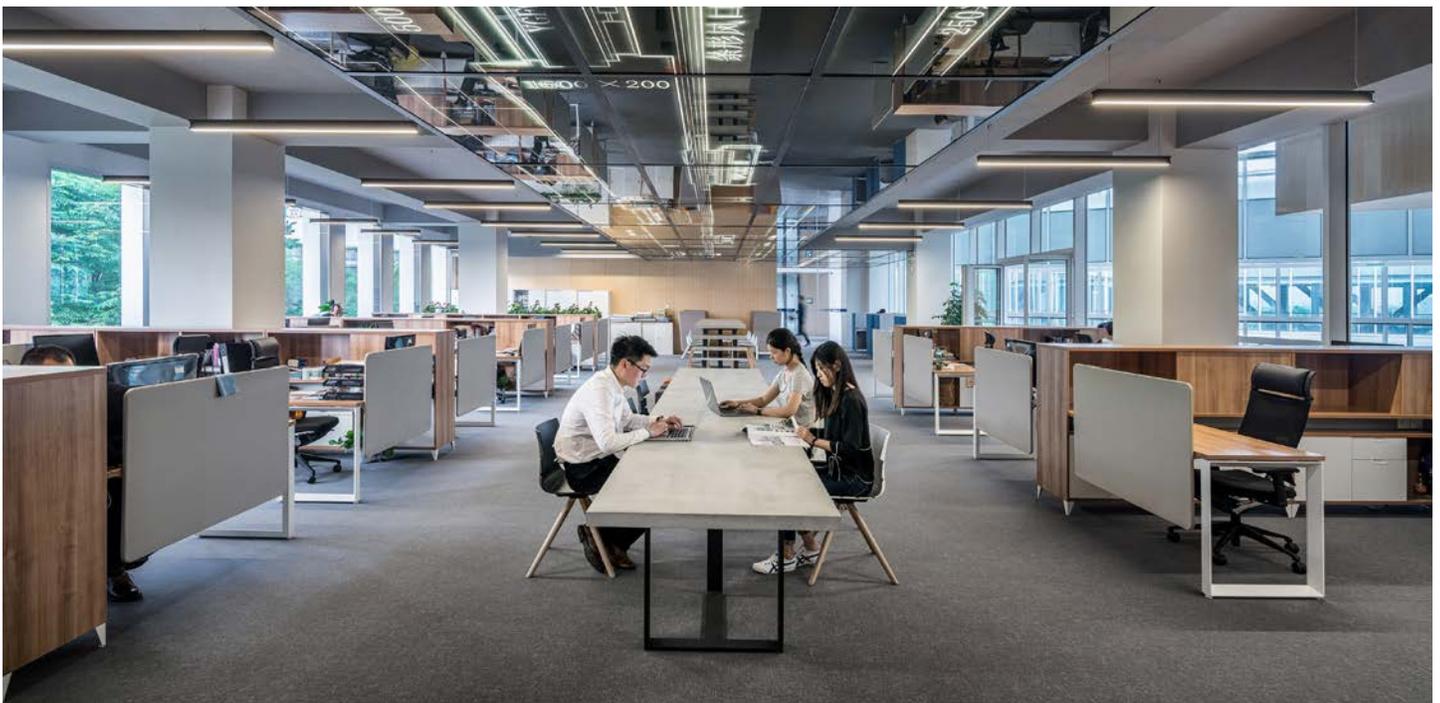
"Thorough engagement with real estate owners ensures that city climate mitigation policies remove common obstacles to compliance and help support our own internal energy reduction goals. In particular, well-crafted climate policy helps us better engage tenants on sustainability by supporting whole-building data collection and providing flexibility in how energy savings projects are implemented."

—Becca Rushin, vice president, sustainability and corporate social responsibility, Jamestown Properties

Policy Examples

Rethinking a green roof ordinance (Denver). In 2017, voters in Denver passed an ordinance requiring new and existing buildings over 25,000 square feet to install a green roof during construction or roof replacement. However, the quickly passed ordinance had major obstacles to compliance: in many cases, the upfront construction costs could be prohibitive, and many existing roofs were structurally unable to support a green roof's weight. As a result, many building owners chose to freeze construction. In response, the city convened a task force representing real estate, construction, academia, and government to evaluate the ordinance and recommend modifications that would achieve more feasible, cost-effective approaches to sustainability.

Under the revised ordinance, all buildings covered by the original ordinance must at least have a cool roof, which is a roof painted white to reflect solar heat. If the building cannot install the required green roof or roof solar panels, buildings can either purchase renewable energy, achieve LEED Gold certification, or pay a fee that the city can use to purchase or improve green space, both on building roofs and the ground. The task force's comprehensive Green Buildings Ordinance, adopted in October 2018, creates up to 3.5 million square feet of additional green space by 2050 (compared with the original ordinance), improves stormwater management, increases flexibility in building design and efficiency requirements, and lowers compliance costs by 20 to 90 percent.

4 ALIGN WITH THE LARGER POLICY ECOSYSTEM

Directing all policies toward the same goal ensures consistency, resulting in city policies that build off state policies and new developments that do not immediately face fines under existing building policies.

Be Specific

Although cities drive a significant amount of climate action, they are not acting in a vacuum. Some cities looking to act on climate change are in states with legislatures that can constrain a city's goals or policy development. Policy alignment with other layers of regulations impacting the building sector is key to successful implementation. In addition, cities have varying levels of resources and economic and legislative tools within their local markets. Ultimately, the strength and dynamics of the market shapes the possible policy solutions and the trajectory of building decarbonization.

Streamline Policies

Many real estate owners and developers operate in multiple markets, so complying with new policies is easier if the requirements are similar to those in similar cities. Cities have already taken up this idea to streamline and simplify some processes, with most requiring data for energy benchmarking to be submitted through the U.S. Environmental Protection Agency's Energy Star Portfolio Manager, a free online tool that allows buildings to track their energy, water, and waste data. Simple approaches already in use help drive compliance, such as benchmarking in Portfolio Manager, which the average contractor or building owner can understand.

Getting the details of a policy and the operational strategy for implementation in alignment with others also helps real estate stakeholders understand what will be required of them and reduces friction. Examples of this include ensuring that current building code provides an easy pathway for new construction to meet climate action plan goals and milestones or that all policies within a city use similar metrics and timelines. For cities working within states that have restrictions on changes to building code or other political limitations, additional voluntary programs and incentives can help drive the market.

In addition, new building and existing building policies should all work toward the same goals, with design standards and incentives for new buildings resulting in buildings capable of achieving operational performance standards. Working together ensures that incentives available from the city or local utility push toward the city's long-term goals and do not provide incentives for technologies that will eventually be against policy, such as funding slightly more energy-efficient gas-fired boilers, if the long-term goal is to electrify buildings.

Role for Real Estate

- **Make connections:** There are multiple different city departments that regulate buildings, often working within their own silo. Reminding policymakers focused on climate mitigation to connect with other building regulators, such as building codes, zoning, utilities, transportation planning, and even historic preservation, ensures that policies are aligned and that they are working toward the same goals.

- **Incorporate sustainability in design:** Considering energy performance during building design and construction ensures maximum energy and cost savings benefits for building owners. Thinking ahead can also save buildings on future energy performance standards compliance costs, a real concern as more cities move to pass policies.
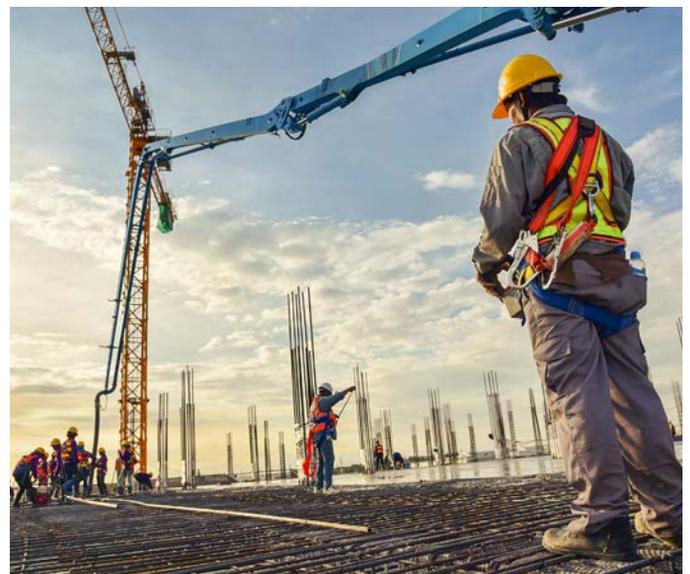
Policy Examples

Balancing state and local policy priorities (Berkeley, California).
In July 2019, Berkeley passed the first ordinance in the United States prohibiting natural gas in new buildings. The ordinance became effective January 1, 2020, and applies to all new projects applying for a land use permit. A key issue considered in the development of this policy was the ability to comply with the California State Energy Code (Title 24, Part 6). The energy code is updated on a triannual cycle, with the newest version of code effective January 1, 2020. The new version of code provides a baseline for all-electric buildings and an easy path for all-electric low-rise buildings but presents some barriers for high-rise buildings. To address these complications, Berkeley provides an exemption from the gas prohibition for projects applying for a land use permit with an exemption for all-electric that would not comply with code, along with a reach code that allows a mixed-fuel option. (The city offers a comparison of the natural gas prohibition and reach code for electrification here.)

Building code exemption (Philadelphia). In Pennsylvania, city governments are required to adopt the same building code as the state. However, in 2018, after a one-time exemption was granted in the state legislature, Philadelphia's city council was authorized to adopt the 2018 International Building Code instead of the 2015 code with the rest of the state. By coordinating with the legislature, Philadelphia was one of the first cities in the United States to adopt this new energy code, making the city's buildings even more energy efficient and cost-effective.

Importance of coordinating timelines and metrics (New York City). New York City recently passed two different policies that address energy use in city buildings: Local Law 33 (LL33) and Local Law 97 (LL97). Starting in 2020, LL33 mandates that building energy efficiency grades, from A to F, are to be displayed at building entrances. Grades will be based on Energy Star scores (A: 85+; B: 70–84; C: 55–69; D: 0–54; F: buildings that do not submit data; N: exempt), but the building display will show both the grade and the overall score. LL97 sets emissions intensity standards for residential or commercial buildings over 25,000 square feet starting in 2024 and becoming more stringent in 2030. Buildings that do not meet these standards will receive a fine. Although the 2024 deadline will affect only the 20 percent most carbon intensive buildings, the 2030 deadline will affect 75 percent of buildings.

LL33's calculated performance is based on Energy Star scores, which compares a building's actual energy use data to an ideal estimate to determine where the building ranks relative to its peers. LL97 measures performance on the basis of emissions intensity (metric tons of carbon dioxide equivalent per square foot). LL33 and LL97 use different metrics, which may result in some buildings that receive an A grade receiving substantial fines and other buildings that get a D having no fine.

Successful climate mitigation policies that garner broad support consider more than just the buildings; they also support a city's broader social and economic goals.

5 CONNECT TO A CITY'S OTHER SOCIAL AND ECONOMIC GOALS

Leveraging the opportunities to address public health, workforce development, social equity, and transportation in achieving energy efficiency and climate mitigation creates policies that achieve more benefits for the community.

Opportunities for Synergy

Building-sector decarbonization goals that complement a city's goals for resilience, public health, workforce development, social equity, and transportation will be more durable to opposition, and will provide a broader range of positive impacts for cities. By working to find areas of collaboration between these goals, the community receives more benefits from the decarbonization of real estate. Some cities have sought to address all of these topics within their Climate Action Plans or Resilience Strategies, developing the plans with interdepartmental working groups that will have a range of responsibilities for implementation. Areas presenting opportunities for synergy with climate mitigation can include the following:

• **Resilience:** Climate mitigation efforts should align and be coordinated with climate adaptation goals and/or city Resilience Strategies. These efforts may address topics ranging from citywide land use strategy for flood-vulnerable sites to building elevation, green infrastructure incorporation, back-up power provisions, and policies for community development and social resilience. Increasingly, these topics are being addressed in city planning and zoning policies, and many cities also offer rebates or incentives to incentivize resilient design features that better manage stormwater, address urban heat island, or otherwise help buildings and occupants be prepared for the impacts of climate change. Furthermore, if building owners are undertaking improvements to adhere to new mitigation policies, incorporating resilient features at the same time can help with financing.

• **Public health**: Climate change has already led to even more extreme summers, putting young children, the elderly, and low-income households without air conditioning at risk from heat. New climate policies to reduce heat (like low-albedo roofs and pavements, enhanced tree planting, green roofs, and operable windows) or to

improve indoor air quality (using low-volatile organic compound materials, green cleaning techniques, or monitoring indoor air quality) can address public health risk and provide benefits that extend beyond carbon reductions. Other complementary policies focused on green space also offer important public health and community quality of life benefits related to exercise and recreation.

• **Workforce development:** To implement building upgrades, there needs to be a market with enough qualified service providers to meet demand. Workforce development programs focused on technologies for climate mitigation can help ensure that low-income and minority communities have access to these jobs and the new clean energy economy.

• **Social equity and environmental justice:** Low-income communities and communities of color often face the brunt of the negative impacts of climate change and have the fewest resources to be able to prepare for and bounce back from climate events. But strategies to reduce emissions and enhance sustainability and resilience can introduce a potential financial burden to homeowners and affordable housing providers, even if they may introduce long-term operational savings. For example, will rents need to be raised to finance a solar roof to meet ordinance requirements? Will that balance out if the residents' energy cost burden is reduced? Issues of racial and social equity need to be considered from policy proposal to implementation.

• **Transportation and land use:** The increased popularity of urban living and mixed-use "live/work/play" development centers present significant opportunities for a more sustainable urban footprint. As interest in urban living surges, many cities increasingly are prioritizing policies for high-density development, but these policies can lead to increased vehicle traffic and emissions without corresponding investment in transit and sound land use strategies. Implementing policies that reduce barriers to mixed-use development, incentivizing development at transit sites, and/or financing additional public transportation options can reduce scope 3 emissions at a building. Also, the public and private sector can jointly fund investment in required new transit infrastructure, such as in Boston, where a real estate developer in one neighborhood chose to pay for an extra commuter train during rush hour for 10 years, instead of adding extra parking on site.

Role for Real Estate

- **Measure the benefits of climate action efforts beyond reduced greenhouse gas emissions:** Analyze, understand, and communicate the triple-bottom line benefits of projects to explain investment decisions. Think outside the box to incorporate non-energy benefits into the financial calculation and seek complementary funding sources if available.

- Better understand the secondary economic impacts of developments that enhance public health and social equity, including better community relations, increased retail traffic and sales, lower worker/resident turnover and reduced absenteeism, and enhanced brand equity for creating community benefits.

Policy Examples

Sustainability, equity, and resilience (Cincinnati). Green Cincinnati, the city's long-term sustainability plan passed in 2018, includes 80 strategies to reduce the city's carbon emissions 80 percent by 2050. Greenhouse gas and energy efficiency are tied to an array of other quantitative goals, such as equity, by reducing the energy burden on low-income households by 10 percent; transportation, by increasing passenger miles on public transit and prioritizing transit-oriented development; workforce development, by partnering with universities and businesses on green job training programs for low-income residents; and resilience, by decreasing childhood asthma-related hospital admissions in target neighborhoods by 50 percent.

Ensuring housing affordability (Seattle). The Seattle Housing Affordability Policy Calculator is a tool that breaks down the impact of various housing and development-related city policies on market-rate rent. The tool features common affordability policies, such as mandatory set-asides for affordable units; in addition, the tool is comprehensive, also calculating for the impact of climate actions, such as following stricter energy codes or open space and landscaping requirements, among other policies. The calculator illustrates the impact of common climate goals on citywide housing affordability and development potential and points out specific policies that could counterbalance these impacts and help keep housing attainable at multiple income levels.

Climate justice (Providence, Rhode Island). After setting a goal to achieve carbon neutrality by 2050, Providence's 2019 Climate Justice Plan includes seven key objectives and 50 strategies to create both an equitable and low-carbon city. Carbon pollution disproportionately harms disadvantaged communities, through increase pollution and poor health outcomes. To ensure an equitable outcome, the climate justice plan defined the role of equity and environmental justice at the outset, led community education programs and trainings on energy democracy, hosted peer-led community interviews, based solutions on the priorities of disadvantaged communities, and took feedback on proposed solutions. Resulting strategies within the housing and buildings objective were to reduce displacement, initiate community benefit agreements for large development projects, pass a building energy reporting ordinance and make the information public, explore the possibility of mandatory emissions reductions for large buildings, and expand access to existing energy efficiency programs.

> **"In creating [the Climate Justice Plan], we chose to lead with equity and partnered with those who are most impacted by the climate crisis and other environmental injustices."**
>
> —Mayor Jorge O. Elorza, Providence, Letter from the Mayor, *The City of Providence's Climate Justice Plan,* October 2019

6 BE COMPREHENSIVE

Subjecting all buildings in a city to a new ordinance supports collaboration and impact and can potentially cross-subsidize capital improvements across building types.

All Buildings Should Participate

Policies that both require and make it possible for all buildings—including municipal, commercial, residential, affordable housing, institutional, hospital, and other properties—to comply with new decarbonization policies maximize their impact toward a city's goals. Different owners and property types have different needs when it comes to technology, education, and financing to make sustainability improvements, but the more demand there is for supplies and a workforce, the easier and less costly it becomes to comply. It also increases the potential for best practice sharing across industries as well as building emissions trading programs, which can increase the economic efficiency of building decarbonization.

Support Building Owners Who Need the Most Help to Comply

Although industry sectors such as affordable housing are more financially constrained, alternative pathways can support their compliance, benefiting those living in the buildings by lowering their energy bills and improving tenant comfort. Also, there may be new financing options available under these policies, with some cities putting fines collected from noncompliant commercial buildings toward improvements in disadvantaged schools and affordable housing sectors. Using these strategies, emissions reductions can be accomplished in a more equitable and cost-effective manner.

Role for Real Estate

- **Collaborate:** Recognize real estate's potential to help create a thriving and equitable community. Be attuned to issues that could impact the long-term prosperity of the communities because the properties' financial performance depends on the surrounding communities thriving. In markets that include carbon credits, consider investing in carbon reduction in other buildings—find the lowest cost, highest return on investment (ROI) opportunities to reduce carbon emissions (which may not be in your building).

- **Learn from public buildings:** In some markets, public buildings will lead with new technology, greater procurement power, and the ability to invest in technologies and strategies that have a much longer ROI. Owners should look to leverage cities for their technology experience and procurement power, and also help public buildings pursue private-sector strategies for enhanced energy and carbon performance.

- **Share lessons learned:** Many building owners lack the finances and knowledge to implement energy efficiency projects. Share successful projects through case studies that include financial details (investment, kilowatt-hour savings, and cost savings) to help educate the broader market on the strong business case for energy efficiency with the city and industry organizations.

Policy Examples

Net zero for all (global). Through C40 Cities, 19 global mayors have committed to achieve net-zero carbon for all new buildings by 2030 and for all buildings by 2050. By making this commitment, each city agrees to establish a pathway to net-zero carbon, to develop incentives and initiatives, and to report on progress. Thirteen of the 19 cities—including Copenhagen, Johannesburg, Montreal, Newburyport, Paris, Portland, San Jose, Santa Monica, Stockholm, Sydney, Toronto, Tshwane, and Vancouver—pledge to only owning, occupying, and developing assets that are net-zero carbon by 2030, 20 years ahead of the 2050 deadline. By committing to this goal, new technologies and strategies, and the specialized workforce used to achieve net zero in municipal buildings can be shared with private developments.

Incorporating rental buildings (Burlington, Vermont). Burlington's Time of Sale Energy Efficiency Ordinance requires that owners of rental housing in which tenants pay heating costs conduct inspections and improvements to the thermal performance of the building when buildings are sold. Required improvements include enhanced insulation and improved sealing and are capped at 3 percent of sale price or $1,300 per unit, whichever is less; in addition, all measures with a simple payback of 7 years or less are also mandatory. The ordinance helps ensure that rental housing of all sizes is included within broader buildings-related climate goals.

From single-family to high-rise commercial development (Santa Monica, California). In Santa Monica, the 2016 energy code update specified that all new single-family and low-rise residential construction must be designed to use 15 percent less energy than allowed under the state energy code, and must achieve a net-zero energy rating. High-rise residential, commercial, and hotels must be designed to use 10 percent less energy than the state code.

City buildings leading the way (Los Angeles). In February 2020, Los Angeles Mayor Eric Garcetti issued Executive Directive 25, known as "L.A.'s Green New Deal: Leading by Example." Included in this broad vision for sustainability and climate resilience is the notable step of ensuring that "all new municipally owned buildings or major renovations be designed to reach carbon neutrality by 2030" through a mix of energy efficiency, design, on-site renewables, and electrification. In addition, the directive formally adopts the Buy Clean California Act, which rates the embodied carbon of building materials and directs municipal buildings to use materials with lower "global warming potential"; it even directs the city Bureau of Engineering to research and recommend materials that sequester carbon. At the time of this directive, Los Angeles became the largest U.S. city to pursue zero-carbon/all-electric municipal buildings, amidst a rapidly evolving California building energy landscape: 26 cities and counties have adopted new building codes requiring all new buildings to be all-electric, and state law mandates that all new residential buildings be zero net energy (ZNE), with new commercial buildings needing to follow suit by 2030. By applying this comprehensive suite of building energy and carbon measures to its own buildings first, the city provides clear guidance for real estate.
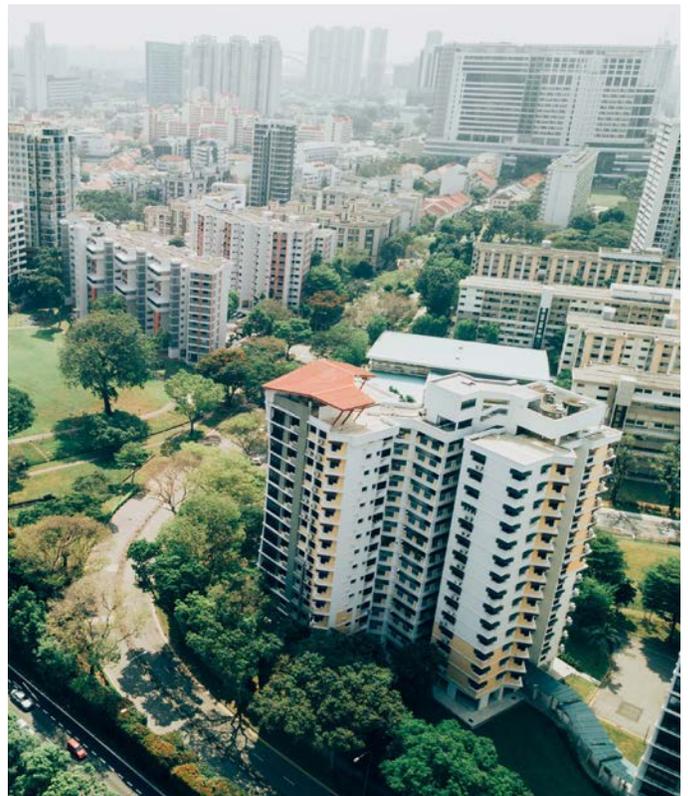
7 PRIORITIZE EXISTING BUILDINGS

Recognizing that every market is different, tailoring incentives and regulations to existing buildings has a greater overall impact than focusing only on new construction.

Recognize the Impact

Incentives for low-emissions new development, such as density bonuses and height allowances, are common, but the majority of a city's building stock in 2050 is already in existence today and the bulk of projected future emissions from buildings will come from these existing buildings. To address this, comprehensive climate action plans need to start with regulations and incentives for the existing building market—not just new developments. Prioritizing existing buildings for redevelopment can also support overall city climate goals because reusing and redeveloping existing buildings instead of building from the ground up lowers the overall embodied carbon emissions.

Timing

Incentives for incorporating electrification and energy efficiency into existing buildings are often specific to different intervention points in a building's lifecycle such as lease turnover, the purchase or sale of a building, or a major renovation. Some incentives are technically free to the city, such as expedited permitting and density bonuses, but others come at an immediate cost, like cash rebates for green building certifications or property tax credits. The most important thing in encouraging uptake is to ensure that the incentive is desirable enough to real estate to drive adoption, and that the terms of the incentive are achievable.

For newer existing buildings, some cities provide a grace period, allowing newly constructed buildings a window of time before they must begin compliance with existing building requirements. For example, Seattle's Building Tune-Ups Ordinance allows newly constructed or substantially altered projects with a certificate of occupancy dated less than three years before the building's Tune-Up deadline to submit for an alternative compliance pathway. Exempting new buildings from some compliance expectations makes more sense when the building is built to standards that ensure it can comply with the city's short-term climate goals (such as a building built to LEED Gold V4.1 in 2019); but even these buildings designed for high performance may be included in near-term future compliance cycles (usually within three to five years).

Role for Real Estate

• **Stay involved**: Contribute real estate insights and market appetite for potential policy choices so that policymakers understand what's most valuable or motivating in each specific locality.

• **Work portfolio-wide:** Lessons learned from one property's retrofit can help other buildings in your portfolio make similar changes and achieve similar benefits. Strategize on efficiency improvement projects for existing buildings as well as new developments to be prepared for future emissions/performance requirements from the city.

• **Start now:** Almost every building has cost-effective opportunities to improve energy efficiency, and early progress will provide a head start to emerging city goals and regulations.

Policy Examples

Benchmarking and audits (Austin). Austin's Energy Conservation Audit and Disclosure requires energy audits and disclosures for all homes and buildings, especially at point of sale or rental for residential and multifamily properties. The city hopes that property owners will use audit results to make improvements in energy efficiency and use those savings to create a competitive edge for attracting tenants. Large multifamily residential buildings with excessive energy usage (150 percent or more above similar nearby properties) must reduce energy usage by 20 percent. Austin Energy, the local utility, provides rebates of $400 per kilowatt saved, up to $300,000 per site per year, to offset the cost of efficiency upgrades. Rebates cover a wide range of improvements, such as heating, ventilation, and air conditioning systems, lighting, and reflective roof coatings, among others.

Phasing out old technology (Montreal). Montreal is gradually phasing out the use of oil for heating in all buildings over the next decade. Municipal buildings will lead, replacing all oil furnaces by 2021. Industrial and commercial buildings will have until 2025 to convert to a renewable system, and residential buildings will have until 2030. Although oil systems have become far less commonplace, they still represent 14 percent of commercial and industrial emissions within the city, meaning a phaseout will accomplish significant progress toward the city's goal of carbon neutrality.

Building performance standards (Philadelphia). Created in 2019, Philadelphia's Building Energy Performance Program requires all nonresidential buildings over 50,000 square feet to conduct energy inspections and carry out recommended tune-ups, or upgrades, of energy systems and controls. The city estimates that the policy will save millions in operations costs for building operators and tenants, create up to 600 jobs, and cut carbon pollution by nearly 200,000 metric tons—the equivalent of taking 40,000 cars off the road.

Retrofitting existing buildings (Washington, D.C.). Clean Energy DC, the District's plan to reduce energy use and carbon emissions by 50 percent by 2032, highlights that retrofitting existing buildings for efficiency will be twice as effective for energy and carbon reduction as requiring highly efficient new construction. The plan has three times more strategies for existing buildings than for new construction, including the creation of incentives for a District-wide retrofit program.
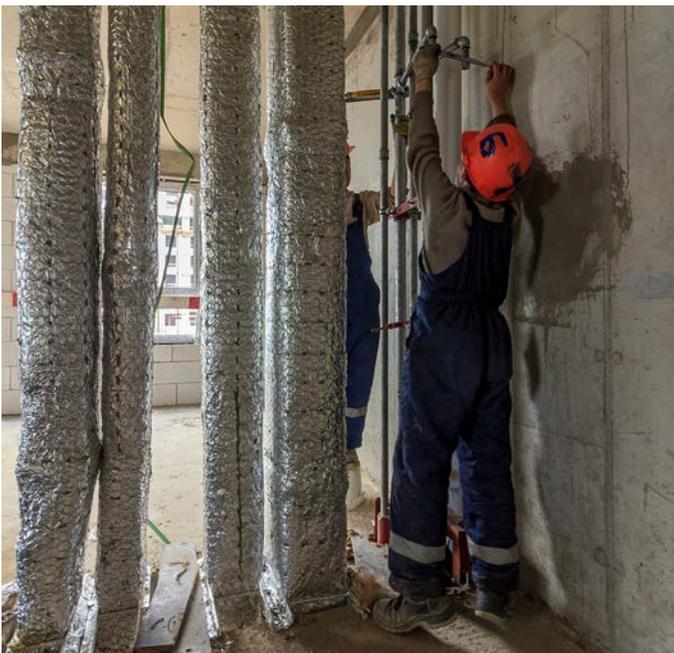
Compliance and performance over time measure the success of a policy. By ensuring that all buildings have a pathway to compliance and access to the proper technical assistance and financing to make improvements, progress can be made toward the ultimate emissions reduction goal.

8 BE FLEXIBLE IN ACHIEVING GOALS

Simplifying requirements enough for everyone in the industry to understand and providing multiple pathways to compliance improves participation.

Cost-Effective Compliance Pathways

Multiple pathways to compliance allow real estate owners to pick their preferred way of following new regulations. For example, cities with audit requirements often offer multiple pathways to compliance, such as conduct an audit and (a) implement all measures that have less than a three-year payback or (b) achieve a 15 percent energy efficiency improvement. This flexibility still leads to energy and emissions reductions, but buildings can take advantage of different energy conservation measures and financing options.

The goal of multiple compliance pathways is to find the most cost-effective way to get carbon out of the atmosphere. Setting up an emissions trading scheme may be another way to provide flexibility in meeting carbon reduction targets. These systems promote investments in opportunities to reduce emissions in local buildings while ensuring that all building owners pay for their share of emissions reductions.

Phased Timelines, with the Cost of Noncompliance Set Upfront

Policy implementation with phased in timelines by size, sector, requirements, and penalties helps improve compliance rates. Often, municipal buildings are the first to comply, indicating the city's commitment to the emissions reductions goals and to testing new technologies. However, voluntary pre-policy pilot programs with real estate leaders also promote early compliance, help demonstrate what is possible for the market, and often provide incentives. These leaders can then share lessons learned with the broader market and increase awareness of the upcoming policy implementation.

Role for Real Estate

- **Participate in pilots:** Whenever possible, take advantage of pilot programs for early compliance to access additional incentives and technical support. These opportunities can often lower the costs of compliance, provide an opportunity to learn from and scale across a real estate portfolio, and help the city understand how to improve the policy going forward.

- **Plan ahead:** Devise capital plans and budgets for investments to meet new policy requirements. Work the cost of compliance into your capital plan, your development pro forma, and your assessments when buying and selling a building. Be sure to also include the cost of fines for noncompliance in the business case for investing in upgrades to meet policy compliance targets.

Policy Examples

Alternative and early compliance pathways (Seattle). The Seattle Buildings Tune-Ups Ordinance was adopted in 2016 and requires commercial buildings over 50,000 square feet to undergo a tune-up process to assess their buildings for operational and maintenance problems and to make required corrections. There are also alternative pathways for buildings to comply, including the following:

- A certified Energy Star score (greater than 90 for buildings over 100,000 square feet or greater than 85 for buildings of 50,000 to 100,000 square feet)
- LEED Gold or Platinum Operations and Management certification
- Living Building, Petal, or Net-Zero-Energy Certification
- A low EUI (equal to or less than 20 kBtu per square foot)
- Participation in and documentation of ongoing commissioning
- Completion of retro-commissioning
- Completion of ASHRAE level II audit recommendations
- Reduction of EUI by 15 percent or more
- Substantial building alteration or new construction
- Participation in the Seattle City Light (local utility) Energy Analysis Assistant Existing Building Program

The ordinance uses a phased-in approach with larger buildings required to comply first, allowing time for smaller buildings to learn about the policy, find a contractor, and build the cost into the building's budget. The city created a Tune-Up Accelerator Program, funded by the U.S. Department of Energy, to help small- to mid-size buildings (50,000 to 100,000 square feet) comply with the ordinance one to two years ahead of the mandated deadline. Because these actions were done voluntarily by building owners and not because of regulations, the city was also able to offer a time-limited incentive of $0.12 per square foot with the local electric utility.

Because Seattle already had a benchmarking policy in place, the city was able to do mass outreach to affected building owners and managers as well as engage partner organizations to identify participants. Ultimately, about 20 percent of buildings (102 total) participated in the Accelerator Program, lowering the number of buildings that still need to comply and helping the city hone the process for the first compliance date. Data from the pilot showed that participants spent about $0.21 per square foot to meet the ordinance requirements and that the required changes were mainly operational (turning off equipment on weekends) and basic maintenance (fixing broken sensors). Some of the pilot buildings went above ordinance compliance and completed additional energy efficiency projects. A survey of approximately 50 percent of participating buildings showed that 80 percent reported implementing or planning for additional voluntary conservation measures beyond the tune-up requirements.

"Each building is different and so Seattle's multiple Building Tune-Ups compliance pathways allow industry leaders to continue going above current requirements and ensures that each building has the tools to comply. The city values collaborating with real estate owners working to reduce energy use and emissions—they are a key part of our Seattle goal of a carbon-neutral future by 2050."

—Nicole Ballinger, City of Seattle Office of Sustainability and Environment

Commercial energy code compliance (Boulder, Colorado).
Under Boulder's recently revised Energy Conservation Code,
which sets minimum energy conservation requirements for
new buildings or for major existing buildings alterations, there
are multiple paths of compliance for commercial buildings of
20,000 square feet or less. Buildings can either demonstrate
compliance through predictive modeling that demonstrates
energy performance of 30 percent greater than ASHRAE/IENSA
Standard 90.1, such as the requirements for buildings over
20,000 square feet, or use approved prescriptive standards that
achieve energy performance of at least 30 percent better than
the 2012 edition of the International Energy Conservation Code.

Building performance standard compliance pathways
(Washington, D.C.). Washington's Building Energy Performance
Standard, passed in 2018, requires buildings over 50,000 square
feet to meet a specific energy-performance threshold or else
be required to improve their energy efficiency over a five-year
compliance period starting in 2021. However, there are multiple
pathways to achieve compliance:

• Performance: Requires a building to demonstrate a 20 percent
  or more decrease in normalized site energy use intensity.
  This intensity is averaged over the last two years of the
  five-year cycle.

• Prescriptive: List of cost-effective energy conservation
  measures for building owners to achieve reductions and improve
  performance. The District is currently developing this list with a
  stakeholder task force.

• Other pathways determined by the District with help from the
  stakeholder task force.

9 FOSTER A MARKETPLACE OF SUPPORT

Convene resources in one location to support education, technical assistance, financing, and training to identify opportunities and provide technical support.

Education and Technical Support

To achieve aggressive climate goals like carbon neutrality by 2050, building owners of all sizes will be required to get their buildings to net-zero carbon operations. Although large Class A building owners (less than 100,000 square feet) often have on-site building engineers and possibly even staff focused on sustainability efforts, building owners with a small portfolio of investment properties will also need resources to comply. Similarly, building professionals will need education on how to incorporate new technologies that maximize building efficiency into their everyday roles.

By creating one central "hub" or guide to support education, technical assistance, and training that is hosted either by the city or a partner organization, smaller owners can obtain adequate resources for compliance. Resource centers also act as a convener of stakeholders, hosting trainings as well as networking events with service providers and vendors who provide technical support.

Supporting the soft costs at the front end of a retrofit project is important and often out of reach for many building owners, but resource centers can provide information on incentives and financing options. With so many public and private organizations offering advice on specific areas of sustainable real estate, combining them achieves better results.

Because resource centers require funding, public/private partnerships often play a role in their creation and management by updating resources and interfacing with owners who need more support. With many cities having one or more organizations/nonprofits in the area supporting their climate goals, a partnership can help the city reach an already created stakeholder group and share costs.

Financial Support

Financing programs are necessary resources that cities can leverage to support the real estate community in meeting their goals, especially smaller owners with fewer financing resources to support their compliance with lofty emissions reductions goals. Making information about these resources a central part of a climate action program is necessary to help building owners weigh their options for making improvements. Beyond utility incentives, public mechanisms such as Commercial Property Assessed Clean Energy (C-PACE) and Green Banks can be set up by a city to support investments in clean energy technologies and retrofits in buildings. If these programs can offer better financial terms than owners would get in the private marketplace, cities can accelerate the uptake of investments in energy efficiency and renewable energy and accelerate the private sectors' progress toward city climate action goals.

Role for Real Estate

- **Go big:** Take projects beyond basic compliance and achieve additional value by leveraging available public resources to train staff or to pilot new technologies, and by sharing best practices with others.

- **Take the help:** Take advantage of the marketplace of support, and let the city know what resources, information, financing, and guidance would be most useful to comply with new building requirements.

Policy Examples

A comprehensive resource center (Los Angeles). The Los Angeles Existing Buildings Energy and Water Efficiency Ordinance requires buildings more than 20,000 square feet to publicly report annual energy and water consumption, and starting soon, it will require covered buildings to achieve certain performance targets on the basis of the benchmarking results. At first, to comply with this ordinance, building owners had to visit at least four different websites to collect piecemeal information.

To help buildings navigate the process more efficiently, the Los Angeles Better Buildings Challenge created the Los Angeles Energy and Water Efficiency Resource Center and developed a comprehensive Benchmarking Guide, which consolidates benchmarking information from four separate sources into a single comprehensive resource. Questions submitted through the Resource Center's website receive instant automated email responses, with links to relevant resources by topic, and those questions are automatically logged in a database for follow-up and resolution by Resource Center staff. The Resource Center is also doing proactive outreach to improve data quality, identifying the most prevalent issues and reaching out to help resolve them. But this Resource Center is not about "comply and goodbye"—it helps building owners understand their buildings' performance and identify potential savings opportunities, and it connects building owners with incentives from local utilities.

"Benchmarking is fundamental to a successful sustainability initiative, whether that's within a portfolio or across a city. Simplifying the process and leveraging technology to provide good customer service have been key to our success engaging over 17,000 customers in the past three years."

—David Hodgins, executive director, Los Angeles Better Buildings Challenge

C-PACE financing (nationwide). C-PACE is a long-term financing program for energy- and climate-related property improvements. Many projects focus on efficiency or renewables generation, but resiliency measures like building hardening are also eligible. A C-PACE program covers 100 percent of upfront project costs and is repaid over 20 or 30 years by a tax assessment that remains attached to the property, even if a property is sold. Participation is often cash flow positive immediately because annual energy cost savings tend to outweigh the tax assessment.

C-PACE has been adopted around the country, with active projects in 20 states and the District of Columbia and enabling legislation in another 16 states. Local governments can participate in state-run programs, which is done in cities such as Buffalo, New York, or Providence, Rhode Island, or they can oversee their own programs, such as in Columbus, Ohio, whose regional program has seen investments of nearly $100 million—the largest total C-PACE investment of any metro region in the United States. The C-PACE program covers a capital gap for energy and climate projects and is key to incentivizing private participation in broader climate action goals.

Accelerating retrofits (New York City). To support New York City's goal of 80 percent emissions reduction by 2050, the Retrofit Accelerator provides targeted outreach and free, personalized advisory services to help building owners streamline the process of improving energy and water efficiency. This free resource provides building owners with expert project managers that help find opportunities for improvement. Specifically, the Accelerator

- Works with building owners one-on-one to understand specific concerns;
- Connects owners with qualified contractors to complete suggested projects;
- Connects owners with incentives and rebates available to cover the cost of retrofits; and
- Trains building staff to run property efficiently after the retrofit.

Resulting projects help building owners lower costs and provide greater tenant comfort in addition to the associated emissions reductions.

10 ENSURE COMPLIANCE, REWARD SUCCESS, AND ACCELERATE TRANSFORMATION

Implementing meaningful but scaled penalties for noncompliance while recognizing achievements can help drive the desired decarbonization.

Fines

Penalties for noncompliance are the teeth behind implementing a new climate mitigation policy, however, there are multiple ways to penalize buildings in a way that disincentivizes long-term nonperformance and incentivizes corrective action. If fines are not substantial enough and instead are cheaper to pay than to implement energy conservation or electrification measures, progress will not be made toward climate mitigation goals.

To overcome this issue, cities are considering raising penalties for repeat offenders versus one-year offenders and even looking beyond owners to penalize tenants for not following the regulations. Even the specific term used for penalty, whether fines, fees, or taxes, has implications for whether it will motivate the right stakeholder because based on the lease, landlords can be responsible for some things, such as taxes, and tenants can be responsible for other things, such as fines. By setting these penalties far in advance of compliance deadlines, owners can work the cost of compliance and noncompliance into their capital plans for their building, and into the sales price and underwriting for future real estate transactions.

Other Penalties

There are a wide range of penalties that get the attention of building owners, both financial and nonfinancial. Penalties can take several forms, either by total building square footage, as a percent of construction costs, or per day of noncompliance. Nonfinancial penalties can be administrative, such as stopping building permits and occupancy certificates or placing buildings on public "shame lists" that vendors can access and use for targeted outreach. Money raised under these policies can be used to subsidize decarbonization efforts cost effectively in harder-to-address building typologies (e.g., affordable housing).

Positive Reinforcement

Cities use a range of "carrots," both financial and nonfinancial, to help buildings surpass their compliance goals without requiring a fine or to help buildings pursue an alternative compliance pathway that gets them well on the road to the city's overall climate goals. Nonfinancial rewards include public recognition of high-performing buildings; this type of reward is highly desirable to building owners because they can tout their success to current and potential tenants as well as to internal organizational leadership to encourage further investment in sustainability. Showcasing early real estate leaders in a visible way to their competitors (like getting a photo with the mayor) can drive action, quickly.

Role for Real Estate

- **Understand the costs of noncompliance:** Building owners should calculate the financial and nonfinancial costs for not complying with new regulations when determining where to make building-level investments in decarbonization.

- **Comply:** Ensure that properties meet/exceed the new climate policy requirements to demonstrate commitment to climate mitigation and to avoid penalties.

Policy Examples

Performance penalties (United Kingdom). Across the European Union, Energy Performance Certificates rate the energy efficiency of a building (on a scale from A to G, with G being the worst), with the ratings required to be publicly accessible for all buildings to be sold or rented. Starting in 2018, commercial properties in the United Kingdom with an energy performance rating of F or G will no longer be able to be leased. By 2020, the requirements will apply to both new and existing leases in residential properties, and by 2023, the same requirements will apply to all commercial leases. With an estimated 18 percent of commercial properties and 10 percent of residential properties in England and Wales in the F or G categories, about £727 billion (US$941 billion) in asset value could be unrentable.

Fee for noncompliance a percent of construction costs
(Miami Beach). In Miami Beach, all new developments more than 7,000 square feet must be LEED Gold for New Construction or Living Building Challenge certified. To enforce this requirement, developers pay a sustainability fee of 5 percent of the construction valuation prior to obtaining a Temporary Certificate of Occupancy, Certificate of Occupancy, or Certificate of Completion. If projects achieve LEED Gold or above, the sustainability fee is returned in full. LEED Silver projects receive 66 percent of the fee, LEED Certified projects receive 50 percent, and uncertified projects do not receive a fee refund.

Recognizing outstanding performers (Atlanta). The Atlanta Better Buildings Challenge (ABBC) was launched in 2011 as part of the U.S. Department of Energy's Better Buildings Challenge Program and in support of the city's sustainability plan. The ABBC is a nation-leading public/private initiative between the mayor's office, the Southface Institute, the Central Atlanta Progress/Atlanta Downtown Improvement District, Livable Buckhead, and Midtown Alliance with a goal of reducing energy and water consumption by at least 20 percent in participating buildings across Atlanta by 2020. Each year, awards are handed out to participating buildings for energy and water reductions as well as to individual and corporate leaders. Winners are provided with a plaque to hang in their building lobby, motivating building owners to make continual improvements.

DEEP DIVE: INCENTIVES AND PENALTIES THAT MOVE THE MARKET TOWARD ACTION

To move the market forward to achieve aggressive climate mitigation goals, cities can choose from a wide range of incentives and penalties (often known as "carrots and sticks"). Each market prioritizes different incentives on the basis of the economics and broader goals of the area and ensures that buildings are motivated to comply with new regulations.

Depending on the locality, some policymakers will have the purview to make a hard-hitting impact by both setting penalties and offering incentives to the buildings community to comply; other policymakers are challenged with budget constraints or state laws (e.g., the Dillon Rule, in which local governments are limited to the powers expressly granted to them by their state) that prevent such motivators. Instead, localities can offer incentives that are free to the city to drive real estate sector action.

The following table offers examples of carrots and sticks that localities have offered to drive compliance with climate mitigation policies by the real estate sector, some more relevant to new construction and others more relevant to existing buildings. Cities often drive action using multiple levers from the table.

Example Incentives and Penalties to Drive Climate Policy Compliance

INCENTIVES

NONFINANCIAL

Increased density/additional floor area ratio
Example
Seattle: Living Building and 2030 Challenge pilots allow departures from the Seattle land use code through design review and offer additional height and floor area incentives for projects attempting to meet the Living Building Challenge.

Increased height
Example
New Orleans: Allows buildings to exceed floor area and height base standards for attaining LEED Gold or other public investments.

Expedited permit review
Example
Chicago: The Green Permit Program provides an expedited permit process for environmentally conscious design elements, including green roofs.

Parking reduction
Example
Shoreline, Washington: Deep Green Incentive Program reduces minimum parking requirement by tier (from 5 to 50 percent), among other benefits.

Rezone incentive
Example
Vancouver, British Columbia: All rezoning must meet a low or near zero emissions building standard, such as the International Living Building Institute's Net-Zero-Energy Building Certification.

C-PACE financing program
Example
Columbus, Ohio: Local owners receive upfront funds for energy/ climate resilience improvement projects and pay back loan through long-term tax assessment (20 to 30 years).

Recognition program
Example
Denver: Certifiably Green Denver recognizes certified businesses through free advertising, including Internet listings and newspaper advertisements, magazines, radio, and water bill inserts. Businesses also receive a framed certificate and a window decal.

Photo with the mayor
Example
Salt Lake City: The Elevate Buildings Awards is attended by the mayor and recognizes high-performing buildings.

FINANCIAL

Reduced or waived fees
Example
South Portland, Maine: Properties in compliance with the benchmarking policy are excused from paying the first $5,000 per project of any building, electrical, plumbing, demolition, site plan, or other city application or redevelopment on the covered property.

Tax abatement
Example
Cincinnati: Provides a rebate as a percent of tax assessed value. The International Living Future Institute (ILFI) suggested range: 0.1 percent to 100 percent over 10–15 years depending on certification level and building type.

Cash rebate, including rebate for green building certification costs or equipment replacement
Example
Sacramento: The city offers rebates for replacing a gas furnace or water heater with a heat pump or heat pump water heater.

Reduced permitting fees
Example
Gainesville, Florida: Voluntary green building ordinance benefits include fast-tracked building permits, a 25 percent reduction in permit fees, marketing support, and an annual green building award.

Rebate of fees
Example
Miami Beach: Developers are required to pay into a Sustainability Fund, with a rebate given according to LEED certification tier.

Utility incentives
Example
Chicago: After benchmarking to understand energy use, the city recommends reaching out to the local utilities, ComEd and Peoples Gas, for free energy assessments.

Grants
Example
Chicago: The Small Business Improvement Fund supports commercial and industrial properties located in a tax increment finance district conducting repairs and remodels, including energy efficiency projects. Up to 75 percent of project costs are covered up to $100,000 for commercial and $150,000 for industrial buildings.

Low-interest project financing
Example

Memphis: Low-interest loans are available through collaboration with Pathway Lending, which provides 100 percent financing for projects up to $5 million. Rates are set at 2 percent for five years or 5 percent for 10 years.

Green Bank loan program
Example

Montgomery County, Maryland: Green Bank provides low-interest loans for energy efficiency projects through partner lenders and acts as hub for lenders and contractors, simplifying the process for loan applicants.

Technical design/implementation assistance
Example

Austin: Austin Energy's voluntary green building program and rating system provides personalized consulting services on design and construction from beginning to end of the process to ensure the highest possible rating. Program is open to commercial, multifamily, and single-family buildings.

Free audits
Example

Boston: Mass Save, a consortium of multiple utilities, provides a number of incentives and rebates for efficiency upgrades based on free assessment for residential property owners of any size, with cash rebates differentiated by upgrade type. Multifamily buildings in which 50 percent or more of tenants are at 60 percent or below of the area median income receive free assessments and upgrades.

PENALTIES

FINANCIAL

Fine added to taxes

Fine by total building square footage
Example

Fort Collins, Colorado: Failure to comply with the benchmarking ordinance can result in fines of $0.0025 per square foot, up to $1,000 per day of noncompliance.

Fine as a percent of construction costs
Example

Miami Beach: Developers that do not meet new construction standards (LEED certification) receive no refund of the Sustainability Fund fee, equal to 5 percent of construction costs.

Fine for each day of noncompliance
Example

Philadelphia: Failure to comply with the Benchmarking Ordinance results in a $300 fine for the first month they are late, and subsequent $100 fines for each day they are late afterwards.

Fine based on emissions over the limit
Example

New York: Buildings that exceed the emissions limits set by the Climate Mobilization Act will be fined $268 per metric ton over the limit.

Lose ability to lease space to new or existing tenants
Example

United Kingdom: If Energy Performance Certificate–subject properties cannot meet a minimum energy efficiency rating, owners lose the right to rent or sell the property until improvements are made to reach the minimum acceptable rating.

NONFINANCIAL

Connect compliance to receiving other building permits, including the city withholding the certificate of occupancy until a building is in compliance
Example

Baltimore: The Green Construction Code mandates that all permits for commercial and certain multifamily buildings are required to complete a Green Building Statement of Compliance to determine code applicability and to identify a green building compliance path. Acceptable pathways include LEED Silver, NGBS, and ASHRAE 189.1a. certification level and building type.

Public display of performance level at building entrance
Example

Chicago: Chicago Energy Rating System assigns large commercial properties covered by benchmarking ordinance (more than 50,000 square feet) a rating from one to four stars depending on Energy Star points. Placard with star rating is required to be posted in a prominent location and shared at time of sale or lease.

Shame-list of noncomplying buildings' contact information provided to local vendors
Example

Orlando: Buildings that do not provide benchmarking data by the deadline are identified as noncompliant in an annual report and on a public benchmarking map.

RESOURCES

ULI resources

UrbanPlan for Public Officials: A global program, UrbanPlan is a realistic, engaging exercise in which public officials learn about the fundamental forces that affect real estate development in communities through interactive roleplay related to a potential development proposal. UrbanPlan for Public Officials workshops can help public officials to better understand the trade-offs and risk at play in the entitlement and negotiation process associated with land use, especially in public/private partnerships. The UrbanPlan case study is an example of a city-led redevelopment effort in which compromise needs to be met between the locality, the development team selected in the request for proposals, and the community. This workshop is ideal for local decision-makers who would like to learn more about the fundamental forces that shape and affect the built environment and the important leadership roles that elected and appointed officials play in the real estate development process.

For details on the ULI Greenprint Center's past city engagement efforts, key takeaways from its events, and city reports, visit: uli.org/greenprintcityengagement.

USDN resources

The *Urban Sustainability Bulletin* newsletter highlights key updates from USDN as well as key accomplishments from its member communities to provide a sense of what is happening in the field of urban sustainability, focusing on GHG reduction, climate resilience, and social equity. Sign up here.

For additional insights on network-identified high-impact priority actions, and products from collaborations of members and partners developing new policy and other innovations, visit: usdn.org.

Other resources

Energy benchmarking

- *Building Energy Rating and Disclosure Policies Update and Lessons from the Field,* Northeast Energy Efficiency Partnerships
- City Energy Project Resource Library, City Energy Project
- Energy Benchmarking Ordinances Engagement Toolkit, Building Owners and Managers Association
- *Putting Data to Work: How Cities Are Using Building Energy Data to Drive Efficiency,* Institute for Market Transformation

Broader building energy efficiency policies

- "Policies for Better Buildings: Cost-Effective Ways Cities Can Cut Carbon, Slash Costs, and Create Jobs," Rocky Mountain Institute
- Toolkit for Policy Leadership, International Living Future Institute
- *Urban Efficiency: A Global Survey of Building Energy Efficiency Policies in Cities,* C40 Cities
- "Zero Code: The Future Has Arrived," Architecture 2030 (https://architecture2030.org/zero-code/)