



Federal Housing Finance Agency (FHFA)
Office of the Director
400 7th Street SW, 10th Floor
Washington, DC 20219

April 19, 2021

To Whom It May Concern,

Thank you for the opportunity to respond to FHFA's Request for Input (RFI) on "Climate and Natural Disaster Risk Management at the Regulated Entities". Our submission first provides key context on **why** FHFA and the Enterprises should take action on both climate risk mitigation and adaptation, and then proposes **how** FHFA and the Enterprises can start building on readily available solutions. Specific questions addressed from the RFI are referenced by number [Q#] where applicable.

Fundamentally, we believe that accounting for and addressing the Enterprises' climate risk exposure before addressing their portfolios' unchecked contributions to that increasing climate risk (via carbon pollution from energy use) is akin to developing a treatment plan for a lung cancer patient while enabling that patient to keep smoking a pack of cigarettes each day. FHFA should act on both fronts to assess, disclose and reduce the Enterprises' climate risk exposure and portfolio carbon emissions in tandem.

Introduction to RMI

RMI (formerly Rocky Mountain Institute) is an independent, non-partisan, non-profit organization of experts across disciplines working to accelerate the clean energy transition and improve lives through market-based change. Since 1982 RMI has grown to over 300 staff engaging with businesses, policymakers, communities and NGOs to secure a clean, prosperous, and zero-carbon future for all.

RMI recently published a co-authored and peer reviewed report, [Build Back Better Homes: How to Unlock America's Single-Family Green Mortgage Market](#), framing the market opportunity to scale the Enterprises' single-family green mortgages (and MBS) as a key tool for both climate risk mitigation and adaptation. RMI also recently published a [Federal Climate Policy Imperatives](#) piece (see Buildings idea #2) outlining at a high-level how FHFA can start to "[climate-align](#)" housing finance through the Enterprises. [Q6]

Why FHFA and the Enterprises Should Take Action

The **climate science** is clear: avoiding catastrophic effects of climate change requires a 50% reduction in carbon pollution by 2030 (compared with 2010) globally and achieving net-zero by mid-century.ⁱ 99% of climate scientists agree that **carbon pollution** is dangerously heating our planet, threatening our health, safety, economy and security. Fortunately, we can solve this problem in large part by using energy more efficiently and switching to cleaner and cheaper energy sources.

Household energy use accounts for 20% of all US emissions; however, the US housing stock is not decarbonizing at nearly the rate required by climate targets.ⁱⁱ Why? A lack of information transparency and awareness, market signals and incentives, and scalable low-cost financing solutions for green home improvements all contribute. FHFA and the Enterprises have the power and the responsibility to change this, and they must start immediately as climate impacts are already being felt across the housing market.

According to NOAA, 2020 was the sixth consecutive year with ten or more billion-dollar weather and

climate disaster events in the US.ⁱⁱⁱ In 2020 alone these disasters caused **\$95 billion in damage nationwide**, almost doubling the damage in 2019.^{iv} As a result, insurance costs to cover damages have been increasing or becoming entirely unavailable to some homeowners.^v A recent report commissioned by the **Commodity Futures Trading Commission** issued stark warnings about the impacts of climate change on financial markets for these same reasons.^{vi} [Q2]

There is a **vast population** of Americans at risk of experiencing the impacts of climate events in the years ahead. Nearly 40% of Americans (127 million) live in coastal counties that will bear the brunt of severe storm events and sea-level rise^{vii}. On top of coastal flooding, an additional 41 million Americans are at risk from flooding rivers, and 29 million live in locations at high risk of wildfires.^{viii} These risks disproportionately affect **lower-income households and communities of color**, which are more often harder hit by the fallout from natural disasters and extreme weather, and are also more likely to live close to power plants and high-pollution areas – further adversely affecting their health and safety.^{ix}

Fortunately, **home retrofits can help**. Home energy improvements (e.g. for efficiency, renewable energy, and electrification) can reduce carbon pollution and loan performance risk while improving affordability and health outcomes. In terms of resilience, the most exhaustive cost-benefit analysis of natural hazard mitigation to date found that every \$1 invested in home retrofits to protect against floods and hurricanes can save \$6; every \$1 invested in retrofits to protect against fires and earthquakes can save \$2 and \$13, respectively.^x [Q14, 15]

When it comes to the mortgage industry, climate disasters and extreme weather can drive increased delinquency rates, default rates, credit losses, and loan loss frequency and severity [Q2]. For the Enterprises, **this is not a future problem**. Recent studies have found that the Enterprises (and thus federal taxpayers) are already inadvertently taking on outsized risk. One study shows the Enterprises may be acting unwittingly as a backstop for the declining National Flood Insurance Program as lenders sell their worst flood risk to the Enterprises without any financial penalties or incentives to choose safer locations.^{xi} Another found that local lenders are selling off coastal mortgages disproportionately to the Enterprises, moving the highest risk properties off their balance sheets.^{xii} These kinds of **information asymmetries** must be corrected quickly by FHFA and the Enterprises. [Q8]

Recommendations to FHFA

FHFA can play a critical role within the current administration’s “whole-of-government” approach to addressing the climate crisis, given that the Enterprises offer the scale and the mechanisms to make the housing market more resilient, equitable, affordable and low-carbon. Our recommendations are intended to be readily implementable, building on existing products and solutions already in the marketplace:

- 1. Invest in critical climate-related housing data:** FHFA should take regulatory action to ensure this is no longer a major blind spot for the Enterprises, government, borrowers and capital market investors. Everyone should have access to this information to make more informed decisions, and borrowers especially have a *right to know* their home’s energy performance and climate risk profile. The Enterprises should work with industry to start capturing two key types of data in the near-term, disclosing both to relevant stakeholders and leveraging both to inform action: [Q3, 16, 22]
 - **Asset-level energy and carbon data:** Home-specific energy cost estimates should be auto-populated into the Enterprises’ standards and underwriting processes for *all* homes (including through the Uniform Appraisal Dataset redesign underway), leveraging a tool already built by the DOE and NREL for this purpose using nationally standardized high-quality housing data (see our report’s [Appendix D](#) for more). [Q24] This data can inform borrowers about their expected energy costs (which pose significant financial burdens for LMI households) and can be easily converted into carbon emissions estimates for planning and reduction efforts.
 - **Asset-level climate risk data:** FHFA should work with NOAA and FEMA to purchase existing climate risk data from third parties (e.g. Jupiter Intelligence, Four Twenty Seven, First Street Foundation) or develop similar data in-house, including all sources of climate risk – floods, wildfires, sea-level rise, hurricanes, power outages, etc. [Q24] The Enterprises should evaluate the potential for a composite “home climate risk score” or similar index based on

multiple sources for ease of use and market comprehension. FHFA and the Enterprises should work with technical partners to conduct stress testing and scenario planning with this aggregated data to gauge current and future risk and quantify needed capital reserves. [Q13]

2. Scale up the Enterprises' single-family green mortgage products: FHFA should direct and enable the Enterprises to streamline and scale their existing single-family green mortgage products (i.e. Fannie Mae's HomeStyle Energy® and Freddie Mac's GreenCHOICE® mortgage), which can offer borrowers nationwide the means to improve their home's carbon pollution and climate risk profile at perhaps the lowest cost of capital available. [RMI's report](#) proposes specific interventions to do this – not only unlocking an estimated \$2 trillion new green bond market but also improving nearly 9 million homes, providing \$12 billion in net savings to consumers, creating 650,000 jobs and avoiding 57 million tons of carbon emissions within a decade.^{xiii} These green mortgage products can already finance energy efficiency, renewable energy, and water efficiency upgrades, as well as resilience measures like hazardous brush and tree removal in fire zones, and storm surge barriers and retaining walls. Note that energy efficiency improvements to building envelopes (e.g. added insulation, high-performance windows, etc) can also be viewed as resilience measures. [Q14, 15]

- **Leverage the data:** Position lenders to easily utilize both data sets above to more effectively market green mortgage products to finance home energy and resilience upgrades where they are most needed. Such data can be incorporated into normal-course transaction processes to fill information gaps and initiate these conversations with borrowers.
- **Finance electrification upgrades:** FHFA should direct the Enterprises to expand green mortgage measure eligibility to include home electrification upgrades. Replacing combustion-based appliances with cost-effective, clean electric alternatives (e.g. heat pumps, heat pump water heaters) improves health outcomes and is critical to decarbonizing the housing stock.^{xiv}
- **Incentivize lenders:** To position green mortgages to become a primary vehicle for financing home energy and resilience upgrades, FHFA and Congress can push to provide stronger financial incentives to lenders to market and include green mortgage products as a built-in, opt-out option in all new and refinance mortgage transactions to drive scale.

3. Update specific policies to plan ahead for increasingly frequent climate events:

- **Build up capital reserves through guarantee fees:** The Enterprises should formally account for portfolio climate risk in their capital requirements. Guarantee fees charged to lenders include the costs of holding capital to protect against losses – and major climate events are matter of when, not if. Applying uniform standards across the Enterprises' portfolios (e.g. flat 2 bps higher g-fees) can create a mechanism to start building up reserves while avoiding the equity challenges that can come with geography-based pricing. [Q25]
- **Update flood insurance policies:** FHFA should work with FEMA and other federal agencies to update outdated flood maps and utilize predictive modeling instead of historical data to enable the Enterprises to more accurately plan for flood risk across the housing market. [Q3]
- **Develop new policies that encourage adaptation and managed transitions from high-risk areas:** FHFA and the Enterprises should thoughtfully develop policy leveraging robust stakeholder engagement processes to ensure that existing homeowners, particularly those in frontline communities as well as LMI households, do not bear disproportionate risk (e.g. from property value declines) as the Enterprises begin to correct for climate risk. [Q5, 18]

[Resources for Support](#)

RMI stands ready and willing to support FHFA and the Enterprises in developing plans and solutions, including those described above. We work with a range of technical partners, market actors, and ambitious state and local governments, and can support FHFA and the Enterprises when it comes to techno-economic analysis, research, testing and piloting solutions, facilitation and convening of diverse stakeholders, and more. [Q23] Please contact us to discuss these recommendations and action items: Jacob Corvidae, Principal: jcorvidae@rmi.org and Greg Hopkins, Manager: ghopkins@rmi.org.

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- ⁱ “Special Report: Global Warming of 1.5°C: Summary for Policymakers,” The Intergovernmental Panel on Climate Change (IPCC), 2018, <https://www.ipcc.ch/sr15/chapter/spm/>.
- ⁱⁱ Benjamin Goldstein, Dimitrios Gounaridis, and Joshua P. Newell, “The carbon footprint of household energy use in the United States,” Proceedings of the National Academy of Sciences, August, 2020, <https://www.pnas.org/content/117/32/19122>.
- ⁱⁱⁱ “U.S. Billion-Dollar Weather and Climate Disasters: Overview,” NOAA National Centers for Environmental Information (NCEI), 2021, <https://www.ncdc.noaa.gov/billions/>.
- ^{iv} Christopher Flavelle, “U.S. Disaster Costs Doubled in 2020, Reflecting Costs of Climate Change,” *New York Times*, January 7, 2021, <https://www.nytimes.com/2021/01/07/climate/2020-disaster-costs.html?action=click&module=News&pgtype=Homepage>.
- ^v “How climate change is changing your insurance,” *PBS News Hour*, November 27, 2018, <https://www.pbs.org/newshour/economy/making-sense/how-climate-change-is-changing-your-insurance>.
- ^{vi} Coral Davenport and Jeanna Smialek, “Federal Report Warns of Financial Havoc from Climate Change,” *New York Times*, September 8, 2020, <https://www.nytimes.com/2020/09/08/climate/climate-change-financial-markets.html>.
- ^{vii} “What percentage of the American population lives near the coast?,” National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce, 2014, <https://oceanservice.noaa.gov/facts/population.html#:~:text=As%20of%202014%2C%20nearly%2040,people%20live%20in%20coastal%20counties>.
- ^{viii} Lindsay Owens, *Soaked: A Policy Agenda to Prepare for a Climate-Triggered Housing Crash*, The Great Democracy Initiative, 2020, <https://greatdemocracyinitiative.org/document/soaked-a-policy-agenda-to-prepare-for-a-climate-triggered-housing-crash/>.
- ^{ix} Ariel Drehobl, Lauren Ross, and Roxana Ayala, *How High Are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burden across the United States*, American Council for an Energy-Efficient Economy (ACEEE), September 2020, <https://www.aceee.org/sites/default/files/pdfs/u2006.pdf>.
- ^x *Mitigation Saves: Mitigation Saves up to \$13 per \$1 Investment*, National Institute of Building Sciences, 2020, https://cdn.ymaws.com/www.nibs.org/resource/resmgr/reports/mitigation_saves_2019/mitigationsaves2019_complete.pdf.
- ^{xi} Amine Ouazad, Amine, and Matthew E. Kahn, “Mortgage Finance in the Face of Rising Climate Risk,” NBER Working Paper No. 26322”, National Bureau of Economic Research, 2019, https://www.ouazad.com/resources/paper_kahn_ouazad.pdf.
- ^{xii} Jesse Keenan and Jacob Bradt, “Underwaterwriting: From Theory to Empiricism in Regional Mortgage Markets in the U.S.”, *Climatic Change*, 2020, <https://link.springer.com/article/10.1007/s10584-020-02734-1>.
- ^{xiii} Rita Ballesteros, David Heslam, and Greg Hopkins, *Build Back Better Homes: How to Unlock America’s Single-Family Green Mortgage Market*, RMI, 2021, <http://www.rmi.org/insight/build-back-better-homes>.
- ^{xiv} *The Impact of Fossil Fuels in Buildings: A Fact Base*, RMI, 2019, <https://rmi.org/insight/the-impact-of-fossil-fuels-in-buildings/>; and Brady Seals and Andee Krasner, *Health Effects from Gas Stove Pollution*, RMI, Physicians for Social Responsibility, Mothers Out Front, and Sierra Club, 2020, <https://rmi.org/insight/gasstoves-pollution-health/>.