2023
Affordable Housing Preservation
Loan Product

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:

3. Build tools and create programs to facilitate energy and water improvements.

SUMMARY OF RESULTS:

Objective's components detailed in the Plan	Corresponding actions taken	Explanation of any deviations from the Plan (if applicable)
☒ Partner with organizations to identify and provide assistance to high-energy burden borrowers.	Target met through 2023 actions; see subsequent implementation steps.	
☒ Expand the Energy Cost Estimator analysis to the entire Single-Family book of business.	Working with an analytics partner and using the U.S. Department of Energy's (DOE) tools, Fannie Mae modeled the energy consumption and energy bills of active loans in the Single-Family book of business as of December 2022. There were a few exceptions to the analysis, including loans for homes in U.S. territories, as the tools cannot model energy consumption in those areas and some loans that lacked specific property data required for the modeling.	
☒ Create a program to test Fannie Mae's role in completing Department of Energy's Home Energy Score assessments.	Fannie Mae engaged with a nonprofit organization that is a DOE Home Energy Score partner to assess Fannie Mae's role in facilitating the completion of Home Energy Score assessments during a real estate transaction. We also conducted some initial assessments of our real estate owned (REO) properties to understand some of the scheduling complexities, costs, and timing of these home energy assessments.	

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?

Action: Energy cost estimator

Fannie Mae has been working to increase its ability to identify energy-burdened homeowners (those with high annual energy costs relative to income) throughout the homeownership journey. Teams from Fannie Mae's ESG Engagement & Impact, Climate Impact, Single-Family Analytics, and Enterprise IT worked with our partner, Clearly Energy, to model the energy consumption and utility bills for homes that we finance. This work began in 2021 with a proof-of-concept (POC) of approximately 1 million homes, and in 2023, we expanded the analysis to almost the full Single-Family book of business. Due to limitations in the DOE modeling tools that we use in this analysis, we cannot model energy consumption and utility bills for homes that we finance in U.S. territories. In addition, some homes lack the necessary property data for this energy analysis. Those situations represented less than one percent of the entire single-family book of business.

This data provides Fannie Mae with a new tool to help identify homeowners with a high energy burden while also taking steps to assist borrowers who may have difficulty paying their utility bills. Energy burden is the percentage of annual income a household spends on annual energy costs. Currently, we can calculate an estimated energy burden for households where the borrower is the primary resident. We cannot estimate the energy burden for single-family renters since we use borrower income to calculate the energy burden. We will research if there are approaches estimating renter income so that investor properties can be included in the energy burden analysis in the future. Yet overall, we still have modeled the energy consumption and energy bills of over 99% of the homes within our Single-Family book of business.

We will use the dataset to employ an outreach strategy to target potentially energy-burdened, low-income households, along with supporting other program outreach, such as our DOE Weatherization Assistance Program pilot and energy savings program finder. In addition, we will analyze loan performance to gain an understanding of the potential impact that energy burden has on delinquency rates.

Action: Home energy score

Home energy assessments, like an energy audit, provide insight into the energy-efficiency of a home and allow us to provide recommendations for energy-saving improvements. Over the past few years, we received feedback from lenders that coordinating home energy assessments is time-consuming, logistically challenging, and costly for borrowers, particularly low-income borrowers. In response, we created a test program with a nonprofit organization to coordinate and complete Home Energy Score assessments. Fannie Mae is trying to understand the complexities, costs, and timing of the Home Energy Score assessments while seeing if we can play a larger role in having these assessments completed. Our theory is that more energy assessments will increase the likelihood that borrowers will finance energy-saving improvements during a real estate transaction.

The DOE's Home Energy Score is an energy assessment that uses property characteristics to estimate energy bills, provide a 1-to-10 efficiency score, and recommend energy-saving home improvements. Fannie Mae has engaged a third-party vendor to assess our role in facilitating the completion of Home Energy Score assessments during a real estate transaction. In 2023, Fannie Mae and the vendor completed a reporting methodology, customized a Home Energy Score report template, designed and built an API endpoint for data and report transfer, and created processes for implementation. In addition, we worked with this vendor to test traditional in-person Home Energy Score assessments and "remote assessments," which require a real estate or home improvement professional to do a walk-through of the property while on video conference with a certified Home Energy Score assessor. These tests were performed on our REO properties in two phases. A total of 26 REO properties received a Home Energy Score and recommendations that may be incorporated into the property repairs. Our partner documented what went well and potential improvements during these assessments, along with summarizing the scores and recommended upgrades. Fannie Mae will apply these lessons in the future and potentially include lenders when testing the Home Energy Score in 2024.

The overall goal is to simplify the process by which borrowers identify energy efficiency improvements during the homebuying or refinancing process. Ultimately, we want to increase the number of loans that finance energy efficiency improvements. Additionally, we want to align processes with the Inflation Reduction Act (IRA) Home Energy Rebate Program, which is scheduled to start launching in states in 2024. The DOE's Office of State and Community Energy Programs, which is charged with setting the rules for the Home Energy Rebate Program, has determined that the Home Energy Score is an eligible tool for the modeled energy savings approach. To be eligible for the energy-saving improvement rebates, households will need to get an approved home energy assessment or commit to a measured energy approach. Aligning with the IRA could help households with completing deeper energy retrofits by tapping into rebates and mortgage financing, such as HomeStyle Energy.

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

Action: Energy cost estimator

We learned that data gaps are a significant issue in energy modeling. Using the DOE's modeling tools to model the energy consumption and energy bills of single-family homes requires data fields such as ZIP code, square feet, year built, foundation type, heating type and heating fuel, and cooling type. Additional data points are optional but can help make the modeling more accurate. These fields include renovation year (if applicable), number of bedrooms and bathrooms, property condition, attic presence, pool, or rooftop solar. Our initial data source was appraisal data. However, significant data gaps remained, particularly with year built and square footage (both mandatory data fields) due to appraisal waivers and loans originated prior to the Uniform Collateral Data Portal becoming mandatory. In some cases, we pulled data from old appraisals for loans with appraisal waivers. When data gaps persisted, we supplemented the data from tax assessments. Finally, some records still had missing data. In these cases, we worked with our partner to use the U.S. Energy Information Administration's Residential Energy Consumption Survey to estimate missing fields like average square footage or year built, based on the ZIP code.

Because the energy burden calculation uses household income at origination as part of the calculation, it is only applicable to primary resident households. We are developing an approach to calculate energy burden for single-family renters, as well.

Based on our energy modeling, we created an energy cost and energy burden dashboard to provide insights into our analysis. The data will inform where we conduct outreach to promote the use of mortgage products to finance energy-saving improvements and to connect energy-burdened homeowners to existing programs such as weatherization assistance, utility rebates, and IRA funds. The data also helps us understand where we should focus our efforts and to whom. Older homes and those heated with fuel oil or propane have much higher energy costs. New England, New York, Alaska, and Michigan have some of the highest energy burdens based on our modeled data, driven by high heating costs and high electricity rates. Hawaii also has high energy burdens because it has the highest electricity rates in the country. For southern states dominated by cooling costs, Alabama, Arizona, and South Carolina are some of the top energy-burdened states in the country. In addition to fuel type and geographies, we can look at energy costs and energy burdens across FICO buckets, loan-to-value buckets, and housing goal buckets by year built and renovation years, along with built-in scenarios for homes that would benefit from weatherization or electrification. Finally, we began analyzing loan performance to see if higher energy burdens increase the odds of borrower delinquency. We expect to have those results in the first quarter of 2024.

Action: Home energy score

Setting up a test-and-learn for the home energy requires that we address several barriers. First, no company has operationalized the home energy score nationally. There are city and regional home energy score programs, and most of those are geared toward an existing homeowner receiving the energy assessment. We are trying to set up a test-and-learn for lenders and borrowers, at a national level. Nationally, there is a lack of home energy score-certified assessors. We have explored the option of conducting "remote assessments," which requires a real estate or home improvement professional to do a walk-through of the property while on a video conference with a certified home energy score assessor. This approach has challenges, particularly when the real estate or home improvement professional doesn't have the means or desire to go into an attic or crawlspace to assess insulation, HVAC equipment, or air sealing. We are exploring another option to work with appraisal management companies (AMCs) to support the remote assessment, which may have a cost and timing benefit given that AMC personnel are already onsite during a real estate transaction.

Additionally, we are working with our nonprofit partner to design and develop a new customer intake process. A customer may be a homebuyer, a homeowner, or a lender. The various workflows each need a solution for contacting, ordering, and scheduling a home energy score assessment, whether in-person or remote. We anticipate challenges when completing the home energy score assessment in rural areas or in areas where no home energy score assessors are available. If we can leverage AMCs for the remote assessments, instances of appraisal waivers may be another issue we will have to address in the future.

3. Optional: If applicable, why was the Enterprise unable to achieve the Plan target?

N/A