

City policy is driving building transformation

JLL's City Climate and Resilience Policy Tracker

Key highlights

City climate policy is shifting decisively from ambition to enforcement, which is reshaping the regulatory landscape for buildings and driving a new phase of market transformation.

- **Cities are turning to building performance to cut emissions at scale.** Nearly half of the 75 cities studied now reference enforceable performance standards. As limits tighten—with escalating penalties and retrofit triggers—compliance will increasingly influence asset value and liquidity.
- **Building regulation is becoming energy policy.** Electrification mandates, fossil-fuel phaseouts and solar provisions are reshaping planning regulations as cities tie carbon goals directly to power systems. By 2026, 17 cities in our study will prohibit fossil-fuel systems in new construction, with many also requiring on-site renewables that will transform how buildings connect to and support the grid.
- **Climate resilience is emerging as a defining regulatory priority, though action still lags risk.** Cities are adding adaptation measures to building codes, yet asset-level improvements are insufficient if surrounding infrastructure cannot withstand climate hazards, making citywide resilience a shared priority for CRE stakeholders.

Despite political headwinds and policy rollbacks in some regions, the overall direction of travel is clear. Regulation is accelerating real estate's transition toward a low-carbon, climate-resilient future—and city governments are leading the charge. Across the globe, cities are taking decisive action to decarbonize their building stock and strengthen resilience through increasingly sophisticated policy levers, from enforceable building performance standards and electrification mandates to adaptation and circularity strategies.

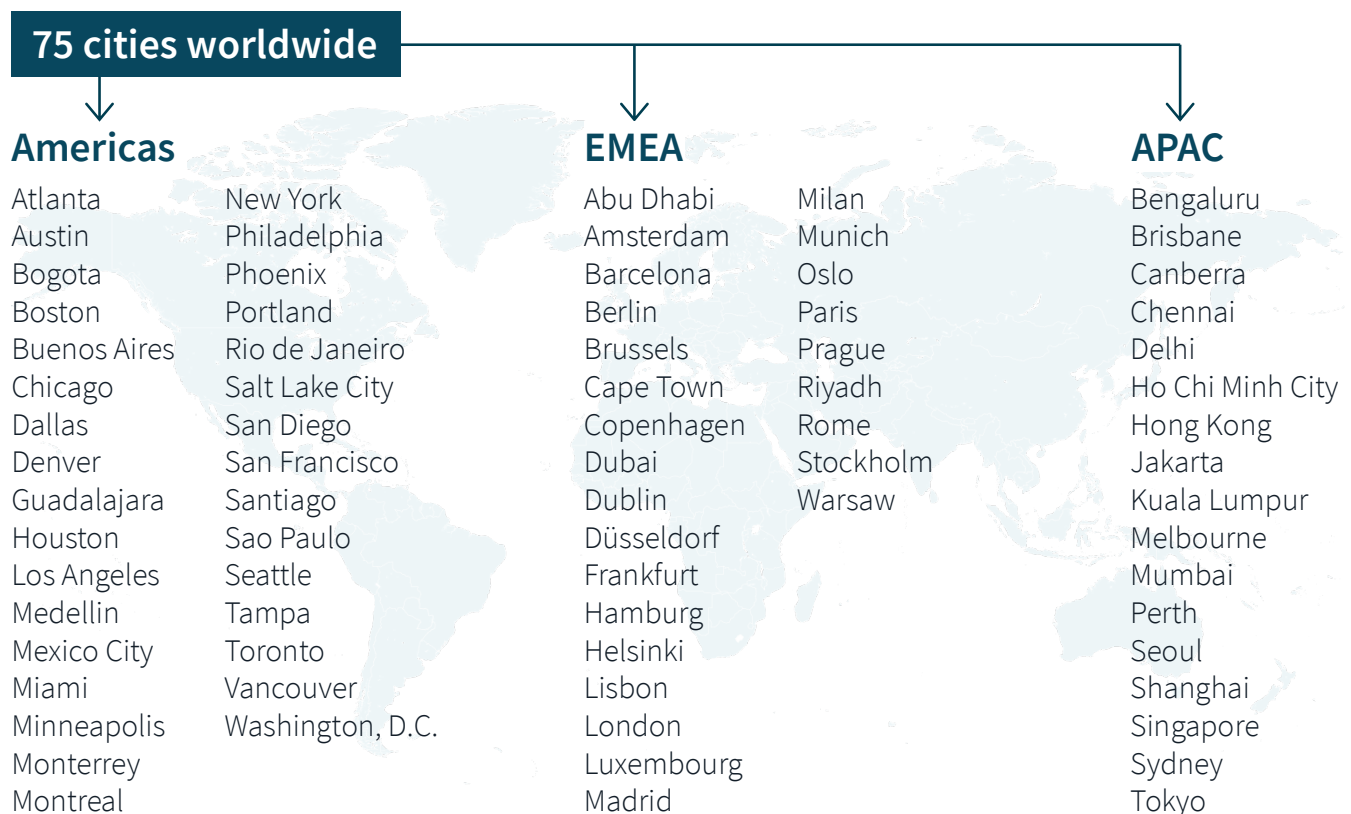
For the CRE sector, local policy is often the most significant regulatory force impacting operational costs and investment strategies. As regulation gains enforceability and scope, real estate leaders must anticipate these shifts to safeguard asset value and manage transition risk.

JLL's city climate and resilience policy tracker

To help investors and occupiers navigate this rapidly evolving landscape, JLL has developed the city climate and resilience policy tracker—a multi-year research initiative mapping the trajectory of city-level regulation and its impact on real estate. The Tracker builds on JLL's 2022 decarbonizing cities and real estate study, which benchmarked 35 cities worldwide. This latest edition expands the scope to 75 global cities, providing a more comprehensive view of how regulation is reshaping markets.

The goals of the Tracker are threefold:

- **Profile and benchmark** — Systematically map and evaluate cities on their climate commitments, regulatory frameworks and delivery mechanisms shaping the decarbonization and resilience of real estate markets.
- **Identify leading practices** — Highlight best-in-class policy approaches enabling scalable retrofitting, electrification and resilience—providing actionable insight for investors, occupiers and policymakers.
- **Anticipate market change** — Translate emerging regulation into investment intelligence, helping stakeholders to future-proof portfolios, manage transition risk and capture value in the next wave of low-carbon transformation.



Since the 2022 study, the policy landscape has matured. Then, momentum centered on climate targets and voluntary commitments; today, the emphasis has shifted toward delivery. The gap is no longer one of awareness—it's one of execution, integration and scale. To reflect this shift, our 2025 framework introduces four refined categories that better emphasize success as a measure of policy maturity, delivery and market impact:



Across the full sample, the broad patterns identified in 2022 remain: policy still lags the science on climate; building performance and grid decarbonization remain essential; and collaboration between public and private sectors continues to define success. However, the direction of progress is unmistakably toward implementation.

Cities at different stages of implementation

	 Emerging implementers	 Policy builders	 Market mobilizers	 Global accelerators
	Foundation stage	Scaling frameworks	Delivery momentum	Integrated leaders
	Early-stage adoption with foundational strategies; few mandatory elements and little enforcement	Frameworks forming or recently updated; coverage and enforcement still patchy.	Clear regulatory traction, growing private sector alignment	Mature, enforceable frameworks and advanced delivery
	Examples include:			
	Baseline emissions inventories, nascent partnerships, reliance on regional or national initiatives	Citywide NZC plans, voluntary programs, early disclosure, adaptation planning, etc.	Mandatory benchmarking with publicly available data, periodic audits, etc.	Net zero-aligned building performance standards, electrification mandates, public scorecards
AM	Bogota, Buenos Aires, Dallas, Guadalajara, Houston, Monterrey, Santiago, São Paulo, Tampa	Atlanta, Austin, Medellin, Mexico City, Miami, Minneapolis, Montreal, Philadelphia, Phoenix, Rio de Janeiro, Salt Lake City	Boston, Chicago, Denver, Los Angeles, Portland, San Diego, San Francisco, Toronto, Washington, D.C.	New York, Seattle, Vancouver
EMEA	Abu Dhabi, Brussels, Cape Town, Dubai, Riyadh, Rome	Dusseldorf, Lisbon, Madrid, Milan, Prague, Warsaw	Barcelona, Berlin, Dublin, Frankfurt, Hamburg, Luxembourg, Munich	Amsterdam, Copenhagen, Helsinki, London, Oslo, Paris, Stockholm
APAC	Chennai, Delhi, Ho Chi Minh City, Jakarta, Kuala Lumpur	Bengaluru, Brisbane, Hong Kong, Mumbai, Perth	Canberra, Melbourne, Seoul, Shanghai, Singapore, Tokyo	Sydney

Source: JLL Research, 2025

New York, Seattle, London, Oslo, Paris and **Sydney** have entered the leading group where policy maturity is now translating into measurable market transformation. This progression reflects three key developments:

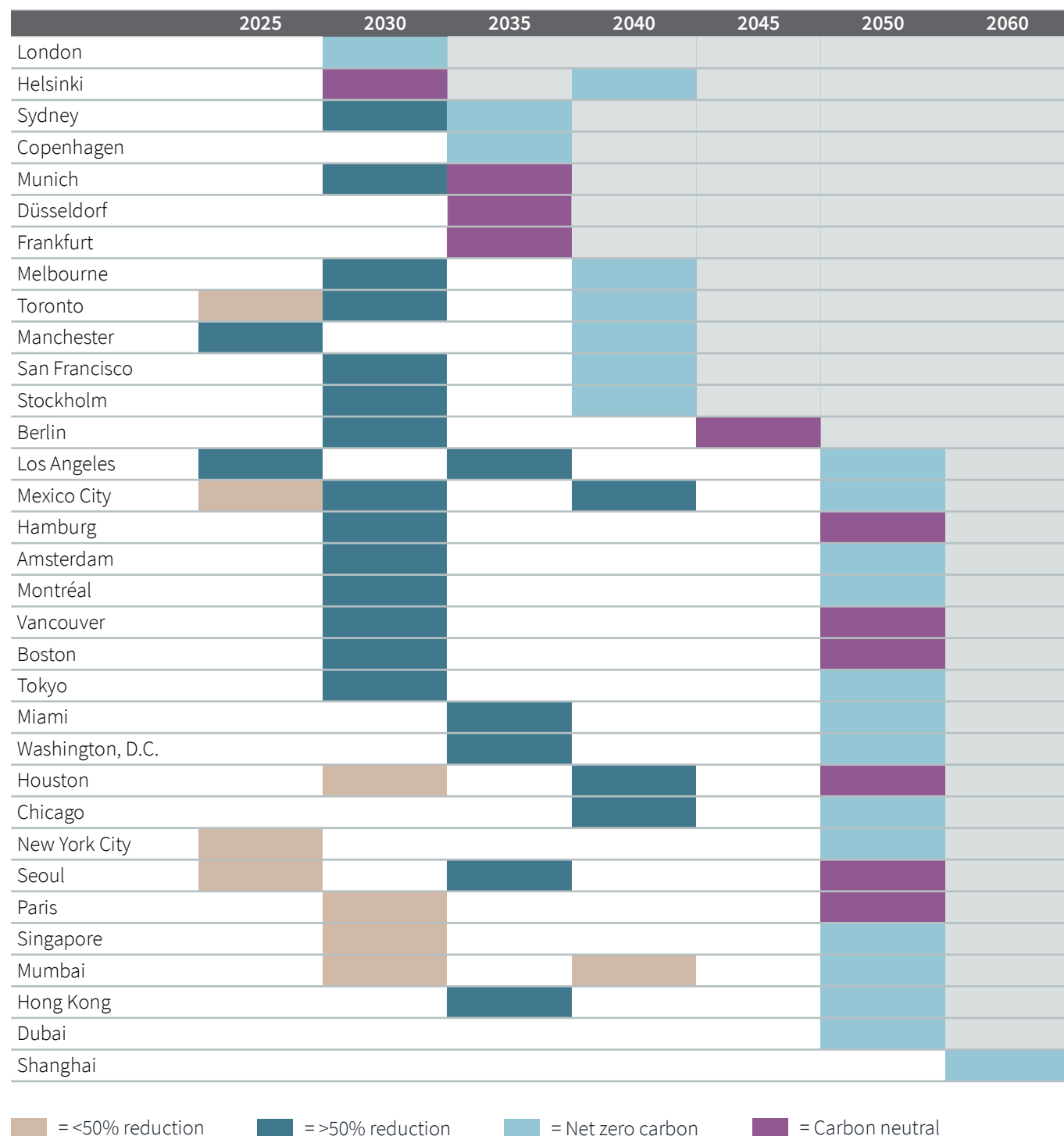
- Expanded mandatory **emissions performance** requirements with local enforcement mechanisms
- Integration of **energy transition** goals into planning and permitting frameworks
- A growing, though still inconsistent, policy response to **physical climate risks**

Policy maturity sharpens around emissions performance

Cities are increasingly positioning the built environment at the center of their emissions-reduction strategies. Our analysis across 75 global cities shows that **82% of CRE investment over the past decade—equivalent to US\$4.1 trillion—has occurred in markets with net zero by 2050 targets in place**. Yet many cities are moving faster: one in four dollars invested globally has flowed to markets whose net-zero targets come *before* the Paris-aligned 2050 goal, with several aiming for 2030. This overlap underscores how deeply investors are exposed to cities pursuing net-zero pathways.



The city race to net zero



Source: JLL Research, 2025

While national frameworks often emphasize taxation, disclosure or subsidies, city governments are targeting the most direct source of urban emissions: **buildings**, which account for about **60% of total citywide emissions**, compared to 42% globally. As a result, the most advanced policies now focus on measuring, managing and mandating energy and emissions performance improvements at the building level.

Across our study, **31 cities – representing 41% of the markets covered - now reference enforceable building performance standards**, a significant increase since 2022. These laws require specific energy-use or carbon-intensity thresholds that tighten over time, often paired with substantial penalties for non-compliance.

- **New York City’s Local Law 97 (LL97)**, now in force, is among the most comprehensive examples. Covering over 23,000 buildings, it caps annual emissions and imposes relative fines for exceeding limits. About 94% of covered buildings have [already](#) initiated compliance for the 2024 period—proof of the law’s impact. However, the next compliance cycle is far tougher: a JLL analysis finds 81% of buildings could face penalties by 2030, underscoring the scale of transformation required.
- **Europe’s revised Energy Performance of Buildings Directive (EPBD)** entered into force in May 2024 and will need to be transposed into national laws by May 2026. It introduces minimum energy performance standards that will lead to renovating 16% of the worst-performing commercial buildings by 2030 and 26% by 2033. This is a major shift in policy design as European governments have typically sought design-based frameworks. Targeting building performance across existing stock is necessary given that [85% of EU buildings](#) were built before 2000 and 75% have poor energy performance. The EU explicitly links these standards to energy security, recognizing that efficiency reduces both carbon and grid investment needs.
- **Tokyo’s Cap-and-Trade Program**, launched in 2010 and now in its fourth phase in 2025, remains the world’s only city-scale carbon trading system for buildings. Building owners can comply through energy efficiency measures, renewable energy installations and by trading emissions credits with other facilities. The latest compliance period raises targets to 48%-50% below baseline, up from 6%-8% reductions in the first round (2010-2014). Earlier this year, the Tokyo Metropolitan Government [launched](#) a digital carbon-trading platform to enable small and medium-sized businesses to access and trade credits more easily—a data-driven expansion that complements its long-standing cap-and-trade program and signals a shift toward more inclusive urban carbon markets.

By 2030, dozens more cities will actively enforce building performance standards. Financing and enforcement capacity remain challenges, but the direction is set: cities are turning ambition into measurable outcomes, with penalties and retrofit triggers built in. Crucially, the design of these standards—with emissions limits that tighten over time and penalties often proportionate to the degree of excess—means that regulatory exposure compounds if action is deferred. Even owners facing minimal

near-term impact are not insulated given that, as compliance thresholds ratchet downward, future buyers and their successors will inherit increasingly material obligations and financial risk. The result is a growing threat to asset liquidity and value as performance compliance becomes a defining factor in underwriting, transaction pricing and exit strategy across global real estate markets.

Alongside operational performance requirements, **embodied carbon** is emerging on the policy agenda, with a small group of cities beginning to regulate emissions associated with building materials and construction. **London, Vancouver** and **Amsterdam** now stand out as global leaders: London requires Whole Life-Carbon assessments and circular-economy statements for major developments; Vancouver mandates whole-building life cycle assessments and has introduced embodied-carbon intensity limits; and Amsterdam applies national environmental-footprint thresholds that cap the embodied impact of new buildings. At the state level, **California** is now leading the U.S. with updated CALGreen code provisions (effective July 2024) that require large non-residential buildings to reduce embodied carbon through one of three compliance pathways: building reuse, whole-building life cycle assessment demonstrating a minimum 10% reduction, or the use of materials with verified environmental product declarations.

City policy is explicitly linked to the energy transition

Cities are actively driving the energy transition by coupling performance enforcement with explicit electrification and renewable generation requirements for buildings. This represents a fundamental shift from previous approaches that focused solely on efficiency.

All-electric building codes and **fossil-fuel phaseouts** are proliferating across major markets. Across our 75-city study, **17 cities now have mandates or functional bans that eliminate fossil-fuel systems in new construction by 2026**, if not already in effect, marking one of the clearest global trends in building policy. Two models are driving this shift:

- In the U.S. and APAC, **San Francisco, Seattle, New York** (for smaller buildings), **Washington, D.C., Melbourne** (through the state of Victoria) and **Sydney** have implemented explicit all-electric building codes that prohibit gas connections or combustion equipment outright. San Francisco stands out both as one of the first major cities globally to require all-electric new construction and for recently extending this requirement to major renovations, making its framework among the most comprehensive in our dataset.

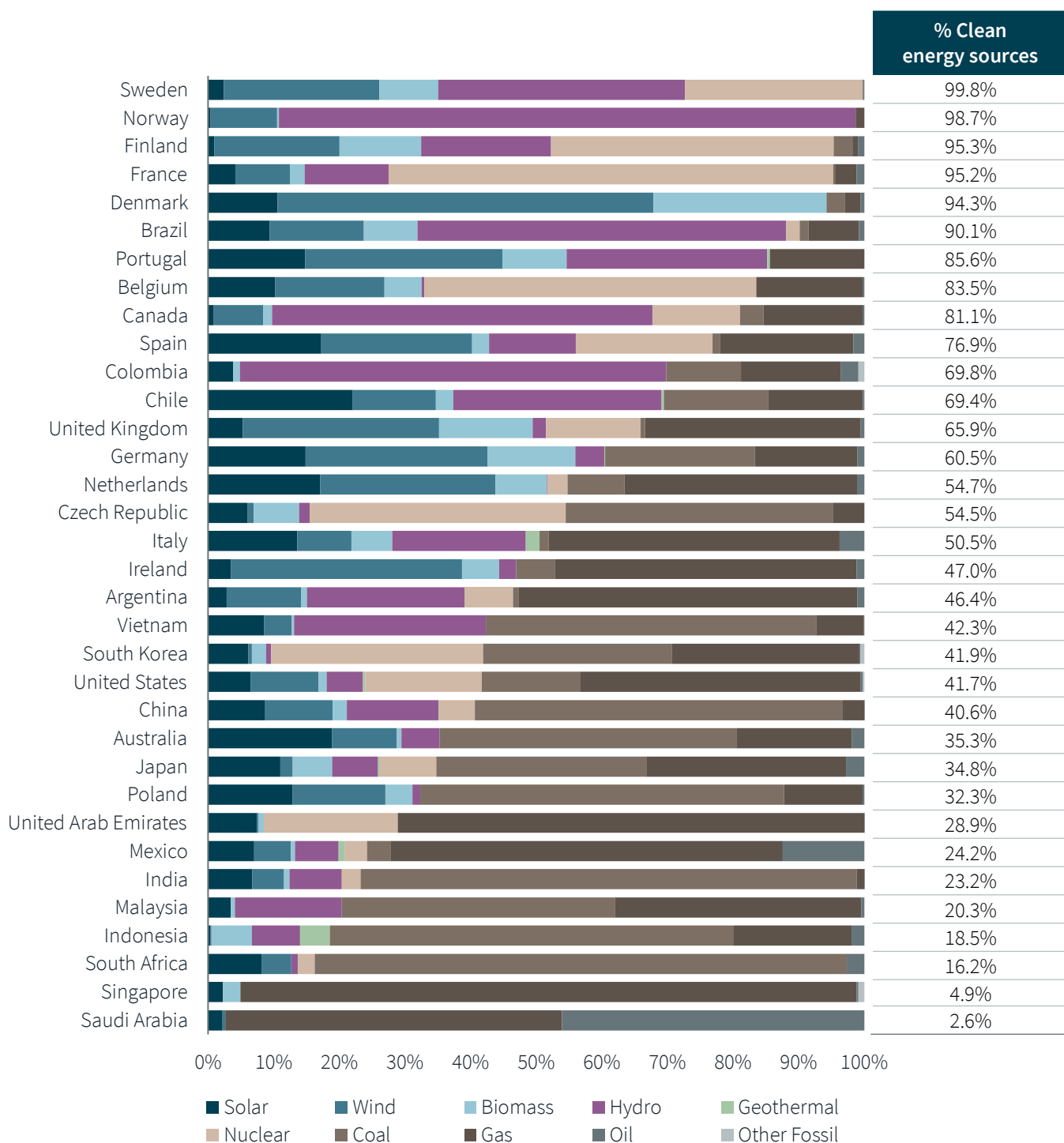
- In Europe, the same outcome is being achieved through a different regulatory pathway. Rather than using “all-electric” language, many European jurisdictions are adopting technology-neutral fossil-fuel phaseouts—banning gas and oil boilers in new buildings or requiring new heating systems to run on high shares of renewable energy. Cities such as **Paris, Copenhagen, Oslo, Amsterdam, Brussels** and **Luxembourg**, along with Germany’s major metros (**Berlin, Munich, Frankfurt, Hamburg** and **Düsseldorf**) fall into this category. While these policies do not explicitly mandate heat pumps, they eliminate conventional fossil-fuel options, effectively steering markets toward electrification.

Despite this acceleration, 2024–2025 also revealed early signs of policy volatility. **Los Angeles** rolled back its citywide all-electric ordinance, moving from a temporary wildfire-rebuild exemption to a broader repeal. **New York State** delayed elements of its statewide gas-ban schedule, creating uncertainty around long-term implementation even as New York City’s local law remains intact. And in the **United Kingdom**, a national reversal of the 2028 gas-boiler phaseout has weakened the trajectory for several major cities previously expected to tighten their local codes.

Yet policy adoption is only half the equation. The carbon benefit of electrification depends on the grid it plugs into. These mandates are most impactful in cities with clean electricity grids—markets like those in the **Nordics, France** and **Brazil**, which operate on 90%+ clean energy, enabling immediate emissions reductions through building electrification.



Energy generation in 2024 by technology (GWh)



Source: BloombergNEF

Spotlight on Brazil:

Brazil stands out as Latin America's clean-energy frontrunner, with over 90% of its electricity generated from clean sources—primarily hydro, but rapidly diversifying into solar and wind.

São Paulo aims to become a distributed-energy hub, expanding rooftop and community-scale solar through its municipal climate plan and net-metering programs. New building rules promote solar-ready design and on-site generation, linking construction approvals and public-building retrofits to renewable energy targets.

Cities are simultaneously mandating **onsite renewable generation**, writing solar requirements directly into local building codes.

- **Hamburg** leads with one of the strictest and earliest-enforced mandates, requiring solar panels on all new buildings with roof surfaces exceeding 50 square meters (~500 square feet) since 2023, with the requirement extended to existing buildings undergoing roof renovations as of January 2025. Other German jurisdictions including **Berlin** have followed suit with similar mandates.
- **California** mandates solar photovoltaic systems for most new construction, effective in 2020 for residential and in 2023 for commercial structures. The 2023 update expanded the requirement to include onsite battery storage for new commercial buildings.
- **Austin** updated its solar ordinance in 2024 to require solar panels or renewable energy equivalents for all new residential buildings and commercial buildings over 10,000 square feet (~1,000 square meters).

Grid-scale collaboration is emerging as cities coordinate regionally to maximize impact. Such policies demonstrate how cities can leverage collective purchasing power to accelerate clean energy deployment beyond building-level solutions.

- **Amsterdam's** Regional Energy Strategy (RES) is a collaborative initiative across neighboring municipalities to identify renewable energy generation zones and plan for storage capacity. This approach allows for shared planning and resource allocation across the municipalities.
- **Melbourne** is advancing several leading renewable-energy projects. The Melbourne Renewable Energy Project (MREP) is a collective PPA that brought together a consortium of city agencies, universities and businesses to purchase 80MW of power from the new Crowlands wind farm—the first wind farm in Australia to be developed and operated by such a consortium. A second PPA, MREP2,

brought together another purchasing group of large energy consumers composed of shopping centers, offices, educational campuses and manufacturing sites in a 10-year deal that adds a further 110 GWh of wind energy production to the region. In 2024, construction began on the Melbourne Renewable Energy Hub (MREH) comprising 2.4 GWh of battery storage and a 12.5 MW co-located solar farm.

These energy-centered policies reflect the growing urgency around power reliability and costs surfacing across markets. They also highlight how buildings are evolving from being seen as solely energy consumers to helping address price volatility, capacity constraints and security of supply. For cities, linking building policy directly to power-sector decarbonization marks a pivotal next step toward both climate progress and long-term energy resilience. This convergence positions the built environment as both a driver of and beneficiary from the energy transition, creating new value streams for building owners while delivering critical grid-scale benefits for urban energy systems.

Climate resilience emerges as the next policy differentiator

Commercial real estate is beginning to respond to climate risk imperatives as extreme weather events become routine and insurance premiums increase exponentially in high-risk areas. However, resilient buildings require resilient cities—creating an interdependent challenge that demands coordinated policy responses.

Today, **over 60% of cities in our study now reference resilience or adaptation strategies**, up from roughly 30% in 2022. While most frameworks still focus on voluntary planning or risk disclosure, a growing number of cities are beginning to translate these strategies into tangible, place-based interventions.

- **Miami Beach** has already implemented some of the strictest building codes in the United States, including a minimum elevation requirement one foot above base flood level, with additional height allowances for builders who exceed it. In July 2025, Miami Beach adopted a 75-year Sea Level Rise Adaptation Plan that provides a flexible, science-based roadmap to protect the city from rising seas and chronic flooding. The plan identifies more than 67,000 vulnerable assets and uses phased pathways to guide when current strategies remain viable and when new ones are needed.
- **Paris**, one of Europe's most heat-exposed major cities, has rolled out one of the continent's most comprehensive urban heat-adaptation programs. The city has created more than 800 "cool island" spaces—parks, fountains, green roofs and public facilities that remain 2–4 °C cooler than surrounding streets—and is targeting 170,000 new trees by 2026 to expand shade and reduce heat. These actions

align with national RE2020 building regulations, which require higher thermal performance and heat-resistant materials to prepare new buildings for extreme temperatures.

Despite this momentum, adaptation policy is still far from where it needs to be to reflect the reality of climate risks now and in the future. However, the market is beginning to fill that gap—physical-risk pricing through insurance and lending constraints is emerging as a critical enforcement vector. As premiums rise and access to capital tightens in high-risk zones, cities that embed resilience into regulation will be better positioned to protect both their infrastructure and their investment attractiveness.

Financing mechanisms are also a central lever for accelerating action. Across our study, **51 cities now offer at least one form of financial incentive**—from retrofit grants and low-cost loans to tax benefits and targeted electrification, onsite energy or efficiency subsidies. These local tools increasingly sit alongside state, national and supranational programs such as U.S. C-PACE financing, EU energy-efficiency funds and Japan's GX investment framework, creating deeper and more coordinated capital channels. Together, these mechanisms help strengthen the capital stack for upgrades by lowering upfront costs and improving project viability. As these instruments mature, they help to de-risk projects and attract private capital, and enable owners to undertake more ambitious upgrades at scale.

While policy frameworks increasingly share common goals and metrics, their execution reflects regional governance and market maturity.

- **Americas:** Cities remain the prime drivers of progress. Municipal regulation—anchored in building performance standards and energy-use disclosure—continues to shape local investment decisions and compliance expectations.
- **EMEA:** Policy integration runs deepest. The region's frameworks align with the EU Taxonomy and emerging embodied-carbon regulations, extending reporting and compliance responsibilities well beyond operational energy use.
- **APAC:** National leadership dominates, with Singapore's Mandatory Energy Improvement (MEI) regime, Japan's strengthened building performance standards, and China's expansion of green building codes setting the pace.

Keeping pace with pivoting policy

Across all regions, the 2025 landscape reveals a clear pivot toward enforceable, finance-backed, and energy-integrated building policy. Climate policy is no longer defined by pledges but by the mechanisms of delivery. For CRE stakeholders, this evolution means there is no single compliance pathway. Success will require local, state, national and supranational regulatory fluency. Moreover, real estate leaders

understand that climate policy drivers are expanding to encompass energy security, financial structuring and resilience—each carrying direct risks and opportunities for asset value.

On one side lies increasing exposure to enforcement and transition costs; on the other, the potential to capture value through energy-smart, compliant and resilient assets. The winners will be those who move early—aligning portfolios with performance standards, integrating smart-energy systems, and positioning assets not just to comply, but to lead.

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Research at JLL

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