

2022 Affordable Housing Preservation Loan Product

REGULATORY ACTIVITY:

G. Energy or water efficiency improvements on single-family, first lien properties that meet the FHFA Criteria (12 C.F.R. § 1282.34 (d) (3)).

OBJECTIVE:

1. Reduce homeowner utility costs through loan product enhancements that allow homeowners to finance or refinance energy and water improvements.

INFEASIBILITY:

☐ Check here if the Enterprise is submitting an infeasibility request for the objective.

SUMMARY OF RESULTS:

Objective's components detailed in the Plan	Corresponding actions taken	Explanation of any deviations from the Plan (if applicable)
Develop or launch a product enhancement and work with industry partners to decrease homeowner energy and water costs while increasing Duty to Serve AHP Energy loan purchases.	The implementation steps that follow, collectively, constitute completion of this target.	N/A
Based on feedback from lender and non-lender stakeholders, develop and/or enhance loan product(s) for homeowners that reduce energy and water costs and/or address health hazards.	Fannie Mae created and implemented a policy change to allow an exception to the home energy report requirement for ENERGY STAR®-certified improvements financed with HomeStyle® Energy and HomeStyle® Renovation mortgage products.	N/A
☐ Engage at least 10 lenders to promote loan products for financing energy and water improvements	Fannie Mae conducted meetings and presentations with ten lenders to promote the financing of energy and water improvements using HomeStyle Energy and HomeStyle Renovation.	N/A
Evaluate use cases of the 2021 energy cost estimator project where we modeled the energy consumption and utility bills of approximately 990,000 homes in Fannie Mae's portfolio.	Fannie Mae identified and evaluated over 15 use cases for the Energy Cost Estimator and presented the initial findings of the tool to over ten teams at Fannie Mae. We received feedback that guided the prioritization of use cases and justified the expansion of the Energy Cost Estimator analysis to the full single-	N/A



	family book of business, work that began in 2022 and will be completed in Q1 2023.	
Identify 5 underserved high energy burden markets to test new approaches to reach high energy burdened populations that are currently not well-served with access to energy efficient, safe and healthy green housing.	Fannie Mae conducted an analysis of high energy burden states and cities using several data sources, including the energy burden data from our Energy Cost Estimator results and publicly available energy insecurity data. We determined five energy burden states that will be the focus of 2023 and 2024 test-and-learns and a larger list of ten high energy burden states that will be the basis for the first phase of the low- and moderate-income (LMI) green incentive finder tool.	N/A
Based on stakeholder feedback, work with energy industry partners to develop of database of cost-effective home improvement recommendations and local, state, and utility incentives for low- and households.	Fannie Mae engaged with an industry partner to build a database of local, state, and utility incentives for LMI households in ten states that were determined with the high energy burden market research.	N/A
Conduct marketing activities that promote the benefits of energy efficiency improvements to lenders and key industry stakeholders. Educate lenders on upcoming product enhancements.	Fannie Mae's marketing team conducted several digital marketing activities to promote the Energy Efficiency Best Practices Report developed the previous year, including the creation of B2B and B2C infographics, and social media posts targeting industry stakeholders. Additionally, we promoted the product enhancements for HomeStyle Renovation and HomeStyle Energy through Fannie Mae's Selling and Servicing News newsletter, our website, and social media channels.	N/A
Working with a design-build non-profit and industry partners, develop and implement plan that will build a pipeline of 20 high efficiency, resilient, and affordable homes in rural areas, to be funded and permitted in 2023. The rural areas of focus will be areas where preservation options are limited due to housing conditions	Fannie Mae engaged with [] to build a pipeline of 20 high-efficiency, resilient, and affordable homes in rural areas. Additionally, with support from Fannie Mae, [] provided technical assistance for the construction of four highly efficient and resilient affordable homes in 2022. One of these homes was delivered to Fannie Mae as a Duty to Serve-eligible loan and included in one of our Single-Family Green Mortgage-Backed Securities (MBS) due to the home's ENERGY STAR v3.1 certification.	N/A



SELF-ASSESSMENT RATING OF PROGRESS:

☐ Target met☐ Target exceeded☐ Target partially completed☐ No milestones achieved	
IMPACT:	
☐ 50 – Very Large Impact ☐ 40	
☐ 30 – Meaningful Impact ☐ 20 ☐ 10 – Minimal Impact ☐ 0 – No Impact	

IMPACT EXPLANATION:

1. How and to what extent were actions under this objective impactful in addressing underserved market needs, or in laying the foundation for future impact in addressing underserved market needs?

Overview

Upgrading the single-family housing stock in the U.S. to be energy efficient is imperative for both mitigating climate change and preserving the financial stability of LMI households, who disproportionately live in aging, inefficient housing that burdens them with high utility bills. Energy efficiency upgrades, however, are complex and sometimes prohibitively expensive, often requiring high upfront costs. In 2022, Fannie Mae pursued a comprehensive strategy to address barriers to energy efficiency, developing programs and products that use a combination of debt, grants, incentives, and housing replacement solutions to meet the needs of different consumers, leveraging new research and analysis to guide our approach and lay the groundwork for future impact.

Leveraging Data to Guide Our Priorities

In 2022, Fannie Mae deployed the Energy Cost Estimator (ECE) that we developed in 2021 in partnership with [] to guide its strategic priorities. We used the ECE to model the energy consumption and utility bills of nearly one million homes in our book of business, resulting in a tool that is unique among its peers in the market in that it draws on large public and private data sources, statistical sampling, detailed sub-hourly building simulations, high-performance computing, and can be scaled to analyze millions of households. With a dataset of approximately 990,000 homes, the ECE has already revealed many insights and guided our work, including through:

- **Discovering Insights:** The age of a home and the heating fuel are significant predictors of energy burden in our portfolio. LMI households are more likely to own older homes, that are built to more dated specifications and use more energy. Some heating fuels, like heating oil, result in higher energy costs and, thus, higher energy burdens. Compounding the energy burden issue, homes that rely on heating oil are also much older and less efficient than homes heated by natural gas, electricity, or propane. This has led to internal discussions around focusing intervention efforts based on property age.
- **Identifying High Energy Burden Trends:** The ECE's geographically diverse dataset reveals insight into which regions, states, counties, and even census tracts have households that are likely to experience the highest energy burdens.
- **Developing Solutions:** We have also used the ECE to run intervention scenarios, such as weatherization measures, to estimate the potential utility bill reductions.

As one example of over 15 use cases we identified and evaluated, we have already used the ECE to identify markets likely to experience high energy burdens and leveraged that data to guide strategy for both enhancing our financing offerings and developing a tool to find energy upgrade incentives, as described below.



Based on its early success, we decided to expand the analysis to almost all of our single-family books of business, bringing our dataset to over 17 million homes in early 2023. The smaller-scale ECE currently helps us identify which households, from a sample of nearly 1 million loans, may experience energy burden and use that sample to model and predict property energy burden across our book. However, the expanded ECE will enable us to identify households from across nearly all our book of business that may be experiencing energy burden based on their home characteristics and income at loan close. This lays the groundwork for future impact in significant ways, including by helping us understand the unique barriers to energy efficiency different borrowers and areas face; deploy focused intervention strategies; identify local organizations with whom to partner; develop effective financing offerings; conduct outreach and education for high energy burden households; and more.

Enhancing Energy Efficiency Financing Offerings

Fannie Mae's HomeStyle Energy product offers borrowers the opportunity to bundle energy upgrades into their home purchase or refinance to make their homes more comfortable, efficient, and resilient. However, lender feedback in 2021-2022 revealed that product complexities and limited product awareness created barriers to wider adoption of this product and HomeStyle Renovation. As part of a broader review of the HomeStyle loan products that began in late 2022, Fannie Mae asked lenders to identify and share barriers to product adoption and to provide recommendations for product improvements. Common themes continue to emerge that are in line with past Duty to Serve outreach, including simplifying the products and providing more training, tools, and resources for lenders and borrowers. This year, we addressed these barriers in several ways described below.

Reducing Known Hurdles for Lenders

Our analysis in 2021 revealed that the requirement to submit a home energy report was a common hurdle for lenders, creating operational complexity and lengthening loan cycle time. In 2019, we launched the HomeStyle Energy skeleton variance, which included an exception to the home energy report—of three policy exceptions included, this was the one that lenders most frequently used. In response, in 2022, we implemented a policy change to HomeStyle Energy and HomeStyle Renovation that allows lenders to skip the home energy report for loans where the borrower was making ENERGY STAR-certified improvements. In this way, we reduced the operational complexity and loan cycle time and eliminated the borrower's expense in paying for the report while still maintaining environmental impact. In addition, the special feature codes leveraged in this policy change will help Fannie Mae track and report on loan deliveries with energy-related improvements more precisely. With these changes, we expect lenders will be more engaged with our mortgage products and promote ENERGY STAR-certified improvements.

Using a Data-Driven, Localized Approach to Product Improvement

While other barriers exist to the wide adoption of HomeStyle Energy, we cannot identify and address all hurdles consumers face when pursuing energy efficiency upgrades using a one-size-fits-all approach. The homeowner's experience of planning and paying for energy-related improvements can be cumbersome and complex, and Fannie Mae must better understand these nuances in its efforts to enhance and increase the uptake of HomeStyle Energy. In response to this, we will launch test-and-learn initiatives in two high energy burden markets in 2023-2024, where we will partner with stakeholders to better understand hurdles to product uptake. We will select two markets from the five high energy burden states we identified in 2022, leveraging the ECE and U.S. Census Household Pulse data: Arizona, Georgia, Michigan, Pennsylvania, and Texas. Criteria included:

- **High energy burden and energy insecurity:** Based on our energy burden analysis, for households with below 100% Area Median Income (AMI), all five of these states have higher median energy burdens than the national average of 3.29% (from a low of 3.41% for Texas to a high of 4.41% for Arizona). Georgia, Michigan, Pennsylvania, and Texas all had energy insecurity levels above the national average of 20 percent. Energy insecurity is defined in the Household Pulse Survey as "adults in households that were unable to pay an energy bill in full in the last 12 months." Of these five states, Texas had the highest percentage of 23.3%, followed by Georgia, which was 22.5%.
- **Predominant heating and cooling system:** Homeowners with different heating and cooling systems may require different solutions and approaches, so we selected states representing a variety of heating fuel types to take a comprehensive approach and further our learnings. Historically, annual energy bills are predominantly driven by cooling needs in Arizona, Texas, and Georgia, while space heating is the largest contributor to annual energy bills in Michigan and Pennsylvania.



• Strategic alignment: Black homeowners and communities of color are disproportionately likely to experience energy burden. To focus Fannie Mae's efforts on racial equity, we also prioritized states where Fannie Mae has launched the Special Purpose Credit Program within selected metropolitan statistical areas (MSAs). We also selected states representing broad geographic diversity.

Directing LMI Households to Low- and No-Cost Upgrades through a green incentive finder tool

Energy efficiency improvements could reduce LMI consumers' utility bills, thereby reducing financial stress and increasing their energy security. However, upgrades often require high upfront costs, putting them out of reach for LMI households with already-strained budgets, who cannot take on new debt. Many incentive programs exist at the federal, state, local, and utility levels to pay for or subsidize energy efficiency improvements—in the last two years alone, the Weatherization Assistance Program (WAP) received \$3.5 billion, and the historic Inflation Reduction Act includes \$369 billion for energy efficiency and clean energy programs—but these dollars are difficult to access. To find application and program information, individuals must navigate non-user-friendly, complicated, and outdated websites or systems, and existing tools to compile programs in a central location can be paywalled, outdated, limited, and/or confusing.

To address these needs, Fannie Mae is developing a green incentive finder tool, which will compile information about energy improvement incentive programs for eligible LMI households—including detailed, area-specific contact information; the types of improvements covered; the average financial benefit; and more. Importantly, the data we collected includes links to the program applications where available, which are sometimes difficult to find. In 2022, we partnered with [] to build the dataset underlying the tool for ten high energy burden states, which we selected using the ECE (including the five in HomeStyle test-and-learns, plus Alabama, Florida, Rhode Island, Kentucky, and New York, which also ranked highly using the same criteria). We expect the tool will lower barriers to entry in energy efficiency home improvements for consumers, as well as fill knowledge gaps for practitioners and aid in their work with clients (e.g., housing counselors can be in a better position to advise on how to reduce utility bills as part of standard budget planning). By connecting LMI households with the underutilized resources they need to make improvements, we expect the tool will contribute to increased stability and property durability for LMI households, lowering the risk of delinquency and increasing health, comfort, and resilience to climate change.

Supporting a Pipeline of Efficient and Resilient Homes

Households regularly affected by intense weather, such as tropical storms and hurricanes, face different challenges: renovating their homes to recover from a disaster can be prohibitively expensive while still leaving them vulnerable to the next storm that comes. Instead, replacing the home altogether with a new efficient and resilient structure offers better long-term protection and is more cost-effective. However, LMI homeowners in persistent poverty areas still require solutions to make home replacement affordable.

To address this need, Fannie Mae partnered with [] In early 2022, [] identified opportunities to provide design-build technical assistance to five housing provider partners. Fannie Mae provided support for [] to scale their technical assistance approach and expand their outreach and partner development capacity, with the goal of developing a 50-home "pipeline"—which consists of the architectural designs for the high-efficiency homes, as well as the project build technical assistance and identified buildings partners for each house—by the end of 2023.

This year, [] met its 2022 goal by establishing a pipeline of 20 homes, many of which anticipate construction in 2023:



In addition to this direct impact, this partnership laid the groundwork for future impact by marking the first use case of several innovative affordable housing initiatives we developed in recent years. Fannie Mae includes a sweat equity flexibility for HomeReady®, which allows the homebuyer to accrue equity that counts towards their loan through their work hours, the labor of volunteers, and other ways. We also worked with Grounded Solutions Network in 2021 to develop a Model Deed Restriction, which established a template legal agreement for shared equity homeownership programs so that mortgages following this standard can be sold to Fannie Mae and Freddie Mac. One of the four homes was the first ever to take advantage of sweat equity in a conventional mortgage since the sweat equity section was added to the Fannie Mae Selling Guide. [] Further, because the home was ENERGY STAR v3.1 Certified, Fannie Mae was able to include this HomeReady loan in its Green MBS program—two years earlier than our Duty to Serve goal to include a DTS-eligible loan in a Green MBS issuance.

By successfully leveraging our financing with [], we have laid the groundwork for similar partnerships with other non-profits in the future who need liquidity to support affordable markets. In 2023, Fannie Mae will continue to work with [] to build a home design and technical assistance project pipeline of an additional 30—and cumulative 50— high efficiency, resilient replacement homes in persistent poverty areas that have been repeatedly impacted by natural disasters.

2. What did the Enterprise learn from its work about the nature of underserved market needs and how to address them?

To be a Duty to Serve-eligible loan, the Duty to Serve rule requires a loan which is projected to reduce energy or water consumption by at least 15% and provide aggregate utility savings over the life of the improvement that exceed its cost. One of the ways to estimate that reduction in energy consumption is through an energy report or energy assessment; but as noted above, we have learned that the cost and effort required to obtain an energy report can be a barrier for LMI consumers, and that lenders see obtaining energy reports as a barrier to using HomeStyle Energy due to the perceived difficulty of obtaining them and lack of professionals available to do this work in a timely manner. Our recent product changes help to streamline some of the eligible improvements that can be installed without needing a home energy report. But home energy reports can still be a valuable tool for information for homeowners and homebuyers. Based on these learnings, Fannie Mae is planning to test methods for greater use of home energy score reports throughout the housing journey. As we look to make homeownership more affordable, we will continue to test new ideas in the market to improve existing processes and procedures.

Fannie Mae did not have a loan purchase target for single-family AHP Energy and Water in 2022. However, we did track the loans which would have qualified as eligible for Duty to Serve. []

3. Optional: If applicable, why was the Enterprise unable to achieve the Plan target? Not Applicable



Affordable Housing Preservation Second Quarter Report: April 1 – June 30, 2022 Loan Product

ACTIVITY:

G. Regulatory Activity: Energy or water efficiency improvements on single-family, first lien properties that meet the FHFA Criteria (12 C.F.R. § 1282.34 (d) (3)).

OBJECTIVE:

1. Reduce homeowner utility costs through loan product enhancements that allow homeowners to finance or refinance energy and water improvements.

SUMMARY OF PROGRESS:

Feedback from lender and non-lender stakeholders, develop and/or enhance loan product

In Q1 and Q2 2022, Fannie Mae obtained feedback from 5 lenders and 3 non-lender stakeholders to inform and support a loan product enhancement for energy efficiency improvements that reduce energy costs. The loan product enhancement enables EnergyStarcertified improvements to be eligible for financing with any Fannie Mae HomeStyle Renovation or HomeStyle Energy loan. This enhancement enables all borrowers, including low-income borrowers who may not be able to afford a home energy report to finance EnergyStar-certified improvements to their home without a home energy report. In addition, it allows us to identify loans which finance improvements eligible for 2023 and 2024 Duty to Serve loan purchase goals.

Lender Engagement

In Q1 and Q2 2022, Fannie Mae engaged 6 lenders to promote loan products for financing energy, water and resiliency improvements. We found that the most common use cases for our HomeStyle Energy product were energy improvements as part of a larger renovation project, and refinancing existing energy debt, including PACE loans. Given the robust housing and mortgage market, lenders informed us that a major barrier to financing energy improvements with a mortgage was the reluctance of borrowers, realtors, and loan officers to add process and complexity to the mortgage process.



Energy Cost Estimator

Fannie Mae conducted additional data analysis and data visualization of the Energy Cost Estimator results for the 990,000 homes we modeled in 2021. We conducted many internal, cross-company presentations socializing the results and gaining feedback and suggestions on how to refine and apply the analyzed data. We compiled a list of potential use cases and began to prioritize. The results of the analysis will initially help Fannie Mae identify high energy burdened areas for future Duty to Serve test-and-learn locations and we will continue to evaluate the other use cases. Furthermore, based on the positive feedback from internal stakeholders, we are planning to expand the analysis to almost the entire single-family book of business by the end of 2022. Approximately 17 million homes will be analyzed, generating conservative estimates of the household energy consumption, energy bills, energy burden, and carbon footprint.

High Energy Burden Areas

Using the Energy Cost Estimator, we have developed lists of high energy burden counties and zip codes that will be used to determine where we will deploy the first test-and-learns in 2023. We have convened an internal work group to further refine the locations and being thoughtful about what we want to achieve in 2023 and 2024. During Q3, we will determine the additional criteria that will be considering in choosing the locations, including but not limited to access weatherization programs, local lender and non-lender partners, and utilities with low-income energy efficiency programs.

Green LMI Incentive Tool

The Fannie Mae ESG Engagement and Impact team has selected the American Council for an Energy Efficient Economy (ACEEE) as the primary research and co-development partner to design and launch the Green LMI Incentive Tool (GLMIIT). Fannie Mae aims to execute a Scope of Work by the end of August 2022. During the remainder of 2022 ACEEE will serve as a thought partner to identify the criteria for the Green LMI Incentive Tool database that will contain information regarding local energy efficiency incentive programs and will serve as the primary resource to populate results generated from a consumer's online search. Initially the database will contain information for 2-3 geographic locations and will be tested to determine what outputs need to be contained within the results page to direct consumers to local resources. During the remainder of 2022 the ESG Engagement and Impact team will continue to co-develop the search tool functionality and results page to ensure an optimal consumer experience. In addition, the Fannie Mae team will continue to work with the internal legal partners to ensure that consumer information gathered via their interaction with the tool adhere to the internal data governance policy. The Fannie Mae team will also continue to collaborate with additional internal partners to determine the location of the Green LMI Incentive Tool on Fannie Mae's website and how this tool will be incorporated within or connected to additional Fannie Mae consumer facing products such as HomeView



(homebuyer education), the Homebuyer Readiness Calculator and New Homebuyer Onboarding Kit.

Our goal is to complete the database during 2022 and to begin building the search tool, design at least three different results page templates and test them with consumers during the spring of 2023. Upon selecting the results page that provides the most comprehensive set of local energy efficiency incentive programs the tool will be delivered to the internal Fannie Mae team responsible for integrating the tool within Fannie Mae's website. Lastly Fannie Mae will continue to develop a roll-out strategy to reach consumers including potential use cases such as partnering with local non-profit housing counseling agencies, social service providers and utility companies and direct email, text and paper mail campaign to all borrowers identified as energy burdened within the 2-3 initial geographic locations selected.

Marketing Campaign Development

After internal conversations between Duty to Serve and Marketing staff, we are shifting the development of a marketing campaign that would support product enhancements and tools until 2023 to better align the timing of the product enhancements, likely to be finalized later this year, and the testing of the Green LMI Incentive Tool. Under the current plan, we stated we would develop a marketing campaign to be launched next year supporting customer tools and/or product enhancements. Instead, our 2022 marketing activities have consisted of promotion of the energy efficiency best practices guide which was a 2021 Duty to Serve deliverable. We will continue to promote this guide, along with marketing support changes to Selling Guide documents that will accompany HomeStyle Energy and HomeStyle Renovation updates occurring later this year.

Pipeline of 20 high efficiency, resilient, and affordable homes in rural areas

Fannie Mae has continued its partnership with Auburn University Rural Studio (AURS) to facilitate a pipeline of efficient homes. Working with nonprofit housing providers, Rural Studio provides technical assistance to construct high-performance homes. In addition to having significantly lower HERS ratings, these homes frequently obtain third-party certifications such as ENERGY STAR and Insurance Institute for Business and Home Safety (IBHS) FORTIFIED resiliency standards. Building homes to the FORTIFED standard also makes the homes eligible for insurance discounts.

This year, through our partnership with Auburn University Rural Studio, the first homes in a robust pipeline have been completed. On July 21, Chipola Area Habitat for Humanity completed construction on four Rural Studio homes in Marianna, Florida. These homes received the following certifications: ENERGY STAR 3.1, Florida Green Building Coalition Certified Florida Green Home Platinum, and has achieved an outstanding HERS score of 38. Certification for FORTIFIED Gold for Hurricane as well as certification of the other three homes is expected soon. The project also resulted in the first HomeReady loan delivery to Fannie Mae for a client of this non-profit housing provider which also leveraged the Sweat Equity



flexibility of HomeReady for the first time and the first use of the Grounded Solutions Network Model Deed Restriction. Because of its ENERGY STAR 3.1 rating the home is also eligible for and will be delivered to Fannie Mae's Green MBS program. Other partners expanding their home build projects include Eastern Eight CDC (1 planned home) and Habitat for Humanity Greenville County (5 planned homes).

Rural Studio has identified an opportunity to build a pipeline of homes with a new housing partner provider, New Orleans Area Habitat for Humanity, to build between 40-60 homes in the Hurricane Ida Disaster affected area of Jean Lafitte, located in Jefferson Parish, Louisiana. The program plans to invest \$4.5 million in funding and construction on the first replacement home is underway, with two additional homes breaking ground soon. Rural Studio is also focused on expanding other pipelines of homes with existing partners, including Chipola Area Habitat for Humanity.

FOLLOWING ARE THE 2022 ACTIONS UNDER THIS OBJECTIVE:

 velop or launch a product enhancement and work with industry partners to decrease owner energy and water costs while increasing Duty to Serve AHP Energy loan ases.
Based on feedback from lender and non-lender stakeholders, develop and/or enhance loan product(s) for homeowners that reduce energy and water costs and address health hazards.
Engage at least 10 lenders to promote loan products for financing energy and water improvements.
Evaluate use cases of the 2021 energy cost estimator project where we modeled the energy consumption and utility bills of approximately 990,000 homes in Fannie Mae's portfolio.
Identify five underserved high energy burden markets and test new approaches to reach high energy burdened populations that are currently not well-served with access to energy-efficient, safe, and healthy green housing.
Based on stakeholder feedback, work with energy industry partners to develop a database of cost-effective home improvement recommendations and local, state, and utility incentives for low- and moderate-income households.
Develop a marketing campaign to promote awareness around new consumer tool, new product(s) and/or enhancement(s).
Work with a design-build nonprofit and industry partners, develop and implement plan that will build a pipeline of 20 high efficiency, resilient, and affordable homes in rural areas, to be funded and permitted in 2023. The rural areas of focus will be areas where preservation options are limited due to housing conditions.



SELF-ASSESSMENT RATING OF PROGRESS:
On-target to meet or exceed the target
Progress delayed and/or partial completion of the objective expected
Unlikely to achieve any milestones of the objective
ADDITIONAL INFORMATION (IF APPLICABLE):
Not applicable