

Factsheet

POLICIES & APPROACHES TO ACHIEVE NET-ZERO IN BUILDINGS

- A report from the Center for Global Sustainability (CGS) examines policy approaches to decarbonize the building sector, emphasizing the importance of net-zero carbon buildings in transforming the sector.
- The report discusses predominant policy approaches to decarbonize the building sector and highlights best practices for each of these approaches to drive lasting change.
- The report focuses on net-zero buildings as an ambitious and high impact way to frame building sector decarbonization in a jurisdiction. Two US case studies (Boston and California) are highlighted for how they center net-zero buildings at the heart of their decarbonization goals and efforts.
- The report outlines five policy tools that have been shown to be instrumental in achieving net-zero buildings. Furthermore, it identifies ten strategies to strengthen and guide the development, implementation, and enforcement of building decarbonization policies.

Buildings are crucial to broader decarbonization efforts. The construction and operation of buildings already account for around 40% of global carbon emissions—and the building stock is expected to double by 2050. Fortunately, decarbonization of the building sector is possible with technologies readily available today.

Based on a broad analysis of several effective approaches to building decarbonization, the report dives deeper into net-zero as a particularly powerful approach. Net-zero, whether defined as net-zero energy or net-zero carbon, is an extremely ambitious standard that requires the combination of exemplary energy efficiency alongside renewable energy. And while defining net-zero is often challenging in practice, the overall concept is straightforward, intuitive, and easy to communicate—making it a powerful messaging tool.

The analysis finds, based on the report's case studies of Boston and California, that jurisdictions that center net-zero buildings in their overall decarbonization efforts have had success mobilizing stakeholders, spurring innovation, and building ambition. In analyzing these two jurisdictions, in the context of a broader consideration of building sector policies throughout the US and Europe, five policy tools stand out as notably high impact ways to achieve net-zero buildings.

STAND-OUT POLICY TOOLS TO REACH NET-ZERO

1. Net-zero building codes
2. Emissions performance standards
3. Green zoning requirements
4. Benchmarking and disclosure
5. District energy systems

10 STRATEGIES TO MAXIMIZE NET-ZERO POLICIES

Success in building decarbonization hinges on policy design, implementation, and enforcement just as much as it does on the choice of policy tools themselves. The following ten strategies provide a guiding framework for this process and help maximize the impact of policy tools:

Lead by example	Build goodwill and demonstrate benefits through the adoption of net-zero performance standards in public buildings before extending these standards to the private sector
Net-zero as a messaging tool	Collaboration and messaging should be considered to align stakeholders in the building sector behind a common goal
Flexible approach	Jurisdictions should be flexible with definitions of net-zero to increase cost-effectiveness, stakeholder buy-in, and compliance
Stakeholder engagement	Engage diverse sets of stakeholders early and often throughout the policy process
Prioritize compliance	Enforce policies through stakeholder engagement, training and education, and compliance mechanisms such as inspection and commissioning
Integrated, data driven approach	Integrate the building sector with other sectors, such as transportation and power generation, to ensure the most cost-effective and direct pathway to decarbonization
Policy alignment	Align policy at all levels of government, and even within a single government, to eliminate contradictory incentive structures that hinder building decarbonization
Mandatory programs	Jurisdictions should focus on mandates coupled with capacity-building policies, such as workforce development and financial assistance
Just transition	The benefits of a decarbonized building sector must be shared by all, and should enable additional benefits such as affordable housing, reduced energy costs, and employment opportunities in a clean energy workforce
Financing	Financial mechanisms should be designed to use future energy savings to pay for initial costs through incentive programs and public-private-partnerships

BOTTOM-LINE

The strategic framework outlined above, and in depth in the full report, provides a proven path to success in building sector decarbonization. Different jurisdictions may face different barriers to decarbonization, making it challenging to prescribe a checklist to guarantee success. These policy tools and supporting strategies offer a roadmap to transform the building sector and encourage the widespread adoption of net-zero buildings, regardless of context.