



## A Guide for Communities: Getting Involved with Building Energy Codes

**This resource serves as a starting point for communities by highlighting the importance of building energy codes, how to stay informed during the code development process, and the avenues for becoming actively involved in the process.**

### Key Takeaways:

- Understanding the significance of building energy codes and pathways for engagement empowers communities to participate in the development and implementation of building energy codes, contributing to broader goals of environmental sustainability and public health.
- Building energy codes offer significant benefits such as improved health, reduced utility costs, and environmental sustainability. However, it is a challenge to ensure that communities benefit equally, particularly for low-income households facing higher energy expenses and difficulties accessing energy-efficient housing.
- Communities can drive change by raising awareness about opportunities for public input and collaborating with state and local energy efficiency organizations and stakeholders. By actively engaging in the process, communities can influence code changes that better suit their needs and priorities.

### *What are Building Energy Codes?*

Building energy codes are sets of regulations that set the legal minimum energy efficiency<sup>1</sup> requirements for residential and commercial buildings. Energy codes are established by local jurisdictions and state agencies, code councils, or legislatures. States and jurisdictions with climate goals recognize the crucial role energy codes play in curbing greenhouse gas emissions within the building sector. The most recent model energy codes (such as the 2021 International Energy Conservation Code) boost overall energy performance in buildings, leading to improved occupant health and comfort while reducing greenhouse gas emissions. These codes dictate specific elements of building design and construction tied to energy performance. These elements include a building's

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<sup>1</sup> **Energy efficiency:** Energy efficiency in buildings refers to the optimization of energy use within structures, resulting in reduced energy consumption for activities like temperature regulation. This not only leads to cost savings but also minimizes environmental impact while enhancing indoor comfort.



thermal envelope<sup>2</sup>, heating, ventilation, and cooling systems, lighting systems, and other systems that affect a building's energy consumption. Compliance<sup>3</sup> by builders, architects, contractors and other building design and construction professionals is legally required in most jurisdictions and is enforced through building permits, inspections, and other regulatory mechanisms.

Building energy codes are applicable to both new construction and existing buildings<sup>4</sup> undergoing additions, alterations, or major retrofits. Building energy codes apply to three primary categories of buildings:

- **Commercial Buildings:** This category encompasses structures intended for business, industrial, and public use, including offices, factories, and retail spaces, among others.
- **Multifamily Residential:** A multifamily residential building allows two or more families to live in the building in separate units. Zoning or mortgage requirements may set this definition at a higher number than two.
- **Single-Family Residential:** This category refers to free-standing homes for one family or homes for one family that share common walls with adjacent single-family homes, such as rowhouses.

### *Stretch Codes*

Stretch codes are advanced building energy codes that set higher standards for energy efficiency in construction, surpassing the requirements of base codes. Compliance with stretch energy codes often make builders, contractors, homeowners, and other building professionals eligible for various incentive programs that support energy-efficient construction and renovation, further bolstering sustainability and economic advantages.

### *How are Building Energy Codes Adopted?*

The building energy code development process entails the regular updating of model codes like [American Society of Heating, Refrigerating, and Air-Conditioning Engineers](#) (ASHRAE) and [International Energy Conservation Code](#) (IECC) every three years. These updates are motivated by a commitment to enhance energy efficiency. Regular updates are intended to ensure that building energy codes remain relevant and in line with evolving industry standards, technological advancements, and sustainability objectives.

The Department of Energy (DOE) is mandated by the Energy Conservation and Production Act (ECPA), to assess whether the most recent editions of ASHRAE Standard 90.1 (for commercial and multi-family high-rise residential buildings) or the International Energy Conservation Code (for low-rise residential buildings) will enhance energy efficiency compared to their preceding versions. The DOE must issue this determination within a year of the publication of each new edition of the standard or code in the Federal Register.

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<sup>2</sup> **Thermal envelope:** The building thermal envelope is like the protective skin of a house or building. It keeps the inside comfortable by preventing heat from escaping in the winter and keeping hot air out in the summer.

<sup>3</sup> **Compliance:** Compliance requires buildings to meet or exceed the prescribed energy efficiency codes

<sup>4</sup> **Existing buildings** are structures that have already been constructed and are in use, as opposed to new construction.



### Resources: Understanding Building Energy Codes

- The [Building Science Education Solution Center \(BSE\)](#) offers a collection of freely accessible educational resources focused on the core principles of building science.
- The [Energy Codes 101](#) guide is tailored to a broad readership interested in enhancing building energy efficiency. It covers a range of topics, including the process of building energy code development, adoption at the state and local levels, the impact of codes on building design and construction, and various aspects such as heating, ventilation, cooling, lighting, electrical systems, building envelope, water heating, energy compliance, and enforcement.

These codes (ASHRAE 90.1 and the latest IECC) serve as model codes that states often adopt, providing a foundation for local energy codes. Federal incentives for adopting the latest energy codes, coupled with efforts to decarbonize buildings and achieve zero energy standards, are typically based on these model codes. This ensures consistency and encourages states to align their codes with the latest advancements in energy efficiency and sustainability.

### *Challenges and Benefits: How Do Building Energy Codes Impact Homeowners and Tenants?*

Building energy codes bring numerous advantages but also pose challenges for both homeowners and tenants. Recent energy codes mandate rigorous testing of mechanical ventilation systems. This proactive measure rectifies inadequate ventilation, effectively reducing respiratory ailments, allergies, and infections caused by mold, mildew, and rot growth. By addressing excess moisture, recent codes create an environment less favorable to dust mites, bacteria, and allergens, thereby reducing triggers for allergies, asthma aggravation, and respiratory issues for both homeowners and tenants. Additionally, these improvements prevent structural compromises that could release harmful particulate matter into the air. Tenants and homeowners living in buildings meeting the most recent building energy codes stand to benefit from [improved occupant health and comfort](#). Ultimately, adopting the latest building energy codes results in a decrease in potential health risks, directly benefiting both homeowners and tenants living in buildings complying with the latest energy codes.

Moreover, adherence to energy codes significantly contributes to environmental sustainability by reducing the overall energy consumption of buildings, resulting in significant utility savings for tenants and homeowners. Enhanced insulation and efficient [Heating Ventilation and Air Conditioning \(HVAC\)](#)<sup>5</sup> systems, driven by these codes, create living spaces that are not only more energy efficient but also notably more comfortable and conducive to occupant health and well-being. These codes significantly impact utility bills, offering potential cost reductions for occupants and homeowners and living in buildings built to the latest building energy codes.

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<sup>5</sup> HVAC, which stands for **Heating, Ventilation, and Air Conditioning**, is a system that helps control the temperature and air quality inside a building. It keeps the indoor environment comfortable and healthy by either warming or cooling the air and providing fresh air from outside, while maintaining desired humidity levels.



However, while improving these standards might benefit communities broadly, upgrading standards does not necessarily alleviate poor living conditions or high utility expenses for low-income tenants and homeowners. For instance, while the average American household devotes 3.1 percent of its income to utility bills, this figure rises to 8.1 percent for low-income households ([Electric Utility Disconnections](#), 2023). This discrepancy underscores how housing disparities, stemming from outdated code requirements in older buildings, hinder energy efficiency through inadequate insulation, air sealing, and outdated mechanical systems.

Builders and property owners are responsible for ensuring that their building(s) meet local energy codes but often lack the incentive to do so due to upfront costs or limited access to resources such as education or workforce shortages to ensure compliance with energy codes. For tenants in existing buildings, property owners may lack the incentive to conduct major retrofits or renovations to improve energy efficiency. As a result, there is a gap in energy efficiency between new and existing buildings, and marginalized communities, namely low-income communities, face the brunt of this inequity. The costs of meeting building energy codes for new construction and improving the efficiency of existing buildings should not be passed on from the builder or property owner to the tenant.

Community involvement and advocacy for practical solutions are essential to promote fair access to energy-efficient housing and minimize disparities in energy efficiency. Community-based organizations can help residents, builders, and property owners stay informed about federal, state, and local efficiency initiatives such as weatherization programs, Qualified Allocation Plans, and Low-Income Housing Tax Credits available to offset costs associated with building to the latest energy codes for new construction, as well as retrofitting existing buildings built to less stringent energy codes. For example, the [Maryland Weatherization Assistance Program](#) provides income eligible renters and property owners with energy improvements to decrease costs of heating and cooling and improve the public health and safety of eligible households. The U.S. Department of Energy (DOE) [Weatherization Assistance Program \(WAP\)](#) provides similar benefits.

**Qualified Allocation Plan (QAP):** A QAP is a document used by state housing finance agencies to allocate low-income housing tax credits to developers. The QAP can be directed to prioritize energy-efficient housing projects and encourage developers to incorporate green building practices into the design and construction of projects.

**Low-Income Housing Tax Credit (LIHTC):** LIHTC is a federal program that incentivizes developers and investors to create affordable housing for low-income individuals and families. It provides tax credits to finance the construction or rehabilitation of housing units, ensuring affordability and economic diversity within communities. LIHTC can be leveraged to promote resilient housing by incorporating disaster-resistant features, energy efficiency, and sustainability measures in these affordable housing developments.

Communities can also leverage federal funding opportunities by partnering with community-based organizations and those offering technical assistance to develop and execute strategies for updating energy codes equitably. These proactive measures aim to broaden the positive impact of updated energy codes, to reach tenants and homeowners who need them most.



## What is the Process for Adopting and Updating Energy Codes?

The process for adopting and updating building energy codes varies by state and/or local jurisdiction, which makes it challenging to offer uniform advice on how community members can be involved. Typically, states hold a public comment and public hearing period, allowing community input; during these periods, it is important to note that in various states, distinct entities or agencies are tasked with the development and adoption of codes (see Table 1: *Code Departments by State and Code Update Cycle in the NEEP Region*). Public comment periods provide critical opportunities for those who will be affected by proposed energy code changes to weigh in. Some states and jurisdictions also make use of **code collaboratives** and **technical advisory boards**, many of which offer the public the opportunity to participate, either virtually or in person. Specific information on the most recent energy code development and promulgation processes can typically be found on the relevant code department website.

### Code Collaboratives and Technical Advisory Boards

Some states and jurisdictions establish code collaboratives and technical advisory boards. These groups consist of experts in the field, including professionals from the construction and energy sectors. They work collaboratively to develop, review, and revise energy codes. These boards often hold meetings and forums that may be open to the public, allowing stakeholders to observe the decision-making process and provide input.

**Table 1: Code Departments by State and Code Update Cycle in the NEEP Region**

STATE	STATE CODE DEPARTMENT	CURRENT STATUS OF RESIDENTIAL BASE CODE	CODE ADOPTION TIMELINE
Connecticut	<a href="#"><u>Department of Administrative Services – Codes &amp; Standards Committee</u></a>	Adopted the 2021 IECC (effective as of October 2022).	As State Building Inspector and the Codes and Standards Committee, from time to time, deem necessary or desirable. ( <a href="#"><u>Chapter. 541.Section(\$)</u></a> 29-252)
Delaware	<a href="#"><u>Department of Natural Resources and Environmental Control – Division of Energy and Climate</u></a>	Adopted the 2018 IECC effective June 11, 2020. Currently reviewing the 2021 IECC for adoption.	The highest available energy conservation code of the ICC/IECC as determined by the Delaware Energy Office shall be the referenced energy code for all new detached 1- and 2-story family dwellings and all other new residential buildings 3 stories or less in height( <a href="#"><u>§ 7602</u></a> ), approximately every three years.
District of Columbia	<a href="#"><u>Department of Consumer and Regulatory Affairs- Construction Codes Coordinating Board</u></a>	Currently reviewing the 2021 IECC. Adopted the 2015 IECC (effective as of May 2020).	Triennial revisions of the Construction Codes. ( <a href="#"><u>Chapter 14A. §6-1451.09.d.3</u></a> )



<b>Maine</b>	<u>Department of Public Utilities – Bureau of Building Codes and Standards</u>	Actively working on the adoption of the 2021 IECC, the 2015 IECC is currently effective.	Either the most recent edition or the edition previous to the most recent edition (referencing codes of the ICC, IECC, and ASHRAE) ( <u>Sec. §9722.6</u> )
<b>Maryland</b>	<u>Department of Labor, Licensing, and Regulation</u>	Adopted 2021 IECC (effective as of May 2023).	After new editions of I-codes become available from ICC, the Department is required to adopt the new codes for the State within 18 months ( <u>Maryland State Building Codes – Building Codes Administration</u> )
<b>Massachusetts</b>	<u>Department of Public Safety – Board of Building Regulations and Standards</u>	Actively discussing the adoption of the 2021 IECC. Adopted 2018 IECC (effective as of February 2020).	After new editions of I-codes become available from ICC, the Department is required to adopt the new codes for the State within 18 months ( <u>Chapter 169, An Act Relative to Green Communities</u> )
<b>New Hampshire</b>	<u>Department of Public Safety – Building Code Review Board</u>	Adopted the 2018 IECC on July 1, 2022, the Building Code Review Board recommended to the legislature that they keep in place the current 2018 IECC while moving to adopt the other suite of 2021 I-Codes. <sup>6</sup>	The board shall review a newer version of a code that has been published for 2 years, and shall provide a summary of all significant changes, cost estimates of these changes, and documentation of the need for the change in any recommended legislation ( <u>Sec. 155-A:10.IV(a)</u> )
<b>New Jersey</b>	<u>Department of Community Affairs – Division of Codes and Standards</u>	Adopted the 2021 IECC (effective as of September 2022).	Adoption of publications shall not occur more frequently than once every three years; provided, however, that a revision or amendment may be adopted at any time if the commissioner finds that there exists an imminent peril to the public health, safety, or welfare. ( <u>Sec. 52:27D-123</u> )
<b>New York</b>	<u>Department of State – Division of Building Standards and Codes</u>	Adopted the 2018 IECC (effective as of May, 2020), will skip the 2021 IECC in favor of the 2024 IECC when it becomes available.	The code can be revised at any time, the State Fire Prevention and Building Code Council meets at least four times a year to consider revisions to the code.  The council may from time to time amend particular provisions of the uniform code and shall periodically review the entire code to assure that it effectuates the purposes of this article and the specific objectives and standards hereinafter set forth ( <u>Executive Law § 377</u> ).

<sup>6</sup> **I-Codes** encompass a collection of building safety and fire prevention regulations known as the International Codes, formulated by the International Code Council (ICC). These regulations encompass diverse elements of construction safety, such as building, fire, plumbing, mechanical, and residential codes. Their primary objective is setting basic benchmarks to safeguard the safety, durability, and adaptability of buildings and edifices. Furthermore, the I-Codes undergo frequent updates to integrate emerging technologies, methodologies, and safety standards. (The International Codes, I-Codes)



<b>Pennsylvania</b>	<u>Department of Labor, and Industry – Review and Advisory Council (RAC)</u>	Adopted the 2018 IECC (effective as of February 2022). Currently reviewing the 2021 IECC.	The council shall examine triennial code revisions ( <u>§2.b.3</u> )
<b>Rhode Island</b>	<u>State Building Office- Building Code Commission</u>	2018 IECC (effective as of February 2022), will adopt the 2024 IECC when it becomes available.	For residential buildings, (must) meet or exceed the most recently published International Energy Conservation Code (IECC) or achieve equivalent or greater energy savings. The state building code standards committee shall revise the state energy conservation code to comply with this requirement within one year of any update to the IECC; provided, however, that the 2021 IECC... shall not be adopted and the 2024 IECC... shall be adopted within (3) three months of its release. ( <u>§0855A Substitute A</u> )
<b>Vermont</b>	<u>Department of Public Service</u>	Adopted the 2021 IECC with strengthening amendments, the anticipated effective date is “no earlier than July 2024”.  Adopted the 2018 IECC (effective as of September 2020).	The Commissioner shall ensure that appropriate revisions are made promptly after the issuance of updated standards for residential construction under the IECC. ( <u>VSA 30 § 51</u> )
<b>West Virginia</b>	<u>State Fire Commission</u>	Adopted 2015 IECC on August 1, 2022	Anytime. The State Fire Commission shall propose rules for legislative approval in accordance with the provisions of §29A-3-1 et seq. of this code to safeguard life and property and to ensure the quality of construction of all structures erected or renovated throughout this state through the adoption of a State Building Code...the rule shall include building energy codes. ( <u>§15A-11-5</u> )

### **How Can Communities Get Involved in the Code Development Process?**

Communities can actively engage in the code development process by participating in public hearings and public comments, offering input, and advocating for specific code changes that align with their needs and priorities. Public comments and hearings often provide a platform for individuals, local organizations, and community groups to voice their concerns, ideas, and suggestions related to building energy codes. By attending these hearings, communities can influence the code development process and ensure that it reflects their unique needs and perspectives. Unfortunately, code adoption processes have not necessarily been developed to prioritize community participation. Communities may face challenges in participating in these processes.



Public comment periods and hearings often have short timeframes, making it difficult for individuals with busy schedules or limited familiarity with the subject matter to provide comprehensive feedback. Additionally, specific requirements such as online submissions or in-person attendance may present barriers to participation. Access to information, technological limitations, geographical constraints, and language barriers further impede effective engagement in the process, necessitating measures such as multilingual materials and interpretation services to ensure inclusivity and diverse community involvement.

Communities can address these limitations by actively advocating for extended timelines, raising awareness about public comment opportunities, and requesting that information be made available in multiple formats, such as both online and printed materials, both in English and in translation advocating for options for both in-person and virtual participation can help mitigate technological and geographical barriers, ensuring that a broader range of voices is heard. Community members can advocate for meaningful changes, such as longer public comment periods, which can be vital for community members who face challenges in accessing and understanding complex technical documents within shorter timeframes. Extending these periods allows community members more time to review and provide input on building energy code proposals, making the process more inclusive and responsive to diverse needs.

Collaborating with established community-based energy efficiency programs can provide valuable support and resources for individuals and policy makers to enhance community involvement. It is equally essential for building energy code departments and agencies to take proactive measures in addressing these limitations, striving to make public comment and engagement periods as inclusive as possible. Individuals and community-based organizations can collaborate with relevant stakeholders, such as energy experts, industry professionals, and policymakers, to advocate for changes that promote energy efficiency and sustainability in their communities. By working together, communities, regulatory bodies and stakeholders can create more equitable and efficient energy codes that benefit all residents and the broader environment.

To get involved, communities can reach out to listed contacts on their respective energy code board website for information on how to participate and stay informed on the status of their local building energy code adoption.

#### District of Columbia's Language Access Act

District of Columbia's Language Access Act mandates the provision of interpreter services and vital documents in various languages to promote equal access and participation in public services.

If you request service within the DC government and cannot speak, read, write, or understand English, you have the right to:

- Request and receive interpreter services at no cost.
- Request and receive vital documents in your language at no cost to you.
- Make a complaint if denied any service at a DC government agency.

By acknowledging and advocating for the implementation of language accessibility legislation and programs, communities can effectively overcome this limitation and participate more inclusively in shaping energy code regulations.





## Take Charge: Engage, Influence, and Shape Building Energy Codes

This resource serves as a starting point for communities, shedding light on the significance of building energy codes and offering pathways to actively engage and remain informed in the development of these codes. Communities may lack the necessary information and guidance to participate effectively in the code development process, despite the direct and substantial impact of building energy codes on tenants and homeowners. This resource covers fundamental aspects of building energy codes, their influence on homeowners and tenants, the adoption and updating processes, and, most importantly, how communities can play a pivotal role in shaping these regulations. By using this resource as a starting point communities can empower themselves to advocate for more equitable and sustainable housing, thus contributing to broader goals of energy efficiency, environmental sustainability, and health.