

Part II: Code Adoption Toolkit

# Taking Action for Stronger Energy Codes

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### **About IMT**

The Institute for Market Transformation (IMT) is a national nonprofit organization focused on increasing energy efficiency in buildings to save money, drive economic growth and job creation, reduce harmful pollution, and tackle climate change. IMT ignites greater investment in energy-efficient buildings through hands-on expert guidance, technical and market research, policy and program development and deployment, and promotion of best practices and knowledge exchange. For more information, visit [imt.org](http://imt.org)

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# Introduction

Strong energy codes are critical to creating efficient buildings.

Energy-efficient buildings require less energy to operate and are therefore more affordable, while better envelopes make them more resilient to inclement conditions and safer in the case of a power outage. Buildings contribute to more than a third of U.S. carbon emissions, so reducing energy waste not only saves money, but is also critical to meeting climate commitments. Further, 90% of our time is spent indoors, making safe and healthy structures critical to our well-being. In our [Code Adoption Overview](#) we discuss the model energy code used in the United States and how it is developed. This document expands upon that introduction and explains how one can play a role in advocating for adoption of the strongest, most efficient energy codes.

## Key Terms

**Model code:** code language developed by a standards organization, independent from the jurisdiction

**Enacted code:** the code that is passed into law

**IECC:** the International Energy Conservation Code

**Stringency:** the code efficiency level

**Reference code:** the year or version of the IECC/90.1 used as the basis for the enacted local or state code



# Understanding Energy Code Adoption

## Currently adopted energy codes

Many cities and states are using outdated energy codes. The U.S. Department of Energy (DOE) maps below provide a visual overview. Newer versions of the International Energy Conservation Code (IECC) are more efficient than older ones. The same is true for newer versions of ASHRAE 90.1. The former is model code for residential buildings and the latter is the model code for commercial and larger multifamily buildings. Most jurisdictions adopt the suite of International Codes, including the commercial IECC, which cites ASHRAE 90.1 as an alternative compliance path. For purposes of this document, references to the IECC also include ASHRAE 90.1.

The year indicated in the legend is not the year of the code version adopted, but rather the "code equivalent" for the enacted code in each state, as determined by DOE. The equivalent version (year) is more relevant when discussing its stringency, as jurisdictions may modify the model code by adding amendments that either strengthen or weaken the code as part of the adoption process. This means that the stringency (i.e. efficiency level) of the code may not always align with the referenced model code version.

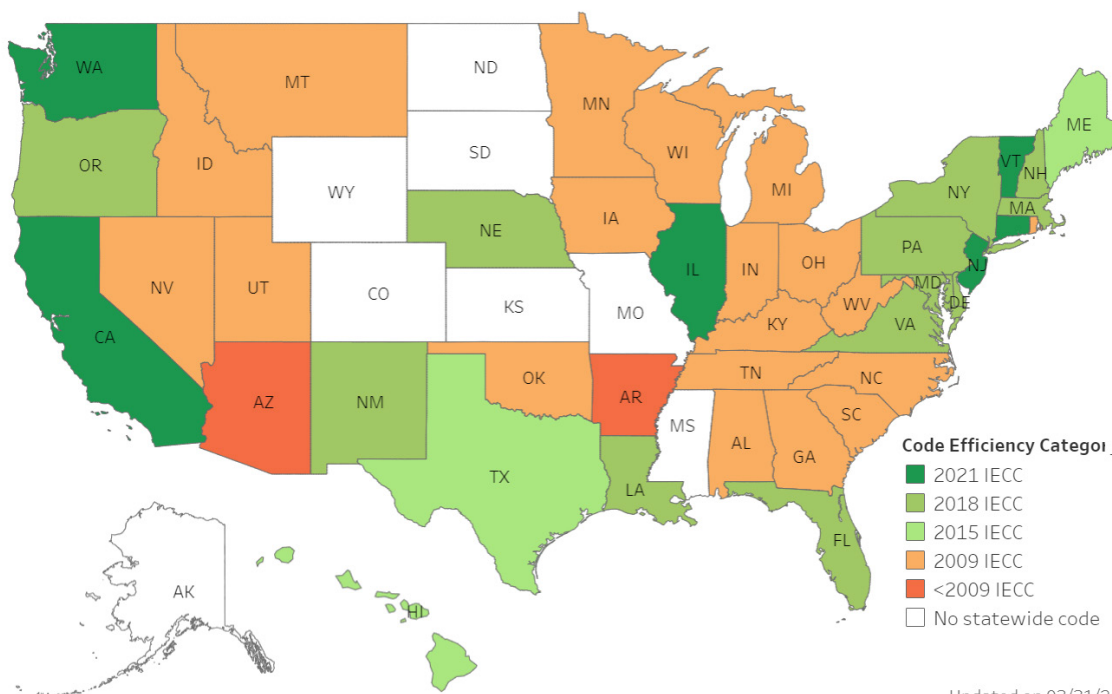
Montana, as an example, adopted an amended 2021 Residential IECC with amendments that weakened the efficiency of the code by 10.4%. The map in Figure 1 shows Montana as orange, however, and not green, because a home constructed to the latest Montana code will use a similar amount of energy as a house constructed to the 2009 IECC model code.

Understanding both the equivalent stringency of the code in place and the version of the code referenced is critical to begin the process of participating in the development and adoption of a new version of the code.

## Code amendments

Amendments are used to tailor a model code to meet state or local needs. They can address any component of the code, including efficiency elements, administration, or definitions, and can range from changing one word or number to replacing or deleting entire sections, all of which can have large impacts. Amendments approved by the governing code committees and/or boards are incorporated into a draft code proposal and are subject to a public review process before ultimately being approved or

Figure 1. State Energy Code Adoption for Residential Buildings



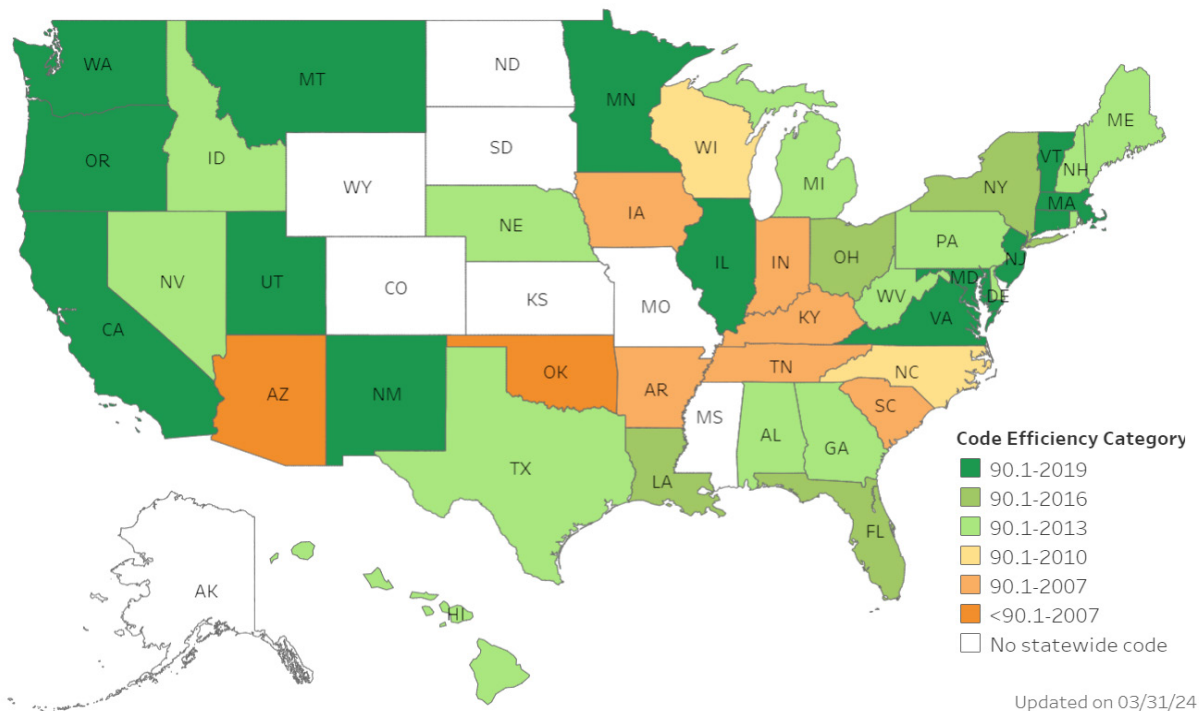
disapproved by the administrator. Members of the public are empowered to submit code amendments for consideration through the initial proposal request as well as the public comment process.

Outside of administrative changes, amendments are often classified as “strengthening,” i.e. more stringent, or “weakening,” i.e. less stringent, and can be positive or negative depending on your perspective. For example, an amendment to remove air leakage testing requirements may reduce costs during construction (a positive), but could result in higher than acceptable levels of air leakage not being caught before the construction is finished and the building is occupied (a long-term negative consequence). This would result in a less efficient building which will increase costs for the building owner over the long term, possibly eclipsing the initial construction savings.

Where significant amendments have been proposed, it may be worthwhile to advocate for the code adoption body to provide an analysis comparing the amended local code to the model code prior to adoption to determine if the amended code is expected to be more or less efficient than

the model code. The [Pacific Northwest National Laboratory \(PNNL\)](#) supports the development of energy codes and provides technical assistance for state and jurisdictions adopting codes, and may be able to perform this kind of analysis if requested. Organizations such as home builder associations often submit efficiency-reducing (weakening) amendments, particularly for the residential codes; being aware of these amendments and how they might impact the code can give efficiency proponents a leg up in responding to them. Attending code meetings and reviewing draft code language will support awareness of these types of changes. Additionally, National Association of Homebuilders (NAHB) publishes [its own code adoption toolkit](#) which includes many of the weakening amendments that local home builder associations propose for inclusion in state and local codes. See the section “Prepare for opposition: cost-efficiency arguments” below for more information on how to combat misinformation and weakening amendments.

Figure 2. State Energy Code Adoption for Commercial Buildings



## Public influence

State and local building code adoption processes are open to the public and anyone is welcome to offer public comments on the codes being considered; however, general awareness of these meetings and how to participate in them is limited.

To get involved in a local code adoption process, first determine who the code adoption agency is for the jurisdiction. The [DOE State Portal](#) can be a useful place to start. To use it, click a state on the map and select “state page” from the pop-up window. The state’s profile page will provide contact information for the adopting agency. In home rule states the contact may be for a state agency that can support your search for a local adoption agency. Once you determine who the responsible body is, you can contact them directly for information on how to get involved. Many code adoption agencies have listservs that will send out notices of events or other updates related to energy code adoption activities, such as comment periods and hearings.

Public comment periods and public hearings are opportunities for members of the public to express their interests and priorities to the administrators. They are an important moment to convey the importance and benefits of adopting a more efficient energy code. Comment periods and hearings are usually held following the publishing of a draft code. Written comments can typically be submitted online within predetermined public comment period timeframe. Verbal comments are accepted during public hearings, but speakers may need to register for a speaking slot. While these hearings are more often being held virtually, some jurisdictions may still require in-person attendance.

Public hearings may also take place in the legislature, depending on the state’s code adoption process. State legislation can derail energy code updates, even following a successful adoption process. In certain states such as Utah, the state legislature has final say whether the code is adopted. A legislature could also pass legislation that

alters, reverts, or removes the energy code altogether. The legislature’s webpage will provide information about bills, including when hearings on the bill are to take place. Public testimony can be provided at these hearings. [This document from the City Energy Project](#) summarizes tips for delivering testimony as well as coordinating that of stakeholders.

## Limitations on code adoption

Energy code adoption processes can be fraught with political and regulatory challenges; being aware of limitations can support a stronger adoption effort. Here are a few things to consider:

- Is there legislation that would preempt a local jurisdiction from adopting their own code or one that is more stringent than the state code? This may be the case in some Dillon’s rule states such as [Virginia](#), where local municipalities are unable to adopt a code more stringent than the state’s without the legislature’s permission.
- Are jurisdictions allowed to opt out of the energy code? For example, some cities in [Tennessee](#) are empowered to pass resolutions exempting their jurisdiction from state residential energy code standards.
- New versions of the model code are published every three years. Does the jurisdiction “skip” code updates? [Utah](#) aligns their residential energy code updates with “every second update” of the model code, putting the state on a six year rather than a three year update cycle. In some places, the length of the code cycle is enshrined in law, in others it is just by practice. A locality’s ordinance or state statute will have more information, as would a local building board or commission.
- Do policies such as gas bans, or prohibitions on gas bans exist? [Berkeley, California](#) was the first jurisdiction in the U.S. to attempt to restrict the use of gas in buildings, but others, such as [Alabama](#) and [South Dakota](#), have taken the opposite approach by passing preemption legislation outlawing prohibitions on gas.

## Spotlight: Preemption

Preemption is the concept that a higher authority of law will supersede a lower authority of law when the two conflict. Preemption comes into play for energy codes in myriad ways. At the federal level, the [National Appliance Energy Conservation Act \(NAECA\) of 1975](#) disallows setting more stringent appliance and equipment standards than are set by the federal government, or in certain cases, by ASHRAE, which sets the energy code standards for commercial buildings. This creates uniformity in regulation across all states but also has the effect of limiting efficiency gains in the code through equipment such as HVAC systems, which are heavy energy users and represent a significant source of savings.

At the state and local level, the principles of home rule and Dillion's rule come into play. In general terms, home rule states delegate certain powers to the local level while Dillion's rule states retain that power at the state level. Dillion's rule states may not allow local jurisdictions to adopt a code more stringent than the state code; this is a type of preemption.

## Action steps for adopting stronger energy codes

To have the greatest influence on the content of the energy code, it is best to have a planned, multi-pronged approach.

### **1. Understand the adoption process in your location, identify opportunities to comment, and work with others to create greater impact.**

Depending on how many modifications are made to the model code; the speed at which the technical, regulatory, and legislative bodies move; and what kind of political pressures exist in the jurisdiction, the adoption process could take from several months to a few years. Stay aware of opportunities for public action such as calls for proposals, advisory group meetings, comment periods, and code hearings open to testimony. Refer to the Public Influence section for information on the adoption body.

Formal and informal stakeholder collaboratives can serve as a platform to bring together energy code stakeholders outside of the formal code adoption process. They can provide an opportunity to identify and resolve disagreements amongst stakeholders, coalesce support for the energy code, or leverage expertise to provide analyses that can feed into the larger code adoption effort. Regional Energy Efficiency Organizations (REEOs) may organize and support these initiatives. Tribes may be able to find support through organizations such as the Alliance for Tribal Clean Energy or the Office of Indian Energy Policy and Programs. See the chart below for more information about groups that often participate in the code adoption process and the value they provide when engaged effectively.



## Participation in Code Adoption Process

Group	Value Added
<b>Affordable Housing Advocates</b>	Representatives with a focus on housing affordability bring a perspective that is imperative to ensuring the energy code is grounded in equity and will not do additional harm to frontline communities (those on the frontlines of climate change, usually communities of color that have been historically marginalized).
<b>Builders and Contractors</b>	Builders and contractors bring an understanding of how the code will influence construction practices and costs.
<b>City and County Representatives</b>	When adopting a code at the state level, it is important for stakeholders like city and county officials, or city associations, to participate in adoption activities, as the impacts of adoption will ultimately come into play at the local level.
<b>Code Officials</b>	Code officials provide necessary insight into how the code will be implemented and enforced and can support code language that is actionable and not overly burdensome.
<b>Community-Based Organizations (CBOs)</b>	CBOs bring specialized insight of community needs and the impact of more efficient codes.
<b>Energy Efficiency Organizations</b>	Efficiency proponents provide clarity to how the code will impact energy use at the individual and community level; they help ground the code in a long-term view of cost-savings, essential for long-term affordability (see below) and resiliency to extreme weather.
<b>Real Estate</b>	Real estate representatives understand the market and how efficient buildings affect the demand for space.
<b>Trade Groups and Associations</b>	Trade groups and associations can provide specialized knowledge into specific components of the code as well as market insights.
<b>Utilities</b>	Utilities can provide data for analyses, such as for assessing energy savings, and provide insight on grid capacity.

## 2. Design an effective campaign strategy, including effective messaging and media engagement

The strategy for your approach should be based on the issues decision makers are currently prioritizing. Government officials and their energy or sustainability office often set a percentage energy reduction goal for buildings, or choose goals that will support larger objectives. These may relate to a [local](#) or [state climate action plan](#) or be tied to complementary policies, like a [building performance standard](#). It is also common to set a goal of making new buildings ready for electrification.

The full range of benefits from adopting efficient codes may not be well understood by the public. In conjunction with your stakeholder collaborative, identify who will be a decision maker or key influence with regard to energy code adoption. Determine who may have connections to these individuals, and what arguments are likely to persuade them to advocate for stronger energy codes. Keep in mind that human-centered messaging is most effective, rather than centering arguments on carbon reduction or even grid stabilization and energy security. One way to do this is to focus on high energy costs for residents or the health effects of living inside poorly insulated buildings. Additionally, consider what constituencies could best relay these anecdotes to decision makers.

### 3. Prepare for opposition: cost-efficiency arguments

When advocating for adoption of a more efficient code, it is likely you will encounter arguments centering on cost and/or difficulty in adapting to new requirements. This is especially common with respect to residential energy code updates, which receive more targeted pushback from certain stakeholder groups.

As an example, NAHB’s Code Adoption Toolkit includes a cost-effectiveness analysis from the Home Innovation Research Lab (HIRL) that claims the requirements of 2021 IECC are overly expensive and burdensome to builders and homebuyers. In response, an independent consultant, ICF, conducted its own analysis to “check the math” of the HIRL report. It followed the format of the HIRL report, but used life-cycle cost instead of simple payback and research-backed cost numbers. ICF’s report, [Cost Effectiveness of the Residential Provisions of the 2021 IECC](#), and a companion summary document, [Comparison of 2021 IECC Residential Cost Effectiveness Analyses](#), show that the 2021 IECC is cost effective when compared to the 2018 IECC across all climate zones and provides useful additional data for discussion in the adoption process. ICF’s finding are generally in line with those of PNNL, whose [National Cost Effectiveness of the Residential Provisions of the 2021 IECC](#) shows the 2021 IECC to be cost-effective.

## Spotlight: Regional Energy Efficiency Organizations

Most states in the U.S. are supported by a [Regional Energy Efficiency Organizations \(REEO\)](#), which are excellent resources to assist with energy code adoption efforts and to provide efficiency education and awareness more broadly. See the map below to identify your REEO and engage with them early and often during the code adoption process.

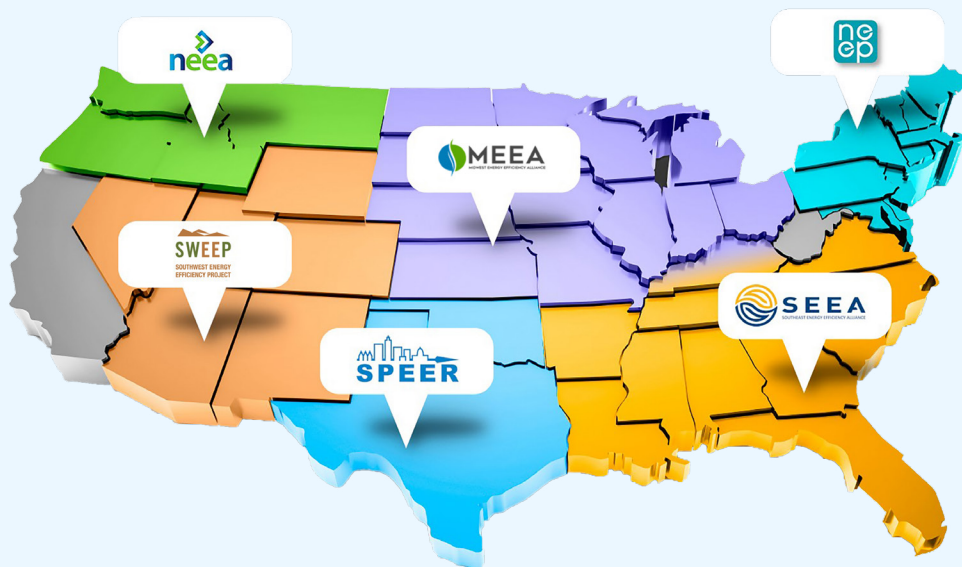


Figure 3. Map of Regional Energy Efficiency Organizations

Specific policies aside, a common argument in opposition of adopting new, more efficient energy codes (especially in relation to the residential code) relates to a fear of raising the cost of new homes and how that may impact affordable housing. Increased costs related to higher efficiency requirements in the code may be either absorbed by builders or passed onto buyers. Opponents assert this hurts the construction industry, makes homes less affordable, and exacerbates an already challenged housing market. While it should be acknowledged that, depending on the code adopted, stricter energy codes may slightly increase the first cost of new homes (per PNNL, the 2021 IECC increased costs by \$2,372, or less than \$7/month over the life of the loan compared to the 2018 IECC), the benefits can last the life of the building and will still be present when the home is resold. By contrast, few homeowners will be able to afford the high costs of renovating a home to recover the efficiency lost in initial construction.

Additionally, the majority of homebuyers buy their home with a mortgage that distributes costs over 30 years, so the cost of energy efficiency improvements has a very small impact on down payments and monthly mortgage costs. The Department of Housing and Urban Development (HUD) [issued their own draft determination on the 2021 IECC](#) and found that the primary impact on affordability would relate to a moderately increased down payment—between \$331 and \$435, or less than one tenth of one percent of the total cost of a new home.

While new codes may moderately increase the cost of new construction, the efficiency improvements offset the cost through utility bill savings. The 2021 IECC, as shown in the PNNL report generates an average life-cycle cost savings of \$2,254, an average simple payback of approximately 10 years, and an average of four years to positive cashflow for all climate zones.

## Spotlight: Addressing injustice through energy code

Heating and cooling buildings uses tremendous energy, and often leads to high utility bills. A working paper by the federal mortgage financier Fanny Mae found that utilities continue to be one of the largest components of housing costs, affecting frontline communities more acutely, as they have a higher energy burden compared to non-low income and white households. Energy burden is the percent of gross household income spent on energy costs. Having a high energy burden is correlated with higher risk of certain diseases, increased stress, and economic hardship. According to the Energy Information Administration, one in three U.S. households report difficulty paying their energy bills. Strategies to reduce energy burden include 1) increasing household income, 2) increasing bill payment assistance, and—most relevant for the energy code discussion—3) reducing household energy use. Incorporating high-performing elements, such as well-insulated walls and roofs and efficient windows, is

easiest and most cost-effective at the time of construction because many of these elements remain unchanged for the life of the building. In this way, building energy codes are a foundational tool for developing a building stock that is comfortable, safe, and affordable. For these reasons, the code adoption processes should be inclusive and decisions should support the needs of frontline community members.



#### 4. Come to public hearings prepared with data and stories that will resonate with decision makers

Public hearings are a major opportunity for the general public to influence the adoption process, so concentrate on making the moment count.

Your organization or stakeholder collaborative should ensure that its most influential members are slated to speak at hearings or provide advance written testimony. Jurisdictions vary in their rules for public participation, so be on the lookout for communications from the hearing organizer. The organizer will typically provide an agenda or meeting packet in advance, which can help guide participation—including providing an indication of what kind of expertise will be necessary from participants. Share meeting invitations, participation directions, meeting packets and agendas with allies to maximize participation and impact.

Outside of the public hearings, creating media interest through news articles or blogs can help keep up the

pressure to advance the energy code until a decision is made. [Must Haves for Publicly Launching and Ongoing Communications](#) provides guidance on launching ongoing public communications, including insights on navigating communications processes, and the best practices, strategies, and tactics, for developing communications materials. This may include sign-on letters, [press releases](#), [blogs](#), or [other media](#) to encourage ongoing stakeholder and community participation and rally more participants to your cause.



## Long-term advocacy

The job is not done once a new code is passed. Maintaining the relationships developed through the code adoption process can be imperative to maintain momentum for future adoption cycles. Efficiency proponents should advocate for the development of a long-term strategy for code adoption. Sharing [case studies or fact sheets](#) with other advocates, residents, or other interested parties provides education and awareness to the benefits of regularly updated energy codes; they can provide tangible examples of how certain requirements of the code are performing and how they can be improved in the next update cycle.

It's important to monitor the activity of parties who may oppose more stringent codes, as discussed in the sections on pre-emption and opposition. Monitoring for legislative activity related to energy codes is essential as well, as described in the Public Influence section. Often these concepts overlap, because opponents often use the legislature as a vehicle to promote their priorities.

## Conclusion

The path to update energy codes is rarely simple or straightforward. Yet, the changes we make today will last for the lifetime of the building, and will affect everyone in them and around them. While a single building may save only a small amount of energy by adopting a new energy code, the ripple effects are tremendous in terms of increasing long term energy affordability, reducing local power needs, increasing resiliency to extreme weather and—for communities near fossil-fueled power plants—reducing air pollution. By establishing your local context, planning, activating supporters, and creating a long-term strategy, your community will be in the best position possible to make buildings comfortable, safe, healthy, resilient, and affordable.





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