

Rural Rules: Energy Code Implementation in Vermont and Colorado

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ABSTRACT

This paper examines the challenges and opportunities of residential building energy code implementation in the rural states of Vermont and Colorado. Both states recently undertook projects funded through the U.S. Department of Energy's Resilient and Efficient Codes Implementation (RECI) program, aimed at strengthening energy code adoption and compliance.

Despite their differences, Vermont and Colorado share important similarities: extensive rural areas with unique construction practices, limited state-level support for energy code implementation, and resource-constrained local governments. Vermont has adopted an energy code but lacks a residential building code, and its energy code provisions are not enforced. Colorado, as a home rule state, delegates building and energy code authority to local jurisdictions, leading to variations in requirements across communities.

Both states must contend with limited oversight, small municipal staff, rural access and industry workforce challenges, and housing affordability concerns while encouraging energy code compliance. These issues are particularly pressing amid ongoing housing shortages, which heighten the stakes for effective energy efficiency policies.

This paper highlights common challenges across Vermont and Colorado, reviews experiences from their RECI-funded projects, and assesses the advantages and drawbacks of different approaches to energy code administration and implementation.

Introduction

Rural communities face distinct challenges related to residential building energy code administration and implementation. Characterized by lower population densities and geographically dispersed housing development, rural jurisdictions often experience lower volumes of new construction activity than urban and suburban areas. These conditions frequently correspond with limited municipal staffing capacity and constrained local budgets, making it difficult to support the plan review and inspection activities common to comprehensive code enforcement in denser jurisdictions.

As a result, many rural states and communities adopt alternative approaches to energy code implementation. In the absence of sufficient resources for routine inspections or detailed plan reviews, jurisdictions may rely on builder self-attestation, voluntary compliance pathways, or education and training initiatives intended to improve construction practices. While these approaches can support industry knowledge and market transformation, ensuring consistent compliance remains challenging when participation in training programs is voluntary and verification mechanisms are limited.

Under these conditions, energy code administration may be deprioritized relative to other essential municipal responsibilities. This may increase the risk that new homes do not meet modern standards for energy performance, durability, or occupant health. At the same time, rising energy costs, increasing weather volatility, and ongoing housing shortages heighten the importance of ensuring that new housing in rural communities is affordable to operate, resilient to extreme weather events, and constructed using sound building science practices that avoid moisture and indoor air quality concerns to prolong housing durability.

This paper examines rural energy code implementation through a comparison of Vermont and Colorado, two states with extensive rural regions but differing governance structures. Vermont has adopted statewide energy codes with limited enforcement capacity, while Colorado delegates authority to local jurisdictions under a home rule framework, resulting in significant variation across communities.¹ Drawing on experiences associated with U.S. Department of Energy Resilient and Efficient Codes Implementation (RECI) awards and other funding sources, the paper evaluates strategies undertaken in both states and identifies lessons that may inform energy code implementation in other rural jurisdictions facing geographic, financial, and staffing constraints.

Policy Landscape

Colorado

Colorado has nearly 350 local municipalities and counties that have the authority to adopt and enforce building codes. Historically, these local jurisdictions have had full autonomy to determine what, if any, building and energy codes they adopt, with a few notable exceptions. The state adopts the latest versions of the National Electrical Code (NEC), the International Plumbing Code (IPC), and the International Fuel Gas Code (IFGC) on regular cycles. These apply statewide regardless of local adoptions, as do codes that regulate the safety of escalators, elevators, and other conveyance systems. Because of this local authority to adopt and enforce building and energy codes, Colorado has a significant patchwork of adopted codes across the state.

House Bill 19-1260 (Colorado General Assembly, 2019) established Colorado's first statewide energy code requirement, which directed any municipality or county updating any building code to adopt and enforce one of the three most recent editions of the International Energy Conservation Code (IECC). This law was later changed in House Bill 22-1362 (Colorado General Assembly, 2022) to require any municipality or county updating any building code after July 1, 2023 to adopt and enforce the 2021 IECC and the Colorado Model Electric Ready and Solar Ready Code, and if adopting after July 1, 2026, to adopt and enforce the Colorado Model Low Energy and Carbon Code. With the establishment of state minimum energy code requirements, many local governments have adopted similar energy code requirements, leading to a growing consistency in adopted energy codes across the state. Additionally, a number of regional local government collaboratives across rural communities have convened to

¹ Colorado has a minimum state energy code, but jurisdictions are only required to adopt it if they update any of their local building codes. As a result, adoption is inconsistent throughout the state.

focus on regional consistency in energy code and general building efficiency and decarbonization policies, further driving the growing consistency in policy adoption.² To date, over 80% of Colorado’s population lives in a jurisdiction that has adopted at least the 2021 IECC.

Vermont

Vermont’s Residential Building Energy Standards (RBES)³ set minimum energy efficiency requirements for new residential construction and certain renovations in buildings three stories or less (Vermont General Assembly 2025a). RBES includes both a base code and a stretch code. The base code applies broadly to most residential construction, while the stretch code establishes a higher level of energy performance required for certain projects that trigger an environmental review (“Act 250”) and in municipalities that choose to adopt more stringent local standards (Vermont Natural Resources Board 2025).

State statute authorizes periodic updates to Vermont’s energy codes following revisions to national model standards, including the IECC. These updates are intended to improve building energy performance and reduce long-term energy use and emissions. RBES has undergone multiple updates since its initial adoption in 1997, most recently in 2024. In September 2025, Vermont’s Governor Scott issued an Executive Order allowing builders to comply with either the 2020 or 2024 RBES requirements. This effectively rolls back the energy code in Vermont, preventing future homeowners from realizing the benefits associated with the upgraded standards. The order cites ongoing housing shortages and affordability concerns as the basis for this action (Scott 2025).

Energy Code Administration

Colorado

Local building departments are responsible for enforcing every aspect of the adopted codes, except for Electrical Code and Plumbing Code requirements in jurisdictions that coordinate with the state. The state enforces the NEC and IPC for these specific jurisdictions, while some jurisdictions enforce the NEC and IPC themselves. Levels of enforcement vary significantly from jurisdiction to jurisdiction, often based on the capacity, expertise, and availability of local building department staff and trained local contractors and raters. Currently only 4 of about 350 jurisdictions have dedicated energy plan review and inspection personnel. Most jurisdictions wrap energy code reviews and inspections into mechanical,

² Collaboratives are active in Pitkin County, Eagle County, San Miguel County, San Juan County, Ouray County, Routt County, and the Denver Regional Area. There are also regional building departments in several counties, including El Paso County, Park County, and Mesa County.

³ Vermont also administers Commercial Building Energy Standards (CBES) which apply to commercial buildings and larger residential structures (Vermont General Assembly 2025b). While CBES plays an important role in Vermont’s overall energy code framework, the analysis and project work discussed in this paper focus primarily on RBES and its implementation in rural residential construction markets.

plumbing, electrical, and structural reviews and inspections. So, while the energy code provisions are being enforced in those jurisdictions at some level, they are enforced by staff who lack deep expertise in energy or building science. There are also jurisdictions that hire third-party services for plan review and inspections to ensure they have capacity to review all building code requirements. Programs like the Colorado Energy Office’s technical assistance, trainings, tools, and resources (Colorado Energy Office) exist to support building departments with adoption and implementation in coordination with utility offerings. However, direct code enforcement is not offered through these programs.

Vermont

Although RBES compliance is required by statute, Vermont has no state-supported system for routine inspections or energy code verification. Compliance is generally demonstrated through builder or contractor self-certification submitted to the Vermont Department of Public Service (PSD) prior to occupancy. The state tracks submitted RBES certificates but does not enforce comprehensive coverage for new homes. Figure 1 summarizes Vermont's building and energy code authority and the limited oversight of RBES administration. Vermont's three Energy Efficiency Utilities (“EEUs”)—Efficiency Vermont, Burlington Electric Department, and Vermont Gas Systems—provide some code training, plan review, and technical assistance, but do not enforce the code.

Current Scope of Building and Energy Codes by Building Type



Commercial Buildings



Multifamily Residential over 3 stories



Multifamily Residential up to 3 stories



Two-family dwellings



Residential Rental Properties



Owner-Occupied Single Family Homes

Energy Code	CBES	RBES	
Division of Fire Safety (DFS) Requirement ¹	Filing and Posting Certificate before Occupancy		None
Municipal Requirement ¹	Filing and Posting Certificate before Occupancy		
On-site Verification	Verification of Energy Code Compliance: None Verification of EEU program compliance: EEU's - for some projects		
Building Code	NFPA 101 + IBC	NFPA 101	Plumbing Only ²
Enforcement Authority (DFS)	Yes		No
On-site Verification	DFS Inspections		None

1. While there are no inspections for compliance or penalties for violations, filing the RBES or CBES certificate by builder or energy specialist ensuring compliance is required by statute.

2. A plumbing permit is required for homes using public water and/or public sewer. No plumbing permit is required for well or septic systems (besides a Vermont wastewater permit).

Figure 1. Current Scope of Building and Energy Codes by Building Type in Vermont

Compliance History

Colorado

In Colorado, code compliance is challenging to evaluate at the state level due to the home rule structure of Colorado's governance. Local governments are responsible for enforcing the energy code and maintaining all permit and inspection records for projects, making it difficult to conduct a complete assessment of compliance rates by the state. However, the state has participated in several field studies funded by the U.S. Department of Energy to evaluate the effectiveness of construction across different states and compare that construction quality with energy code compliance. The most recent study, conducted in 2019 and 2020, determined that approximately 67% of the sampled homes in Colorado met the requirements of the 2018 IECC for duct tightness, air tightness, wall and ceiling insulation, window U-factor and solar heat gain coefficient, and lighting efficiency, despite only 35 out of 128 (~27%) being required to comply with the 2018 IECC at the time. This demonstrates that building practices in Colorado have generally continued to improve as energy codes have advanced in certain parts of the state, though there is still room for improvement to achieve high levels of compliance. It also indicates that builders, particularly production builders, who work in multiple jurisdictions are likely standardizing construction to more stringent codes to minimize variation across their model home designs.

Vermont

Vermont's compliance framework relies primarily on self-certification rather than inspection, and statewide compliance outcomes have varied over time. In 2012, the State developed a plan to achieve 90% compliance with RBES by 2017 (Vermont Department of Public Service 2025). However, that target was not achieved.

Figure 2 illustrates documented residential compliance rates in Vermont over time. The left axis and blue line represent estimated compliance rates, while the right axis and orange line show the energy use intensity (EUI) associated with a prototypical home built to the requirements of each code iteration. As shown, compliance rates have declined as the stringency of the energy code has increased—that is, as the code required target EUI of homes has decreased.

The most recent residential compliance study sponsored by the Vermont Department of Public Service found that approximately 54% of surveyed newly constructed homes complied with key technical components of the 2015 RBES, compared with a reported 66% compliance rate under the 2011 RBES (Vermont Department of Public Service 2023). The study sample size was small ($n = 27$) and not statistically representative statewide. Additionally, RBES has since been updated twice to more stringent standards. These limitations should be considered when interpreting compliance trends. By way of comparison, a 2022 study in Rhode Island found 87% compliance for non-program residential homes with the 2015 IECC (Rhode Island Office of Energy Resources 2023) and a 2024 study in Massachusetts found 95% compliance amongst single-family homes built under the 2018 IECC (Massachusetts Energy Efficiency Advisory Council 2024).

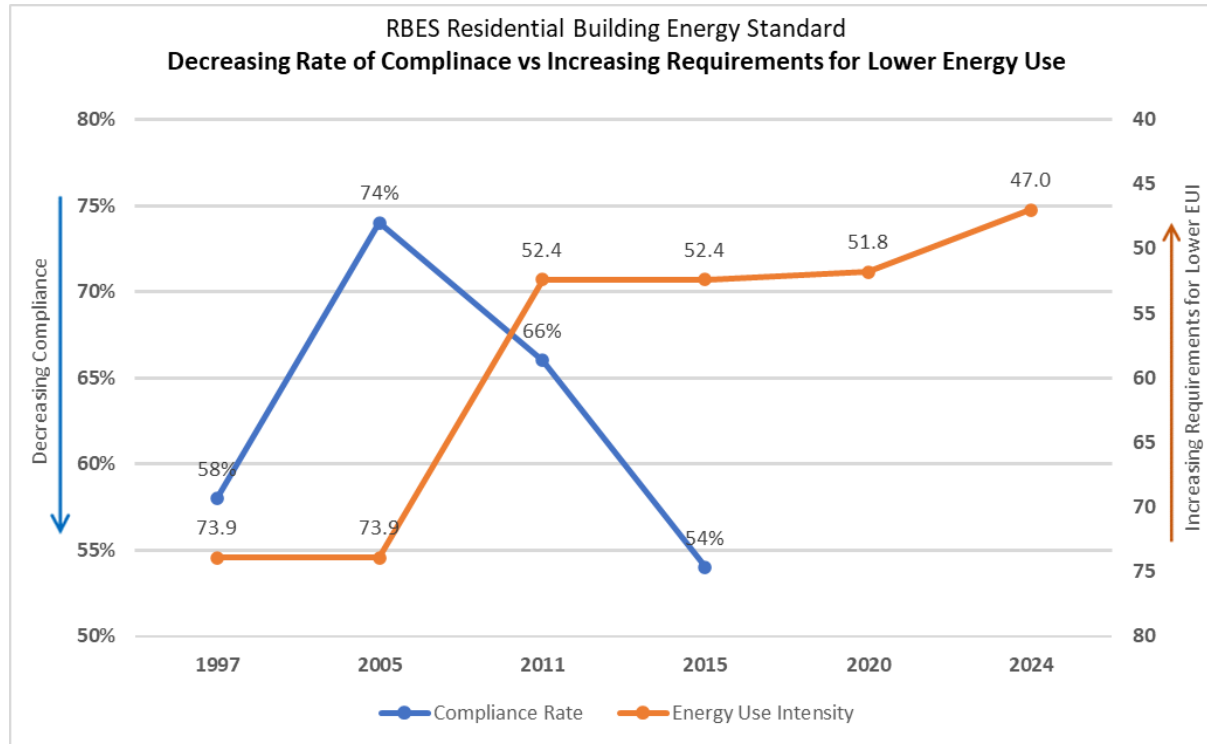


Figure 2. Vermont RBES Compliance and Energy Code Stringency Over Time. Source: Act 47 Building Energy Code Study Committee 2023.

Compliance outcomes under the 2024 RBES remain unknown at this time. However, qualitative feedback from local energy professionals and contractors suggests that compliance challenges persist in many areas of the state.

Energy Code Attribution Policies

Energy code attribution policies represent an emerging element of the energy code policy landscape in both Vermont and Colorado. These policies allow energy efficiency program administrators to claim energy savings associated with activities that support improved compliance with building energy codes. By allowing savings attribution, these policies create a financial incentive for utilities to invest in builder training, technical assistance, and other activities designed to improve code compliance.

In Vermont, the Public Utility Commission recently approved the inclusion of energy code compliance support activities within the EEU's portfolios as part of their Demand Resources Plans (DRP) (Efficiency Vermont 2025a). Under this framework, Efficiency Vermont plans to implement an Enhanced Code Support Program that will provide RBES training, project-level technical assistance, and subsidized blower door testing to support builder compliance with the energy code. The program also establishes a methodology for estimating savings associated with improved compliance based on modeled energy use differences between RBES-compliant homes and a reference baseline home.

Utilities in Colorado have similarly supported energy code compliance activities through broader demand-side management portfolios. Utilities such as Xcel Energy have historically provided incentives and technical support related to energy-efficient construction and building performance improvements, which can help builders meet or exceed energy code requirements. Xcel Energy also operates a building energy codes and standards program (Xcel Energy), which provides technical assistance, workforce development, and resources to builders, architects, code officials, plans examiners, and others to support effective adoption and enforcement of energy codes across Xcel's service territory in Colorado.

Allowing utilities to attribute energy savings to code compliance activities can significantly expand the resources available for training, technical assistance, and implementation support. In rural communities where local governments often lack the staff and funding needed to administer energy codes directly, utility-supported compliance activities can provide an important source of technical expertise and program funding.

Shared Challenges

Colorado and Vermont share many common challenges related to energy code administration, enforcement, and compliance in rural areas. Although the two states differ in governance structure and statutory authority, as outlined in the Policy Landscape section, several barriers to improved compliance outcomes are similar and reflect broader conditions facing rural communities. These challenges affect multiple market actors, including builders, code officials, designers, and homeowners. The following sections describe these shared constraints and examine response strategies that, when considered collectively, may form a portfolio of approaches to improve long-term code compliance outcomes.

Limited Industry Workforce

A common challenge in rural communities is the limited availability of an industry workforce. This constraint affects not only builders but also key subcontractors, including insulation contractors, heating, ventilation, and air conditioning (HVAC) contractors, and energy professionals such as Home Energy Rating System (HERS) raters. For builders, a limited workforce can have several implications. A smaller pool of contractors often means higher demand for their services, leaving less time to pursue training opportunities related to evolving energy code requirements while also resulting in higher fees for services. In addition, a limited contractor base may reduce the likelihood that builders are familiar with or regularly implement the advanced construction practices required by modern energy standards. For building officials and code professionals, securing and maintaining the certifications required to interpret and enforce the energy code — such as those issued by the International Code Council (ICC)— can itself be a workforce barrier, as the time and cost involved limit who can enter and remain in the field.

Workforce limitations also affect subcontractors who play critical roles in energy code compliance. Key code provisions related to insulation installation and HVAC system design and performance rely heavily on the expertise of these trades. As with builders, limited subcontractor availability can reduce participation in training opportunities and slow the adoption of advanced installation practices needed to meet increasingly stringent energy code requirements.

Both Colorado and Vermont energy codes also provide performance-based compliance pathways that rely on approved third-party professionals, such as HERS raters or Building Performance Institute (BPI) professionals to conduct diagnostic testing and energy modeling. In rural areas, however, the supply of qualified HERS raters can be extremely limited. As a result, builders may need to pay a premium for these services, as raters often must travel long distances to support rural construction projects. Limited access to HERS raters can therefore create an additional barrier to utilizing performance-based compliance pathways and improving overall energy code compliance in rural communities.

Limited Staff and Oversight

Both Colorado and Vermont face staffing limitations that affect energy code oversight in rural communities. In Colorado, it is common for a single building official in a rural county to conduct plan review and inspections across multiple codes, unless those services are contracted to a third-party provider. Rural communities also often face challenges recruiting and retaining qualified building officials due to the limited local workforce. For example, in one rural Colorado jurisdiction, a newly appointed building official with a background as a construction framer is currently working toward certification in the International Codes (I-Codes) while simultaneously overseeing building department responsibilities.

In Vermont, staffing and oversight limitations can be even more pronounced. Most rural communities do not maintain building departments or employ staff responsible for building or energy code enforcement. Vermont does not administer a statewide residential building code, and single-family homes are generally not subject to state-level building code oversight unless they are to be rental units. As a result, residential construction in many rural communities proceeds with little formal review of building plans or inspections during construction. Financial constraints faced by small municipalities further limit their ability to hire or contract staff or establish systems for energy code administration and oversight. Even where local interest exists, municipalities may lack clear statutory authority to administer and enforce RBES, leaving a governance gap that is distinct from — but compounds — the staffing and financial constraints described above.

One additional challenge facing building departments is that building inspectors and other staff are facing demographic challenges, where certain staff are retiring and the roles are not being backfilled. This creates clear challenges for energy code administration and enforcement. Moreover, it can make jurisdictions reluctant to adopt updated codes, knowing that existing staffing limitations will make implementation more difficult.

Affordability

Affordability concerns are central to housing discussions in both Colorado and Vermont. While affordability challenges extend beyond housing, they play a particularly significant role in the new construction market. For most households, a home represents both the largest financial investment and the most significant asset they will acquire. Energy code updates often introduce additional construction costs associated with meeting new efficiency requirements. At the same time, many of these provisions reduce long-term operating costs for homeowners through improved building performance, improving energy bill affordability for occupants. As a result,

builders and policymakers must balance the upfront costs of constructing homes to modern energy standards with the long-term affordability benefits associated with lower energy consumption.

In Colorado, state law HB22-1362 requires jurisdictions to update their energy codes whenever other building codes are updated (Colorado General Assembly 2022). As a result, increases in energy code stringency often occur simultaneously with updates to other building code requirements, which can further complicate affordability discussions in new construction markets. In some cases, energy code provisions may be viewed by builders as lower priority compared with other code requirements that are more directly tied to structural or life-safety considerations. These perceptions can contribute to challenges related to energy code adoption and compliance, as discussed further below. Regional collaboration models, also discussed later in this paper, may also help mitigate these concerns by improving uniformity across jurisdictions — reducing the complexity builders face in navigating different rules and sourcing materials across AHJs.

Housing Shortages

Housing shortages in both Colorado and Vermont amplify many of the challenges described above. Shortages place upward pressure on the costs of labor, material, and land, all of which affect housing affordability for both builders and homebuyers. For builders, housing shortages are often characterized by too many projects competing for too few workers. These pressures are heightened by an aging construction workforce (Academy of Craft Training 2025). In many cases, rising home prices associated with housing shortages may further complicate efforts to attract younger workers to the trades, reinforcing existing workforce constraints. The result is higher wages for construction labor and increased costs for subcontractor services.

Material costs are similarly affected. Increased construction activity associated with efforts to address housing shortages can drive demand spikes that contribute to higher material prices and greater cost uncertainty for builders. Housing shortages also increase the competition for land, increasing acquisition costs and further raising the cost of new housing construction.

These pressures ultimately affect homeowners. Basic supply-and-demand dynamics mean that limited housing availability combined with strong buyer demand contributes to rising home prices. Increased construction costs borne by builders are typically passed through to buyers, while competitive market conditions may reduce homeowner leverage during transactions, including the ability to negotiate inspection contingencies or construction upgrades. Housing shortages can also reduce attention to long-term operating costs, even though building efficiency plays a significant role in household affordability.

In this environment, energy code requirements are often viewed by market actors primarily through the lens of near-term construction cost impacts. This is especially true as additional requirements (e.g., wildfire resilience measures and residential fire sprinklers) are introduced alongside energy code updates. However, improved building energy performance can reduce operating expenses and enhance durability, helping homeowners manage long-term costs despite higher upfront housing prices. Although energy code requirements are frequently evaluated on initial costs, their long-term benefits suggest that a full life-cycle cost perspective better captures the true cost of compliance.

Compliance Outcomes in the Face of Challenges

These conditions raise an important question: how do the challenges facing rural communities affect energy code adoption and compliance outcomes? The issues described above often interact and reinforce one another, creating compounding barriers to effective energy code implementation. Limited industry workforces reduce the availability of qualified builders and subcontractors while also limiting opportunities for training on evolving code requirements. At the same time, many rural jurisdictions lack the staffing and resources needed to provide consistent oversight or verification of energy code compliance. Even where oversight mechanisms exist, the pool of candidates with the necessary technical expertise may be limited. These challenges are further intensified by housing shortages, which place additional pressure on construction markets and contribute to the compliance difficulties observed in both Colorado and Vermont. All of this suggests that traditional enforcement-based energy code implementation models may be insufficient in rural jurisdictions.

Strategies

This section describes a portfolio of strategies used in both Colorado and Vermont to address the challenges associated with residential energy code compliance.

Training and Education for Construction and Code Professionals

Training and education initiatives are intended to address one of the most significant barriers identified in rural communities: limited industry familiarity with evolving energy code requirements. Both Colorado and Vermont have invested significant resources in training and education opportunities for builders, subcontractors (e.g., insulation and HVAC professionals), third-party energy professionals, architects, and code officials.

In Colorado, the Colorado Energy Office supported training programs designed to increase the number of certified HERS raters and air infiltration and duct leakage testing professionals throughout the state, addressing the limited supply of qualified professionals—an issue that is particularly pronounced in rural communities. All seven of the training sessions supported through this effort were held in rural areas.

In Vermont, the RECI award supported the development of a detailed plan outlining the role of “Energy Professionals” in supporting energy code implementation. This designation includes professionals with HERS or BPI certifications and emphasizes their role in supporting improved energy code compliance and implementation across the state.

Both states have provided flexible training opportunities for construction and code professionals. Training was offered in both in-person and virtual formats and was often made available after the initial session through recorded webinars, allowing builders and contractors to access the material at their own pace. To encourage participation from the construction community, both Colorado and Vermont offered continuing education credits that attendees could apply toward professional certification requirements.

In Vermont, a series of training modules was developed to cover different aspects of the 2024 RBES, the applicable energy code at the time the training was delivered. This modular

approach helped avoid overwhelming participants with too much information at once and allowed attendees to focus on specific components of the code.

Both states also maintain ongoing training programs to ensure a consistent presence and source of engagement with market actors. Training is delivered through a range of formats—including in-person sessions, live webinars, and self-paced recorded courses—to maximize participation and support effective knowledge transfer. Colorado has also provided targeted training for code officials. Because many Vermont municipalities do not maintain building departments, this approach has been less applicable in that state. In Colorado, experience has shown that training code officials is most effective when it meets them where they are. Rather than requiring officials to master the full energy code at once, training programs focus on building familiarity gradually, helping officials develop confidence with specific code components over time while integrating training and skills building into the daily workflows of these professionals.

Technical Assistance

In addition to formal training and education opportunities, both Colorado and Vermont provide technical assistance to support energy code implementation. In Colorado, the Colorado Energy Office hosts the Colorado Building Code Helpline, which answers questions related to the I-Codes for projects across the state. Since August 2021, the helpline has responded to more than 600 inquiries. Similarly, Vermont offers the Energy Code Assistance Center, managed by Efficiency Vermont, which provides technical support related to both RBES and the Commercial Building Energy Standards (CBES). In 2024, the Energy Code Assistance Center managed 440 inbound and outbound inquiries for the residential code (Efficiency Vermont 2025a).

These types of technical assistance services provide a relatively low-cost way to support the building community by addressing specific technical questions related to energy code requirements. One of the primary challenges associated with helpline services is building awareness among potential users. It often takes time for building professionals and local officials to become familiar with these resources and begin incorporating them into their workflow. Formal training sessions provide an effective opportunity to promote these services, while listservs, newsletters, and targeted email outreach can further expand awareness.

In addition to helpline services, both Colorado and Vermont have implemented onsite technical assistance programs through energy code “Circuit Riders.” Circuit Riders are energy code experts who travel throughout the state to provide direct support to building departments and construction professionals. In Colorado, Circuit Riders visited 29 municipal and county building departments between October 2024 and September 2025. These visits focused on identifying technical assistance and training needs, connecting jurisdictions with relevant resources, and helping municipalities identify potential grant funding opportunities. As a result of this engagement, many of the jurisdictions visited are progressing toward adopting the latest energy codes and participating in training opportunities with which they were previously unengaged.

In Vermont, Circuit Riders conducted 46 site visits through the RECI-funded program. These visits primarily involved onsite technical assistance for builders and contractors, where Circuit Riders provided guidance on energy code compliance and addressed project-specific

technical questions. In addition, Circuit Riders delivered presentations on energy code requirements and compliance strategies at lumber yards in several regions of the state, helping reach builders and contractors in locations where they regularly gather. These forms of technical assistance can be particularly valuable in rural communities, where building officials and contractors often lack access to local peers or specialized expertise related to evolving energy code requirements.

Municipal Code Adoption and Implementation Assistance

Because municipal capacity plays a critical role in code implementation, both states have pursued strategies to support local governments. This is particularly relevant in rural communities, where municipal capacity is typically more limited than suburban and urban areas.

In Colorado, the Colorado Energy Office and its partners provide customized technical assistance to municipalities considering updates to their building codes. Recognizing that jurisdictions will be adopting the building, mechanical, plumbing, fuel gas, and fire codes concurrently with the energy code, the Colorado Energy Office provides technical assistance for all codes to ensure the jurisdiction has support across the board when moving forward with the adoption process. These services include code review, stakeholder facilitation, committee meeting facilitation, resource development, and grant writing assistance, among others. This tailored support helps reduce the administrative burden associated with updating local code packages, particularly for rural jurisdictions with limited staff capacity. In doing so, it supports more consistent code adoption and updates across municipalities that might otherwise lack the resources to pursue these changes independently.

In Vermont, municipalities have received targeted training designed to clarify their role in the energy code administration and implementation process. One of the few mechanisms municipalities have to encourage compliance with RBES is withholding a certificate of occupancy until an RBES certificate has been submitted. Outreach efforts have therefore focused on ensuring that municipalities understand this aspect of the code and consistently collect RBES certificates for residential new construction projects. More recently, advocates have begun developing a collaborative focused on improving municipal energy code administration and enforcement in Vermont; this initiative is discussed in greater detail in the *Looking Ahead* section below.

Implementation Tools and Resources

Both Colorado and Vermont have developed a range of resources that can be used by various market actors to support energy code implementation and compliance. These resources are designed to simplify code requirements and clarify compliance pathways through visual aids and concise reference materials. The level of detail varies depending on the intended audience and their level of technical expertise. Resources include checklists for building departments and designers, summary guides highlighting key code updates, compliance calculators, reference guides, and technical details related to air sealing and other building envelope requirements.

In Vermont, the RBES Handbook has long served as a primary resource to support market actors in understanding energy code requirements (Vermont Department of Public Service 2025b). The Handbook presents the technical provisions of the energy code in a

simplified format that is easier to follow than the formal code text. It also includes additional information and guidance on building science, e.g., moisture management, beyond what RBES covers. More recently, Vermont updated the *Municipal Guide for Vermont Energy Codes* (Efficiency Vermont 2024). This guide explains the statutory framework associated with Vermont's energy codes, outlines the role of municipalities in energy code implementation, and provides answers to frequently asked questions from municipal officials.

Collectively, these strategies demonstrate that improving energy code compliance in rural communities requires approaches that extend beyond traditional inspection-based enforcement. Workforce development, technical assistance, municipal support, and simplified implementation resources can help address the structural barriers faced by rural jurisdictions.

Regional Collaboration

Regional collaboration can provide an effective strategy for supporting energy code adoption and implementation in rural areas where individual jurisdictions often lack sufficient staff capacity or technical expertise. In Colorado, this approach has been explored through the Sneffels Energy Board, a cohort of seven jurisdictions in southwestern Colorado: San Miguel County, Mountain Village, Telluride, Ridgway, Ouray County, Silverton, and San Juan County.

Through a series of cohort meetings facilitated by the Colorado Energy Office and its partners, participating jurisdictions reviewed the Low Energy and Carbon Code—Colorado's amendment package to the 2024 IECC—and discussed potential amendments tailored to the mountain region. The meetings also included discussion of available studies evaluating the cost implications of adopting updated energy code requirements.

The cohort provided a forum for jurisdictions to share information and evaluate potential adoption timelines. However, discussions also highlighted the challenges associated with regional coordination, including differing political timelines and hesitancy among jurisdictions to be early adopters of more stringent codes. To support the process, project partners developed simplified resources and presentations to help building departments communicate proposed code updates to local decision-makers and stakeholders.

While the jurisdictions within the Sneffels cohort have not adopted a fully aligned energy code timeline, the effort demonstrates how regional collaboration can help reduce information barriers and build local capacity for evaluating energy code updates in rural communities.

Looking Ahead

Looking ahead, the response strategies described above will remain important for advancing energy code compliance efforts in rural communities. However, additional approaches will likely be required to address the structural barriers that rural jurisdictions face.

In Colorado, many building officials and building department staff face the challenge of securing and maintaining the required certifications from the ICC and other certifying bodies to ensure robust understanding and effective implementation of the energy code. The time and cost can be a barrier to entry. The Colorado Energy Office is working to develop and deliver robust free educational offerings to ease the burden as officials prepare for certification exams. Grant opportunities are also available in Colorado for jurisdictions to hire energy code specific plan

reviewers and inspectors. The Colorado Energy Office is actively listening to feedback provided from post-training surveys and resource development inquiries to understand what training, tools, and resources are needed to increase compliance and adoption.

In Vermont, advocates are working to ensure municipalities have the statutory authority to administer and implement the energy code if they choose to do so. The state currently lacks both the resources and the executive support necessary to implement a comprehensive statewide enforcement framework, leading energy code advocates to view municipal administration as a potential path forward. One concept under consideration involves partnering with third-party “Energy Professionals” with interested municipalities to support energy code administration and verification. The concept would define the qualification criteria to be an Energy Professional with the building science and energy code expertise necessary to verify that new homes meet RBES requirements. Under this approach, residential builders and contractors would work directly with third-party Energy Professionals during the construction process to verify compliance with RBES. Documentation from these professionals would then be submitted to municipalities to demonstrate compliance with the energy code.

In this model, municipalities would retain the authority to address cases of non-compliance but would rely on qualified third-party professionals to perform the technical verification work. This structure could significantly reduce the administrative burden associated with municipal energy code enforcement while still ensuring that new homes meet RBES requirements. The concept is similar to the energy code approach used in Massachusetts, where HERS raters play a central role in verifying compliance. While many rural municipalities in Vermont may not pursue this type of system independently, there may be opportunities for regional collaboration—potentially through regional planning commissions—to administer and oversee this type of compliance framework across multiple jurisdictions, especially those where most housing is being built.

Utility engagement could also play an important role in improving compliance outcomes. In several states, including Massachusetts, California, and Rhode Island, utilities claim energy savings associated with improved energy code compliance and receive performance-based incentives for supporting compliance activities. These structures create a financial motivation for utilities to invest in training, technical assistance, and other support programs that improve code compliance outcomes. Expanding this type of model could provide additional funding, staffing, and technical expertise to support rural energy code implementation efforts. It is worth noting that implementing this approach can be administratively complex as many utility savings frameworks and technical reference manuals (TRMs) require multi-year update cycles to incorporate new code-compliance measures.

Ultimately, improving energy code compliance in rural communities will require a combination of strategies that address workforce capacity, municipal resources, and market awareness. Training programs, technical assistance services, regional collaboration models, and utility-supported compliance initiatives each play a role in strengthening the broader energy code ecosystem. The experiences in Colorado and Vermont—particularly those supported through the U.S. Department of Energy’s RECI program—offer valuable insights into how states can support rural jurisdictions in improving compliance with modern energy codes. These lessons can help inform future efforts to strengthen energy code implementation in rural communities across the United States.

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