Fannie Mae

Fannie Mae 2021
Affordable Housing Preservation
Loan Product

ACTIVITY:

H. 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:

2. Increase liquidity for energy or water efficiency improvements that meet the FHFA Criteria by facilitating the adoption of enhanced industry standards and purchasing loans (Partner and Innovate, Do What We Do Best, Test and Learn).

SUMMARY OF RESULTS:

Following are the 2021 Actions under this Objective per the **[January 1, 2021 Duty to Serve Plan]**:

Objective's components detailed in the Plan	*Corresponding actions taken*	*Explanation of any deviations from the Plan (if applicable)*
☒ Fannie Mae will demonstrate industry leadership by continuing to build the foundational data capabilities to help develop future loan products and solutions that will reduce the cost of low- to moderate-income homeownership.	All of the underlying activities associated with this action contributed to the completion of this objective's target.	N/A
☒ In the absence of data collected through appraisals and other loan documentation, Fannie Mae will engage external stakeholders and identify, review, and capture property-level energy efficient data from industry sources.	Using property-level energy data from Ekotrope, a software company that supports home energy raters, Fannie Mae conducted an address-matching exercise on 40,000 homes. Of the 40,000 homes, approximately 3,200 matched loans within our book of business. We conducted loan-level analysis on these homes to gain insights into how energy bills, primary heat system type, and heat system efficiency relate to loan performance.	N/A
☒ Using industry building energy model tools, identify the	Fannie Mae used a Department of Energy building modeling tool and	N/A

method(s) of data collection to estimate the energy burden of low- to moderate-income borrowers and how it could help identify at-risk homeowners. If feasible, begin estimating the energy burden of low- to moderate-income borrowers.	inputs from appraisals to estimate the energy bills of approximately 990,000 homes within our portfolio. Comparing those estimates with borrower income, we were able to estimate energy burdens and develop use cases for how we may use this information to help low- and moderate-income borrowers in the future.	
☒ Continue to execute the marketing campaign to promote awareness around HomeStyle Energy and HomeStyle Renovation.	In June 2021, Fannie Mae completed the HomeStyle Energy and HomeStyle Renovation marketing campaign aimed at increasing product awareness to lenders in 14 MSAs that have a high percentage of homes greater than 40 years old.	N/A
☒ Conduct research and data analysis that will explore how energy efficiency, water efficiency, and renewables can make home ownership more sustainable through lower utility costs, improved health, and indoor air quality.	Fannie Mae completed a research report on the intersection of energy, health, and climate with estimated costs and savings for homeowners. Additionally, the report includes scenarios to maximize savings and indoor air quality, along with estimated greenhouse gas reductions.	N/A
☒ If feasible, establish business justification for a future product enhancement by analyzing data gathered, assessing current policies, processes and guidelines, and determining scalability of potential product enhancement(s).	Fannie Mae developed justification for making parts of the HomeStyle Energy variance permanent in the Selling Guide in 2022.	N/A

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☒ Evaluate energy, water, and green home features and other critical factors needed to expand our bond program to support affordable housing preservation.	Fannie Mae drafted the framework and process for a Retrofit Green Bond.	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?

The lack of household utility data hinders many efforts to reduce utility costs at the individual home level. To identify ways homeowners can reduce energy costs as part of our efforts to preserve affordable housing, Fannie Mae needed to improve our ability to identify low- and moderate-income homeowners and homebuyers who may be energy burdened, and then provide costs and savings estimates that they may finance, or refinance, with their mortgage. We took significant steps this year toward identifying borrowers within our portfolio who are energy burdened, and completing the research needed to provide them with cost-effective options for addressing the energy burden of their homes.

Two examples:

Fannie Mae modeled the energy consumption, utility bills, and carbon emissions of approximately 990,000 homes within our single-family portfolio. Additional modeling outputs include energy savings estimates associated with weatherization, an upgrade to a high-efficiency heat pump, and the addition of solar photovoltaics. We are reviewing options to apply this tool to our entire single-family portfolio, to help identify homeowners or homebuyers who may have high energy burdens, and develop

programs, products, or processes to help these borrowers to make homeownership more affordable and sustainable.

Fannie Mae conducted research and data analysis to explore how energy efficiency, water efficiency, and renewable energy can make single-family homeownership more sustainable through lower utility costs, improved health and indoor air quality, and reductions in greenhouse gas emissions. The subsequent report and supporting data from this research provide cost and savings ranges, along with GHG emissions reductions, for specific improvements to a single-family home. We included three scenarios to help illustrate what costs and savings homeowners would experience if the homeowner addressed multiple improvements at once or had different goals they wanted to achieve (decarbonization, improved indoor air quality, etc.). This information will be used in 2022 to provide homeowners the cost and savings guidance borrowers seek on energy- and water-related home improvements.

There is significant investor demand for green bonds, which could provide opportunities to improve access to energy efficiency financing for consumers in the coming years. To date, our single-family green bond offerings have focused on new construction with green certifications as the energy savings for these homes are more easily assessed than for existing homes. However, since new homes are a small fraction of the market, and the average cost of a newly constructed home is out of reach for most low- and moderate- income buyers, it is a priority to develop a retrofit green bond to capture existing homes with energy-efficient upgrades. This year, we created a draft Retrofit Green Bond framework, mapped a process flow, and assessed changes necessary to existing loan products to support this effort. Our Green Bond workgroup has also evaluated how to measure impact from financed improvements, including energy savings and cost savings, which is more complicated than with newly constructed homes that meet a new construction green certification. We continue to gather lender and energy-industry feedback to refine the process and work towards launching a Green Bond that will support energy-saving home improvements.

Fannie Mae prepared a justification for making most of the components of the HomeStyle Energy variance permanent in the Selling Guide in 2022. The HomeStyle Energy Variance simplifies the Energy product by removing the requirement, in most cases, for a borrower to secure an energy analysis for their home, known as an energy report, and for the lender to certify that the energy improvements financed will save the borrower more on their utility bills than the up-front cost. They may finance energy-efficient improvements up to $6,500 without triggering the energy report or cost-effectiveness assessment, while the Selling Guide currently requires them for improvements valued over $3,500. While both the energy report and cost-effectiveness assessment are useful for the consumer, they are difficult to complete on a tight closing timeline and have limited utilization of our energy efficiency financing.

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

The energy modeling project was initially scoped to determine the energy burden of low- and moderate-income homeowners. The purpose of this tool was to show that we could identify homeowners who may be having trouble paying their utility bills and could benefit from energy-saving home improvements. As we continue to analyze the data and evaluate use cases with Fannie Mae teams, some initial insights into the energy burden analysis of the approximate 990,000 single-family homes include:

The average energy burden of the homes in the dataset was 2.45%. This means these households, on average, spend 2.45% of the gross borrower income on energy bills.

Homes fitting Duty to Serve criteria have an average energy burden of 4.51%, or 84% higher than the overall dataset average. Very-low-income homes have an average energy burden 138% higher than the overall dataset average.

The 10 states with the highest energy burden are:
RI (4.09% Average, 6.90% DTS Average)
VT (4.07% Average, 7.20% DTS Average)
CT (3.92% Average, 6.44% DTS Average)
AK (3.91% Average, 6.03% DTS Average)
ME (3.81% Average, 8.07% DTS Average)
HI (3.71% Average, 5.06% DTS Average)
NH (3.64% Average, 5.98% DTS Average)
AZ (3.19% Average, 5.71% DTS Average)
MA (3.17% Average, 5.08% DTS Average)
PA (3.14% Average, 5.71% DTS Average)

Homes that use heating oil as their primary heating fuel have an average energy burden of 4.30%, or 75.5% higher than the national average. Homes that use propane have an energy burden of 3.26%, or 33% higher than the national average.

This exercise not only succeeded in creating the data we needed, but the project also helped map previously not-so-useful home heating and cooling equipment data in appraisals. Of the nearly one million homes we analyzed, the dataset had over 38,000 unique abbreviations for the home heating and cooling equipment in a home that we were able to “translate” into useful, property-level data. Space heating and cooling is, on average, responsible for 52% of the energy use in a home and thus the biggest driver of utility bills. This property-level information will help us understand what may be contributing to estimated utility bills of higher energy burdened homes.. Through this energy modeling project, we were able to estimate energy- and cost-savings for these homes if they completed whole-home weatherization, installed a high-efficiency heat pump, or installed solar photovoltaics.

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

N/A

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Second Quarter Report: April 1 - June 30, 2021
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OBJECTIVE:

2. Increase liquidity for energy or water efficiency improvements that meet the FHFA Criteria by facilitating the adoption of enhanced industry standards and purchasing loans (Partner and Innovate, Do What We Do Best, Test and Learn).

SUMMARY OF RESULTS:

We are on track to complete this objective of helping reduce the cost of home ownership by building foundational data capabilities. We have engaged several external stakeholders and are currently working through a procurement process to acquire a dataset of home energy ratings on existing homes. Additionally, we have onboarded a vendor that is assisting us in using energy modeling and property-level data to estimate the utility costs and energy burden of one million homes in our portfolio. We are on track to complete the initial modeling in the third quarter, thus allowing us to analyze the data, including the estimation of household energy burden. Furthermore, we are working with our internal technology department to map the modeling output data to a property-level database.

The marketing campaign to promote awareness of HomeStyle® Energy and HomeStyle® Renovation ran through the end of June and our Marketing Department is assessing the campaign results. In addition, by the end of the second quarter, we completed our initial research into energy and water interventions which helps us quantify utility cost savings and health benefit impact(s).

We evaluated our HomeStyle Energy variances to assess whether all or part of them should be made permanent in the Selling Guide. Also, we anticipate evaluating other product enhancements in the second half of the year based on any feedback we receive during our September industry roundtable.

Finally, we are working on expanding our Single-Family Green Bond program to impact existing homes and affordable housing preservation. A cross functional team representing various departments across Fannie Mae are working together to create a home improvement, or retrofit, Green Bond framework, and establishing the process that homeowners and lenders will need to follow.

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Fannie Mae
Affordable Housing Preservation
Second Quarter Report: April 1 - June 30, 2021
Loan Product

Following are the 2021 Actions under this Objective as published in the December 14, 2018 Duty to Serve Plan:

☐ Evaluate energy, water, and green home features and other critical factors needed to expand our bond program to support affordable housing preservation.

☐ If feasible, establish business justification for a future product enhancement by analyzing data gathered, assessing current policies, processes and guidelines, and determining scalability of

potential product enhancement(s).

☐ Conduct research and data analysis that will explore how energy efficiency, water efficiency, and renewables can make home ownership more sustainable through lower utility costs, improved health, and indoor air quality.

☐ Continue to execute the marketing campaign to promote awareness around HomeStyle Energy and HomeStyle Renovation.

☐ Using industry building energy model tools, identify the method(s) of data collection to estimate the energy burden of low- to moderate-income borrowers and how it could help identify at-risk homeowners. If feasible, begin estimating the energy burden of low- to moderate-income borrowers.

☐ In the absence of data collected through appraisals and other loan documentation, Fannie Mae will engage external stakeholders and identify, review, and capture property-level energy efficient data from industry sources.

☐ Fannie Mae will demonstrate industry leadership by continuing to build the foundational data capabilities to help develop future loan products and solutions that will reduce the cost of low- to moderate-income homeownership.

SELF-ASSESSMENT RATING OF PROGRESS:

☒ On-target to meet or exceed the objective

☐ Progress delayed and/or partial completion of the objective expected

☐ Unlikely to achieve any milestones of the objective

ADDITIONAL INFORMATION (IF APPLICABLE):