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Developing the Fannie Mae Multifamily Electrification and Decarbonization Roadmap

Background

Since the start of our Multifamily Green Financing Business in 2010, Fannie Mae has been committed to reducing the housing sector's impact on the environment by transforming the rental housing market to be more energy and water efficient. Fannie Mae's Multifamily Green Financing Business has proven that greening multifamily properties can be done at scale and within a delegated lending model. In November 2021, Fannie Mae surpassed $100 billion in Green MBS issuance becoming the largest issuer of green bonds globally over the past ten years.[1]

Now, more than a decade after the issuance of our first green bond, the green housing market is evolving. The multifamily utility efficiency landscape has seen rapid growth due to a desire to improve property operations and reduce utility expenses. At the same time, a growing consensus on the need to reduce Greenhouse Gas (GHG) emissions to mitigate the future impacts of climate change has emerged. Fannie Mae's Green Financing Business needs to evolve along with the market, both incentivizing a deeper level of green and including a focus on reducing GHG emissions through decarbonization.

Electrification is the process of reducing or eliminating the need for fossil fuel-based systems in buildings for heating, hot water heating, cooking, or clothes drying. Electrification may also include on-site renewable energy generation and battery storage. Properties that electrify switch from fossil fuel-based systems to all-electric systems, while at the same time the electric grid that powers those systems is becoming cleaner as more power is generated from renewable sources.[2]

Developing the Roadmap

The *Fannie Mae Multifamily Electrification and Decarbonization Roadmap* is the culmination of three years of progressive research on the steps that our Green Financing Business can make towards decarbonizing America's multifamily building stock.

The Roadmap, as well as the research and product development needed to support this effort, will be iterative as market demands and the policy landscape evolve.

In 2022, Fannie Mae completed an initial analysis of the energy consumption and property characteristics of more than 3,000 Green Mortgage Loan properties, running simulations to determine ongoing utility costs, savings, and GHG emissions reductions from multiple scenarios including:

- electrification;
- electrification combined with energy efficiency; and
- electrification combined with energy efficiency and conversion of existing electric resistance heating equipment to heat pumps.

Fannie Mae also collected data from the Association for Energy Affordability (AEA), RMI, Elevate Energy, and Bright Power on the costs of electrification to assess the level of investment needed to support decarbonization at multifamily properties across the country.

1 "Climate Bonds Announces 2020 Green Bond Pioneer Award Winners," Climate Bonds Initiative, July 7, 2020, https://www.climatebonds.net/files/releases/media_release-climate_bonds-2020_green_bond_pioneer_awards-07072020__0.pdf.

2 "Reimagining and rebuilding America's energy grid," U.S. Department of Energy, 2021, https://www.energy.gov/articles/reimagining-and-rebuilding-americas-energy-grid.

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Key Takeaways from our Roadmap Research

1. Electrification alone results in only modest emissions and energy savings. Our analysis shows a median carbon emissions savings of 3% for electrification only compared to a median of 43% for electrification, efficiency, and where present, conversion of electric resistance heating systems to heat pumps. Similarly, our analysis shows no median cost savings (0%) for electrification only compared to a median cost savings of 35% for electrification, efficiency, and, if applicable, conversion of electric resistance heating systems to heat pumps. To maximize emissions impact, electrification should be combined with both deep efficiency measures and switching electric resistance heating to heat pumps where applicable.
2. Due to high upfront costs and low utility savings, property owners will likely require significant incentives, financial support, and/or penalties to drive electrification forward.
3. Most tenants will see a significant utility cost savings from electrification combined with efficiency; however, a small percentage of tenants (12%) are at risk of utility cost increases if electrification improvements lead to owners pushing heating costs onto tenant bills.
4. For decarbonization to be successful, a three-pronged approach is needed consisting of (a) energy efficiency, (b) electrification, and (c) if suitable, on-site renewable energy generation.

The Roadmap for Fannie Mae's Green Financing Business

Recent Actions

- Incentivized development and financing of net zero properties with green building certifications
- Removed high efficiency fossil fuel heating systems from Green Rewards eligible improvements
- Added electrification analysis for Green Rewards
- Hosted Lender Learning Series of webinars to raise market awareness of electrification and decarbonization

Existing Product Evaluation

- Evaluate additional efficiency measures to promote electrification via Green Rewards
- Consider transitioning from Source energy to Site energy eligibility metric for Green Rewards
- Continue to raise standards for Green Building Certifications

Framework for Future Action

- Keep energy efficiency at the forefront of decarbonization efforts
- Understand impact on tenant utility expenses
- Identify alternative incentives to cost savings
- Expand impact by layering federal and local incentives with mortgage financing
- Solutions for electrification and decarbonization need to work in every market, every day