# INSURANCE ENDORSEMENTS TO SUPPORT CLIMATE-READY RESIDENTIAL REBUILDING POST-DISASTER

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Authors

Carolyn Kousky
Environmental Defense Fund

Talley Burley
Environmental Defense Fund

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**Cover Photo Credit:** Getty Images. Hurricane Debby victims swimming on boat on flooded street in Sarasota, Florida. Rainfall flood waters between rural homes in residential area.

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# EXECUTIVE SUMMARY

## The Challenge

Many of America's homes are not ready for our climate future. Between 1980 and 2024, weather-related disasters have cost the United States over $2.9 trillion, and as emissions continue, damages from storms, floods, wildfires, and extreme heat rise. These disasters cause wide-ranging costs and can impose a lasting toll on families and communities. At the same time, buildings are responsible for over one-third of U.S. greenhouse gas emissions, making their decarbonization critical for addressing one of the root causes of rising disaster losses. Post-disaster rebuilding presents a unique opportunity to address both challenges by constructing climate-ready homes that are more resilient and have a lower carbon footprint.

Upgrades could not only lower future losses and save money on energy, but also help preserve insurability as risks rise. While strong building codes could help ensure that these cost-effective upgrades are adopted, most jurisdictions lag in adopting codes that reflect our needs as the planet warms. Left on their own, homeowners often miss the chance to upgrade their home because they cannot afford the upfront costs or lack guidance on what improvement to undertake or prioritize or how to find qualified builders.

## The Solution: Climate-Ready Rebuilding Endorsements

This is an area where private insurers could lead. With roughly 85% of U.S. homeowners carrying a standard homeowners insurance policy, insurers are often already interfacing with homeowners after a loss. By offering a climate-ready rebuilding endorsement—an addition to a standard insurance policy that provides policyholders with extra coverage for rebuilding with upgrades that protect against future disasters and reduce carbon emissions—insurers can use the claims process to drive climate-ready improvements to homes. These endorsements would enable homeowners to rebuild homes that are safer, more energy efficient, and better prepared for the future.

## Design Considerations and Next Steps

To unlock the potential of climate-ready rebuilding endorsements, thoughtful design is essential. Success hinges on five key design elements:

1. Identifying which upgrades to include that are impactful and cost-effective,
2. Keeping the endorsement affordable for households,
3. Generating demand,
4. Providing clear guidance and support for policyholders, and
5. Supporting a skilled workforce to enable these upgrades.

While a comprehensive solution will take time to build, there are first steps that could be taken, such as offering a no-cost, universal FORTIFIED roof upgrade and forming the cross-sector partnerships needed to scale these practices. As insurers and consumers learn more and momentum grows, these endorsements can expand to cover a wider range of climate-ready improvements.

Ultimately, the objective of this endorsement is to help transform recovery into resilience. Private insurers, through their reach and expertise, are uniquely positioned to lead this shift. But they cannot do it alone. Public-sector tools such as building codes and incentive programs will be necessary, as well as a complementary focus on new construction and pre-disaster retrofits. Ensuring that we rebuild in ways that are aligned with our climate future, however, is an essential first step. If deployed successfully, a climate-ready endorsement could be one key tool to help create more resilient and lower-carbon communities across the country.

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# 1. INTRODUCTION

Much of the residential building stock in the United States is not prepared for our climate future. The risks of weather-related extreme events are increasing as the planet warms, generating rising economic losses. As measured by the National Oceanic and Atmospheric Administration (NOAA), between 1980 and 2024, 403 weather-related disasters cost the U.S. at least $2.9 trillion in damages (National Centers for Environmental Information 2025). Furthermore, buildings are responsible for a little over a third of U.S. greenhouse gas emissions (DOE 2024), making their decarbonization crucial for addressing the root cause of the growing risk of extreme weather events: a warming planet. There are proven, cost-effective construction methods that can significantly minimize damage from disasters and also methods that will reduce the carbon footprint of homes, yet adoption of these approaches is not widespread.

Both of these challenges—creating safer and decarbonized homes—can be addressed by making our buildings climate-ready. A climate-ready building is defined by the Building Energy Exchange as "high-performance, low-carbon, and climate-resilient" such that "their design, construction, and operation must reduce energy use and greenhouse gas emissions while simultaneously mitigating and adapting to the various hazards presented by climate change" (Building Energy Exchange 2023). A climate-ready building is built to withstand growing climate risks and also to use less energy and less carbon-intensive materials.

While retrofits of existing buildings are clearly needed, post-disaster rebuilding presents a unique and crucial opportunity to implement climate-ready upgrades. Adopting the needed upgrades during rebuilding is typically more cost-effective than undertaking retrofits, as well as easier on the homeowner since changes to the home are already occurring. Retrofits, for example, can encounter onsite complexities that can further increase costs or disqualify homeowners from public sources of funding, such as when homes have significant deferred maintenance, disqualifying them from weatherization assistance programs (Eisenberg et al. 2012). Despite the benefits of upgrading during rebuilding, too often the post-disaster rebuilding just replaces the exact structure that was there before the disaster, missing this critical opportunity to improve our building stock.

The failure to improve our buildings post-disaster is typically driven by a few factors. First, property owners may not have the needed funds to invest in upgrades. While many of these climate retrofits and interventions could pay back over time through avoided losses, and/or lower energy bills, they typically require extra funds up front (e.g., National Institute of Building Sciences 2025). Post-disaster, cash is stretched thin, with many lacking financial resources to pay for damages or reluctant to take on additional debt (Board of Governors of the Federal Reserve System 2017). In addition, there are information barriers and transaction costs; property owners often lack the needed information about what actions to take, how to prioritize them, or how to find a trusted and skilled contractor or builder to undertake the needed work. In the chaos and emotional turmoil of a disaster, most disaster victims do not have the time or attention to navigate such changes on their own. They may also be concerned that taking time to explore these upgrades, a process that can be confusing or complex, could slow recovery too much.

**Private sector property insurers already work in the rebuilding process with nearly 85% of homeowners in the U.S. who have homeowners insurance, providing funding to rebuild via claims payment. This makes insurance policies a readily available structure that can be adapted to provide additional payments for climate-ready enhancements.**

Private sector property insurers are in a unique position to address these roadblocks. They are already working with policyholders in the rebuilding process for the almost 85% of homeowners in the United States who maintain homeowners insurance.[1] For these homeowners, insurers already provide funding for rebuilding through claims payments, making insurance policies a readily available structure that can be adapted and structured to provide additional payments for climate-ready enhancements.

This can be achieved through an endorsement, or an addition to a standard insurance policy that provides a specific extra coverage. Indeed, some insurers have already experimented with related endorsements for green or resilient home improvements, but they have not been comprehensive or designed to work at scale. In this report, we examine the potential for a scalable, implementable, private-sector climate-ready rebuilding endorsement for the residential property insurance market in the United States. This endorsement would support necessary upgrades to reduce damages from future weather-related extremes, as well as the use of climate-friendly building materials, electrification,

[1] This estimate was made by combining NAIC data on the number of homeowners policies with data from the American Community Survey on the number of owner-occupied homes (National Association of Insurance Commissioners 2025).

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and investments in energy efficiency. Partnerships with other organizations could provide policyholder support at the time of rebuilding to identify and adopt key upgrades.

In this report, we define such an endorsement for private insurers, explain its benefits, and present a series of considerations about its design and implementation that would be needed for adoption at scale to have measurable impact. The report draws on a literature review, anonymous interviews with a range of stakeholders, analysis of existing related programs, and roundtable discussions with participants at two workshops that took place in the fall of 2024 (Environmental Defense Fund and Harvard Salata Institute 2024; The Economic Risks of Climate Change for California Communities 2024). We conclude with suggested next steps to drive adoption of a climate-ready endorsement amongst private-sector insurers.

The endorsement discussed in this report is **focused on private sector insurers.** State-created residual insurance programs could offer similar endorsements, and several already do provide similar coverage focused on loss reduction measures (Kousky et al. 2025). This report also does not discuss flood insurance, as that is a federal program offered through the Federal Emergency Management Agency (FEMA). It, too, has a similar endorsement already in place for flood mitigation post-disaster, as well as several other incentive programs for flood risk reduction. Finally, while this report is focused exclusively on ensuring that rebuilding is done with consideration of our climate future, complementary approaches for brand-new construction and to retrofit existing homes pre-disaster will clearly also be needed to improve the nation's residential building stock for growing climate-related risks.

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# WHAT IS A CLIMATE-READY REBUILDING ENDORSEMENT?

U.S. homes are not widely prepared for our climate future. Realtor.com has estimated that almost 45% of all homes in the country are at risk of severe or extreme damage from a natural disaster, representing almost $22 trillion in value (Trapasso 2023). And the building sector in the U.S. in 2021 was estimated to be 35% of total greenhouse gas emissions, with over half of this coming from indirect emissions associated with electricity use and roughly a quarter coming from on-site burning of fossil fuels, such as using gas for heating and cooking (DOE 2024). Beyond indirect emissions, embodied carbon emissions refer to the total lifetime greenhouse gas emissions associated with raw material extraction, manufacturing, transportation, construction, maintenance and repair, and disposal. Lowering embodied emissions requires using lower-carbon building materials.

**A climate-ready rebuilding endorsement would provide additional funds for pre-determined upgrades that would make the home less likely to be damaged in future weather-related disasters, as well as upgrades that support lower energy use and decarbonization of the building.**

Endorsements, sometimes referred to as riders, are a commonly used tool by insurers to provide additional coverage not included under a standard insurance policy. They can typically be opted into by the policyholder for an extra cost. For example, a standard homeowners insurance policy might exclude coverage for sewer backups or broken service lines, but coverage for these could be added through an endorsement. A climate-ready rebuilding endorsement would provide additional funds for pre-determined upgrades that would make the home less likely to be damaged in future weather-related disasters, as well as upgrades that support lower energy use and decarbonization of the building. Such an endorsement would only be triggered in the event of substantial damage to the home. This threshold would be determined by the insurer, but, for example, could be damage over 50% or 60% of the structure.

It is worth noting that if all localities adopted forward-looking building codes, both for stronger building in the face of increasing perils and to decarbonize our buildings, insurers could use building upgrade endorsements to support policyholders with meeting the newer codes during rebuilding (more on these below). Unfortunately, FEMA has identified that the majority of U.S. communities have not adopted up-to-date building codes (FEMA 2023), let alone codes that consider escalating climate risks. Energy efficiency codes are also being rolled back in many states around the country, despite being cost-effective and saving residents money on lower energy bills over time (Tilman 2023). And the International Code Council, which develops model codes, dropped a requirement that new homes include electrical wiring to support building electrification, such as heat pumps and induction stovetops, under pressure from the fossil fuel industry and in opposition to its own experts (Kaufman 2024). Dwindling political will puts the pressure on residents to proactively take action to build climate-ready homes. A climate-ready rebuilding endorsement can help.

## Related Examples

While our research did not identify any existing comprehensive climate-ready rebuilding endorsement on the market today, there have been several related offerings that can inform its design. The most successful have been FORTIFIED roof endorsements. The Insurance Institute for Business & Home Safety (IBHS) has developed the FORTIFIED certification, which provides guidance on roof installation and home construction to dramatically reduce damages from high wind (Insurance Institute for Business & Home Safety 2025). Three state residual insurance programs (those in Alabama, Mississippi, and North Carolina) have adopted FORTFIED roof endorsements at no added cost for policyholders (Kousky et al. 2025). For policyholders in these programs, the endorsements cover the installation costs of an IBHS FORTIFIED roof following a loss that results in substantial damage. Essentially, when a roof is going to be replaced anyway and paid for by the insurer, the endorsement provides the extra funds to make it a FORTIFIED roof.

The extra costs are modest. As noted on the IBHS website, an analysis conducted for Alabama found that the extra costs to upgrade roofs to FORTIFIED standards, once a roof replacement was already being done, ranged between $700 and $1,700. For reference, the cost of a roof replacement on average is a bit more than $10,000 but this varies by the size of the home and by location according to the costs of material and labor (Joint Center for Housing Studies 2023). In addition, policyholders must pay the cost of an IBHS evaluator to certify the work, an extra $300 - $600. The certification is necessary for policyholders to receive premium discounts reflecting the lower risk from the FORTIFIED roof as it makes sure the work was done correctly. A recent analysis in Alabama found that on average,

FORTIFIED roofs that were inspected by an IBHS evaluator performed over 50% better in a hurricane than homes built to a similar code but not evaluated (AL DOI and Center for Risk and Insurance Research 2025).

The FORTIFIED roof endorsements by residual insurance programs have been successful because the upgrade offers substantial reduction in avoided future losses at a small additional cost. Multiple studies have shown that the roofs dramatically reduce claim frequency and severity making these investments cost-effective (AL DOI and Center for Risk and Insurance Research 2025; LA Legislative Auditor 2025; NCIUA 2024). This makes it viable for state residual markets to provide them universally at no extra charge, especially since these programs often have an objective to improve insurability and transfer policies back to the private market (Kousky et al. 2025). The Mississippi Windstorm Underwriting Association endorsement reimburses an additional $1,500 for materials and labor and $500 for an inspection and evaluation, while the North Carolina Insurance Underwriting Association endorsement offers up to $5,000 as well as up to $600 for an IBHS evaluator (Kousky et al. 2025). While some private insurers may also offer FORTIFIED roof endorsements, private insurers typically charge additional premium for such coverage.

Beginning in the mid-2000s, a few insurers began experimenting with "green" endorsements for more sustainable rebuilding. In 2006, Fireman's Fund Insurance created some of the first green insurance products for commercial insurance, including offering additional coverage to support rebuilding with environmentally friendly construction materials and the installation of energy-efficient equipment: Certified Green Building Replacement and Green Upgrade coverage (GreenBiz 2006). Fireman's Fund worked with the U.S. Green Building Council and the Green Building Initiative to align their endorsement with the LEED and Green Globes programs, and the coverage pays for the application to be certified by either of these organizations. They began automatically providing this at no extra cost to 35,000 California customers that had purchased its "Prestige Premier" product. In other states, as of 2012, 5,500 homeowners had purchased it at a cost of $70 per $1 million in insured value (Panko 2012); we do not have updated numbers.

Additional companies including Farmers Insurance, with their "Eco-Rebuild" product, began offering similar coverages to rebuild more sustainably. The Farmers Insurance endorsement provided $25,000 to cover extra costs of green materials and reimbursement for recycling debris (The Columbus Dispatch 2009). The cost was 2% of premium or $25; despite the low cost, as of 2012, less than 1% of their policies in eligible states chose the endorsement (Panko 2012). Chubb Personal Insurance introduced the GreenWise policy endorsement in 2009 in select states. Policyholders could choose an additional 10%–100% of their replacement cost for added cost that began at 1% of premium (Chubb 2024). In 2009, the Insurance Services Office, which develops contract language for insurers, released a standard coverage option for commercial insurers adding a green endorsement (Insurance Journal 2009). Multiple other firms offer these endorsements. These green endorsements, however, come at additional costs to the policyholder and limited information is available on the uptake or, importantly, whether the endorsement has been used following claims. Anecdotal evidence through our research suggests take-up has been quite low.

Globally there has also been emergence of both resilience and green endorsements that could serve as models for programs in the United States. In the United Kingdom, for example, many insurance firms offer "Build Back Better" coverage, which provides up to

£10,000 to install flood resilience measures when repairing properties after a flood (Flood Re 2025). In 2023, Tokio Marine launched a Green Upgrade Endorsement, at no additional cost, for its commercial properties, which applies in the event of a total loss. The endorsement covers extra costs for greener reconstruction up to £1 million or 10% of the total loss (Tokio Marine HCC 2025). As another example, AXA offers ResidenceSurance coverage for customers in Hong Kong, France, and Germany to replace damaged appliances with energy-efficient models (AXA 2022).

A much more common endorsement for homeowners insurance policies in the U.S. is building code upgrade coverage, sometimes called law and ordinance coverage. This provides additional funding to pay for upgrades needed to meet current building codes, if they have been updated since the property was originally constructed. If a locality adopts stronger codes related to extreme events or energy efficiency, for example, this coverage will pay for any extra costs in reconstruction to meet these codes. Some policies come with this coverage included as a default, while in other cases, consumers have to choose to add it. In California, it is state law for a homeowners insurance policy that provides replacement cost coverage to also include building code upgrade coverage at a minimum of 10% of the dwelling coverage policy limits (CA Ins Code § 10103). As such, when rebuilding, if wildfire or energy codes have been upgraded, policyholders in the state likely have the funds to pay any extra costs to comply with the stronger codes. The federally-managed National Flood Insurance Program has a similar coverage that has been required in all new policies since 1997 that pays, for a small additional premium, up to an additional $30,000 to bring a home into compliance with floodplain management regulations (Kousky and Lingle 2017). Policyholders cannot opt-out of this coverage.

## Benefits for the Policyholder

Climate change is increasing the risks of many weather-related extreme events, driving up costs on households. Disasters are severe financial shocks for survivors, and most households do not have sufficient resources to cover the wide range of expenses and potential lost income that the disaster imposes (Collier and Kousky 2025). These costs include repairing damaged structures and contents, debris removal and remediation, paying for evacuation or temporary lodging, lost income when business is interrupted, higher commuting costs when transit is down, and paying for generators or fuel when power is lost, among others. Hardening homes against disaster losses makes such damages less likely. The National Institute of Building Sciences, for example, has found that every $1 invested in resilience measures can save on average between $4 to $11 in avoided future losses (National Institute of Building Sciences 2025).

Safer homes also mean more insurable homes. As risks have grown around the country and other factors have driven up the costs of building, the price of homeowners insurance has risen (Keys and Mulder 2024); and in some instances, insurers have withdrawn from high-risk markets (Kousky 2024). Insurance, though, is more available and less expensive when risks are lower. Any investments in making homes safer can translate into more available and affordable property insurance. Some states have also begun mandating premium reductions for investments in loss reduction, such as California requiring insurers that cover wildfire to offer a premium discount for certain loss reduction upgrades to the home, or Mississippi, Louisiana, and Alabama requiring insurance premium discounts for FORTIFIED homes. In addition, these investments may increase home value. Research has found that at least some improvements, such as FORTIFIED roofs, increase home values (Awondo et al. 2023; Petrolia et al. 2023).

Similarly, investment in energy efficiency can generate long-term energy savings for households through lower utility bills. Replacement of older appliances for more energy efficient (such as ENERGY STAR) systems, for example, has been estimated to save households as much as $450 per year (Lawrence Berkeley National Laboratory 2020). The U.S. Department of Energy notes that the average American spends $2,000 on energy annually, and $200 - $400 tends to just be wasted from drafts, air leaks, and outdated heating and cooling (U.S. Department of Energy 2025). Research suggests universal adoption of heat pumps could result in emissions reductions in the United States of between 5% and 9% and reduce energy bills for 80% of households (Wilson 2024). Such upgrades may also provide other benefits; eliminating gas from the kitchen, for example, can help improve the health of residents. Gas stoves cause higher levels of asthma and respiratory illness in children (Lin et al. 2013).

**Endorsements would reduce the need for out-of-pocket costs or additional debt for post-disaster upgrades, increasing a household's likelihood of adopting climate-ready retrofits.**

Despite the benefits of lower future disaster costs, reduced insurance premiums, lower utility bills, and fewer health costs, many of these measures still require extra up-front funds. In a post-disaster context, however, households are often under severe financial stress. Given this strained post-disaster financial situation, most survivors are reluctant to spend any extra amount or take on additional debt. For example, after major disasters, the Small Business Administration offers recovery loans for households with an option to increase the size of the loan to pay for investments in risk reduction; less than 2% of borrowers choose to do this (Collier et al. 2024). As such, even if upgrades are cost-effective or produce other benefits, if there are not funds to cover these up-front costs, many households will not adopt them. Endorsements would reduce the need for out-of-pocket costs or additional debt for post-disaster upgrades, increasing a household's likelihood of adopting climate-ready retrofits.

The endorsement would also eliminate some of the uncertainty homeowners have in being able to finance the upgrades. Other sources for disaster recovery, such as federal disaster assistance from FEMA and HUD, are uncertain and can take months and sometimes years to reach households (Martin et al. 2019). Households are often uncertain when and if aid will arrive, how much aid they will receive, and what activities will be eligible for reimbursement or funding. Households commonly tap into personal finances to begin repairs that allow them to return home. The replacement and repair of life-safety systems, including utilities, often happens before aid arrives. Being assured of funds for upgrades early could increase their adoption.

Households dealing with post-disaster impacts and working to return home as quickly as possible may not have time or capacity to evaluate whether a repair or replacement will improve energy efficiency or increase resilience, and identifying and installing climate-ready upgrades can be complex. Additionally, It can be difficult for homeowners to assess which retrofits are most cost-effective or impactful for their structure and to determine how to prioritize the array of options. Different properties and geographies may require different interventions. Without guidance, decision fatigue can lead to systems being replaced without upgrading to climate-ready options. As such, a climate-ready endorsement will need to be coupled with homeowner outreach and education. A well-communicated endorsement could remove some of this uncertainty and support households in selecting climate-friendly materials as they undertake critical repairs post-disaster.

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# CREATING A SUCCESSFUL CLIMATE-READY REBUILDING ENDORSEMENT

To achieve the goals of creating climate-ready residential structures and supporting households in building homes that have lower occupancy costs and improved health and safety for residents, any endorsement should be carefully designed and tied to broader supportive services. We've identified five considerations in designing a climate-ready rebuilding endorsement: (1) selecting upgrades and interventions, (2) maintaining affordability, (3) increasing demand, (4) providing consumer education, and (5) identifying and growing the community of builders and contractors.

## 1. Selecting Upgrades and Interventions

A climate-ready rebuilding endorsement needs to be easily adapted across geographies and yet also needs to reflect the specific climate risks and building types of a given location. This requires careful selection of eligible activities covered by the endorsement. The plethora of adaptation and decarbonization interventions, the diversity of climate hazards, and the variation in local laws, regulations, and incentive programs across the country present complexities in identifying what investments and upgrades would be covered under the endorsements. Adhering to already developed standards and certifications can assist in this process and ease the need to identify which upgrades would qualify for coverage. Additionally, for policyholders, clear and well-known standards can reduce decision fatigue, minimize confusion, simplify the design process, and provide peace-of-mind that the work done was impactful.

For climate hazards, IBHS offers standards for wind- and wildfire-resistant construction that can be the basis of the climate resilience component of an endorsement. IBHS is a non-profit organization supported by the property insurance industry to perform building research to identify design, construction, and retrofit solutions and standards that reduce future losses and make homes and businesses more resilient. As discussed above, the IBHS FORTIFIED designation has been shown to dramatically reduce losses from hurricanes and high wind events. A study conducted by the Institute for Advanced Analytics at North Carolina State University, for example, determined that homes with FORTIFIED roofs resulted in a 35% reduction in insurance claims reported and a 23% reduction in loss per building per storm (NCIUA 2024). Rebuilding to wildfire-resistant standards has similarly been found to reduce future economic losses—by up to 43% (Hernandez et al. 2025). IBHS's new Wildfire Prepared Homes standard provides a clear set of standards that could be adopted to lower the risk of fire damage and reduce future claims.

Given that not every location faces the same climate hazards, there are two approaches for the endorsement. The first is to have the endorsement vary by state (or a smaller geography). For example, the endorsement could support upgrades to FORTIFIED in areas of high wind risk, including hurricane risk, and to the Wildfire Prepared Home standard in areas of high wildfire risk. This would require insurers to identify which states (or counties or zip codes) would be eligible for which risk reduction measures, but this should be easily doable with publicly available datasets. This includes federal data, such as FEMA's National Risk Index, which provides information about various climate and natural hazards for U.S. counties or the Climate Explorer developed to support the U.S. Climate Resilience Toolkit, which provides interactive graphs and maps showing past and projected climate conditions across the country. Since there is growing uncertainty about the continued availability of federal data resources under the current administration, the increasing number of data resources emerging through private and non-profit groups like First Street and Climate Central could be used as alternatives or complements.

Alternatively, an insurer could offer a national endorsement that is agnostic to location. This endorsement would need to be designed with a dollar cap that can be spent on any upgrade from a preapproved list. This would include resilience upgrades for multiple climate risks, and it would be up to the homeowner to identify which were most applicable for them. While perhaps easier to administer, this would create more burden on the homeowner. The approach would require the homeowners to evaluate and choose the best interventions for their property. That said, if using pre-developed standards, such as IBHS, homeowners would only need to know the perils of concern, since the specific building upgrades are then

identified in the standard. Insurers could also offer referrals to local organizations that would provide home audits to help policyholders understand the upgrades that would be useful to improve resilience and lower emissions.

There are many different options to lower the carbon emissions associated with a home. Unlike resilience upgrades, many of these are highly transferable across locations. At a high level, decarbonizing the building sector is thought to require improved energy efficiency of the home and appliances, electrification, greening the electricity sources to the home, and using low-carbon materials. Specific actions under each of the high-level categories could then be identified, such as better insulation and weatherization, high-efficiency and electric appliances, and installation of rooftop solar.

Determining what is included from the many decarbonization options in any endorsement could be challenging because there is not one agreed upon standard and recent shifts in federal policy present hurdles. The ENERGY STAR certification, for example, has long been a relied-upon standard for energy efficiency and would have been ideal for insurers to reference as part of an endorsement. Unfortunately, in 2025, the Trump administration announced it will end the ENERGY STAR program. The future of the Zero Energy Ready Home Program in the Department of Energy, a standard for buildings solely focused on decarbonization, remains uncertain.

LEED is a broader, more holistic sustainability certification for buildings and it includes some measures focused on reducing carbon emissions. BREEAM is another standard for new construction tailored to the region in which the building is located. For the decarbonization part of the climate-ready rebuilding endorsement, an insurer could choose to support either of these standards, although they tend to be more commonly applied to commercial and institutional buildings. An insurer could also work with organizations, such as the U.S. Green Building Council or the BEAM estimator from Builders Climate Action to identify a list of specific measures that would be eligible for coverage under the endorsement (Builders for Climate Action 2025).

PHOTO CREDIT: KELLY, PEXELS

The easiest approach for an insurer, following the design of some of the green endorsements that have already been developed, would be to give the policyholder a pre-defined amount to spend on any pre-approved decarbonization upgrades. The insurer could create a comprehensive list of items that would be covered, as well as offer advice on what items would be useful to prioritize. For example, heating—both space heating and water heating—are the largest source of operational emissions for residential building (DOE 2024), so improved efficiency of heating could be a priority during rebuilding. In addition, certain appliances, such as heat pumps, and certain building techniques, such as improved insulation and air sealing, are known to be widely beneficial. Insurers could also partner with established organizations such as Rewiring America, which has details on the necessary home upgrades, can advise homeowners about the options, and support them through the retrofitting process (more on such partnerships below).

## 2. Maintaining Affordability

Endorsements must be affordable for policyholders. Many households cannot or will not pay higher insurance premiums, especially in an environment of rising prices. That said, insurers cannot provide extra funds at the time of a claim if they do not account for those payouts ahead of time and price for them appropriately. As such, for an endorsement to be low cost for the policyholder, it must also be low cost to deploy for the insurer. This requires focusing the endorsement on lower-cost, high-impact upgrades.

Some of these have been identified through prior approaches. For example, as discussed above, fortifying a roof against high winds once a new roof is already being put on is fairly low cost. Once the roof is already being replaced, it can cost less than a few thousand dollars—a very small percentage when rebuilding a home substantially damaged in a storm. To date, though, private-sector insurers have charged homeowners for this endorsement, with a couple interviewees estimating around $100 per year. Most policyholders, typically unaware of the important benefits of stronger rebuilding, will not or cannot pay the extra costs, limiting adoption.

Given the small costs of the upgrade once a roof is already being replaced and the huge savings in potential avoided future losses, it would appear that the private sector should be able to offer this endorsement free of charge, as is currently done in the three wind pools, as noted above. That said, many stakeholders we spoke with noted that insurers are unlikely to do this because they do not want to invest in making a home safer when the policyholder could choose, for any number of reasons, to move their policy to a competitor, depriving the insurer of the benefits of fewer claims and lower future payouts. If all insurers offered this benefit, however, they would all be contributing to loss reduction and long-term insurability of a region. This would likely take regulation to prevent free-riding and any indication of insurer collusion. Absent widespread inclusion of the endorsement in all residential policies, insurers could potentially offer to pay for the FORTIFIED roof if the policyholder agrees to a slightly longer insurance contract, such as a few years, to help ensure the insurer benefits from the lower risk. While many households may only purchase insurance based on price, it is also possible that for some market segments, insurers could increase customer loyalty through the endorsement, justifying adoption.

Upgrades associated with some of the other climate hazards, such as wildfires, can cost more and would likely require private insurers to charge for the endorsement. The costs of upgrading to wildfire-resistant materials and approaches during rebuilding, for example, can cost on average anywhere from a few thousand dollars more to almost $30,000

depending on the region and wildfire standard adopted (Barrett et al. 2022; Hernandez et al. 2025). While greater than the costs of a FORTIFIED roof, these costs are typically much less than 10% of a dwelling's value, a common standard for code upgrade coverage, as described above.

Decarbonization retrofit costs can vary widely. A recent study by RMI found that building an all-electric home costs less than building a home with gas (Tan et al. 2022). As such, encouraging homeowners to convert to electric during a complete rebuild would not only help reduce carbon emissions but would also cost less for the insurer. While more efficient appliances, such as an induction stove, might be more expensive, the actual cost depends on the particular models being compared. Rewiring America has collected price data for many electric appliances but does not compare them to alternatives (Rewiring America 2024). The U.S. Energy Information Administration, however, has conducted detailed cost estimates for residential and commercial building appliances and equipment, enabling easy comparison of the costs of traditional units with ENERGY STAR or high-efficiency units or comparing one type of heating or cooling with another (EIA 2023). While most upgrades do indeed cost more, for the majority, the additional costs are fairly modest once a replacement is already being done.

While using existing standards could help define the endorsement, as discussed in the preceding section, they do typically come with inspection or certification costs. Certifications provide a guarantee to third parties that the work was done properly and all standards met, which can then support potential premium discounts, such as for IBHS standards, or increase home values. Policyholders, however, may be unwilling or unable to cover these expenses. Prior examples demonstrate that any endorsement should cover the additional cost of inspections or certifications.

Given the wide range of upgrade options and the need to keep costs predictable and manageable for an insurer and homeowner, the most workable approach for a climate-ready rebuilding endorsement may be the one taken in some of the initial green endorsements: provide a modest amount of pre-defined funding at low additional premium. For instance, the endorsement could give policyholders a set amount following a substantial loss, either as a fixed dollar sum or as a percentage of their dwelling coverage, to use toward a variety pre-approved climate-ready upgrades, as well as any certification costs. An endorsement could also be designed with a cost--sharing feature; for example, the insurer pays 90% of upgrades up to a certain threshold, with the policyholder paying 10%. This would create a financial incentive for the homeowner to lower costs when possible and choose the highest impact upgrades.

## 3. Increasing Demand

Anecdotal evidence suggests that the endorsement cost will also need to be kept as low as possible to spur widespread demand. That said, a survey of households across Europe, Asia, and the Americas found that a majority would be interested in insurance coverage that could help them reduce their environmental impact or adapt to climate change, and 60% said they would be willing to pay more for this (AXA 2022). Further research is needed to better understand willingness to pay for a climate-ready endorsement across income levels, geographies, and other household attributes.

Increasing demand will also require consumers to be made aware of this coverage option and educated about the benefits. Insurers could produce short and easy-to-understand

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documents and infographics to explain the cost savings and broader social benefits of the adoption of resilience and decarbonization upgrades during rebuilding. These could then be shared with agents, encouraging them to market the endorsement widely to consumers as well as directly to their policyholders.

Insurers could also harness findings from behavioral economics. Individual decision-making has been found to rely on simplified decision-rules and fall prone to common biases. This can lead people to be overly optimistic, as well as myopic, about future losses, thus limiting interest in insurance and financial preparation for future disasters (Meyer and Kunreuther 2017). Another decision bias identified by researchers is that when presented with various options, people tend to stick with status quo or default choice (Jachimowicz et al. 2019). This suggests approaches to designing the endorsement to increase takeup. A recent study that examined a private flood insurance endorsement that paid for rebuilding with flood-resilient materials found that consumer enrollment was indeed influenced by the default choice. When the default was switched from an opt-in (the customer had to choose to add the endorsement) to an opt-out (the customer was automatically enrolled in the endorsement but could chose to have it removed) enrollment, it increased take-up from 12% to 32% (Conell-Price et al. 2022). Learning from this, enrollment in the climate-ready rebuilding endorsement could be the default choice.

## 4. Providing Consumer Education

In addition to education about the benefits of enrolling in the endorsement, policyholders will need to be reminded of their endorsement at the time of a loss and instructed on how to use it. Coupling this outreach to broader homeowner support and guidance on climate-ready rebuilding could ease the process for the consumer and increase the likelihood that upgrades are adopted. Research has found that property owners who were informed about mitigation options are almost three times more likely to undertake mitigation—such as installing flood vents, elevating HVAC systems, or upgrading their roof—post-disaster, and if a household was insured, they are 124% more likely to invest in risk reduction after the disaster (Kousky and You 2024).

The variety of climate-ready retrofits available can make it difficult for households to know which ones are most appropriate or cost-effective for their property. Policyholders need to also be informed about the cost savings of different measures, in terms of lower energy use, avoided future losses, and potential premium reductions. In addition, as noted above, research has found that some upgrades increase home values, and these findings could also be summarized for policyholders. Detailed information is also needed for implementation. Research underway on equitable decarbonization at University of California, Berkeley, for example, has found that that the majority of homeowners interested in electrifying their homes were unable to complete the retrofits due to implementation barriers, including challenges navigating the paperwork, difficulty finding contractors, or learning that the costs to make their homes retrofit-ready greatly exceeded available incentives (Reid 2024).

Technical and case management support can provide policyholders with the necessary details to choose upgrades and successfully adopt them. Insurers may not be the best positioned to provide these services, but they could refer consumers to partner organizations that do. There are many non-profit organizations that help households with resilience and energy retrofits and would be well-positioned to provide case management support. It would also be possible to customize an app for policyholders that centralizes much of the information needed to navigate use of the endorsement. This could be tailored by geography and home type. Automating some of the information would be a one-time investment but could save costs over time.

## 5. Identifying and Growing the Community of Builders and Contractors

These endorsements cannot be successful without the skilled workforce of builders, contractors, architects, and others needed to implement the climate-ready upgrades for policyholders. Some of the upgrades are easy to adopt, but others require specialized training. The residual insurance markets that adopted FORTIFIED endorsements and grant programs learned that to be successful, they had to support training of builders and IBHS evaluators to support the program (Kousky et al. 2025). Post-disaster, the increased demand for construction and contractors can stretch the availability of the workforce. If only a small set of contractors is trained, the increased demand may make it difficult for households to easily secure those contractors for their projects. Insurers could partner with economic development organizations and trade associations to expand the workforce to help support building climate-ready homes and increase the workforce of climate-ready builders available post-disaster.

In addition, insurers could develop pre-approved lists of builders, contractors, and architects that are trained in climate-ready upgrades and meet certain standards of trust and professionalism. For example, the California Earthquake Authority and the North Carolina wind pool have both created such lists to help policyholders who receive a mitigation grant from them (California Earthquake Authority 2025; North Carolia Independent Umbrella Association 2025). In addition, IBHS keeps an online list of those trained to do FORTFIED. All of these organizations could share lessons and also potentially be partners in generating joint prequalified contractor lists. Such lists could increase demand and create a market signal that rewarded those trained climate-ready rebuilding.

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# NEXT STEPS

Disaster losses are growing, but there are proven techniques to harden homes and lower damages. Buildings account for over a third of U.S. greenhouse gas emissions; lowering those emissions is a necessary component of reducing climate impacts. The public sector plays a vital role in improved construction through building codes, grants for retrofits and upgrades, and tax incentives—all of which are greatly needed. But insurers can also be a key driver of upgrading our housing stock. They touch many homeowners, are seen as society's risk managers, and their claims processes could be harnessed to support housing improvements. Uniting public programs with action by private insurers (and our publicly-created insurance programs) can help turn disasters into opportunities to create climate-ready communities. Transformation will take time, but there are initial steps that can be taken now. We highlight five next steps to help build momentum and scalability of climate-ready insurance endorsements.

1. **Start Simple**

   Insurers do not need to begin with a full climate-ready rebuilding endorsement all at once, although that should be the ultimate goal, given both the benefits to policyholders and the broader social and economic benefits of safer and decarbonized homes. A simplified endorsement can serve as an on-ramp and be scaled over time. For example, the evidence supporting FORTIFIED roofs is extensive, already driving widespread support from policymakers, residents, insurance regulators, and others. The extra costs of a FORTIFIED roof are very modest and states such as Alabama and Louisiana now require that FORTIFIED endorsements be offered. Private insurers could build on this body of evidence and momentum by offering a free and universal endorsement that covers the cost of upgrading to a FORTIFIED roof whenever a full roof replacement is already covered by the insurer. From there, endorsements could expand to support more resilient rebuilding for other perils as well.

   Another initial approach could be to allocate $25,000 toward any pre-approved climate-ready upgrade across all geographies. That list could start small, with well-vetted items, such as adopting IBHS standards or converting to more energy-efficient appliances or home electrification or rooftop solar. This list of approved measures could grow over time as further cost analyses are completed and insurers (and other sectors) learn more about which retrofits have the biggest impacts. This approach could also become geographically distinguished over time. Insurer outreach could start small, such as a one-page flyer with claim notices, for example, and expand to more sophisticated tools such as websites and apps for those navigating the rebuilding process.

2. **Harness Cross-Sector Collaborations**

   A climate-ready endorsement will be more effective—and easier on insurers—when undertaken in partnership with other organizations. Such collaborations can harness the comparative advantage of partners in needed areas, such as consumer engagement or construction upgrades, and reduce burdens on the insurers. For example, outreach, information, and resources can be delivered alongside partners, making endorsements easier for policyholders to understand and use, and potentially lowering costs on insurers. As another example, partnerships with contractors, engineers, architects, and a variety of specialized construction trades can provide demand for a skilled workforce to deliver on the upgrades and ensure capacity for the work to be undertaken post-disaster. For certain retrofits, such as heat pumps or other energy-efficient systems, insurers could also build relationships with and invest in the supply of specialized equipment needed to complete the work.

3. **Regulators Can Enable Change**

   Insurers often suffer from a collective action challenge. For example, a free FORTIFIED endorsement could reduce losses and improve insurability across a region. But no single insurer wants to pay slightly higher claims for that upgrade if their policyholder may switch to a competitor who then benefits from the roof upgrade without having supported the investment. Regulators can solve this challenge for the industry by requiring FORTIFIED endorsements on all policies. Alabama, for instance, has required FORTIFIED endorsements be offered to consumers since 2019 (Alabama Department of Insurance 2025), but mandatory offers in insurance do not always drive adoption. For example, California has a mandatory offer of earthquake insurance to residential coverage, but over 85% of policyholders decline coverage (California Department of Insurance 2023).

Required coverage, however, can drive widespread impact. An example comes from California, which, as noted above, requires code upgrade coverage at 10% of the dwelling limit for all replacement cost homeowners policies in the state. This creates a level playing field for insurers and guarantees that post-disaster all insured homeowners can make the needed upgrades to comply with stronger hazard codes, safety codes, or energy codes. State legislators could similarly require low-cost, baseline climate-ready rebuilding endorsements. Alternatively, states could require an opt-out for such coverage, as the research findings discussed earlier suggest this could expand adoption.

4. **Researchers Can Fill Gaps in Understanding**

   While some investments, like FORTIFIED, have been well-researched in terms of their efficacy, cost-effectiveness, and value by housing markets, others still need more of an evidence base. One key gap is how new materials and approaches for decarbonized and more environmentally sustainable buildings perform under natural hazards. Better understanding these linkages will also require guidance for builders, such as how to install rooftop solar on a FORTIFIED roof and maintain the benefits of lower storm damages. Relatedly, there is still only minimal understanding of which decarbonization investments also lower risks of losses for households creating win-wins. For example, removing gas stoves not only lowers carbon emissions but also dramatically improves health outcomes for residents. Finally, more data is needed on how existing endorsements, like those for green building, have been adopted and how they are viewed by consumers. That information will be critical to improving policyholder outreach and tailoring education efforts to scale the adoption of endorsement and drive not only uptake, but use by homeowners after a loss.

5. **A Shift in Mindset**

   Finally, while insurers could play a key role in transforming our building stock, insurance is typically designed to simply replace what was damaged or lost without any changes. A shift in mindset is necessary so that the rebuilding process incorporates upgrades that mitigate future losses and help stabilize the climate. All participants in disaster recovery need to shift their perspective to one of rebuilding in a manner that is aligned with our climate future. This shift in perspective is essential given our ever-increasing climate risk. Homeowners need to recognize the value of a stronger and greener home in terms of enhanced safety, lower future losses, lower utility bills, and more readily available and affordable insurance. State and local policymakers must recognize that strong building codes do not delay building and are necessary tools to halt economic losses from disasters and ensure the costs of occupancy of a home do not become unaffordable. Building trades must train a workforce in resilient and low carbon construction approaches and embrace these approaches as an opportunity for growth. Insurers, in turn, need to support their policyholders with a streamlined claims process that includes funds for more resilient and decarbonized rebuilding as well as information and resources to encourage adoption of such upgrades. With the right policies, partnerships, and mindset shifts, we can turn disaster recovery into a powerful engine for building a safer, more resilient, and climate-ready future.

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